



SCOTTISH HOSPITALS INQUIRY

**Hearing Commencing
26 February 2024**

**Bundle 3 – The Works Under
Supplementary Agreement 2 (SA2)**

This document may contain Protected Material within the terms of [Restriction Order 1](#) made by the Chair of the Scottish Hospitals Inquiry and dated 26 August 2021. Anyone in receipt of this document should familiarise themselves with the terms of that Restriction Order as regards the use that may be made of this material.

The terms of that restriction order are published on the Inquiry website.

Table of Contents

1	A40933361	Part A RHCYP & DCN OVERSIGHT BOARD PAPERS 2019-2021	Page 7
2	A34194299	Email - RHCYP & DCN Oversight Board papers - 7 August 2019	Page 7
2.1	A40933361	Oversight Board Papers – 08 August 2019	Page 8
3	A34194307	Email - RHCYP & DCN Oversight Board papers - 21 August 2019	Page 40
3.1	A40933361	Oversight Board Papers – 22 August 2019	Page 42
4	A34452809	Email - RHCYP & DCN Oversight Board papers - 27 August 2019	Page 83
4.1	A40933361	Oversight Board Paper – 29 August 2019	Page 85
5	A34451962	Email - RHCYP & DCN Oversight Board papers – 04 September 2019	Page 140
5.1	A40933361	Oversight Board Papers – 5 September 2019	Page 141
6	A34194258	Email - RHCYP & DCN Oversight Board papers – 11 September 2019	Page 173
6.1	A40933361	Oversight Board Papers – 12 September 2019	Page 175
7	A34451963	Email - RHCYP & DCN Oversight Board papers – 19 September 2019	Page 223
7.1	A40933361	Oversight Board Papers – 19 September 2019	Page 225
8	A34241594	Email - RHCYP & DCN Oversight Board papers – 02 October 2019	Page 238

8.1	A40933361	Oversight Board Papers – 3 October 2019	Page 240
9	A34194256	Email - RHCYP & DCN Oversight Board papers – 09 October 2019	Page 280
9.1	A40933361	Oversight Board Papers – 10 October 2019	Page 282
10	A34194252	Email - RHCYP & DCN Oversight Board papers – 16 October 2019	Page 310
10.1	A40933361	Oversight Board Papers – 17 October 2019	Page 312
11	A34194265	Email - RHCYP & DCN Oversight Board papers – 23 October 2019	Page 344
11.1	A40933361	Oversight Board Papers – 24 October 2019	Page 346
12	A34194259	Email - RHCYP & DCN Oversight Board papers – 30 October 2019	Page 376
12.1	A40933361	Oversight Board Papers – 31 October 2019	Page 378
13	A34194281	Email - RHCYP & DCN Oversight Board papers – 12 November 2019	Page 423
13.1	A40933361	Oversight Board Papers – 13 November 2019	Page 425
14	A34194302	Email - RHCYP & DCN Oversight Board papers – 27 November 2019	Page 455
14.1	A40933361	Oversight Board Papers – 28 November 2019	Page 457
15	A34194273	Email - RHCYP & DCN Oversight Board papers – 04 December 2019	Page 485
15.1	A40933361	Oversight Board Papers – 5 December 2019	Page 487
16	A34194278	Email - RHCYP & DCN Oversight Board papers – 18 December 2019	Page 528
16.1	A40933361	Oversight Board Papers – 19 December 2019	Page 530
17	A34194275	Email - RHCYP & DCN Oversight Board papers – 15 January 2020	Page 556
17.1	A40933361	Oversight Board Papers – 16 January 2020	Page 558
18	A34194268	Email - RHCYP & DCN Oversight Board papers – 28 January 2020	Page 607

18.1	A40933361	Oversight Board Papers – 29 January 2020	Page 609
19	A34405695	Email - RHCYP & DCN Oversight Board papers – 19 February 2020	Page 684
19.1	A40933361	Oversight Board Papers – 20 February 2020	Page 686
20	A34194280	Email - RHCYP & DCN Oversight Board papers – 25 February 2020	Page 722
20.1	A40933361	Oversight Board Papers – 27 February 2020	Page 724
21	A34194289	Email - RHCYP & DCN Oversight Board papers – 11 March 2020	Page 756
21.1	A40933361	Oversight Board Papers – 12 March 2020	Page 757
22	A41230644	Email - RHCYP & DCN Oversight Board papers – 24 March 2020	Page 829
22.1	A40933361	Oversight Board Papers – 26 March 2020	Page 830
23	A34194291	Email - RHCYP & DCN Oversight Board papers – 08 April 2020	Page 869
23.1	A40933361	Oversight Board Papers – 9 April 2020	Page 870
24	A34194290	Email - RHCYP & DCN Oversight Board papers – 22 April 2020	Page 905
24.1	A40933361	Oversight Board Papers – 23 April 2020	Page 906
25	A34194282	Email - RHCYP & DCN Oversight Board papers – 05 May 2020	Page 926
25.1	A40933361	Oversight Board Papers – 7 May 2020	Page 927
26	A34451979	Email - RHCYP & DCN Oversight Board papers – 20 May 2020	Page 960
26.1	A40933361	Oversight Board Papers – 21 May 2020	Page 961
27	A34451983	Email - RHCYP & DCN Oversight Board papers – 03 June 2020	Page 975
27.1	A40933361	Oversight Board Papers – 4 June 2020	Page 976
28	A34194303	Email - RHCYP & DCN Oversight Board papers – 17 June 2020	Page 1004

28.1	A40933361	Oversight Board Papers – 18 June 2020	Page 1005
29	A34194297	Email - RHCYP & DCN Oversight Board papers – 29 June 2020	Page 1024
29.1	A40933361	Oversight Board Papers – 30 June 2020	Page 1025
30	A34451992	Email - RHCYP & DCN Oversight Board papers – 25 August 2020	Page 1032
30.1	A40933361	Oversight Board Papers – 27 August 2020	Page 1033
31	A34194295	Email - RHCYP & DCN Oversight Board papers – 23 September 2020	Page 1039
31.1	A40933361	Oversight Board Papers – 24 September 2020	Page 1040
32	A34194304	Email - RHCYP & DCN Oversight Board papers – 18 November 2020	Page 1047
32.1	A40933361	Oversight Board Papers – 19 November 2020	Page 1048
33	A34194298	Email - RHCYP & DCN Oversight Board papers – 12 January 2021	Page 1072
33.1	A40933361	Oversight Board Papers – 14 January 2021	Page 1073
34	A34194306	Email - RHCYP & DCN Oversight Board papers – 24 February 2021	Page 1080
34.1	A40933361	Oversight Board Papers – 25 February 2021	Page 1081
35	A34194306	Email - RHCYP & DCN Oversight Board papers – 06 April 2021	Page 1093
35.1	A40933361	Oversight Board Papers – 8 April 2021	Page 1094
36	A35010023	Email chain Multiplex to Dalmore Capital enclosing copy IOM issues log dated 04 October 2019	Page 1099
36.1	A35010026	IOM Ventilation Log – 4 October 2019	Page 1101
37	A35055472	Hoare Lea appointed by Imtech as lead designer – 13 November 2019	Page 1108
38	A41367221	Email regarding Imtech Hoare Lea letter of engagement and fee schedule – 19 November 2019	Page 1112
38.1	A41367219	Ventilation HVC Draft Design Programme and Expenditure Profile 19 November 2019	Page 1115

38.2	A41367220	Fee Proposal to Imtech 13 November 2019	Page 1118
39	A34957602	Appendix 4 - HVC 107 Paediatric Critical Care and Haemonc Ventilation – 5 December 2019	Page 1146
40	A35680990	HVC 107 Air handling unit specification revision T1 – 20 March 2020	Page 1150
41	A32469196	Project Agreement Supplemental Agreement (No. 2) – 5 August 2020	Page 1204
42	A35681002	Hoare Lea – Specification Issue Sheet – 20 December 2020	Page 1439
43	A35683157	Hoare Lea Final Report – 21 December 2020	Page 1440
44	A41649822	Email from NHS Lothian dated 120421 enclosing Minutes of final Oversight Board meeting dated 08 April 2021	Page 1495
44.1	A43838257	Oversight Board Draft Minute - 08 April 2021	Page 1496
45	A39032317	Environmental Matrix – 22 April 2021	Page 1498
46	A32354071	SHTM 03-01 Principal Differences between SHTM and HTM 03-01 – 20 October 2011	Page 1556
47	A35055578	Subcontract Initial Engagement Agreement from IHSL to Imtech – 20 December	Page 1557

From: [REDACTED] on behalf of [Graham, Chris](#)
To: [Morrison A \(Alan\)](#); [Crowe B \(Barbara\)](#); [Calderwood C \(Catherine\)](#); [McLaughlin C \(Christine\)](#); [Colin Sinclair](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); [Gordon James](#); [Jacqui Reilly](#); [Little, Kerryann](#); [McMahon, Alex](#); [Peter Reekie](#); [Roche R \(Rowena\)](#); [Trotter, Audrey](#); [Pillath, Bryony](#)
Cc: [REDACTED]; [Smith G \(Gregor\)](#); [Murray D \(Diane\)](#)
Subject: UPDATE: RHCYP, DCN, CAMHS Oversight Board - PAPERS attached
Attachments: [2. NHS Lothian RHCYP Oversight Board ToR 19 July 2019.docx](#)
 [REDACTED]
[5b. Oversight Board - HFS&HPS Milestones v1.10 10-7-19.pdf](#)
[5c. Oversight Board - 2019-08-05 NSS RAG Report for RHCYP and DCN v0.7.pdf](#)
[5a. Oversight Board - HFS&HPS Commission for RHCYP & DCN v0.3 10-7-19.pdf](#)
[Oversight Board Agenda 08-08-19 FINAL.DOCX](#)

Please note, item 5 has now been added

Please find attached Agenda and papers for the meeting

 The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
 For more information please visit <http://www.symanteccloud.com>

 This email has been received from an external party and has been swept for the presence of computer viruses.



Scottish Government
Riaghaltas na h-Alba
gov.scot



Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 8 August 2019, 3.30-5.00pm

Venue: Room 8&9, Waverley Gate, EH1 3EG

Scope

The Oversight Board will provide advice in relation to:

- *Advice on phased occupation;*
- *Advice on the proposed solution for ventilation in critical care areas and on any other areas that require rectification works;*
- *Advice on facility and operational readiness to migrate;*
- *Commercial arrangements with IHSL for completion of works;*
- *The approach to NPD contract management*

AGENDA

1.	Chair's Welcome and Introductions	CMc	v
2.	Draft Terms of Reference – for Approval	All	*
3.	Ventilation Solution – air changes per hour and pressures for all clinical areas against SHTM standard; works required to bring to acceptable standard.	NHSL/HFS	*
4.	Water & Drainage System – applicable standards; ongoing work to lead to acceptable system;	NHSL/HFS	v
5.	Validation – proposed HFS validation activities	HFS	*
6.	Programme / Occupation – potential programme for phased occupation	NHSL	p
8.	Communications	CMc	v
9.	Any Other Competent Business	All	v
10.	Future Meetings 8.00 – 9.00am Every Thursday Morning Meeting Room 5, Waverley Gate		

* = paper attached

v = verbal report

p = presentation

= paper to follow

Oversight Board:
NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services
Draft Terms of Reference

Date Published: July 2019
Version: V1.0
Document Type: ToR
Review Date: N/A

DOCUMENT CONTROL SHEET



Key Information:

Title:	Terms of Reference
Date Published/Issued:	
Date Effective From:	
Version/Issue Number:	1.0
Document Type:	ToR
Document Status:	Draft
Author:	Christine McLaughlin
Owner:	Scottish Government
Approver:	Malcolm Wright, DG Health & Social Care and Chief Executive NHS Scotland
Approved by and Date:	
Contact:	
File Name:	

Approvals: *This document requires the following signed approvals:*

Name	Title	Date	Version
Malcolm Wright	Director General and NHSScotland Chief Executive		
Ms Freeman	Cabinet Secretary		

Distribution:

This document has been distributed to:

Name:	Date of Issue:	Version:

1. Name of the Board
Oversight Board: NHS Lothian Royal Hospital for Sick Children, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services
2. Background
<p>Following the decision to halt the planned move to the new Hospital facilities on 9 July an Oversight Board is being established to provide advice to ministers on the readiness of the facility to open and on the migration of services to the new facility.</p> <p>On Tuesday 2 July, NHS Lothian alerted the Scottish Government to an issue with the ventilation system at the Royal Hospital for Children and Young People (RHCYP) in Edinburgh.</p> <p>The Cabinet Secretary was not satisfied that the issue could be resolved within the very short timeframe available before services were to move to the new hospital, and required further assurance on all aspects of compliance with standards across the new hospital. For this reason, the planned move was halted in the interests of patient safety.</p> <p>Work has been initiated to identify the solution needed to ensure the ventilation in the critical care unit in the new site meets the required clinical and safety standards. Scottish Government has commissioned NHS National Services Scotland (NSS) to undertake a detailed assessment of all buildings systems in the new hospital which could impact safe operation for patients and staff, recognising how infection prevention must always be embedded within the design, planning, construction and commissioning activities of all new and refurbished healthcare facilities. This work will be phased, with assessment of water, ventilation and drainage systems prioritised, including the proposed fix for the ventilation unit. This will determine the timeframe for migration of services to the new hospital and a full report is anticipated in September.</p> <p>In order to provide co-ordinated advice to ministers, an Oversight Board is being established to which will seek assurance from NHS Lothian that according to its due diligence and governance, the facility is ready to open; and from NHS NSS that its agreed diligence has been successfully completed.</p>
3. Scope of work
<p>The Oversight Board will provide advice in relation to:</p> <ul style="list-style-type: none"> • Advice on phased occupation; • Advice on the proposed solution for ventilation in critical care areas and on any other areas that require rectification works; • Advice on facility and operational readiness to migrate; • Commercial arrangements with IHSL for completion of works; • The approach to NPD contract management

4. Membership
<p>The Board membership will be:</p> <p>Christine McLaughlin, Chief Finance Officer, Scottish Government Catherine Calderwood, Chief Medical Officer, Scottish Government Prof Fiona McQueen, Chief Nursing Officer, Scottish Government Susan Goldsmith, Director of Finance, NHS Lothian Tracey Gillies, Executive Medical Director, NHS Lothian Prof Alex McMahon, Nurse Director, NHS Lothian Peter Reekie, Chief Executive, Scottish Futures Trust Colin Sinclair, Chief Executive, NHS National Services Scotland</p> <p>Attending the Board to provide advice and assurance will be:</p> <p>Brian Currie, Project Director, NHS Lothian Prof Jacqui Reilly, Health Protection Scotland, NHS National Services Scotland Gordon James, Health Facilities Scotland, NHS National Services Scotland IHSL would be in attendance on as 'as required' basis</p>
5. Governance
<p>The Board will provide advice to the Cabinet Secretary</p>
6. Meetings
<p>The Board will commence their work in August 2019 and will meet frequently for the first 3 months as appropriate and will agree a plan of work which will determine future meetings. The first meeting will take place on Thursday 8 August 2019.</p>
7. Outputs
<p>The Board will provide advice to the Cabinet Secretary on the decisions set out in the scope</p>

NHS Lothian – RHCYP & DCN Oversight Board



Meeting date	8 August 2019
Title	Critical Care Ventilation – proposed technical specification
Responsible Director	Susan Goldsmith
Report Author	Iain Graham

Purpose of the Report

This report is presented to the Committee for:

Decision	x	Discussion	x	Awareness	
-----------------	----------	-------------------	----------	------------------	--

This report aligns to the following strategic contexts:

Government Policy/Directive		IJB Strategy / Direction		Legal Requirement	
Board Strategy		Annual Operational Plan		Corporate Objective	
Local Policy		Operational Issue		Other	x

This report aligns to the following quality ambition(s):

Person Centred		Safe	x	Effective	
-----------------------	--	-------------	----------	------------------	--

SBAR Report

Situation

The key decision point for delaying the operational transfer of services in July 2019 was the assessment of ventilation serving Critical Care within the RHCYP component of the new facility by the Board's independent commissioning and validation engineer. Since that time, work has been underway to identify a potential solution to the issues identified. This work has been carried out with IHSL and their supply chain; with HPS and HFS supporting the Board's project team.

Background

The assessment identified that the air changes per hour (ACH) were below the standard for critical care accommodation set in national health guidance, Scottish Health Technical Memorandum 03-01 (SHTM 03). This guidance also covers other environmental conditions relevant to the ventilation system, etc.

Following preliminary dialogue with IHSL and Multiplex, around the time of the proposed transfer, an option to improve the ventilation system in critical care was outlined. However, no engineering designers from their supply chain has been involved directly to date.

This outline has been developed over the last few weeks but with limited designer input as they have only been represented at meetings recently.

Assessment

Clinical services – the engagement with clinical stakeholders has been through the project team and management lines. The outlined proposal has been accepted by the Critical Care lead clinician and management; this has been issued to HFS for guidance feedback.

Infection Control / Microbiology – NHS Lothian lead Microbiology Consultant, Infection Protection and Control leads and Health Protection Scotland have been involved.

Legal and commercial – implementation of an appropriate contract mechanism to ensure works are carried out in a cost effective and compliant manner. A draft "Board Change" has been prepared; but

without inclusion of any other works that may result from the technical and governance reviews. The reservation of legal positions has not been proposed as part of the draft Board change.

Recommendation

The proposed Board Change for agreement of the Oversight Board is:

In accordance with Schedule Part 16 (Change Protocol), the Board requires Project Co to:

Design, Supply and Install a ventilation system or systems capable of delivering **10 air changes/hour at +10pa** as per SHTM 03-01, Appendix 1, Table A1 to the following rooms:

1-B1-065 including 1-B1-022, 1-B1-069, 1-B1-066 and 1-B1-071 which are all open to 1-B1-065

1-B1-075

1-B1-063

1-B1-037

1-B1-031

1-B1-021

1-B1-020

1-B1-019

1-B1-009

All environmental requirements for all spaces served by these systems shall be met – including but not limited to, temperature, lighting levels, noise, and humidity. These should be consistent to the agreed parameters throughout the facility adjusted as appropriate to meet the specific clinical and operational needs for the space.

The system installation, finishes and maintenance regime shall be in accordance with SHTM 03-01 requirements, together with clinical and operational constraints identified below:

All works to be carried out and monitored after and with reference to a collaborative full Stage 3 HAI SCRIBE assessment being approved by NHS Lothian.

The fire strategy and systems agreed for the facility will be maintained throughout the works and operational period. The works will integrate with these systems and all other building management systems.

The location of the installation within the rooms, external areas, route across such spaces and the take out of any windows, etc, will enable the current operational functionality and safety policies and procedures to be maintained.

The layouts etc will be agreed with the Project Director (and in turn the clinical service and related stakeholders) as part of the design development which will include input from the Board and all appropriate stakeholders.

Impacts

Quality / Patient Care

Improvement on current installation.

Workforce

As reported separately regarding the delayed occupation of the facility and subject to the timeframe for the delivery and commissioning for the works.

Financial	
Initial estimate £1.8m project cost allowance.	
Risk Assessment and Management	
To be developed	
Equality and Diversity, including Health Inequalities	
Not applicable for this report.	
Has an equality and diversity impact assessment (EQIA) been completed?	
No	
Communication, Consultation, Involvement and Engagement	
The following have been consulted before the Committee meeting:	
Stakeholder / Group Name	Date(s)
Project team, Infection Prevention & Control and Microbiology and engagement with HPS / HFS as part of the review programme	
Route to the Committee	
This business case has been previously considered by the following groups as part of its development. The groups have either supported the content, or their feedback has informed the development of the content presented in this report.	
Committee/Group/Meeting	Meeting date
None	
List of Appendices	
The following appendices are included with this paper	
Appendix No	Document title
None	



**Commission to assure key
standards and specification
compliance at RHCYP
(HFS and HPS)**



**Working
Document**

1. Brief and Context

The following is an outline proposal to address the following brief from Scottish Government to stimulate discussion to allow a fuller proposal to be agreed.

“I have also asked that we undertake an external series of checks, led by Health Facilities Scotland and Health Protection Scotland, to ensure that the relevant technical specifications and standards applicable to the new Edinburgh Children’s Hospital are being followed and implemented.”

The work will also include reviewing NHS Lothian’s proposed permanent solution for the ventilation of the RHCYP ICU and the contracting, design, installation, commissioning and setting to work processes as well as assurance around the appropriate advice on infection control.

This commission is separate to that detailing the development of a centre of excellence for infection control and the development of an assurance function for HFS, however the learning approach and outcomes of this work will inform that primary commission.

The brief remains dynamic and the scope and timescales within this document may be subject to change, referenced by appropriate version control.

A further extension to the scope was provided on 9th July 2019, to include a similar review for, “all recent new build and major refurbishments across the NHS estate”.

2. Approach and Core Team

A core team has been established from within NSS, with key HFS and HPS personnel identified. The team is as follows;

Jim Miller	SRO	Executive Management Team and link to CoE commission
Gordon James	Project Owner	Primary point of contact
Eddie McLaughlin	Project Lead	Overall project co-ordination
Kate Harley	HPS	Link to HPS management
Ian Storrar	HFS Technical Lead	Will co-ordinate HFS inputs
Annette Rankin	HPS Technical Lead	Will co-ordinate HPS inputs
Chris McVey	CoE link	Feedback to CoE commission
Kerry McGrogan	Programme Manager	PM for both commissions

The scope of this proposal includes patient safety risks unrelated to infection control, however it is proposed to follow the approach set out in the National Support Framework relating to Healthcare Infection, as far as practicable

https://hpspubsrepo.blob.core.windows.net/hps-website/nss/2684/documents/1_national-support-framework-2017.pdf

To use the available resource efficiently, NSS will write to board specifying what information is required to allow them to prepare. It is proposed that the work covered by this proposal be an assessment against guidance and standards rather than an audit, as not all involved might be trained auditors and the criteria are not clearly set in advance in relation to all issues. Site visits will be used to examine evidence, visually inspect installations and verify compliance. An initial meeting with key board personnel will be arranged as a matter of urgency to allow all sides to understand the approach and scope.

The approach will be to seek evidence of compliance with key standards and guidance outlined below. The scope includes all building systems which could adversely impact on patient safety. All topics will be reviewed from Estates and Infection Prevention and Control perspectives.

The approach will build on experience in checking on technical standards and specifications for the water system at NHS Greater Glasgow and Clyde, whilst reflecting the primarily non-technical audience. It will also reflect and inform current thinking in NSS' approach to assurance around developing a Centre for excellence in reducing risk of infection in the healthcare environment. This commission highlights the broad interdependency of infection control activity and the construction and engineering aspects of the built environment.

As NSS is still developing a proposal for an assurance model through a Centre of Excellence, separate resource is not currently in place to do assurance work of this nature, so reprioritisation of existing work, some of which relates to preventing issues with future projects, will be necessary. The extension of the commission to include further projects will also be a consideration.

NSS EMT will support the reprioritisation in discussion with health boards reflecting the urgency of this requirement. Technical resource in this area is scarce and often in high demand. It is envisaged that contractor support will be required alongside key internal staff and, whilst not fully planned at this stage, a budget estimate of £80-£100k is anticipated. Following the initial activity, a more detailed budget will be developed and managed via the programme.

In order to free up internal resource an approach of 'release and backfill' will be adopted. HFS and HPS will agree specific requirements through their management line and the SRO will ensure overall understanding of total resource allocation.

Findings will be fed back to the Health Board and SG as soon as they are finalised, recognising the urgency in the requirement.

In scope:

- Ventilation
- Water
- Electrical distribution (including medical locations)
- Drainage
- HAI SCRIBE (System for Controlling Risk in the Built Environment)
- Medical Gases
- SCART (statutory Compliance Audit and Risk Tool)
- Vermin Control (e.g. Bird droppings)
- Lifts
- Fire
- Building Management Systems
- Contracts

It is recognised that an audit has also been commissioned by SG and this scope may be reviewed to ensure no duplication

3. Relevant standards and specifications

To provide the assurance Government is seeking, the following categories of standards and specifications are in scope.

- Legal instruments and Approved Codes of Practice
- Scottish Health Technical Memoranda and associated guidance
- Scottish Infection Manual (as related to the built environment)
- Specification of Client Requirements

4. Timescales

Findings will be reported as they are finalised, with recommendations for rectification where applicable. Given experience of similar work in NHSGGC, relating only to water, a draft final report of all areas is anticipated to be available in 6 months from first engagement.

Draft programme

Commencement

The core group commenced activity on 9th July 2019 and agreed resources, roles and governance.

Next steps will include development and agreement of question sets and reference documents, selecting and contracting experts where required, requesting initial

information and early site familiarisation visits for all involved, plus review and comment on ICU ventilation designs

Week 4- 8

Production of and review of initial information, follow up questions with early site visits to examine records and interview staff, plus engaging with Board colleagues on remedial actions for general ventilation and other issues.

Week 9-12

On-site review of records and interviews, plus review of ventilation procurement and other remedial work. Production of initial feedback and recommendations to Board and Government

Week 13-17

Follow up requests for information and detailed on site investigation of identified problem areas, plus review and comment on contractors method statements, IPC advice, site working practices. Further findings and recommendations feedback to Board and Government

Week 18-22

Draft report preparation, consultation and final draft report.

Further detail to be added.

5. Report

Reports to Scottish Government and NHS Lothian are anticipated, with the NHSL reports containing sufficient technical detail to facilitate rectification of any issues found, and Government reports detailing issues, implications for cost, safety and timescales.

6. Anticipated Benefits

It is anticipated that successful completion of this programme will:

- Reduce the risk of exposure to infection and health and safety risks in the healthcare environment in RHCYP
- Allow lessons to be learned to benefit future investment in the healthcare environment across Scotland
- Provide assurance that appropriate levels of safety have been maintained
- Increase public confidence
- Improve collaboration and sharing of expertise across NHS Scotland.
- Promote Best Practice in Healthcare Environments
- Inform any future Centre for Excellence in the Healthcare Environment

- Reduce avoidable costs in retro-fitting healthcare facilities and avoidable infection

7. Constraints

1. To fulfil the requirements specified in this brief, specialist resources are required and the specialist workforce is not readily available. The timescales advised above reflect this situation.
2. There are a range of other high profile activities that may be impacted by this work, given the available resource. This will be managed by NSS in collaboration with board colleagues and SG.
3. The scope and timescales contained within the document relate to the RHCYP programme and not the wider commission on other projects underway/recently completed.

Document Control Sheet

1.1 Key Information

Title	Checks that key standards and specifications are adhered to at RHCYP (HPS and HFS)
Date Published / Issued	10-07-19
Version / Issue Number	d0.3
Document Type	Proposal
Document Status	Draft
Author	Eddie McLaughlan
Owner	Gordon James Director HFS
Approver	Jim Miller Director PCF
Approved by and Date	
Contact	Eddie McLaughlan HFS

1.2 Revision History

Version	Date	Summary of Changes	Name	Changes Marked
v0.1	07-06-19	Initial Draft	Eddie McLaughlan	No
V0.2	5/7/19	JM Comments	J Miller	No
V0.3	10/7/19	JM edits following RHCYP core group	J Miller	No

1.3 Approvals

This document requires the following signed approvals:

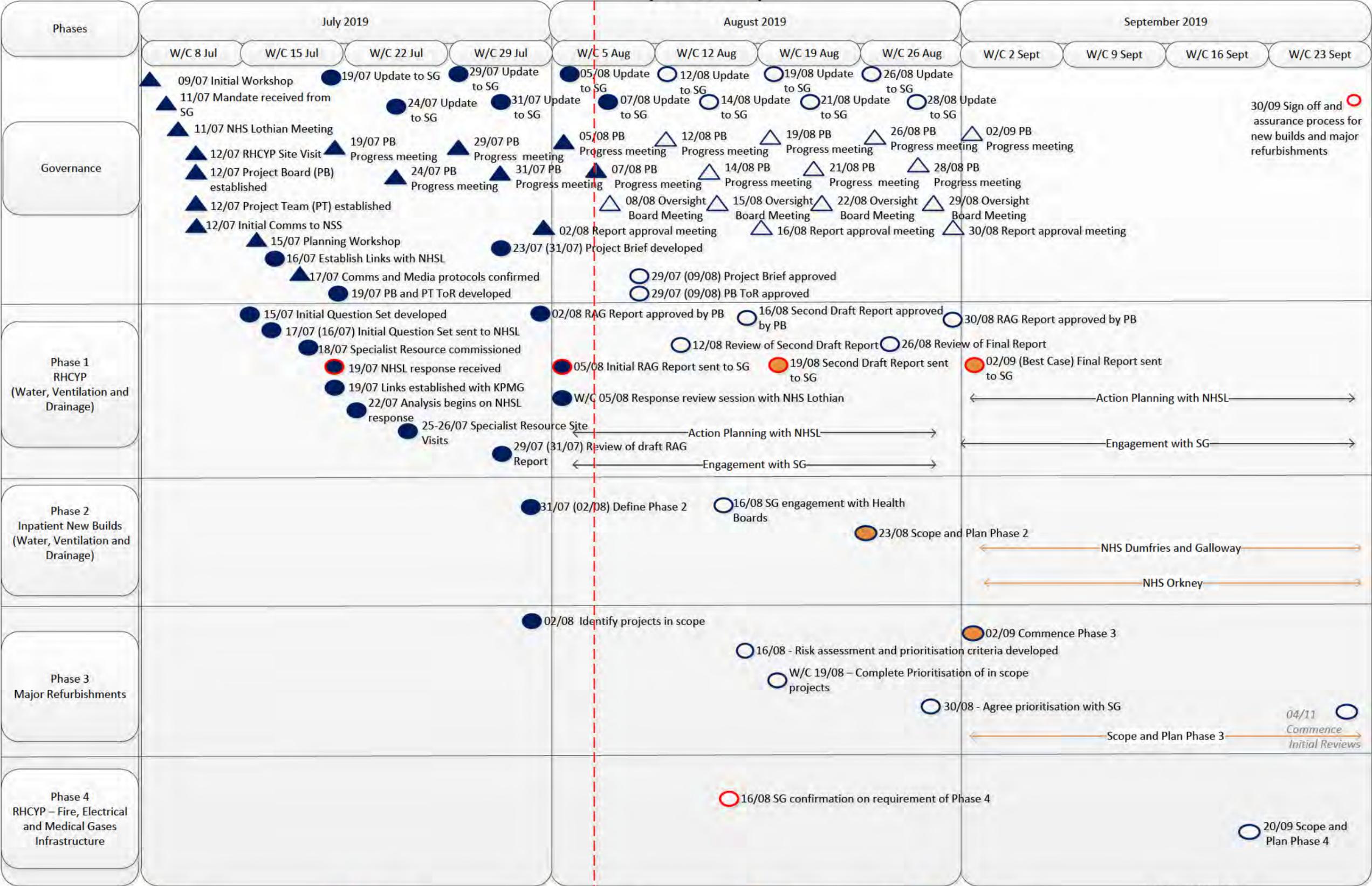
Version	Date	Name	Role	Signature

1.4 Distribution

This document has been distributed to:

Version	Date of Issue	Name	Role / Area

HPS and HFS Review of the NHS Lothian Royal Hospital for Children and Young People (RHCYP)



○ Milestone
 ○ Key Milestone
 △ Meeting / Event
 ○ Delayed Milestone / At Risk
 ● Completed Milestone

Date: 07/08/2019
v1.10

CONFIDENTIAL DRAFT: DO NOT PRINT

NSS (HPS & HFS) Technical Review of the Royal Hospital for Children and Young People (RHCYP) and Department of Clinical Neurosciences

Draft & In Confidence – RAG Status Report

05th August 2019

Version Draft 0.7



CONFIDENTIAL DRAFT: DO NOT PRINT**NSS (HFS & HPS) RAG Table for Royal Hospital for Children and Young People
and Department of Clinical Neurosciences**Date 5th August 2019, Version Draft.07

The attached initial draft RAG report has been collated based on information provided, on-site reviews of the RHCYP and expert advice sought within the key focus areas of Ventilation, Water and Drainage systems. NSS would like to thank the NHS Lothian project team for their corporation, input and access to the required information.

This report uses a high level RAG status to review each of the components. The following table describes the RAG and Status:

RAG	Description
Red	Unacceptable condition for patients and staff
Amber	Remedial work required
Green	No comment

Summary:

- Work is still progressing on all issues covered in this draft report and views and RAG status may change.
- There are numerous issues not necessarily impacting significantly on the ability to occupy the building but nonetheless requiring rectification for the building to function the way a new building should. These are not included in this report.
- The report focusses on areas where potential problems have been identified and these are rated red or amber and changed to green following verification of remedial work.
- Issues which would have been rated green initially are not included.

CONFIDENTIAL DRAFT: DO NOT PRINT**Water Systems:**

Service	Comment	Remedial work	RAG
Water services (critical care)			R
	Pseudomonas found in taps, in critical care areas.	All taps (not just TMT/TMV) to be disinfected and retested. Follow guidance.	R
		Replace tap strainers and cartridges in CCU TMT taps.	R
		Showers require to be disinfected.	R
		Implementation plan required.	A
Water services (non- critical care)			A
	Swarf and biofilm found in tap strainers.	Replace tap strainers in all areas.	A
Showers (all areas)			R
	Shower hose lengths do not comply with Scottish Water bye laws and guidance.	Shorted hose length or retaining ring to ensure that head cannot reach WC or drain	R
		Disinfect hose and drain after rectification.	R
Water (general)			R
	Testing has found widespread fungal contamination.	The water system should be disinfected and re-tested.	R

CONFIDENTIAL DRAFT: DO NOT PRINT

Service	Comment	Remedial work	RAG
	Legionella risk assessment.	<p>The Legionella Risk assessment Feb 2019 identified a range of actions. The Action Tracker does not demonstrate that the issued raised have been resolved or a timeline provided for resolution.</p> <p>The risk assessment is too heavily focussed on Legionella and not taking into account other organisms in line with patient type.</p> <p>There is no categorisation of patient type anywhere in what we have been provided and consideration to susceptibility.</p>	R
	Designated roles and responsibility.	<p>It has not been demonstrated that there are authorised persons or competent persons for the water services as defined in SHTM 00 and SHTM 04-01. In addition, a responsibility matrix and interface to NHSL water management group is required.</p> <p>The current Responsible Person has not been appointed in writing and uncertain as to whether received RP training. Additionally, has no previous experience of healthcare.</p>	Information awaited

CONFIDENTIAL DRAFT: DO NOT PRINT

Service	Comment	Remedial work	RAG
	Water tanks	To be inspected. The Raw Water and Filtrate water tanks are interconnected at the drain. These MUST be separated.	A
	Expansion vessels should be checked for susceptibility to bacterial growth.	Bladder from expansion vessels to be inspected.	A
	Hot and cold water temperatures / Flushing.	There was an issue with raised cold water temperatures during the boiler outage – this requires investigation.	A
	Filtration Plants	From work done at Glasgow micro-biological growth potential was identified as part of the Backwash cycle. Suggest Chlorine dioxide addition to backwash water tank to aid microbiological and biofilm development on filters.	R
	ZIP & HYDRO Units	These were found to be contaminated and are required to be disinfected and tested to demonstrate safe water delivery.	R

CONFIDENTIAL DRAFT: DO NOT PRINT

Service	Comment	Remedial Work	RAG
General (no specific topic)			Items individually rated.
	Information missing	Provide missing information as per information request sheet(s). (1) Water Safety Policy (2) Water Safety plan (3) System of Control (4) PPM Schedule (5) Hydro-X sample results with dated timeline (6) Flushing Records (7) Temperature Records (8) Sentinel Temperature Results (9) Kemper System Maintenance schedule and records (10) Flushing records for taps pre June 2019 (11) Expansion Vessel management protocol (12) Arjo bath commissioning records and results	Status may change depending on information provided and review.
	Callidus compliance report, May 2019	This audit has returned a RED status. A schedule, program of completion for each identified item and demonstration mechanism is required.	R
	Roof plant room	Water leaks should be traced and appropriate remedial action taken.	A

CONFIDENTIAL DRAFT: DO NOT PRINT**Drainage:**

Service	Comment	Remedial Work	RAG
Drainage			A
	Sinks drains	Initial testing indicates that these are not significantly contaminated, however they need to be disinfected periodically prior to and post occupancy to maintain their condition. Suggest utilising the Hysan methodology being employed at QEUH and RCH Glasgow.	A
	Bottle traps	There would appear to be an inconsistency of installation and potential of back-feed from trap to drain. This requires review.	A
	Trough Sinks	The drains in trough sinks have been identified as high risk potential. This requires review and treatment strategy considered.	A
	Pumped Drainage	The Rainwater drainage system presents the potential for flooding on pump failure and requires review.	Information awaited

CONFIDENTIAL DRAFT: DO NOT PRINT**Ventilation:**

Service	Comment	Remedial Work	RAG
Ventilation (general)			Items individually rated.
	Air Handling Units (AHU)	Confirm AHU comply with the requirements of SHTM 03-01, including fan change, filter bypass, air leakage etc.	Information awaited
	External doors to plant rooms	Ensure that excessive gaps are removed and appropriate anti vermin measures are applied to all the doors and screens.	A
	Air intake location - Air intakes are sited in the well below the helipad but information has not been provided on the impact of downdraft on air flows and pressures or entrainment of contaminants.	Demonstrate the effect of helicopter landing on air flows through measurement or modelling.	R
Ventilation (Isolation rooms and the areas containing them)	Isolation rooms are not served by a single ventilation system for each room as recommended in SHPN4 Supplement 1. The arrangement provided where ventilation systems serve an area of the building including contained isolation rooms has not yet been proven in the event of failure of an air handling unit and the implications for service impact are not yet understood.	Prove that bypass connections to adjacent ventilation systems will allow safe operation of both areas and / or explain service provision strategy for loss of each area including isolation rooms.	R

CONFIDENTIAL DRAFT: DO NOT PRINT

Service	Comment	Remedial Action	RAG
Ventilation Theatres	The ability of the single high level extract of linear scrub rooms should be demonstrated or additional low level ventilation provided.	Show that mixing and extract in scrub rooms effectively prevents contaminants being dispersed into theatres or provide additional extract.	R
	Anaesthetic rooms 31 and 34 do not demonstrate a clean air flow path to reduce exposure of staff to gasses.	Move ceiling supply to opposite side of room from extract. In room 30, move supply away from door.	A
	Theatre utility rooms Extract ventilation means theatres have to be used in pairs and taking a theatre out of service reduces extract in utility room too low.	Add supplementary extract ventilation to allow for one theatre being out of service or demonstrate resilience following the loss of a pair of theatres.	A
	Theatre corridor extract and pressure differentials do not comply with requirements.	Modify theatre corridor ventilation to comply and test and commission.	R
	Provision for maintenance without unnecessarily affecting service appears poor.	For each area, the Board should have the maintenance and failure contingencies mapped and agreement of clinical colleagues for the expected impact on room availability.	A
	Fire dampers in some locations cannot be adequately tested as duct access has not been provided. Also, locations of fire dampers and fire rated ductwork has been questioned.	Provide access so all fire dampers can be readily visually inspected to verify operation. Review fire damper provision and fire rated ductwork and confirm appropriate provision.	A

CONFIDENTIAL DRAFT: DO NOT PRINT

Service	Comment	Remedial Action	RAG
	On inspection the ventilation systems throughout the building had clearly not been snagged and were not ready for validation or operation.	A full snagging of the ventilation systems should be undertaken and rectification put in place. E.G. air handling unit leaks, filter bypass, dust in AHUs and ductwork, missing duct access, firestopping, fire dampers.	R

Systems not yet tested:

Service	Comment	Remedial Action	RAG
Electrical	Not inspected yet due to priority put on water, ventilation and drainage.		
Fire	Not inspected yet due to priority put on water, ventilation and drainage.		
Medical Gasses	Not inspected yet due to priority put on water, ventilation and drainage.		

END.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

- [REDACTED]

- [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

- [REDACTED]

- [REDACTED]

- [REDACTED]

From: [Graham Chris](#)
To: [Morrison A \(Alan\)](#); [Archibald Gordon](#); [Crowe B \(Barbara\)](#); [Chief Medical Officer](#); [McLaughlin C \(Christine\)](#); [Colin Sinclair](#); [Cosens Sorrel](#); [Currie Brian](#); [McQueen F \(Fiona\)](#); [Gilles Tracey](#); [Goldsmith Susan](#); [Gordon James](#); [Graham Chris](#); [Jacqui Reilly](#); [Joyce Alex](#); [Little Kerryann](#); [Mackay Judith](#); [McMahon Alex](#); [Peter Reekie](#); [Roche R \(Rowena\)](#); [Trotter Audrey](#); [Walker Anna](#)
Subject: RHCYP+ +DCN Oversight Board papers - 22-08-19
Date: 21 August 2019 09:55:04
Attachments: [image003.jpg](#)
[9_RHSC UKAS Accreditation SBAR_08_08_2019_V2.docx](#)
[10.1 Staff Communications to OB 190822.docx](#)
[10.2 RHCYP DCN NHS Lothian FoI and PQ tracker OB 190822.docx](#)
[AGENDA RHCYP&DCN Oversight Board 22-08-19.docx](#)
[3.1 NHS Lothian RHCYP&DCN Oversight Board ToR.docx](#)
[5.2 Critical Care Ventilation design and approach OB 190820 Appendix.pdf](#)
[5.2 Critical Care Ventilation design and approach OB 190820.docx](#)
[REDACTED]
[7.1 Water Quality report OB 190822.docx.doc](#)
[2_RHCYP OAB 08-08-19 Minutes - Final.doc](#)
Importance: High

Dear Colleagues

Please find attached the agenda and papers for tomorrow's Oversight Board meeting.

The meeting will take place at 8am in Meeting Room 5, Waverley Gate.

Dial in is available:

[REDACTED]
[REDACTED]

Papers:

Agenda

- 2. Minutes 08-08-19
 - 3.1 Oversight Board Terms of Reference
 - 5.2 Critical Care Ventilation design and approach
- [REDACTED]
- 7.1 NHS Lothian Water Quality Review Findings
- 9. RHSC UKAS Accreditation
- 10.1 Staff Communications
- 10.2 NHSL FoI and PQ Tracker

Kind regards

Chris

Chris Graham
Secretariat Manager
Corporate Governance Team - NHS Lothian

[REDACTED]
[REDACTED]

Our Values Into Action

Quality | Dignity and Respect | Care and Compassion | Openness, Honesty and Responsibility | Teamwork

For more information visit: <http://intranet.lothian.scot.nhs.uk/values>

letterhead logo block 2018 colour



The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>

This email has been received from an external party and has been swept for the presence of computer viruses.



Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 22 August 2019, 8:00 – 9:00am

Venue: Room 5, Waverley Gate, EH1 3EG

AGENDA

1.	Chair's Welcome and Introductions	CMc	v
2.	Minutes of Previous Meeting – 08 August 2019 – for Approval	CMc	*
3.	Matters Arising		
	3.1 Agreed Terms of Reference	CMc	*
4.	Programme / Occupation Timelines	BC	v
5.	Ventilation Systems Update		
	5.1 Confirmation of general ward ventilation requirements	GJ	v
	5.2 Critical Care Ventilation design and approach	BC	*
	5.3 Other ventilation reviews	BC	v
7.	Water, Plumbing & Drainage System Update		
	7.1 NHS Lothian Water Quality review findings	TG	*
8.	Validation		
	8.1 Fire Safety Report	GJ	v
9.	RHSC UKAS Accreditation	TG	*
10.	Communications		
	10.1 Staff communications	JMac	*
	10.2 Tracker of requests for information	SG	*
11.	Any Other Competent Business	All	V
12.	Date of Next Meeting Thursday 29 August 2019, 8am, Meeting Room 5, Waverley Gate		

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 15.30 on Thursday 8 August 2019 in Meeting Room 8, Waverley Gate, 2-4 Waterloo Place, Edinburgh, EH1 3EG.

Present: Ms C. McLaughlin, Chief Finance Officer, Scottish Government (chair); Ms T. Gillies, Medical Director, NHS Lothian; Ms S. Goldsmith, Director of Finance, NHS Lothian; Professor A. McMahon, Nurse Director, NHS Lothian; Ms D. Murray, Deputy Chief Nursing Officer, Scottish Government; Mr P. Reekie, Chief Executive, Scottish Futures Trust (present items 1, 2 and 6); Mr C. Sinclair, Chief Executive, NHS National Services Scotland.

In Attendance: Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian (on behalf of Mr Currie); Mr G. James, Director of Facilities, Health Facilities Scotland; Ms B. Pillath, Committee Administrator (minutes); Professor J. Reilly, Lead Consultant, Infection Prevention and Control, Health Protection Scotland.

Apologies: Dr C. Calderwood, Chief Medical Officer, Scottish Government; Mr B. Currie, Project Director, NHS Lothian; Professor F. McQueen, Chief Nursing Officer, Scottish Government; Dr G. Smith, Deputy Chief Medical Officer, Scottish Government.

The Chair welcomed members to the meeting and members introduced themselves.

1. Draft Terms of Reference, for approval

- 1.1 The draft terms of reference had been previously circulated. It was clarified that Professor Reilly was included in the list of attendees to the Board rather than Health Protection Scotland input.
- 1.2 It was agreed that the role of the Board would primarily be to advise the Cabinet Secretary rather than co-ordinate programmes of activities, but if there was a requirement for co-ordination then this would not be excluded.
- 1.3 It was clarified that this was not the forum for discussion of the KPMG report, which was a separate piece of work reporting to the Cabinet Secretary.
- 1.4 The Board consisted of decision making members and attendees to give technical advice and guidance. 3 members were NHS Lothian and 3 Scottish Government. Other advisors would be invited to meetings as required.
- 1.5 It was agreed to add to the Terms of Reference that the group could identify areas that could be done differently in the future. **CMcL**
- 1.6 It was agreed that the statement in the section on 'scope of work' about commercial agreements would be revised to make it clear that the role of this group was to gain

understanding and give advice to NHS Lothian about commercial arrangements rather than make decisions about the contract.

CMcL

1.7 Members approved the draft terms of reference with the changes outlined.

2. Ventilation Solutions

2.1 Mr Graham presented the previously circulated paper regarding ventilation in the critical care area. Members agreed in principle that if a technical solution was designed that would allow 10 air changes per hour in the required rooms in the critical care area, which complied with the relevant SHTM standard, and was properly implemented, then the critical care area would be fit for use.

2.2 Further clarification was needed for Health Facilities Scotland with the specific rooms to be included in this specification marked out on the plan. The plans would be sent to HFS and Mr James would share them with the engineering team; this would be prioritised. Some work was also still to be done between IHSL and NHS Lothian.

IG / GJ

2.3 It was noted that within the critical care area there were single rooms and four bedded rooms which were included in the specifications, and the term 'isolation rooms' should not be used to avoid confusion.

2.4 Regarding the specification and design process it was clarified that NHS Lothian would sign off the specifications for design with input from Health Protection Scotland, Health Facilities Scotland, and the Scottish Government via this Board, and then engage with IHSL on the design which would later be agreed. There had been discussion with IHSL on the contents of the paper presented, but no formal submission of the specifications.

2.5 Mr Graham tabled a paper listing actions against issues identified in relation to ventilation in the hospital; excluding critical care and general ward areas, and progress against these. This list was being considered in detail by the NHS Lothian Incident Management Team.

2.6 There was a need to understand all the issues that needed to be resolved before the hospital could be opened, the timescale for these, and clarification as to which areas were compliance issues and which were instruction issues. For those which were agreed to be compliance issues IHSL must resolve, and those which were issues with the instructions, if agreed, NHS Lothian must fund the resolution.

2.7 If any areas of non-compliance were agreed to be satisfactory then justification and mitigating actions must be described.

2.8 It needed to be considered whether the current process of identifying areas of non-compliance picked up issues not identified by previous processes. It was noted that the IOM inspection report did produce a list of snagging issues which NHS Lothian was working through.

- 2.9 The report on whether the general ward ventilation of four air changes per hour was compliant would be available the following week.
- 2.10 There needed to be agreement that all ventilation work was on the list, agreement with HFS and HPS on solutions, compliance and any non-compliance mitigating actions, and then the programme of work would start. Once this stage had been reached the timescale for opening could be estimated based on the longest programme of work. There also needed to be identification of which work must be done before moving into the hospital and what could be done after the move.
IG / GJ
- 2.11 It was expected that work on the solution to general ventilation problems would run at the same time as the design for the critical care ventilation so that once general work was completed a decision could be made as to whether the DCN area could be occupied while paediatric critical care work was carried out.
- 2.12 It was noted that timescales would be difficult to judge as it was possible that at the testing stage after remedial works had taken place it may be found that further work was required.
- 3.13 There was an 8 week lead in time for clinical commissioning which could not be started until the other issues had been resolved, but the preference was that DCN would move earlier if safe, due to the problems with the current DCN accommodation at the Western General Hospital.
- 2.14 It was agreed that at future meetings of this group areas from the ventilation action tracker that had been signed off by NHS Lothian with agreement from HFS and HPS, as well as areas which were not going to plan.
SG

3. Water and Drainage System

- 3.1 Professor McMahon gave a verbal update. Two workshops had been held on 29 July and 7 August 2019 to consider the reports on water quality and any failures with the tank and supply plant. Based on microbiology sampling so far completed there were no concerns and it was agreed that the water system was in compliance with the relevant SHTM standard. Next steps for maintaining water quality while the hospital was empty and when it was occupied were agreed. A report on the outcome of the workshops would be discussed at the IMT meeting on 12 August 2019 and then at the next meeting of the Board.
AMcM
- 3.2 It was noted that further tests by HFS had been done which had found fungal organisms in some areas. More detail was needed as to which organisms were found where and what standard this applied to. Professor Reilly advised that there should be a separation between evidence based standards, and practices which were the result of incidents elsewhere where learning was not yet evidence based. This analysis was needed before determination of whether there was a risk and whether this would affect the opening of the hospital.
- 3.3 There was no update on drainage at this time. It was noted that water systems above ground should be referred to as 'plumbing' and those below ground as 'drainage'.

4. Validation

4.1 Mr James presented the previously circulated paper outlining HPS and HFS validation activity taking place. It was noted that validation activity focused on areas where resolution was required; the majority of areas were satisfactory. The final report on this phase of testing was due to be completed by 2 September 2019.

4.2 There was discussion about phase 4 of the validation which was fire and electrical safety and medical gases. It was agreed that information giving assurance on which areas were satisfactory would allow focus on those areas that needed to be checked. HFS were ready to start the fire inspection but this would require resources from Lothian for finding information. It was agreed that an initial meeting with the national fire officer and the Lothian fire officers would be arranged to find out what assurance gaps there were.

4.3 A report on current progress with fire safety would be brought to the next meeting. Reports on progress with electrical safety and medical gasses would be brought to future meetings. **GJ**

5. Programme / Occupation

5.1 There was no discussion on this item at this stage, except to state that an 8 week lead in for clinical commissioning was needed for each area to be moved in, and that there was a preference to move DCN to the new hospital first.

5.2 Ms McLaughlin would discuss with Mr Graham the broad timelines for update to the Cabinet Secretary. **IG / CMcL**

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

7. Communications

7.1 It was proposed that a communication be produced fortnightly to update on the progress of the Board and that it would be given to all NHS Lothian staff to demonstrate that NHS Lothian, National Services Scotland and the Scottish Government were coming together to track progress.

7.2 The NHS Lothian Director of Communications would be invited to join this group.

SG

8. Date of Next Meeting

8.1 The next meeting of this group would take place at **8.00 am** on **Thursday 22 August 2019** in **Meeting Room 5**, fifth floor, Waverley Gate.

8.2 Further meetings would take place each Thursday at 8.00 am.

Oversight Board:
NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services
Draft Terms of Reference

Date Published: July 2019
Version: V1.0
Document Type: ToR
Review Date: N/A

DOCUMENT CONTROL SHEET



Key Information:

Title:	Terms of Reference
Date Published/Issued:	
Date Effective From:	
Version/Issue Number:	1.0
Document Type:	ToR
Document Status:	Draft
Author:	Christine McLaughlin
Owner:	Scottish Government
Approver:	Malcolm Wright, DG Health & Social Care and Chief Executive NHS Scotland
Approved by and Date:	
Contact:	
File Name:	

Approvals: *This document requires the following signed approvals:*

Name	Title	Date	Version
Malcolm Wright	Director General and NHSScotland Chief Executive		
Ms Freeman	Cabinet Secretary		

Distribution:

This document has been distributed to:

Name:	Date of Issue:	Version:

1. Name of the Board
Oversight Board: NHS Lothian Royal Hospital for Sick Children, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services
2. Background
<p>Following the decision to halt the planned move to the new Hospital facilities on 9 July an Oversight Board is being established to provide advice to ministers on the readiness of the facility to open and on the migration of services to the new facility.</p> <p>On Tuesday 2 July, NHS Lothian alerted the Scottish Government to an issue with the ventilation system at the Royal Hospital for Children and Young People (RHCYP) in Edinburgh.</p> <p>The Cabinet Secretary was not satisfied that the issue could be resolved within the very short timeframe available before services were to move to the new hospital, and required further assurance on all aspects of compliance with standards across the new hospital. For this reason, the planned move was halted in the interests of patient safety.</p> <p>Work has been initiated to identify the solution needed to ensure the ventilation in the critical care unit in the new site meets the required clinical and safety standards. Scottish Government has commissioned NHS National Services Scotland (NSS) to undertake a detailed assessment of all buildings systems in the new hospital which could impact safe operation for patients and staff, recognising how infection prevention must always be embedded within the design, planning, construction and commissioning activities of all new and refurbished healthcare facilities. This work will be phased, with assessment of water, ventilation and drainage systems prioritised, including the proposed fix for the ventilation unit. This will determine the timeframe for migration of services to the new hospital and a full report is anticipated in September.</p> <p>In order to provide co-ordinated advice to ministers, an Oversight Board is being established which will seek assurance from NHS Lothian that according to its due diligence and governance, the facility is ready to open; and from NHS NSS that its agreed diligence has been successfully completed.</p>
3. Scope of work
<p>The Oversight Board will provide advice in relation to:</p> <ul style="list-style-type: none"> • Advice on phased occupation; • Advice on the proposed solution for ventilation in critical care areas and on any other areas that require rectification works; • Advice on facility and operational readiness to migrate; • Gain information and give advice to NHS Lothian about commercial arrangements with IHSL for completion of works; • The approach to NPD contract management • Identification of areas that could be done differently in future

4. Membership
<p>The Board membership will be:</p> <p>Christine McLaughlin, Chief Finance Officer, Scottish Government Catherine Calderwood, Chief Medical Officer, Scottish Government Prof Fiona McQueen, Chief Nursing Officer, Scottish Government Susan Goldsmith, Director of Finance, NHS Lothian Tracey Gillies, Executive Medical Director, NHS Lothian Prof Alex McMahon, Nurse Director, NHS Lothian Peter Reekie, Chief Executive, Scottish Futures Trust Colin Sinclair, Chief Executive, NHS National Services Scotland Alex Joyce, representative from NHS Lothian Joint Staff Side</p> <p>Attending the Board to provide advice and assurance will be: Brian Currie, Project Director, NHS Lothian Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work Gordon James, Health Facilities Scotland, NHS National Services Scotland IHSL would be in attendance on as 'as required' basis</p>
5. Governance
<p>The Board will provide advice to the Cabinet Secretary</p>

6. Meetings
<p>The Board will commence their work in August 2019 and will meet frequently for the first 3 months as appropriate and will agree a plan of work which will determine future meetings. The first meeting will take place on Thursday 8 August 2019.</p>
7. Outputs
<p>The Board will provide advice to the Cabinet Secretary on the decisions set out in the scope</p>

**RHCYP & DCN OVERSIGHT BOARD
NHS Lothian**

20 August 2019

Susan Goldsmith

CRITICAL CARE VENTILATION – UPDATE ON DESIGN AND APPROACH

1. Purpose of the Report

This paper sets out the proposed Design Specification for the Critical Care Ventilation remedial works.

2. Recommendations

- 2.1. To confirm the proposed technical specification for the Board Change for critical care ventilation design
- 2.2. To approve the inclusion of the specification in the Letter of Intent proposed to go to IHSL as part of the commercial negotiations
- 2.3. To confirm that HFS and HPS will work through the Board to approve the developed design and the Independent Tester be appointed as Certifier.

3. Discussion of Key Issues

- 3.1. The Oversight Board at its last meeting on 8th August supported a recommendation that NHSL should procure works required to rectify the ventilation air change rate in critical care and any other works identified as being required pre-occupation
- 3.2. The outline specification was prepared by NHS Lothian's project team and technical advisers. NSS were asked by the Oversight Board to review as part of the assurance process. Further information in relation to the rooms and areas within critical care was provided to HFS (Appendix 1), who subsequently asked a series of questions. These have been answered where possible, however most are required for the design development, which is proposed to be the three weeks following the issue and agreement of the Letter of Intent
- 3.3. The **proposed specification** for approval is in accordance with Schedule Part 16 (Change Protocol). The Board requires Project Co to:

Design, Supply and Install a ventilation system or systems capable of delivering **10 air changes/hour at +10pa** as per SHTM 03-01, Appendix 1, Table A1 to the following rooms:

1-B1-065 – *Neo Natal 3 cot area* including 1-B1-022 – *Corridor*, 1-B1-069 – *Staff Base*, 1-B1-066 – *Clean Utility* and 1-B1-071 – *Resus Bay* which are all open to 1-B1-065

1-B1-075 – *Single cot cubicle neo natal*

1-B1-063 – *Open plan bay 4 bed*

1-B1-037 – *Single bed cubicle*

1-B1-031 – *Open plan bay 4 bed*

1-B1-021 – *Single bed cubicle*

1-B1-020 – *Single bed cubicle*

1-B1-019 – *Single bed cubicle*

1-B1-009 – *Open plan bay 4 bed*

All environmental requirements for all spaces served by these systems shall be met – including but not limited to, temperature, lighting levels, noise, and humidity. These should be consistent to the agreed parameters throughout the facility adjusted as appropriate to meet the specific clinical and operational needs for the space.

The system installation, finishes and maintenance regime shall be in accordance with SHTM 03-01 requirements, together with clinical and operational constraints identified below:

All works to be carried out and monitored after and with reference to a collaborative full Stage 3 HAI SCRIBE assessment being approved by NHS Lothian.

The fire strategy and systems agreed for the facility will be maintained throughout the works and operational period. The works will integrate with these systems and all other building management systems.

The location of the installation within the rooms, external areas, route across such spaces and the take out of any windows, etc, will enable the current operational functionality and safety policies and procedures to be maintained.

The layouts etc will be agreed with the Project Director (and in turn the clinical service and related stakeholders) as part of the design development which will include input from the Board and all appropriate stakeholders.

- 3.4. On confirmation of support for the recommendations above, NHS Lothian will continue negotiation of the Letter of Intent, and, with HFS and HPS, to develop the design for critical care ventilation.
- 3.5. The formal design process will commence with the issue of the specification as part of the Letter of Intent. This will then include design development in dialogue with IHSL and their supply chain.
- 3.6. Design responsibility will rest with IHSL in the same way as provided for in the Project Agreement. However, it should be noted that the Board approval procedure is different under the Change Protocol (and the Supplementary Agreement route proposed here) from the way in which it operates under the Review Procedure. Whilst ultimate design responsibility remains with IHSL to ensure that the design meets the Board's Construction Requirements the NHSL's sign off is not limited to Operational Functionality in the way in which complies with the Review Procedure. Indeed, one of the approval criteria for a high value change is that NHSL is satisfied, acting reasonably, that the design meets the BCRs. Accordingly, independent verification of the design will be important.

- 3.7. In discussions to date IHSL and Multiplex have indicated that clarity on “sign off” to any design (and presumably any works thereafter) is required. A key issue to consider is that of Certification and whether it would be appropriate for the Independent Tester to carry this out.
- 3.8. The development, sign-off and execution of the ventilation design process will require ongoing participation from the HFS and HPS with the Board’s project team to deliver the level of assurance sought by the Oversight Board.

Iain F Graham

Director of Capital Planning and Projects, NHS Lothian

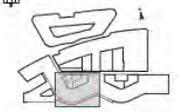
20 August 2019

APPENDIX 1: Drawings and Clinical Output Specification for RHCYP Critical Care



Marked off drawings showing area to work on for system

- Legend
- Door
 - Window
 - Door to be removed
 - Window to be removed
 - Door to be replaced
 - Window to be replaced
 - Door to be replaced with glass
 - Window to be replaced with glass
 - Door to be replaced with solid
 - Window to be replaced with solid
- COVERING:
0.1 POLYURETHANE



- 1. Room 101 - 102 - 103 - 104 - 105 - 106 - 107 - 108 - 109 - 110 - 111 - 112 - 113 - 114 - 115 - 116 - 117 - 118 - 119 - 120 - 121 - 122 - 123 - 124 - 125 - 126 - 127 - 128 - 129 - 130 - 131 - 132 - 133 - 134 - 135 - 136 - 137 - 138 - 139 - 140 - 141 - 142 - 143 - 144 - 145 - 146 - 147 - 148 - 149 - 150 - 151 - 152 - 153 - 154 - 155 - 156 - 157 - 158 - 159 - 160 - 161 - 162 - 163 - 164 - 165 - 166 - 167 - 168 - 169 - 170 - 171 - 172 - 173 - 174 - 175 - 176 - 177 - 178 - 179 - 180 - 181 - 182 - 183 - 184 - 185 - 186 - 187 - 188 - 189 - 190 - 191 - 192 - 193 - 194 - 195 - 196 - 197 - 198 - 199 - 200 - 201 - 202 - 203 - 204 - 205 - 206 - 207 - 208 - 209 - 210 - 211 - 212 - 213 - 214 - 215 - 216 - 217 - 218 - 219 - 220 - 221 - 222 - 223 - 224 - 225 - 226 - 227 - 228 - 229 - 230 - 231 - 232 - 233 - 234 - 235 - 236 - 237 - 238 - 239 - 240 - 241 - 242 - 243 - 244 - 245 - 246 - 247 - 248 - 249 - 250 - 251 - 252 - 253 - 254 - 255 - 256 - 257 - 258 - 259 - 260 - 261 - 262 - 263 - 264 - 265 - 266 - 267 - 268 - 269 - 270 - 271 - 272 - 273 - 274 - 275 - 276 - 277 - 278 - 279 - 280 - 281 - 282 - 283 - 284 - 285 - 286 - 287 - 288 - 289 - 290 - 291 - 292 - 293 - 294 - 295 - 296 - 297 - 298 - 299 - 300 - 301 - 302 - 303 - 304 - 305 - 306 - 307 - 308 - 309 - 310 - 311 - 312 - 313 - 314 - 315 - 316 - 317 - 318 - 319 - 320 - 321 - 322 - 323 - 324 - 325 - 326 - 327 - 328 - 329 - 330 - 331 - 332 - 333 - 334 - 335 - 336 - 337 - 338 - 339 - 340 - 341 - 342 - 343 - 344 - 345 - 346 - 347 - 348 - 349 - 350 - 351 - 352 - 353 - 354 - 355 - 356 - 357 - 358 - 359 - 360 - 361 - 362 - 363 - 364 - 365 - 366 - 367 - 368 - 369 - 370 - 371 - 372 - 373 - 374 - 375 - 376 - 377 - 378 - 379 - 380 - 381 - 382 - 383 - 384 - 385 - 386 - 387 - 388 - 389 - 390 - 391 - 392 - 393 - 394 - 395 - 396 - 397 - 398 - 399 - 400 - 401 - 402 - 403 - 404 - 405 - 406 - 407 - 408 - 409 - 410 - 411 - 412 - 413 - 414 - 415 - 416 - 417 - 418 - 419 - 420 - 421 - 422 - 423 - 424 - 425 - 426 - 427 - 428 - 429 - 430 - 431 - 432 - 433 - 434 - 435 - 436 - 437 - 438 - 439 - 440 - 441 - 442 - 443 - 444 - 445 - 446 - 447 - 448 - 449 - 450 - 451 - 452 - 453 - 454 - 455 - 456 - 457 - 458 - 459 - 460 - 461 - 462 - 463 - 464 - 465 - 466 - 467 - 468 - 469 - 470 - 471 - 472 - 473 - 474 - 475 - 476 - 477 - 478 - 479 - 480 - 481 - 482 - 483 - 484 - 485 - 486 - 487 - 488 - 489 - 490 - 491 - 492 - 493 - 494 - 495 - 496 - 497 - 498 - 499 - 500 - 501 - 502 - 503 - 504 - 505 - 506 - 507 - 508 - 509 - 510 - 511 - 512 - 513 - 514 - 515 - 516 - 517 - 518 - 519 - 520 - 521 - 522 - 523 - 524 - 525 - 526 - 527 - 528 - 529 - 530 - 531 - 532 - 533 - 534 - 535 - 536 - 537 - 538 - 539 - 540 - 541 - 542 - 543 - 544 - 545 - 546 - 547 - 548 - 549 - 550 - 551 - 552 - 553 - 554 - 555 - 556 - 557 - 558 - 559 - 560 - 561 - 562 - 563 - 564 - 565 - 566 - 567 - 568 - 569 - 570 - 571 - 572 - 573 - 574 - 575 - 576 - 577 - 578 - 579 - 580 - 581 - 582 - 583 - 584 - 585 - 586 - 587 - 588 - 589 - 590 - 591 - 592 - 593 - 594 - 595 - 596 - 597 - 598 - 599 - 600 - 601 - 602 - 603 - 604 - 605 - 606 - 607 - 608 - 609 - 610 - 611 - 612 - 613 - 614 - 615 - 616 - 617 - 618 - 619 - 620 - 621 - 622 - 623 - 624 - 625 - 626 - 627 - 628 - 629 - 630 - 631 - 632 - 633 - 634 - 635 - 636 - 637 - 638 - 639 - 640 - 641 - 642 - 643 - 644 - 645 - 646 - 647 - 648 - 649 - 650 - 651 - 652 - 653 - 654 - 655 - 656 - 657 - 658 - 659 - 660 - 661 - 662 - 663 - 664 - 665 - 666 - 667 - 668 - 669 - 670 - 671 - 672 - 673 - 674 - 675 - 676 - 677 - 678 - 679 - 680 - 681 - 682 - 683 - 684 - 685 - 686 - 687 - 688 - 689 - 690 - 691 - 692 - 693 - 694 - 695 - 696 - 697 - 698 - 699 - 700 - 701 - 702 - 703 - 704 - 705 - 706 - 707 - 708 - 709 - 710 - 711 - 712 - 713 - 714 - 715 - 716 - 717 - 718 - 719 - 720 - 721 - 722 - 723 - 724 - 725 - 726 - 727 - 728 - 729 - 730 - 731 - 732 - 733 - 734 - 735 - 736 - 737 - 738 - 739 - 740 - 741 - 742 - 743 - 744 - 745 - 746 - 747 - 748 - 749 - 750 - 751 - 752 - 753 - 754 - 755 - 756 - 757 - 758 - 759 - 760 - 761 - 762 - 763 - 764 - 765 - 766 - 767 - 768 - 769 - 770 - 771 - 772 - 773 - 774 - 775 - 776 - 777 - 778 - 779 - 780 - 781 - 782 - 783 - 784 - 785 - 786 - 787 - 788 - 789 - 790 - 791 - 792 - 793 - 794 - 795 - 796 - 797 - 798 - 799 - 800 - 801 - 802 - 803 - 804 - 805 - 806 - 807 - 808 - 809 - 810 - 811 - 812 - 813 - 814 - 815 - 816 - 817 - 818 - 819 - 820 - 821 - 822 - 823 - 824 - 825 - 826 - 827 - 828 - 829 - 830 - 831 - 832 - 833 - 834 - 835 - 836 - 837 - 838 - 839 - 840 - 841 - 842 - 843 - 844 - 845 - 846 - 847 - 848 - 849 - 850 - 851 - 852 - 853 - 854 - 855 - 856 - 857 - 858 - 859 - 860 - 861 - 862 - 863 - 864 - 865 - 866 - 867 - 868 - 869 - 870 - 871 - 872 - 873 - 874 - 875 - 876 - 877 - 878 - 879 - 880 - 881 - 882 - 883 - 884 - 885 - 886 - 887 - 888 - 889 - 890 - 891 - 892 - 893 - 894 - 895 - 896 - 897 - 898 - 899 - 900 - 901 - 902 - 903 - 904 - 905 - 906 - 907 - 908 - 909 - 910 - 911 - 912 - 913 - 914 - 915 - 916 - 917 - 918 - 919 - 920 - 921 - 922 - 923 - 924 - 925 - 926 - 927 - 928 - 929 - 930 - 931 - 932 - 933 - 934 - 935 - 936 - 937 - 938 - 939 - 940 - 941 - 942 - 943 - 944 - 945 - 946 - 947 - 948 - 949 - 950 - 951 - 952 - 953 - 954 - 955 - 956 - 957 - 958 - 959 - 960 - 961 - 962 - 963 - 964 - 965 - 966 - 967 - 968 - 969 - 970 - 971 - 972 - 973 - 974 - 975 - 976 - 977 - 978 - 979 - 980 - 981 - 982 - 983 - 984 - 985 - 986 - 987 - 988 - 989 - 990 - 991 - 992 - 993 - 994 - 995 - 996 - 997 - 998 - 999 - 1000

Re-provision of RHSC and OCN at Little France



FIRST FLOOR EQUIPMENT LAYOUT SHEET 01-417

Drawing No.	01-417	Revision	0
Scale	1:50	Date	15/06/2014
Author	FOR CONSTRUCTION	Checked	



Purpose of accommodation within marked up areas (Drawing A and B)*

Patient Accommodation

- Facilities will be required to accommodate 8 PICU patients split into 1x 4 bedded bay, 2 single isolation cubicles with gowning lobby and 2 single cubicles
- Facilities will be required to accommodate 12 HDU patients within a High Acuity and Low Acuity areas with each area requiring 1 four bedded bay, 1 single isolation cubicle with gowning lobby and 1 single cubicle
- Facilities will be required to accommodate 4 NNU patients split into 1 x 3 bedded bay and 1 single cubicle
- A fixed ceiling mounted method of transferring patients from bed/cot spaces (20) to trolley is required for all areas, with the exception of the NNU, and the patient assisted shower

Resuscitation Bay

- Area used for the storage of the resuscitation trolley
- Resuscitation Trolley used in the situation of medical/clinical emergencies and therefore staff must have ease of access to this area

Clean Utility (2 & 3)

- This room will provide facilities for the safe, separated and secure storage of medicines which will maintain their quality (including internal and external medicines, intravenous fluids, controlled drugs, refrigerated items, clean and sterile supplies)
- Lockable storage for pharmacy delivery boxes will be required
- This room will be used for the storage and preparation of intravenous medication, one stop dispensing and take home medications
- Direct visibility of the adjacent clinical areas will be required
- Storage of weighing scales in the NNU clean utility

*Information abstracted from the RHSC Paediatric Critical Care Clinical Out Put Specification

[REDACTED]

- | [REDACTED]
- | [REDACTED]
- | [REDACTED]
- | [REDACTED]
- | [REDACTED]
- | [REDACTED]
- | [REDACTED]
- | [REDACTED]
- | [REDACTED]

NHS Lothian

Oversight Board
22 August 2019

Tracey Gillies
Alex McMahon

WATER QUALITY AND SAFETY

1 Purpose of the Report

- 1.1 The purpose of this report is to recommend that the Oversight Board considers the summary of NHS Lothian's actions to date to evidence the safety and quality of the water for RHCYP/DCN in the attached paper (Appendix 1).

Any member wishing additional information should contact the Executive Lead in advance of the meeting.

2 Recommendations

- 2.1 To note the work summarised to date and the actions agreed and outstanding in the paper, provided as evidence that the water quality, and the systems in place for its management, are compliant with the required standards.
- 2.2 To discuss and agree any discrepancies or work as yet incomplete with reports available from NSS colleagues and consider an anticipated timeline for a further report.
- 2.3 To recommend that assurance can be provided that the water is safe for patients and staff and there is a quality management system in place through the water safety plan.

3 Discussion of Key Issues

- 3.1 The paper presented describes the actions undertaken and reports considered in a chronological fashion to evidence the safe provision of water of an adequate quality, and the maintenance of that system.
- 3.2 It references the external reports received and the opinion of the Authorising Engineer. It lists the actions necessary to reach full compliance.
- 3.3 It does not cover the content of the third workshop, held on 21 August 2019 which will be summarised verbally at the Oversight Board. The purpose of this third workshop is to consider the water safety plan submitted by Bouyges in detail and the associated responsibilities and reporting arrangements and to agree any required board changes.
- 3.4 It does not cover any additional testing undertaken by HPS for organisms not covered by existing standards. This will be discussed on 21 August.

4 Key Risks

- 4.1 Actions for the maintenance of water safety are difficult to maintain in a building unoccupied for a considerable period of time.
- 4.2 The Oversight Board may require more work for assurance of water safety than is set out in current standards and this will require further board changes

5 Risk Register

- 5.1 The delayed move into RHCYP/DCN is on NHS Lothian's corporate risk register and this paper does not introduce any new risks

6 Impact on Inequality, Including Health Inequalities

This is not relevant to this paper

7 Duty to Inform, Engage and Consult People who use our Services

7.1 This section is not applicable.

8 Resource Implications

8.1 The resource implications are not yet concluded

Tracey Gillies

Medical Director

20 August 2019



Appendix 1: The Royal Hospital for Children and Young People and Department for Clinical Neurosciences: Water Quality

APPENDIX 1

ROYAL HOSPITAL FOR CHILDREN & YOUNG PEOPLE/DEPARTMENT OF CLINICAL NEUROSCIENCES – WATER QUALITY

9 Purpose of the Report

The purpose of this report is to set out the present situation regarding water quality on the building and to update the Incident Management Team (IMT) on whether there are any systemic failures of the water distribution system that would delay the occupation of the building. The report is based on the expert reports and testing and on the discussion at a workshop held to summarise knowledge related to water quality issues.

Any member wishing additional information should contact the Executive Lead in advance of the meeting.

10 Recommendations

10.1 To support the actions agreed at the Water Quality Workshop held on 29th July 2019 which are highlighted in the section marked next steps.

10.2 To note that the microbiological water sampling reported to date does **not** indicate evidence of systemic contamination of the water; water plant or water tank at RHCYP/DCN.

10.3 To note that Independent reports shared after the decision to postpone the hospital opening have highlighted some issues relating to the wider maintenance schedule undertaken prior to the settlement agreement and commissioning of the water system, which need to be addressed to provide ongoing assurance of the water quality and maintenance of the water system. This information was not part of the evidence used in June 2019 when it was recommended that remedial work to address water quality issues could be achieved while the building was occupied.

10.4 On the advice of HFS, the authorising engineers for NHS Lothian, and Bouygues, a detailed plan for water safety is required. This will list the interventions required to address the known issues, maintain water quality and safety until the building is partially or fully occupied and to undertake ongoing microbiological sampling in line with SHTM04-01 and HPS guidance. It will be owned by Bouygues in their role as Hard FM providers but agreed through the IMT.

11 Discussion of Key Issues

11.1 A multi-disciplinary team workshop was held on Monday 29th July 2019 to consider water quality. The following people (with the organisations they represent) attended:

- George Curley, Director of Facilities (NHS Lothian)
- Wallace Weir Project Co (IHSL)
- David Gordon, (Bouygues)
- Ian Clark, Authorising Engineer (Water) for Bouygues – By Phone
- Lindsay Guthrie, Infection Prevention & Control
- Dr Ewan Olson Consultant Microbiologist (NHS Lothian)
- Ronnie Henderson, (NHSL Project Team)
- Janice Mackenzie, NHSL Project Team (part meeting only)
- Dorothy Hanley (NHSL)
- David Wilson (Multiplex)
- Ian Storrar (Health Facilities Scotland) – By Phone

- Annette Rankin, (Health Protection Scotland) – By Phone
- Dennis Kelly, Authorising Engineer (Water) for NHS Lothian
- Tim Wafer Authorising Engineer (Water Solutions Group) for HFS – By Phone
- John Bryson (Westfield Caledonian)
- Craig Simpson (IHSL)

11.2 The focus of the workshop was to:

- review the design of the water systems
- draw conclusions from the sampling regimes undertaken by the principal partners, and
- agree recommendations.

It is important to stress that the resulting actions were discussed in the context of a building which all present understood to be unoccupied, with no confirmed date for transfer of clinical services onto site.

The workshop considered the following reports commissioned by NHS Lothian, which has been produced at the dates noted, further details of which are included later in the paper:

- Westfield Caledonian 1st -12th July 2019 – to sample water outlets in augmented care areas for *Pseudomonas aeruginosa* and assess the overall microbiological load of the water distribution system.
- Callidus: 21st & 22nd March 2019, 25th & 26th April 2019 – to undertake a high level assessment of Health & Safety Management including a review of compliance with statutory requirement for control of *Legionella*

The workshop discussions and recommendations were also based on current mandatory and best practice guidance:

- Scottish Health Technical Memorandum 04-01 (SHTM 04-01) Water safety for healthcare premises (Parts A-E) (2014)
- Health Protection Scotland (2018) *Pseudomonas aeruginosa* routine water sampling in augmented care areas for NHS Scotland

11.3 Prior to the decision made in early July 2019 by the Cabinet Secretary to postpone the opening of RHCYP/DCN, additional information and assurance was sought by the Infection Prevention and Control team and others in relation to water quality on the site. This was in response to:

- a) Publication of interim guidance by HPS for *Pseudomonas aeruginosa* routine water sampling in augmented care areas for NHS Scotland in September 2018, and
- b) Water related infections identified at the QEUH which had been linked to issues with the hospital water supply
- c) Limited information on potential contamination of water outlets at RHCYP with *P. aeruginosa* identified during commissioning by Multiplex.

11.4 With the support of the NHSL project team, Westfield Caledonian were commissioned by NHS Lothian as an independent expert to evaluate and confirm the bacteriological safety of the water quality across the site, with a specific focus on *P. aeruginosa* in augmented care areas. At this time, in discussion with the project team, senior managers and others, it was felt that if water quality issues were identified, particularly in augmented care areas, that this would allow the board to instruct Bouygues to undertake appropriate remedial work in line

with HTM04-01 and the draft HPS guidance to eliminate or mitigate any risk to patients from this organism in the water supply.

- 11.4 It was agreed that this remedial work to address localised microbiological water quality issues could reasonably be achieved while the building was occupied, in line with the approach to *P. aeruginosa* control taken on other NHS Lothian sites and would not preclude the planned move of clinical services onto the site.
- 3.4 Westfield Caledonian commenced water sampling on 1st July 2019 just before the announcement to postpone the move was made. In view of emerging concerns relating to other aspects of the hospital construction and commissioning, Westfield's remit was extended to include a wider review of the water distribution system.
- 3.5 The water results and the report from Westfield Caledonian were not available until after the decision was made to postpone the move.
- 3.6 An independent Health & Safety Review commissioned by NHS Lothian in March 2019 (the Callidus report) had highlighted significant concerns in relation to the Legionella controls required by legislation. Specifically, this included: inadequate evidence of water flushing regimes, inadequate evidence of appropriate Legionella risk assessments and water temperature control, evidence of water leaks/damage, and an absence of appropriate risk assessment or response. This report was not specifically referenced in the water safety workshop on 29th July. Concern around water temperature regulation was also highlighted in the Westfield Caledonian report.
- 3.7 The Callidus report was shared with the IMT on 22nd July 2019, some of whom were also members of the Water Safety workshop group held on 29 July, after the Westfield Caledonian report was available and following the Cabinet Secretary's decision.
- 3.8 It is difficult to determine the impact of hindsight bias that the information contained in the Westfield Caledonian and Callidus reports may have had on the assessment of risk at the 1st July 2019 and the previous decision to undertake corrective action to address water quality issues with patients in situ. The majority of the work proposed can be undertaken away from patient care delivery areas, and where work impacts on clinical areas, an HAI Scribe would be completed to determine control measures to mitigate any clinical risks associated with this. This has been our approach on other acute hospital sites when this type of work to address water quality issues has been undertaken.
- 3.9 Guidance for water sampling is set out in SHTM 04-01 Water Safety for healthcare premises Parts A and C. This set out that sampling should include total viable counts (TVC) of organisms, and *Escherichia coli* (*E.coli*) and *Pseudomonas aeruginosa* (*P. aeruginosa*) from selected outlets. However the document does not provide explicit guidance on the acceptable range of TVC counts or the actions required in response to these and does not cover *P. aeruginosa* control measures. SHTM04-01 Part C also advises sampling on the basis of risk assessment and system configuration, therefore the approach taken to which outlets to sample from by different parties may vary.
- 3.10 To date, scrutiny of the microbiological safety of the water system at RHCYP/DCN has been undertaken by:
- **Multiplex** –commissioning work as per SHTM04-01 including Total Viable Count (TVC), *E.coli* & limited outlets for *Pseudomonas aeruginosa* as the building provider, in Oct 2018, Jan 2019 and March 2019

- **Bouygues**– who accepted water management responsibility in July 2019 – further testing as per SHTM04-01 (TVC, Legionella, E.coli, Coliforms) – results awaited
- **Westfield Caledonian** –on behalf of NHS Lothian in July 2019 (TVC as per SHTM 04-01, *P. aeruginosa* as per HTM04-01 on all “blended” (mixed hot and cold) outlets in augmented care, other outlets including ZIP hydroboil taps and ARJO baths.
- **Tim Wafer** -on behalf of HFS & HPS to provide further evaluation of the water system and microbiological safety (TVC, *P. aeruginosa*; *Cuprivadus* spp; *Mycobacterium* spp) in July 2019 – results awaited

12 Workshop Findings

- 4.1 The procedures of respective sampling regimes of MPX, Bouygues and Westfield Caledonian were reviewed. Although the scope of sampling and methodology differed between providers, it was agreed by all parties that each was compliant with SHTM 04-01, and that the results available to date did **not** indicate any evidence of issues with water plant, water tank or systemic water contamination. Actions are however required to address the areas of known contamination identified.
- 4.3 The absence of a site specific water safety plan from Bouygues, the Hard FM providers for the site, for the workshop to consider meant that no conclusion could be reached about the adequacy of temperature controls, including whether or not the issues raised in the Westfield and Callidus reports had been addressed. However, Legionella was not detected in any samples collected by Westfield Caledonian.
- 4.4 Testing for *Pseudomonas aeruginosa*: MPX and Bouygues did not sample all outlets, and as part of routine sampling found very little *P. aeruginosa* other than in the untempered outlets. This is water provided without any temperature mixing. *P. aeruginosa* is not normally detected in such areas because water temperature which is maintained above at least 55°C as part of Legionella control is sufficient to kill other organisms including *P. aeruginosa*. Westfield Caledonian sampled all outlets within the augmented care areas specified by IPCT, and this demonstrated a number of positive outlets in 2 wards (Dalhousie ward & Ward 231). This included clinical hand wash basins and patient showers. In addition, ARJO baths and Zip taps were tested. With the exception of DCN Acute Care (L1), PDC and Castle Mey, the ARJO baths were found to be contaminated. In the augmented care areas, there are 3 hydrotaps and 1 of them tested positive for *P. Aeruginosa* (in Medical Inpatients Adolescent Recreation Room).
- 4.5 Debris in the system: on dismantling some of the taps, Westfield Caledonian found evidence of debris in in-line strainers within the water delivery system. Concern was raised that this debris may be present throughout the system. The automatic flushing “Kempar” system diverts water using venturi splitter valves. Concern was raised that debris might be compromising the “Kempar” system. This extent of this risk was not concluded at the meeting. Further work was advised by Dennis Kelly (NHSL authorising engineer) subsequent to the meeting to assess this issue.

13 Review of Design at the workshop

- 5.1 The Westfield Report highlighted circulating water temperatures which are out of the range required to control Legionella growth; that is a cold water temperature >20°C (required range ≤ 20°C) and hot water temperatures <55°C (required range ≥55°C). Localised temperature

difference does require further investigation and potentially adjustments to the temperature control elements to ensure the quality of the water supplied is adequate on a long term basis.

5.2 Given the delay in the occupation of the building due to the ventilation issues, Dennis Kelly, the Board's Authorised Engineer provided some further advice after the workshop, namely that it would be prudent to undertake (as a precautionary measure) to:

- revise or amend the water infrastructure to take account of the facts learnt from the Queen Elizabeth University Hospital and Dumfries General Hospital – mainly the possible need for secondary disinfection of water prior to occupation
- Inspect an expansion vessel and include the bellow or membrane, depending on the design and also inspect some of the component parts including non return valves, pressure reducing valves
- clarify where biofilm is located within the pipe works, what needs done to remove or suppress it and what the maintenance elements are to achieve this

13.3 On completion of this review, NHS Lothian will be able to confirm the extent and scope of any further corrective action required to provide assurance that the storage distribution system for water meets the required standards.

14 Next Steps agreed at the workshop on 29 July 2019

14.1 HFS required the parties present to provide a full water schematic and expressed concern that this was not currently available. Multiplex and Bouygues will work to provide this from existing documentation as a matter of urgency. It should be presented to the IMT for discussion

14.2 An acceptable site specific water safety plan (WSP) is to be developed and shared as a matter of urgency by Bouygues as the hard FM provider with responsibility for water management. This will contain the explicit detail on flushing regimes; maintenance action (for occupied and unoccupied building); temperature control for Legionella and the remedial actions that will be taken in response to any non conformances or positive water samples. The WSP will provide the level of detail on corrective action required, and will be discussed by the IMT before agreeing where it will be routinely reported.

14.3 The WSP will provide names against each of the prescribed roles contained in SHTM04-01 (e.g. authorised person, competent person) and Bouygues will require to demonstrate to HFS and NHS Lothian the competence of each of these named individuals against these roles.

14.4 NHS Lothian will instruct the work advised by Dennis Kelly, NHSL authorising engineer to confirm compliance of the water system to SHTM 04-01. This will include an assessment of the risk of debris compromising the Kempar system.

14.5 In line with HPS guidance (2018) a further programme of microbiological sampling will be required for clinical outlets which have tested positive for *P. aeruginosa* on completion of the corrective work. This regime comprises 3 consecutive negative samples over a 2 week period, after which the outlet can be returned to normal use. This is followed by additional weekly sampling for 4 weeks, moving to sampling every 3 months until a further 4 consecutive samples remain negative to provide assurance of ongoing water quality. This sampling regime will take 18 weeks in total before standard 6 monthly monitoring can resume. This mirrors the regime in place for sampling in existing occupied areas (eg Wards 20, 31, 32, 33 WGH, NICU and 111, RIE). The building can be occupied for the duration of this monitoring. If positive samples are returned, point of use filters can be attached to

affected outlets as a remedial measure pending further corrective work. This approach is compliant with both SHTM 04-01 Part A and HPS 2018 guidance.

- 14.6 In addition to specific actions for management of *P. aeruginosa*, a detailed approach to address high TVC counts will be provided in the WSP – this will address removal or cleaning of contaminated inline filters, water temperature regulation, whole system disinfection and further microbiological water sampling as per SHTM 04-01 (TVC, E.coli) to confirm efficacy of control measures.
- 14.7 Representatives from ZIP and ARJO are to be requested to attend the site to provide specific maintenance and decontamination guidance for these products. It was proposed, subject to further discussion with the AE (Water), Dennis Kelly, for Lothian and Ian Storrar, HFS that the ARJO baths in Paediatric Oncology and Plastics Dressing Clinic and ward care area are removed and replaced with a suitable alternative. All other baths are to be reviewed, maintained and tested in line with the manufacturer's guidance, and overseen by the NHS Lothian Water Safety Management Group.
- 14.8 Although the risk of infection associated with ingestion of *P. aeruginosa* is low, the presence of this organism in the ZIP taps presents a risk of retrograde seeding of biofilm and wider contamination of the water system and outlets. Further guidance on the provision of drinking water to the highest risk patient group (Paediatric haematology oncology) has been requested from HPS/HFS. The HFS guidance document SUP05 is currently being revised by them.
- 14.9 Additional whole system disinfection (chemical disinfection) was proposed and accepted prior to clinical services moving onto site. The optimal time frame to complete this action is approximately one week before services move.
- 14.10 John Bryson (Westfield Caledonian) proposed to undertake a pilot study to establish the most proficient method to eradicate the bio film and *P. aeruginosa* from all types of outlets. This was agreed by all present. Once this method is confirmed and with agreement with the Lothian AE (Water), Dennis Kelly, and Ian Storrar HFS, this will be undertaken on all clinical outlets positive for *P. aeruginosa*.
- 14.11 NHS Lothian and Bouygues to seek advice from the manufacturer of the valves on the most appropriate compatible disinfectant product that would ensure a high level of disinfection of the whole system including the removal of bio film if present.
- 14.12 HFS via Tim Wafer will advise on the outcome of the additional microbiological testing conducted on their behalf. It was agreed that the actions discussed for inclusion in the water safety plan (flushing, remedial action etc) would address the presence of other organisms. In the absence of any clinical infections the purpose of this exercise remains unclear. No information about the expectation about testing regimes going forwards was discussed. It was highlighted again interpretation of this additional testing may be challenging in the absence of validated testing methodology.
- 14.13 Project Co advised that a Board Operational Change may be required to ensure compliance with the water quality associated with *Pseudomonas aeruginosa*. This *P aeruginosa* guidance is available within HTM04-01 (as used in England and Wales and HPS Interim guidance (2018) as this is not explicit within SHTM 04-01 (the basis of the existing contract).
- 14.14 A further meeting of the Water Workshop was held on 7th August. The meeting was chaired by Professor Alex McMahon, NHS Lothian Executive Nurse Director and HAI Executive Lead. The following people (with the organisations they represent) attended:

- George Curley, Director of Facilities (NHS Lothian)
- David Gordon, (Bouygues)
- Ian Clark, Authorising Engineer (Water) for Bouygues
- Lindsay Guthrie, Lead Nurse Infection Prevention & Control Nurse (NHS Lothian)
- Dr Donald Inverarity, Consultant Microbiologist & Lead Infection Control Doctor (NHS Lothian)
- Ronnie Henderson, (NHSL Project Team)
- Janice Mackenzie, NHSL Project Team
- David Wilson (Multiplex)
- Dennis Kelly, Authorising Engineer (Water) for NHS Lothian
- Craig Simpson (IHSL)
- Ross Southwell (Mott MacDonald)
- Graeme Salmon (IHSL)

14.15 Agreement was reached on prioritisation of the above steps, and all progress made in relation to these was updated on the meeting action log. A further meeting is planned for 21st August.

15 Timescale for the actions from the workshop on 29 July 2019

- 15.1 The overall timescale to complete all of the work outlined in next steps will be defined more clearly at the next planned water safety meeting on 7th August 2019. It is anticipated this will comfortably be achieved within the indicative timescales for the corrective actions on other critical systems on site (e.g. ventilation)
- 15.2 Until the building is occupied, maintenance of water quality will be achieved through a robust programme of water flushing (documented) as defined in the water safety plan, appropriate temperature control of circulating water and automatic system purging. This will be supported by NHS Lothian domestic staff undertaking appropriate cleaning in line with standard operating procedures.

16 Key Risks

16.1 The key risks if the above actions are not achieved include:

- Water safety is compromised and does not meet the standards set out in SHTM 04-01
- Risk of infection to patients
- Public health risk associated with inadequate control of Legionella
- Failure to comply with statutory and legislative standards

17 Risk Register

At this time there are no implications for the corporate risk register.

18 Impact on Inequality, Including Health Inequalities

This does not impact on any Equality and Diversity issues.

19 Duty to Inform, Engage and Consult People who use our Services

20 Resource Implications

The financial resource implications have to be confirmed with finance.

George Curley

Director of Operations – Facilities
[REDACTED]

Lindsay Guthrie
Lead Nurse Infection Prevention & Control
[REDACTED]

List of Appendices

- Appendix 1: Westfield Caledonian Pilot Study
- Appendix 2: Definition of augmented care areas RHCYP
- Appendix 3: Westfield Caledonian Report
- Appendix 4: Callidus Report

Appendix 1 Westfield Caledonian Pilot Study: Corrective action for *P. aeruginosa*

The proposed pilot process would comprise of:

1. Select five Markwick taps which returned a high *P. aeruginosa*. count (probably the 4 I used for my investigative sampling, plus 1 other), and remove, clean and sanitise the filter/NRT assembly of both hot and cold inlet barrels, on all four taps. Replace assemblies.
2. Carryout a thermal disinfection of the first, using the tappings provided behind the shrouds. This procedure is described in Section 10 of the Markwick 21 manual, and may require a slight increase of the DHWS circulating temperature.
3. Remove entire assembly of the Second, and autoclave. (This may not be possible, as the AS Maintenance manual seems to suggest only the spout is autoclavable – I am awaiting confirmation from AS in this respect).
4. Replace the cartridge on the Third tap with a new, sanitised one.
5. The Bouygues hygiene maintenance contractor who phoned into Monday's meeting (5^h Aug) advised they had a chemical sanitising procedure for this type of outlet – this should be implemented on the Fourth outlet, with details of the applied process provided.
6. The Fifth outlet should be left with just the strainer/NRT cleaned and sanitised.
7. On completion of these works, 3 samples should be retrieved as follows for each outlet, and analysed for the standard suite plus *P. aeruginosa*
8. Remove spout, and take an initial discharge sample from the cartridge chamber.
9. Replace spout and take an initial discharge sample from the complete unit
10. Flush outlet for > 1 minute, and take 3rd sample.
11. Samples should be taken by operating the lever all the way round to the full hot position.

Appendix 2: Augmented Care Areas: RHCYP

HTM04-01 states there is no fixed definition of augmented care area. However, HPS provide definition in the interim guidance for management of *Pseudomonas aeruginosa* in augmented care (2018) as:

1. Bone marrow transplant units
2. Haemato-oncology units
3. Neonatal units
4. Critical care and Intensive care units
5. Renal units
6. Respiratory units (including Cystic Fibrosis units)
7. Burns units
8. Other areas where patients have extensive breaches in their dermal integrity
9. Any other care areas where patients are severely immuno-suppressed through disease or treatment

NHS Lothian also defines Neurosurgery as an augmented care area under criteria 8 & 9. Medical Neurology is not included in this definition.

In the new building this includes:

1. Ward 230 (Neurosurgery) and DCN Acute care (ward 130)
2. Dalhousie Ward (Paediatric Medical In patient)
3. Lochranza Ward (Paediatric Haematology-Oncology)
4. Borthwick Ward (Paediatric Neurosurgery)
5. Dunvegan Ward (Burns and Plastics inpatient)
6. Paediatric Critical Care & Intensive Care (including Neonatal Unit)
7. Plastics Dressing Clinic
8. Paediatric Clinical Research Facility

Appendix 3: Westfield Caledonian Report



RHCYP & DCN Water
Condition Assessment

Appendix 4: Callidus Report



Callidus - Compliance
Report (Final).pdf

Situation

NHSL Laboratory Medicine is unable to maintain UKAS accreditation status (UKAS assessment to ISO standard 15189:2012) of the Blood Sciences laboratory at the RHSC site.

Background

The Blood Science (Haematology and Biochemistry) laboratory at RHSC was scheduled to close on 10 July 2019 with all routine paediatric blood science services for RHCYP to be provided from the RIE laboratory. In light of the recent last minute sudden and unexpected decision to postpone indefinitely the move from RHSC to RHCYP, and following consultation with RHSC clinical teams, it was decided to continue provision of core hours blood science service at RHSC (9am-4pm Monday-Friday; 9am-12 noon Saturday/Sunday) until the move to Little France.

UKAS registration (a rigorous external assessment of a laboratory service test repertoire and its quality management system against international ISO standards) is compulsory for all NHS Scotland laboratories since October 2003; thus, all laboratories within NHSL Laboratory Medicine have been assessed by an external quality assurance body since 2004 – for example, the RHSC Blood Science laboratory is UKAS accredited but was due an assessment visit by UKAS in July 2019 in order to maintain its accreditation status.

(Ref - Health Department Letter (HDL) (2003) 45 *Compulsory registration in accreditation schemes for NHS pathology laboratories in Scotland*) – embedded document **Appendix 1**)

In early 2019, an agreement was reached with UKAS that its planned assessment visit to the RHSC Blood Science laboratory in July 2019 would not go ahead given that the hospital was scheduled to close. In line with that agreement (and in preparation for the move to Little France), the RHSC site testing repertoire was reviewed and streamlined with some specialist services moved to new laboratory locations (for example, the metabolic biochemistry service was moved to the WGH laboratory); in parallel, staff/workforce levels, equipment and other resources were reviewed and amended/aligned appropriately in preparation for the move (for example, the move of analysers to other sites).

Currently, the blood science service at RHSC is supported by the RIE laboratory during the transition phase so that the RHSC site may continue to offer its quality assured service on site. However, the approach places a considerable strain on resources and the NHSL blood science service as a whole. Thus, it is no longer possible to prepare for, and participate in, an UKAS assessment visit to the RHSC laboratory.

Assessment

The Blood Science laboratory at RHSC can continue to provide an excellent core service to the site with support from other NHSL laboratories; however, it **cannot** any longer meet the requirements of an UKAS assessment visit. Thus, the RHSC service faces two choices: **(1)** voluntarily relinquishing accreditation; **(2)** facing an UKAS assessment visit and the highly probable removal/withdrawal of UKAS accreditation; the latter approach is **not** an option for the service (and is strongly advised against by UKAS).

Voluntarily relinquishing UKAS accreditation would not affect the blood science service that is currently provided at RHSC, its internal quality assurance, participation in external quality assurance schemes or compliance with NHSL Laboratory Medicine's rigorous quality management system (QMS). NHSL Laboratory Medicine has a single quality management system across all of its laboratories and this continues to meet the required international standards as regularly assessed (and accredited) by UKAS. The electronic QMS across all labs, Q-pulse, manages key components of the QMS such as documents, audit, CAPA (corrective and preventative actions), assets and people. This will continue to be used as it is now for the laboratory at RHSC with minimal changes seen. The changes that may occur are a reduction in the breadth and depth of audits and a gradual reduction in the number of documents requiring review (as work has been transferred to other sites). Key quality indicators will continue to be monitored such as, performance in External Quality Assurance schemes, turnaround times, and Internal Quality Control targets. Management and oversight of the QMS will continue to be carried out by the Compliance Manager, Healthcare Science Manager and Operational manager, and will be reported to the Laboratory Operational Group as it is now. There are no specific risks for any sample types.

It is important to note that not all of NHS Scotland's laboratory medicine services have as of yet attained UKAS accreditation (for example, services in Western Isles and Forth Valley).

Recommendation

The recommendation is voluntarily relinquishing UKAS accreditation for the RHSC Blood Science laboratory service.

Appendix 1



HDL2003_45
compulsory registra

NHS Lothian

Oversight Board
22 August 2019

Director of Communications, Engagement and Public Affairs

Staff Communications on Royal Hospital for Children and Young People, the Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

1 Purpose of the Paper

The purpose of this paper is to ask the Oversight Board to agree the staff communication about the Royal Hospital for Children and Young People, the Department of Clinical Neurosciences, and Child and Adolescent Mental Health Services at Edinburgh BioQuarter ('the Facility').

2 Recommendations

The Oversight Board is asked to consider and agree the attached staff communication.

3 Discussion of Key Issues

Background

- 3.1 It remains our understanding that staff communications require to be cleared by Scottish Government. At the 8th August meeting it was agreed that a fortnightly update would be produced for consideration by the Oversight Board.
- 3.2 There have been four main staff communications since the decision to delay opening of the facility was taken. The first followed the Cabinet Secretary's announcement on 4 July 2019 of her decision to delay the opening, the second took the form of an FAQ's to give staff practical information to minimise personal disruption to those staff directly affected by the delay. A message from the Chief Executive was issued on 18th July following the Cabinet Secretary's letter to staff on that date and an update followed from the Director of Finance and Project Lead to coincide with the submission of an update Paper to NHS Lothian Board on August 7.
- 3.3 It has not always been possible to communicate with staff in a timely manner or before information is put into the public domain.
- 3.4 Timely staff communication is an essential requirement of NHS Lothian's values of openness, honesty and responsibility. It is particularly important when it relates to a high profile project which is the subject of intense media attention and public speculation.

4. Key Risks

- 4.1 There may not always be a great deal of material progress to report fortnightly there is a risk staff will disengage with the messages. However, the risk of the ill informed speculation filling a vacuum is even greater, particularly when not all media reporting is confined to the facts. Uninformed and misleading speculation can cause distress and alarm to staff.

Judith Mackay
Director of Communications, Engagement and Public Affairs
19 August 2019



Appendix 1 Proposed Staff Update

APPENDIX 1:**Update on Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services.**

Dear Colleagues,

A couple of weeks have passed since I last updated you on the new building at Little France so I'd like to bring you up to speed with what has been going on to ensure we can open the new building as quickly as possible.

There is, in fact, a huge amount of work underway to demonstrate that all aspects of the new building meet national standards so that we can begin to move patient services into their new home. We are working with Health Protection Scotland (HPS) and Health Facilities Scotland (HFS) to check ventilation, the water supply and fire prevention systems and design. Inspections of drainage systems and electrical works will follow. It is very detailed work and takes time.

We have also held a number of workshops with the building's owner, IHSL, their building contractor Multiplex and specialist ventilation experts alongside HFS and HPS. These workshops are developing a new design for the ventilation in Paediatric Critical Care; the issue flagged to us by our Independent Ventilation Assessor which triggered the delay in the first place. We are close to agreeing a solution and the way in which IHSL will deliver that solution. Once this is agreed it will then be possible to work out timescales for the procurement of the solution and how long it will take to complete the work to put it in place.

You may remember in my last note I explained that 2 reviews, commissioned by the Scottish Government are being conducted. KPMG are looking at how the project to build the new facility was organised and run. HPS and HFS's review is all about ensuring the building meets various national standards in order to safeguard the safety of our patients, staff and visitors. We are still expecting these reviews to be published quite soon - in September – and although we don't yet have the dates we'll let you know as soon as we do.

In the meantime the Project Team are continuing to support teams visiting the new site to continue local familiarisation to their new wards/departments. Please contact your commissioning manager if you want to arrange a visit.

Finally I'd like to advise you to try to remember that not everything you read in the papers is true. There have been some fairly sensational headlines here and there which I know are alarming for staff and patients alike. For the record: there are categorically no plans to 'pull the building down', costs have not 'soared by £90million' (the finances are on track) and speculation that the building will not open for another 2 years is not based on fact. The simple truth is that until the review is complete we cannot know the timescales for full opening of the building. Please be assured that as soon as things become clearer we will let you know.

As our Chairman, Brian Houston, remarked our recent Board Meeting, staff from across the services have shown remarkable patience and resilience. Your challenge to us is simply that we get it right for our patients, which is what we are working very hard to do. Thank you again, on behalf of the entire leadership team for your understanding patience and for your focus, as always, on doing the very best for our patients.

Best Wishes,

Susan Goldsmith

Director of Finance / Project Lead.

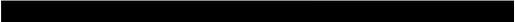
REQUESTS FOR INFORMATION – Freedom of Information requests; Parliamentary Questions

Reference	Question	Status
S5W-24250: Daniel Johnson, 05/07/2019	What discussions or correspondence the Cabinet Secretary for Health and Sport has had since 26 June 2018 with (a) Integrated Health Solutions Lothian and (b) NHS Lothian regarding the opening date of the new Royal Hospital for Sick Children, Edinburgh.	
S5W-24253: Daniel Johnson, 05/07/2019	What discussions or correspondence the Cabinet Secretary for Health and Sport has had since 26 June 2018 with (a) Integrated Health Solutions Lothian and (b) NHS Lothian regarding the ventilation system at the new Royal Hospital for Sick Children, Edinburgh.	
3756 Press Office, Scottish Liberal Democrats 31/07/19	<ul style="list-style-type: none"> • The total amount spent on adverts promoting the Royal Hospital for Children and Young People's move to the new site at Little France, a move scheduled for July 2019. • A complete list of the locations where these adverts were shown. • The total number of buses, taxis or other transport vehicles on which these adverts were displayed. Broken down by vehicle type. • A copy of any communications (internal or external) relating to removing the advertisements when the hospital move was cancelled. Can each of these communications be accompanied by the date on which they were issued. • The total cost incurred to remove adverts which displayed the wrong date of the hospital transfer. 	Sent to: J MacKay C Burden A McCreadie
3764 Paul Hutcheon, Herald 06/08/19	<ul style="list-style-type: none"> • All communications between Susan Goldsmith and the Scottish Government (both ways) in June and July 2019 on the new Sick Kids hospital. This should include the content of attachments in emails. • All communications between Tim Davison and the Scottish Government (both ways) in June and July 2019 on the new Sick Kids hospital. This should include the content of attachments in emails. 	Sent to: T Davison S Goldsmith
3765 Policy & Research Office, Scottish Labour 06/08/19	<ul style="list-style-type: none"> • A copy of all recorded correspondence with Audit Scotland concerning the project, including a copy of any relevant email attachments. • A copy of the final report and/or outcomes of the project which have been received by the health board. 	Sent to: S Goldsmith I Graham
3770 Hannah Rodger 08/08/19	<ul style="list-style-type: none"> • A copy of all SCART documentation for the new Edinburgh Royal hospital for children and young people. • Who were the designers for the RHCYP, and who was in the design team? Please provide their name and job title. • Who was in the project team for the RHCYP, and who was the project manager? Please provide their name and job title. 	Sent to: I Graham B Currie F Cameron

	<ul style="list-style-type: none"> • A copy of the water safety plan for the build? • Who the commissioning manager was for the build? Please provide their name and job title. • Who was in the commissioning team for the build? Please include their name and job title. • All sign-off documents for each stage of the project? • All documentation for the build which details comments, advice and recommendations from any member of your infection control team, at each stage of the building process? 	
S5W-24645: Alex Cole-Hamilton, 08/08/2019	To ask the Scottish Government, prior to the opening being postponed in July, how many patients were scheduled to have appointments at the RHCYP, broken down by month.	Responded 21/08/19
S5W-24651: Alex Cole-Hamilton, 08/08/2019	To ask the Scottish Government who is on the project board of the Royal Hospital for Children and Young People, and whether it will place in the Scottish Parliament Information Centre (SPICe) the (a) minutes of the board's meetings and (b) feedback provided to the Cabinet Secretary for Health and Sport by the Scottish Government representatives on the board.	Responded 21/08/19
S5W-24652: Alex Cole-Hamilton, 08/08/2019	To ask the Scottish Government, further to the answer to question S5W-01841 by Shona Robison on 5 September 2016, which states that completion of the Royal Hospital for Children and Young People was expected in 2017, what other dates it has previously given for its opening.	Responded 21/08/19
S5W-24653: Alex Cole-Hamilton, 08/08/2019	To ask the Scottish Government who independently certified and signed off the Royal Hospital for Children and Young People on 22 February 2019 when it was handed over to NHS Lothian; who appointed the independent certifier; how long the assessment took; what it involved, and whether (a) it and (b) NHS Lothian agreed with the findings.	Responded 21/08/19
3785 Andrew Picken, BBC 13/08/19	With regards to the £80m of "enabling and equipment works" for the new children's hospital at Little France, please could you supply a full breakdown of this expenditure. This should state where the money was spent, ie diversion of sewer pipes or the provision of flood defences, and how much money was spent in each category.	Sent to: I Graham B Currie
3799 Andrew Picken, BBC 19/08/19	A copy of the minutes for all meetings of the NHS Lothian project board responsible for the new children's hospital at Little France.	Sent to: I Graham B Currie S Cosens
3800 Andrew Picken, BBC 19/08/19	A copy of all fire protection and fire compartmentation surveys commissioned by the consortium responsible for the new children's hospital building at the Little France which have been passed to NHS Lothian.	Sent to: I Graham B Currie C Armstrong S Cosens
3801	A copy of any guidance or briefings (in written or video form) which has been issued to staff in relation	Sent to:

Andrew Picken, BBC 19/08/19	to fire safety in the new children's hospital building at Little France.	I Graham B Currie C Armstrong S Cosens
3802 Andrew Picken, BBC 19/08/19	A copy of all 'snagging' reports about the issues at the new children's hospital building at the Little France issued to NHS Lothian from the IHSL consortium which built the facility.	Sent to: I Graham B Currie S Cosens
3803 Andrew Picken, BBC 19/08/19	A copy of the Building Completion Certificate for the new children's hospital building at Little France, as passed from the consortium responsible for securing it to NHS Lothian.	Sent to: I Graham B Currie S Cosens

Sorrel Cosens
Programme Manager

From: [Cosens_Sorrel](#)
To: [Morrison A \(Alan\)](#); [Archibald_Gordon](#): Chief Medical Officer; [McLaughlin C \(Christine\)](#); [Colin Sinclair](#); [Currie_Brian](#); [McQueen F \(Fiona\)](#); [Gillies Tracey](#); [Goldsmith_Susan](#); [Gordon James](#); [Jacqui Reilly](#); [Joyce_Alex](#); "Judith mackay"; [McMahon_Alex](#); [Peter Reekie](#); [Graham_Iain](#)
Cc: [Graham_Chris](#); [Crowe B \(Barbara\)](#); [Little_Kerryann](#); [Roche R \(Rowena\)](#); [Trotter_Audrey](#); [Walker_Ann](#); [Anderson D \(David\) \(Health\)](#)
Subject: RHCYP & DCN Oversight Board papers: 29 August 2019
Date: 27 August 2019 16:53:14
Attachments: [AGENDA RHCYP&DCN Oversight Board 29-08-19.docx](#)
[2_RHCYP_OB_22-08-19_Minutes - Draft.doc](#)

[6.1 RHCYP phased migration.docx](#)
[8.1 RHCYP DCN Executive Steering Group TOR.docx](#)
[9.1 RHCYP DCN Tracker of Requests for Info to OB 190829.pdf](#)

Dear Colleagues

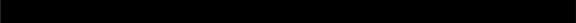
Please find attached the agenda and papers for Thursday's Oversight Board meeting, from 8.00-9.30am.

To accommodate the change in time, **the venue will be Media 2 at St Andrew's House this week.**

Papers:

Agenda

2. Minutes of 22/08/19



6.1 RHCYP phased migration

8.1 RHCYP & DCN Executive Steering Group terms of reference

9.1 RHCYP DCN Tracker of Requests for Info to OB 190829

Please send apologies, or requests for dial-in details, to 

Regards,
Sorrel

Sorrel Cosens
Capital Programme Business Manager
NHS Lothian



The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service. For more information please visit <http://www.symanteccloud.com>

This email has been received from an external party and has been swept for the presence of computer viruses.

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 29 August 2019, 8:00 – 9:30am

Venue: Media 2, St Andrew's House

AGENDA

1.	Chair's Welcome and Introductions	CMc	v
	Apologies: Judith Mackay		
2.	Minutes of 22 August 2019 – for Approval	CMc	*
3.	Matters Arising		
	3.1 Cabinet Secretary briefing	CMc	v
	3.2 HFS Literature Review on ventilation	GJ	v
	3.3 Requirements for neutropenic patients	TG	v
	3.4 Staff communications	SG	v
4.	Technical Reviews		
	4.1 Draft HFS and HPS report: NHS Lothian RHCYP & DCN Review	GJ	#
	4.2 Ventilation redesign and reviews	BC	v
	4.3 NHSL Water Quality Findings and Recommendations	TG	#
6.	Migration Planning		
	6.1 Clinical risk assessment of the potential move to Children's Outpatient services in the new hospital in advance of inpatient and associated services	TG	*
7.	Programme / Occupation Timelines	IG	#
8.	NHS Lothian Executive Steering Group (formerly Incident Management Team)		
	8.1 Terms of Reference	SG	*
9.	Communications		
	9.1 Tracker of requests for information	SG	*
10.	Any Other Competent Business	All	v

11.	Date of Next Meeting Thursday 5 th September 2019, 8am, Meeting Room 5, Waverley Gate		
-----	--	--	--

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 22 August 2019 in Meeting Room 5 Waverley Gate, 2-4 Waterloo Place, Edinburgh, EH1 3EG.

Present:

Ms C. McLaughlin, Chief Finance Officer, Scottish Government (chair);
 Ms T. Gillies, Medical Director, NHS Lothian;
 Ms S. Goldsmith, Director of Finance, NHS Lothian;
 Professor A. McMahon, Nurse Director, NHS Lothian;
 Mr P. Reekie, Chief Executive, Scottish Futures Trust;
 Mr C. Sinclair, Chief Executive, NHS National Services Scotland
 Dr C. Calderwood, Chief Medical Officer, Scottish Government
 Professor F. McQueen, Chief Nursing Officer, Scottish Government;
 Mr C. Sinclair, Chief Executive, NHS National Services Scotland

In Attendance:

Mr B. Currie, Project Director, NHS Lothian
 Mr G. James, Director of Facilities, Health Facilities Scotland;
 Professor J. Reilly, Lead Consultant, Infection Prevention and Control, Health Protection Scotland.
 Ms J. Mackay, NHS Lothian Director of Communications
 Ms Mary Morgan, Director of Strategy, Performance and Service Transformation, NHS National Services Scotland
 Alan Morrison, Capital Accounting and Policy Manager, Scottish Government
 Eddie McLaughlan, Assistant Director, Engineering, Environment and Decontamination, Health Facilities Scotland
 Mr Gordon Archibald, Partnership Lead Outpatient Services (Joint Staff Side)
 Ms S. Cosens, Capital Programme Business Manager, NHS Lothian
 Mr C. Graham, Corporate Governance Team (minutes);

Apologies:

Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side)

The Chair welcomed members to the meeting and members introduced themselves.

1. Minutes of Previous Meeting – 08 August 2019, for approval

- 1.1 The Minutes were approved subject to clarification at paragraph 7.2. The NHS Lothian Director of Communications would be in attendance at the oversight board and would not join the board as a member.

2. Matters Arising

- 2.1 Oversight Board Terms of Reference – The terms of reference were agreed with the incorporation of the change as outlined at 1.1 above.

3. Programme / Occupation Timelines

- 3.1 It was agreed to come back to this item last as the timelines may be impacted by other factors that would be discussed.
- 3.2 The Chair asked about the programme / occupation chart that Mr Iain Graham had brought to the previous oversight board and whether this was complete. Mrs Goldsmith stated this was not yet complete but would provide the Chair with a copy of the helpful milestones.

SG

4. Ventilation Systems Update

4.1 Confirmation of General Ward Ventilation Requirements

- 4.1.1 Mr James reported that the general ward ventilation design intent was awaited as was detail around the mixed mode ventilation to address the frequency of air changes.
- 4.1.2 Mrs Goldsmith and Mr Currie agreed to follow up on the outstanding information with IHSL. If the information was not received then HFS would need to take a view.
- 4.1.3 The oversight board confirmed the sequence of actions as follows:
1. Mrs Goldsmith and Mr Currie to approach IHSL Directors regarding outstanding information and timeframe
 2. Mr James to provide the write up from the HFS literature review on Tuesday or Wednesday of next week
 3. The Chair to take the write up to the Cabinet Secretary meeting next Thursday
 4. Mrs Goldsmith to progress with the draft letter of intent so it is ready to go once the literature review outcome is known
 5. Mrs Goldsmith to hold back final agreement of the letter of intent pending agreement of the critical care ventilation specification

4.2 Critical Care Ventilation Design and Approach

- 4.2.1 Mr Currie gave an update on the remedial critical care ventilation works. It was noted that this had now come as far as possible with the design concept. Multiplex would not move to the next design phase until the letter of intent and agreement was in place around the waiver on any future litigation around air change rates. The critical care works would remain on hold until the contractual position was agreed.
- 4.2.4 Professor McQueen asked where children receiving chemotherapy would be cared for and what the technical requirement specification could be expected in that area. Miss Gillies confirmed that this was a separate point of clarification which related to a neutropenic patient. Miss Gillies would provide further details around this out with the meeting.

TG

- 4.2.5 The oversight board agreed that it was now content with the critical care specification and that it clearly outlined which areas within the building this agreement applied to.

SG

- 4.2.6 There was discussion on the next steps around critical care and the three areas which needed to be tied together, namely: the fast tracking of the technical design; how a supplementary agreement would be obtained; and the risk of default from IHSL failings.
- 4.2.7 It was noted that from discussion last week it was very clear that it would not be possible to secure a fast tracked technical design unless NHSL agreed to waive the right of a legal challenge for the current design of the critical care system; this was coming from Multiplex, not IHSL. Mrs Goldsmith reported that this had lead to the proposed draft letter of intent looking to secure the design with the waiver built in. There was a fine balance to be sought between progress and protection of NHSL's position. It was hoped to have the letter of intent finalised in the coming days.
- 4.2.8 IHSL's first response had included a past and future waiver for critical care ventilation which NHSL could not accept over a 23 year period. Mrs Goldsmith stated that NHSL would be looking to agree a waiver of NHSL's rights to legal challenge for the existing critical care ventilation system as pursuing of litigation was unlikely. Mrs Goldsmith added that the recommendation was based on what was known locally as NHSL had not had sight of the final KPMG report.
- 4.2.9 The Chair asked if this position had been reached or taken through any of NHSL Governance groups or did it need to. Miss Gillies replied that this had also been discussed at the recent NHSL Board meeting private session but had not been as clear as a recommendation. It was agreed that Mrs Goldsmith would undertake this with the Chair of the NHS Lothian Finance and Resources Committee.

SG

- 4.2.10 There was discussion on the other available options including Multiplex not designing or delivering unless the waiver was agreed; formal board change through IHSL which would take some time; or the Board step-in scenario as outlined through previous legal advice.
- 4.2.11 Mr James clarified that in relation to the new ventilation system it should be made very clear that the contractor is liable for this on an ongoing basis as well as being liable for the current ventilation system in all other areas out with critical care and the proposed new critical care ventilation.
- 4.2.12 Consideration was given to potential criticism for agreeing to the waiver but this was felt to be a reasonable step to allow the timeline to progress. Mrs Goldsmith stated that she was confident and comfortable that the decision to agree to the Multiplex waiver would be in the best interest of the public purse and patient safety. There was a good ongoing relationship with the funders and IHSL had briefed the funders about the works.
- 4.2.13 The Chair stated that the oversight board was constituted to give advice and recommendations to the Cabinet Secretary, it was not a decision making board. The Chair asked Mrs Goldsmith to provide a short briefing around the recommendation.

SG

4.2.14 The Chair noted that the KPMG report had only been shared with the Chair, Professor McQueen and Dr Calderwood, which was difficult for NHS Lothian. There were still changes to be made to finalise the report, but it did not place fault on any single party and would be referenced in advice back to ministers showing that no single event or action had led to the current position.

4.2.15 The Chair confirmed the agreed actions as:

1. Mrs Goldsmith to prepare a briefing note and to discuss the position with the F&RC Chair.
2. The Chair to put forward the position to the Cabinet Secretary tomorrow afternoon.
3. Mrs Goldsmith to share the briefing note with the oversight board members.

4.3 Other Ventilation Reviews

4.3.1 Mr Currie explained that there were two parts to this item:

1. **Supplemental IOM review** - it was noted that the general picture was showing that 30% of areas were requiring some minor ventilation adjustments, which Multiplex are addressing
2. **7 areas identified by IOM that would be disruptive to resolve with patients in situation** - it was noted that the bulk of the action remained with Multiplex to respond to and progress, but progress is being made.

4.3.2 The Chair asked if there were any potential “show stoppers”. Mr Currie stated that this was not the case and all work could be completed within the critical care timeline. Also, Multiplex were aware that if DCN occupation were to go ahead then priority would have to be given to the AHUs that would serve DCN.

4.3.3 Miss Gillies outlined the concern around the Air Handling Units remedial work meeting standards for HFS compliance. Until there was confirmation of compliance and the first demonstration of a fixed AHU then this action remained open.

4.3.4 The Chair asked about timeframes for the AHUs work. Mr Currie confirmed that this rests with Multiplex and a timeframe at the moment was unavailable. Mr Currie also confirmed that the AHUs were all bespoke units provided from the same supplier. It was unlikely that a timeframe would be available until Multiplex has had sight of the HPS/HFS ventilation report.

4.3.5 The Chair requested an update on each of the seven areas of ventilation works. Miss Gillies added that work was underway to pull together the issues around ventilation and this would be checked against the HPS/HFS report once received to make sure all detail is covered and it was clear what actions were being agreed.

4.3.6 Mrs Goldsmith made the point the Multiplex had been clear that if they do not agree with any of the recommendations in the HPS/HFS ventilation report then these would not be implemented. They would prioritise the IOM report over the HPS/HFS report.

6. Water, Plumbing and Drainage System Update

6.1 NHS Lothian Water Quality Review Findings - Miss Gillies reported that NHS Lothian's actions to date to evidenced the safety and quality of the water for RHCYP/DCN. Assurance can be provided that the water is safe and there is a quality management system in place through the water safety plan.

6.1.1 The oversight board agreed that this was a useful paper summarising the reviews undertaken by NHS Lothian and the assurance they provided.

6.1.2 Mr James added that there was a second draft HFS report on water that was yet to be shared. Miss Gillies stated that it was hoped that NHSL proposals would match closely with this report once available. Drainage would also be covered in this second draft report.

6.1.3 Mr Reekie asked about drainage progress. The Chair requested that a paper on this be prepared for a future meeting.

GJ

7. Validation

7.1 Fire Safety Report – Mr James reported that this would be completed in 4 to 6 weeks. Mr James added that the process on the electrical infrastructure had also started and there would shortly be a specialist contractor onsite. It was noted that the current HFS focus remained on drainage, water and ventilation.

7.1.1 Mr Reekie asked for confirmation that following completion of the HFS fire and electrical work this would be the earliest point that the 8 week move for DCN could start. The Chair confirmed this was the case.

8. RHSC UKAS Accreditation

8.1 Miss Gillies reported on the situation whereby NHSL Laboratory Medicine was unable to maintain UKAS accreditation status (UKAS assessment to ISO standard 15189:2012) of the Blood Sciences laboratory at the RHCYP+DCN site. It was noted that the recommendation was to voluntarily relinquish the accreditation.

8.2 The Chair stated that it was helpful to have any unintended consequences of the delay in the hospital move highlighted in advance so these could be included in briefings to the Cabinet Secretary.

9. Communications

9.1 Staff Communications – The final proposed communication would be submitted through the usual Scottish Government approval procedure. The Chair would hope to take the communication through the approval process as quickly as possible so it could then go out the NHSL staff. It was confirmed that any partnership forum communication should continue as normal.

10. Date of Next Meeting

10.1 The next meeting of this group would take place at **8.00 am** on **Thursday 29 August 2019**, *members to note change of venue to **Media 2, St Andrew's House***. It was agreed that future meetings would be from **8.00 - 9.30 am** and meeting invites updated.

Haematology /oncology provision for children in RHCYP/DCN

As discussed in the Oversight meeting on Thursday 22 August, the following information is provided for clarification.

- The paediatric haematology and oncology patients will be accommodated in Lochranza, which is all single room accommodation.
- A neuro-oncology patient may be accommodated in Borthwick.
- There are areas within the ward footprint for outpatient treatment and care.

Ward	Bed numbers	Room configuration	SHTM specified standard	Specified in design or supplementary agreement for this area	Validated delivery from IOM
Lochranza (3 rd floor) Haem/once	17	All single rooms: 12 standard single rooms 5 isolation rooms	Standard single rooms: 6a/c per hr, pressure no specification Isolation rooms: 10a/ch at 10 Pa, H12 filter	Standard single: 6a/c at positive pressure Isolation rooms: 10 a/c 10 Pa, H12 filter	
Borthwick (3 rd floor) Neurology and neuro-oncology	12	Mixed configuration: 4 single rooms- 3 standard single rooms 1 isolation room 8 in multibed rooms: 2 rooms of 4 beds each	Standard single: 6a/c per hr, pressure no specification Isolation room: 6a/c per hr, pressure at 10kPa 4 bedded rooms: 6 a/c/hr no pressure specification	Standard single: 6 a/c at positive pressure Isolation rooms: 10 a/c 10 kPa 4 bedded rooms:	

Current and intended clinical practice

The practice of the clinical team is to consider the risks around neutropaenic patients as follows:

- All H/O patients are likely to become neutropaenic between day 10-21 of a treatment cycle. Most patients can be at home or at school, but are seen urgently if they develop a fever. They are advised not to travel by bus.
- Any such patient if an inpatient would be managed in a single room.
- Those patients with severe neutropaenia or additional vulnerabilities are managed in an isolation room- these are those who have had a bone marrow transplant or those young children with AML vulnerable to fungal infections

Design and specification for accommodation

In March 2018, NHS Lothian through their technical advisors Mott MacDonald, advised Project Co and Multiplex that the haematology oncology rooms did not meet the required specifications:

- 9 single rooms were listed, pointing out these were 4a/c per hour and balanced and should be 10Pa positive pressure
- Three additional single rooms were listed as now belonged to the haem onc ward and should be at the same specification
- The 5 isolation rooms were listed with an appropriate pressure regime
- In August 2018 a disputed works schedule was issued by IHSL (IHSL 050) with the title Neutropaenic Patients Ventilation. This notes that the board regard the design of the single rooms (non isolation) as non compliant with the schedule but that Project Co did not propose to alter the design. It concludes with the expectation that the board (NHS Lothian) will be required to prepare specific SOPs for the management of infection for patients in this area who are not in an isolation room
- NHS Lothian had to accept this as part of the supplementary agreement to conclude the negotiations. The clinical view from the haematology/oncology team was that this would be managed through an SOP following the principles outlined above.
- The current advice from our Infection control team is that the ventilation of these single rooms should be rectified to meet the SHTM standard for areas for the care of neutropaenic patients at the same time as the critical care work. We need to reconcile these two views.

TG 28.08.19

Appendix 1: Recommended air-change rates

Application	Ventilation	ac/Hour	Pressure (Pascals)	Supply Filter	Noise (NR)	Temp (°C)	Comments For further information see Section 6
General ward	S / N	6	-	G4	30	18-28	
Communal ward toilet	E	10	-ve	-	40	-	
Single room	S / E / N	6	0 or -ve	G4	30	18-28	
Single room WC	E	3	-ve	-	40	-	
Clean utility	S	6	+ve	G4	40	18-28	
Dirty utility	E	6	-ve	-	40	-	
Ward Isolation room	-	-	-	-	-	-	See SHPN 4; Supplement 1
Infectious disease Iso room	E	10	-5	G4	30	18-28	Extract filtration may be required
Neutropenic patient ward	S	10	+10	H12	30	18-28	
Critical Care Areas	S	10	+10	F7	30	18-25	Isolation room may be -ve press
Birthing Room	S & E	15	-ve	G4	40	18-25	Provide clean air-flow path
SCBU	S	6	+ve	F7	30	18-25	Isolation room may be -ve press
Preparation room (Lay-up)	S	>25	35	F7*	40	18-25	*H12 if a lay-up for a UCV Theatre
Preparation room / bay sterile pack store	S	10	25	F7	40	18-25	*50NR if a bay in a UCV Theatre
Operating theatre	S	25	25	F7	40	18-25	
UCV Operating theatre	S	25*	25	H12	40	18-25	Fresh air rate; excludes re-circulation
Anaesthetic room	S & E	15	>10	F7	40	18-25	Provide clean air-flow path

NHS Lothian - Royal Hospital for Children and Young People & Department of Clinical Neurosciences Review

Health Facilities Scotland and Health Protection
Scotland

CONFIDENTIAL DRAFT



September 2019
Version D0.10

Contents

Contents	2
1. Executive Summary	3
1.1 Overview	3
1.2 Summary of findings	4
2. Analysis of information provided	5
2.1 Information provided	5
3. Review methodology	7
3.1 Review process	7
3.2 Standards and Guidance	7
3.3 RAG reporting methodology.....	9
4. Findings	10
4.1 Management and governance	10
4.2 Ventilation	10
4.3 Water.....	12
4.4 Plumbing and drainage	14
5. Recommendations	16
5.1 Recommendations	16
6. Appendices	17
6.1 Commission Brief	17
6.2 RAG Status Report	17

1. Executive Summary

1.1 Overview

A decision was taken on 2 July 2019 to delay moving to the new Royal Hospital for Children and Young People & DCN (RHCYP & DCN) on 9 July. This followed an inspection of the facility which raised concerns regarding the ventilation arrangements for critical care beds and other areas of the hospital. NHS National Services Scotland (NSS) received a commission from Scottish Government to undertake an external series of checks, led by Health Facilities Scotland (HFS) and Health Protection Scotland (HPS), to ensure that the relevant technical specifications and guidance applicable to the new hospital are being followed and implemented.

The objective of the review in relation to RHCYP & DCN was to:

- Provide a report to Scottish Government on whether the relevant technical specifications and guidance applicable to the RHCYP & DCN are being followed and implemented by September 2019.
- Where relevant technical specifications and guidance have not been followed, identify necessary remedial actions

Given the specific focus on the control of Health Acquired Infections (HAI), the review concentrated on a system wide approach for Ventilation, Water and Drainage systems. The process involved site visits, sample inspections and a review of available documentation.

From early stage of the review process it was apparent that elements of Critical Care Unit (CCU) ventilation system required redesign and modification to ensure compliance with guidance. As a result, the review focused predominantly on the other areas of the hospital. (Advice was provided relating to the design instruction for elements of the CCU)

The review commenced during July 2019 with this final report published in September 2019 for consideration by the established RHCYP&DCN Oversight Board.

1.2 Summary of findings

The findings have been collated based on information provided and on-site reviews of the RHCYP&DCN. Expert advice was sought within the key focus areas of Ventilation, Water and Drainage systems and their overarching management and governance processes. (A detailed RAG status report is contained within Appendix 6.2)

The following table outlines the status of key findings:

Category	Red	Amber	Green
Management and Assurance	1	2	0
Water Systems	3	1	0
Drainage	0	1	0
Ventilation	2 (1)*	1	0
Total	6 (1)	5	0

* It was already recognised that an element the Critical Care Unit required a redesign of the ventilation systems to comply with guidance requirements.

The following definitions were used to categorise the findings:

Red: Material non-adherence to published guidance and standards, having safety or service provision implications that should be resolved prior to occupation of the building.

Amber: Non-adherence to published guidance and standards which should preferably be resolved prior to occupation.

Green: Observation and improvement activity

Overall remedial action is required to be undertaken within the Ventilation and Water systems prior to the occupation. Following acceptance of this report the review team are ready to assist the NHS Lothian team in developing a programme of activity and clarification of remedial descriptions to allow a timeline to be constructed which could inform the decision to migrate towards occupancy on a phased basis.

2. Analysis of information provided

2.1 Information provided

- 2.1.1 The support of the NHS Lothian project team in responding to questions and accessing data is gratefully acknowledged.
- 2.1.2 At the time of writing draft 0.10 the majority of the information required has been received and whilst the timescale for the review means a selective targeted review of documentation is necessary, the main themes are emerging. Some important information remains outstanding, particularly information requested from Multiplex and NHSL colleagues continue to pursue a response.
- 2.1.3 The Special Purpose Vehicle (SPV), Contractor, sub-contractors, Facilities Management Contractor and Independent Tester were not directly involved in the production of this report, nor were they requested to verify its contents and they may have additional information not considered here. It is acknowledged that some of the information provided by NHSL came directly from these sources.
- 2.1.4 NHSL commissioned a specialist contractor to validate the performance of ventilation systems within the facility and their report identified that elements of the ventilation system in CCU was not in accordance with current guidance (SHTM 03-01). Whilst this report notes that finding and HFS has been asked to support NHSL in achieving a solution in compliance with guidance, this report focuses primarily on other systems.
- 2.1.5 Key outstanding information includes the design intent for the natural ventilation component we have been advised is intended to make up the difference between 4 and 6 air changes per hour in general ward areas. Also awaited is the explanation and validation of the ventilation strategy whereby areas with air handling units out of service for whatever reason are served by an adjacent air handling unit, which also continues to serve its own area.
- 2.1.6 The theatre ventilation appears not to have been installed in accordance with current guidance in a number of respects, entailing the potential loss of two theatres at a time for maintenance, rather than one and possible poor removal of contaminants from scrub areas. The Board has sought demonstration of compliance from IHSL in relation to issues identified.
- 2.1.7 Whilst elements of the testing carried out as part of this review are not detailed in current guidance, and NHSL could not have been expected to be aware, lessons learned recently across health systems suggest that the contamination found should be eradicated before patients and staff move in. Test results indicate certain fungi in the water, mainly at the taps, as well as higher than anticipated total viable counts, although this latter may be related to the fact that the building is unoccupied with only maintenance processes to ensure water turnover. In augmented care areas there is evidence of *Pseudomonas aeruginosa* found in some taps. There would appear to be no systemic contamination of the hot and cold water systems, rather, contamination has been found at outlets, and particularly outlets with complex interstices and organic components which can make them more susceptible to contamination.

- 2.1.8 The drainage for the hospital utilises one gravity system and two pumped systems. The pumped systems are used to overcome gravity as they are installed below the local water table and level of the external drains. The main concern is the pumped system in the basement in the location of the kitchen. This system has multiple pump backups as well as alternative power supplies. The risk is that if these fail the kitchen drains will back up causing it to close, which would have an impact on the services to the hospital. At this stage in the process there appears to be no alternative to locating the drainage system sump in the basement, at least without major structural alterations to the basement and courtyard. Work on the review of drainage arrangements is ongoing and is focussing on mitigation of the risks. We await an explanation of what foul waste and other sources drain into the basement sump. If suitable mitigation measures are in place, the drainage should not be an obstacle to occupation of the building.

CONFIDENTIAL DRAFT

3. Review methodology

3.1 Review process

3.1.1 The review process initially took place between 8th July and 27th August 2019. For this interim report no further information has been considered after 27th August 2019

3.1.2 The brief for the review is in Appendix 6.1. The approach taken was to gather information relating to the services detailed in section 1.2 in drawing, specification, report and oral form and compare these to the standards and guidance appropriate for the building type and draw conclusions on whether what is provided matches the requirements. The specifics in relation to each aspect of the systems considered are detailed in a RAG (Red/Amber/Green) report for ease of reference. In addition to existing standards and guidance, learning generated from recent experience health care systems was brought into the review. This learning will inform future guidance.

3.1.3 The review has included

- Establishing a brief.
- Establishing the baseline data to allow the brief to be met.
- Preparation of several question sets to get a greater understanding of the project.
- Preparation and management of detailed question sets and information requests.
- Commissioning UK topic experts to review certain aspects of the project.
- Several site visits
- Several meetings
- Analysis of data
- Analysis of microbiology related to the hot and cold water systems.
- Collation of expert reports

3.2 Standards and Guidance

3.2.1 HFS currently provides a range of advisory and delivery services across a wide variety of topics from a portfolio which covers, the built estate, engineering and environment and facilities management. With some exceptions these services are largely advisory in nature, identifying best practice and developing national guidance and standards.

3.2.2 HPS current provides advice and guidance on Health Associated Infections within the built environment. It produces a practice guide (National Infection Prevention and Control Manual – NIPCM) as well as the HAI Compendium. Like HFS, with some exceptions these services are largely advisory in nature, identifying best practice and developing national guidance and standards. The NHSScotland National Infection Prevention and Control Manual was first published on 13 January 2012 as mandatory

guidance, by the Chief Nursing Officer (CNO (2012)1), and updated on 17 May 2012 (CNO(2012)01-update).

The national manual provides guidance to all those involved in care provision and should be adopted for infection, prevention and control practices and procedures. The manual is mandatory for NHS Scotland .

The authority of the guidance produced is best described in the context below:

Regulations are law, approved by Parliament. These are usually made under the Health and Safety at Work etc Act following proposals from the Health & Safety Commission. Regulations identify certain risks and set out specific actions which must be taken.

Approved Codes of Practice give advice on how to comply with the law by offering practical examples of best practice. If employers follow the advice, they will be doing enough to comply with the law.

Approved Codes of Practice have a special legal status. If employers are prosecuted for a breach of health and safety law, and it is proved that they did not follow the relevant provisions of an Approved Code of Practice, they will need to show that they have complied with the law in some other way, or a court will find them at fault.

Standards (British or European), institutional guides and industry best practice play a large part in how things should be done. They have no direct legal status (unless specified by Regulations). However, should there be an accident; the applied safety practices at the place of work would be examined against existing British or European Standards. It would be difficult to argue in favour of an organisation where safety was not to the described level.

Guidance is issued in some cases to indicate the best way to comply with Regulations, but the guidance has no legal enforcement status.

- 3.2.3 Whilst following guidance is deemed not compulsory by HSE, where compliance with it is specified in a contract, it becomes a contractual requirement and any deviation from it would be expected to follow a formal process with input from all relevant parties and clarity around how the outcome was reached, with risk assessments where appropriate and sign off by those authorised to approve it.
- 3.2.4 The term standards and guidance is used throughout the report to refer to the publications setting the expectations about the level of service to be provided, including legislation, approved codes of practice and guidance. Compliance with guidance is reported on, regardless of whether this implies a contractual requirement, as contract compliance is out with the scope of this report.
- 3.2.5 The contract model for this project is known as an NPD, which amongst other things is intended to deliver benefits such as:
- Single delivery mechanism
 - Whole life costing
 - Design efficiencies
 - Lifecycle maintenance
 - Improved service provision.

Based on the Board construction requirements (including which guidance to be followed and other parameters, such as an environmental matrix), the SPV develops the design and agrees certain operational parameters with the Board before implementation. The design should be in compliance with Board construction

requirements. It is usual to have an Independent Tester involved in the project who is a joint appointment from the SPV and the Board. Their role is certifying the completion of building as referenced in the project agreement and completion criteria of the contract.

3.3 RAG reporting methodology

3.1.1 For clarity the report organises issues with each of the systems considered into a RAG (Red, Amber, Green) report, identifying the importance of deviations from what would be expected based on the standards and guidance. The distinction between the categories is based on our judgement of the degree of non-compliance and the implications of that non-compliance. The criteria used are described below.

Red: Material non-adherence to published guidance and standards, having safety or service provision implications that should be resolved prior to occupation of the building.

Amber: Non-adherence to published guidance and standards which should preferably be resolved prior to occupation.

Green: Observation and improvement activity

3.1.2 Aspects of the services known to be compliant at the outset do not form part of this report.

4. Findings

The following findings should be read in conjunction with the RAG report that is contained within Appendix 6.2

4.1 Management and assurance

- 4.1.1 Healthcare organisations have a duty of care to patients, their workforce and the general public. This is to ensure a safe and appropriate environment for healthcare. This requirement is identified in a wide range of legislation. At the most senior level within an organisation, the appointed person should have access to a robust structure which delivers governance, assurance and compliance through a formal reporting mechanism.
- 4.1.2 The review identified that for both IHSL and NHSL, there were omissions in the identification appointment and role definition of key roles in an effective management structure. Additionally, some records which are necessary to demonstrate compliance with appropriate standards and guidance were not provided.
- 4.1.3 The Board cannot pass its responsibilities under health and safety law to a third party. It can pass duties, but the responsibility for ensuring the safety of those accessing its premises remains with the Health Board. To discharge its duties, the Board should ensure appropriate structures, processes and personnel are in place to ensure that those responsible for operating the facility are doing so in compliance. The structures and processes in the Scottish Health Technical Memorandum (SHTM) suite of guidance, Statutory Compliance Audit and Risk Tool (SCART)¹ and Healthcare Associated Infection-System for Controlling Risk in the Built Environment (HAI_SCRIBE)² produced by Health Facilities Scotland, should form the core of this. These arrangements should be in place as soon as practicable and prior to occupation in any case.

4.2 Ventilation

- 4.2.1 The ventilation systems at RHCYP & DCN were considered in relation to legislation, guidance and the lessons learned from other recent similar projects which may have an impact on the patient group.
- 4.2.2 The principal legislation which is relevant to the ventilation systems is The Control of Substances Hazardous to Health Regulations 2002 (COSHH).
- 4.2.3 The principal guidance which is relevant to the ventilation systems is; Scottish Health Technical Memorandum (SHTM) 03-01: Ventilation for healthcare, and Scottish Health Planning Note 04 Inpatient Accommodation, Supplement 1 Isolation Facilities in Acute Settings.

¹ SCART is a risk based tool used by Boards in NHS Scotland to measure their compliance against statutory and non-statutory position

² HAI_SCRIBE provides Built Environment Infection Prevention and Control information for Design Teams, Construction Teams, Infection Prevention and Control Teams and Estates & Facilities Teams, as well as an assessment process allowing the identification and management of infection control risks in the built environment.
September 2019 D0.10 Page 10 of 17

NHS Lothian RHCYP&DCN review

- 4.2.4 The lessons learned from previous projects are noted where relevant.
- 4.2.5 The ventilation within Critical Care was identified by NHSL's validation contractor, and verified in this review, to be not in accordance with the requirements of SHTM 03-01. NHSL is working with IHSL to design a suitable solution to provide the conditions required within CCU. HFS has been asked by Scottish Government to support NHSL to ensure that the system delivered is compliant with requirements.
- 4.2.6 The general ventilation for non-specialist applications such as general wards was identified by the Board's validation contractor as having lower air change rates than specified in SHTM 03-01, i.e. 4 air changes per hour as opposed to 6, however it has been asserted that the system designed includes a component of natural ventilation to provide six air changes overall. This remains to be verified at the time of writing. HFS visited the site with specialist ventilation consultants who produced a report on the general ventilation systems and noted non-compliances with air handling unit provision and installation and pressure regimens, including several identified by the Board's validation contractor. In addition, a rapid review of the literature has been undertaken.
- 4.2.7 Theatre ventilation was identified by NHSL's validation contractor as having significant deficiencies. HFS visited site with a specialist Consultant Engineer, who was lead author on the last three iterations of the ventilation guidance. This identified and confirmed several deficiencies, including lack of evidence about the efficacy of the ventilation in the scrub rooms, the design of theatre ventilation systems, such that maintenance might entail loss of two theatres rather than one, and overuse of flexible ductwork, potentially causing problems with balancing theatre ventilation. All issues identified are in the action plan and RAG report and all are achievable, and as such should not prevent the theatres being put into use upon rectification.
- 4.2.8 The building contains a number of Positive Pressure Ventilated Lobby (PPVL) isolation rooms for which the guidance, SHPN4 supplement 1 recommends that each isolation room should ideally have its own air handling unit, such that if an air handling unit fails, or is offline for maintenance, only one isolation room is out of commission.
- The building, as built, has an air handling unit serving each area of the building, including any contained isolation rooms. This means that up to five out of 19 isolation rooms may be out of action in the event of an air handling unit failure. We have been advised that the strategy for maintenance is that a bypass duct will be used to feed an area from an adjacent air handling unit. This mode has not yet been proven and the successful operation of isolation rooms and other spaces in the event of use of this bypass strategy seems unlikely. NHSL needs to consider in its clinical service model how each isolation room and ward will function in the event of loss of an air handling unit. This will require full design and validation air change rates for each area in this mode and predicted times to rectify any failure mode.
- 4.2.9 IHSL has advised that the design of the isolation rooms is as per Scottish Health Planning Note (SHPN) 04-01 Supplement 1: In-patient Accommodation: Options for Choice Supplement 1: Isolation Facilities in Acute Settings. This guidance notes that isolation rooms ideally should have its own air handling unit (AHU) and the ventilation systems should be as robust as possible so that standby fans are not required. The guidance acknowledges that in high rise buildings a common supply and extract may

NHS Lothian RHCYP&DCN review

be the only feasible solution with duct branches fitted with spring close gas tight dampers in the event of failure. The height of the building is less than that defined As defined in Scottish Building Standards Technical Handbook - Non-Domestic, for high rise (18m). The solution at RHCYP & DCN does not include the gas tight dampers at ward level but also includes non-isolation rooms as required by the validated design parameters detailed in SHPN 04-01 Supplement 1.

- 4.2.10 Additional observations during a site visit have highlighted potential concerns linked to the location of some high risk wards and the helipad. In addition it was observed that the outdoor courtyards were real plants and soil, which in certain patient populations can be deemed high risk. Further literature reviews will be undertaken by HPS to determine risk and mitigation required.

4.3 Water

- 4.3.1 The domestic hot and cold water services (DHCWS) at RHCYP & DCN were considered in relation to legislation, guidance and the lessons learned from other recent similar projects which may have an impact on the patient group.
- 4.3.2 The legislation which is relevant to the water system are The Water Supply (Water Quality) (Scotland) Regulations 2001 and The Control of Substances Hazardous to Health Regulations 2002 (COSHH). In relation to COSHH, the Health and Safety Executive (HSE) note that "*Micro-organisms are covered in COSHH by the term biological agents. These are defined as any micro-organism, cell culture, prion or human endoparasite whether or not genetically modified which may cause infection, allergy, toxicity or otherwise create a hazard to human health.*"
- 4.3.3 The guidance which is relevant to the water system are HSE Approved Code of Practice L8: Legionnaires' disease. The control of legionella bacteria in water systems; HSE 274: Legionnaires' disease: Technical guidance; Scottish Healthcare Technical Memorandum (SHTM) 04-01: Water safety for healthcare premises and HPS document: Pseudomonas aeruginosa routine water sampling in augmented care areas for NHS Scotland (*published in draft*).
- 4.3.4 The lessons learned from previous projects are noted where relevant.
- 4.3.5 From initial inspection of the Independent Tester's reports, there is evidence of areas of the pipe work systems were installed without end protection. This may have allowed dust and organic material to enter the pipe system and this may not have been eradicated by the disinfection process.
- 4.3.6 From the construction commissioning records contained within the electronic operating and maintenance document repository (ZUTEC) it is noted that: -
- There is no record of leachate flushing of the system.
 - Technical commentary on the test certificates and the chemicals used for disinfection will be provided in the final report (if made available).
- 4.3.7 The Facilities Management (FM) contractor Bouygues FM (BFM) commissioned a legionella risk assessment when they took possession of the site from the

NHS Lothian RHCYP&DCN review

construction contractor. This report has yet to be provided and we will review and assess when presented.

- 4.3.8 NHS Lothian commissioned Callidus in May 2019 to conduct an overall safety audit of the RHCYP&DCN. Contained within their report is a section on the water system and they assessed the risk condition of the system as “high” mainly as a result of BFM’s L8 risk assessment, the lack of evidence of flushing across the system, the lack of maintenance on shower heads and outstanding information on the water management responsibilities by BFM.
- 4.3.9 NHS Lothian separately commissioned water testing from (Westfield Caledonia), on 12th July 2019, which indicated that certain tap outlets within the augmented care areas were positive for *pseudomonas aeruginosa*. This report also noted high Total Viable Counts (TVC). In addition, *Pseudomonas aeruginosa* was recorded in the Zip Hydro Taps and the rise and fall baths. The company concluded that there was no evidence of wide spread contamination of the water system.
- 4.3.10 As part of the HFS review, Water Solutions Group (WSG) carried out some water tests around the facility on 18th July 2019 to determine if there were any significant issues.
- 4.3.11 In summary WSG concluded from their investigations and as a result of the microbiological samples taken by them and others that: -
- There was no indication that the water system (as a whole) was cause for concern referenced to existing guidance.
 - There was no Atypical Mycobacteria found in the 60 samples taken (mainly from neonatal and intensive care areas); however there was some gram negative activity and mould present.
 - Concern was expressed regarding the management of the water system given the lack of occupancy and turnover of the water system.
 - The management aspects of the water system from an FM perspective were not satisfactorily demonstrated.
 - The system showed signs of biofilm and swarf contamination, particularly at the taps.
 - Shower heads and hoses do not meet the required standards with respect to length.
 - During the site investigation it was noted that the cold water temperatures were rising and the hot water temperatures decreasing. In discussions with BFM it was discovered that a boiler had tripped together with the circulating pumps and the other boilers did not come on as they should have. The result of this is that the temperature of the water for both hot and cold domestic water systems fell into the legionella growth band for a significant period of time.
 - The specialist consultant engaged raised concern that 5% sampling of the number of taps whole hospital may not be adequate and it would have been more realistic to test 100% pre samples and 25% post samples.
 - In reviewing the data in respect of commissioning temperature measurement, there would appear to be a question regarding the methodology. Temperature

measurement is tried and tested and we do not expect to see debates regarding brass versus stainless steel; between 1-7 degree variance, etc. The resultant effect of this is that there is reduced credibility in any of temperature commissioning results and the system as a whole should be recommissioned before occupancy with an agreed methodology and instrumentation.

- The management strategy for the Kemper system requires close control to ensure that water is not “dumped” unnecessarily in an effort to control cold water temperatures.

- 4.3.12 The tests for atypical mycobacterium proved negative, however various fungi were identified throughout the water system. These are not required to be tested as part of the current guidance, however, based on the experiences at other sites it was considered prudent to have these test done. The results and any recommendations will be included within the final report. HPS will undertake a literature review on the risk posed by fungi and atypical mycobacterium in water.
- 4.3.13 As a direct result of previous lessons learned by NSS in work undertaken after the construction of this hospital, it is recommended that samples of certain parts of the water system are replaced and the originals tested by WSG, particularly those which have proven to be problematic.

4.4 Plumbing and drainage

- 4.4.1 The range of clinical and non-clinical wash hand basins chosen by the SPV are manufactured by Armitage Shanks from their Contour 21 healthcare range. There is no facility to connect the tap on the sink as the taps are panel mounted. The drain connection is at the rear of the sink bowl and there is no overflow, all as per guidance.
- 4.4.2 The connection on to the wash hand basin from the drain has proven to be an area where water does not drain freely as the connection reduces the diameter of the drainage outlet and creates a dam effect. Lessons learned by NSS after the construction of this hospital have shown that various organisms were grown from this area.
- 4.4.3 The waste connection from the sink to the main above ground drainage system is via “bottle trap” rather than a conventional “U-bend”. Lessons learned by NSS after the construction of this hospital identify this arrangement as a risk for bacterial growth. HPS will conduct a literature review on this topic.
- 4.4.4 The plumbing system is connected to the main sewage system via three drainage systems. The first is a gravity fed system. The second is a sump pump arrangement in the external courtyard. The third is a sump in the basement area of the hospital. The rationale behind the use of the sumps is that the basement areas are below the water table and any waste material has to be pumped up and out to the sewer.
- 4.4.5 The independent tester has noted in their report of 30th June 2017 that an issue had been raised regarding the capacity of the basement sump. In further investigation this appears to be related to the fact that more areas/floors were connected to this system than NHS Lothian had originally been made aware of.

- 4.4.7 The main drainage risk lies with the basement sump. It has a resilience system of back-up power supplies, multiple pumps and alarm systems to three different locations. There are two discharge pipes to sewer, reducing the risk of blockage and the consequent risk of sewage backing up into the basement in the proximity of the kitchen. In addition, if a failure occurred or a maintenance activity was to take place, the location of this sump chamber would mean that all traffic flow through the basement corridor would be halted to permit a safe operating procedure to be implemented.
- 4.4.8 The external courtyard sump has a duty/standby pump as well as a spare submersible pump and also has similar alarm arrangements to the basement pumps. In the event of a catastrophic blockage and spillage the court yard would be impacted.
- 4.4.9 Further investigative work is being carried out on the sump and pumping arrangements at this time.

5. Recommendations

5.1 Recommendations

- 5.1.1 To discharge its duties under Health and Safety law, IHSL monitored by NHSL should have appropriate structures, processes and personnel in place to ensure that those responsible for operating the facility are doing so in compliance. The structures and processes in the SHTM suite of guidance, SCART and HAI_SCRIBE should form the core of this. These arrangements should be in place as soon as practicable and prior to occupation in any case.
- 5.1.1 NHSL should adopt and implement, modifying as appropriate, the action plans for the various services will be provided
- 5.1.2 NHSL should report on progress with implementation of the action plans to the Oversight Board
- 5.1.3 NHSL needs to consider in its clinical service model how each area will function in the event of loss of an air handling unit. This will require full design and validation air change rates for each area in this mode and predicted times to rectify any failure mode. There are tactical action cards covering some services. NHSL should assure itself that all issues raised in this report have appropriate procedures in place.
- 5.1.4 NHSL should consider its clinical service model in light of the ventilation arrangements in place for general wards and other non-critical areas (incorporating literature review and design information not yet available).
- 5.1.5 NSS (HPS/ HFS) recommendations

6. Appendices

6.1 Commission Brief



Commission Brief
v0.4.pdf

6.2 RAG Status Report



2019-08-05 RAG
table for RHCYP v0.14

CONFIDENTIAL DRAFT

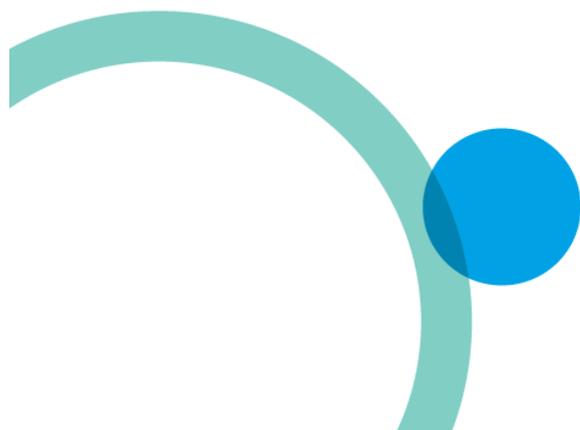
CONFIDENTIAL DRAFT: DO NOT PRINT

NSS (HPS & HFS) Technical Review of the Royal Hospital for Children and Young People and Department of Clinical Neurosciences

Draft & In Confidence – RAG Status Report

28th August 2019

Version Draft 0.14



NSS (HFS & HPS) RAG Table for Royal Hospital for Children and Young People and Department of Clinical Neurosciences

Date 28th August 2019, Draft version 14

Introduction

The attached draft report has been collated based on information provided, on-site reviews of the RHCYP and expert advice sought within the key focus areas of Ventilation, Water and Drainage systems. The table contains sections for Fire, Medical Gasses and Electrical which will be populated following work currently underway. NSS would like to thank the NHS Lothian project team for their corporation, input and access to the required information.

This report uses a high level status to review each of the components. The following table describes the status:

RAG	Description
Red	Material non-adherence to published guidance and standards, having safety or service provision implications that should be resolved prior to occupation of the building.
Amber	Non-adherence to published guidance and standards which should preferably be resolved prior to occupation.
Green	Observation and improvement activity

The report also identifies remedial solutions and these have categorised into:

Category	Remedial Description
P1	Rectification prior to occupation
P2	Rectification prior to occupation where possible

In some areas information on specific issues is incomplete or unavailable at the time of writing this final report and the RAG status and recommendations are based on the safest approach. If information subsequently becomes available, then the outcomes may be better than that reported.

During the review a number of workmanship and snagging issues were identified, not necessarily impacting significantly on the ability to safely occupy the building but nonetheless requiring rectification for the building to function the way a new building should. These are not included in this report but will be passed to the NHSL project team.

The report focusses on areas where potential problems have been identified and these are rated red or amber. Issues which would be rated green and would therefore require no, or minimal, remedial action have not been included. It is intended that the issues reported herein will then inform an action tracker for remedial work for reporting progress to government.

CONFIDENTIAL DRAFT: DO NOT PRINT

A number of the issues identified below relate to lessons learned by NHS NSS in recent work and are not yet incorporated in published guidance. They are issues that need action now, rather than issues the Board should necessarily have been sighted on as decisions were made.

Management and Assurance:

Service	Comment	Remedial work	RAG
Assurance of compliance			Red
	Structures and processes are not fully in place to assure the Board that the facility is being operated in compliance with contract requirements. These should be in place from the point where the building services referred to in this report are put into use.	Put in place management and reporting processes as described in SHTM 00 - Best Practice Guidance for Healthcare Engineering and the SHTMs for each critical engineering service.	P1
Operation and maintenance records			Amber
	<p>Some of the records and documents necessary for the effective and safe operation of the hospital could not be found.</p> <p>The ZUTEC system appears to lack a logical structure which will impact on the ability to readily find necessary information.</p> <p>Some of the sections contain none, or only part, of the documentation they should have.</p>	The Board should request IHSL rectify the filing structure of the documentation and verify that the information contained is both complete and accurate.	P2

CONFIDENTIAL DRAFT: DO NOT PRINT

Service	Comment	Remedial work	RAG
BEMS Alarms			Amber
	The alarms for the building are reportedly un-prioritised, resulting in a very large number of alarms potentially masking critical alarms; e.g. sewage sump pump failure.	Prioritise alarms to make most critical failures visible and manageable. Until alarms are prioritised, have procedures and staff in place to ensure critical alarms are not missed.	P2

Water Systems:

Service	Comment	Remedial work	RAG
Water services (critical care)			Red
	Pseudomonas found in taps, in critical care areas.	All taps (not just TMT/TMV) to be disinfected and retested. Follow guidance.	P1
		Inspect and replace, as appropriate, taps, tap components and pipework.	P1
		Replace tap strainers and cartridges in CCU TMT taps.	P1
		Showers require to be disinfected.	P1
Water services (non-critical care)			Amber
	Swarf and biofilm found in tap strainers.	Replace tap strainers in all areas.	P1
Showers (all areas)			Red
	Shower hose lengths do not comply with Scottish Water bye laws and guidance.	Shorten hose length, or add retaining ring, to ensure that shower head cannot reach WC or drain	P1
		Disinfect hose and drain after rectification.	P1
Water (general)			Red
	Testing has found widespread fungal / mould contamination.	The water system should be disinfected and re-tested.	P1

Service	Comment	Remedial work	RAG
	Legionella risk assessment actions not recorded. Legionella risk assessment insufficient to reflect system contamination in general.	<p>The Legionella Risk assessment Feb 2019 identified a range of actions. The Action Tracker does not demonstrate that the issues raised have been resolved or a timeline provided for resolution. Record rectification of actions.</p> <p>The risk assessment is too heavily focussed on Legionella and not taking into account other organisms in line with patient type. Broaden to reflect system contamination in general.</p> <p>Develop analysis categorisation of patient type and consideration to susceptibility for each area.</p>	P1
	Designated roles and responsibility.	The current Responsible Person (RP) has not been appointed in writing and uncertain as to whether received RP training. Additionally, has no previous experience of healthcare.	Information awaited
	Water tanks	To be inspected. The Raw Water and Filtrate water tanks are interconnected at the drain. These must be separated.	P2
	Expansion vessels should be checked for susceptibility to bacterial growth.	Bladder from expansion vessels to be inspected.	P2

Service	Comment	Remedial work	RAG
	Hot and cold water temperatures / Flushing.	There was an issue with raised cold water temperatures during the boiler outage – this requires investigation.	P2
	Filtration Plants	From previous lessons learned micro-biological growth potential was identified as part of the Backwash cycle. Consideration should be given to Chlorine dioxide addition to backwash water tank to counter microbiological and biofilm development on filters.	P1
	ZIP Hydro Taps and Arjo Baths	These were found to be contaminated and need to be disinfected and tested to demonstrate safe water delivery. The contractor should ensure that a suitable, adequate, safe management plan is in place for all components of the water system which are susceptible to microbiological growth including (not exhaustive) flexible hoses, TMT, TMV, shower heads.	P1

CONFIDENTIAL DRAFT: DO NOT PRINT**Drainage:**

Service	Comment	Remedial Work	RAG
Drainage			Amber
	Sinks drains	Initial testing indicates that these are not significantly contaminated, however the horizontal drain and protruding seal means they retain stagnant water and they need to be disinfected periodically prior to and post occupancy to maintain their condition. From lessons learned, there should be a system of periodic testing and disinfection for wash hand basins with particular focus on augmented care.	P2
	Bottle traps	There would appear to be an inconsistency of installation and potential of back-feed from trap to drain. This requires review and rectification.	P2
	Trough Sinks	From previous projects, the drains in trough sinks have been identified as high risk potential due to high microbiological activity. This requires review and treatment strategy considered.	P2
	Pumped Drainage	The internal pumped sewage drainage systems presents the potential for flooding on pump failure will require full vigilance.	Information awaited

CONFIDENTIAL DRAFT: DO NOT PRINT**Ventilation:**

Service	Comment	Remedial Work	RAG
Ventilation (general)			Red
	Provision for maintenance or plant failure in the ventilation systems has not been validated. The bypass arrangements and functioning of ward ventilation in the event of plant failure remains to be demonstrated.	<p>Demonstrate efficacy of approach of utilising adjacent air handling unit to supply areas not served by failed plant.</p> <p>Commission and validate Isolation rooms and general ward spaces in the event of supply by adjacent air handling unit.</p> <p>Engage clinical leads and Infection Prevention and Control colleagues in developing service provision strategies in the event of air handling plant failure.</p> <p>Confirm damper operation and compliance with fire requirements in bypass mode.</p>	P1

	<p>Air handling units and ductwork contain numerous deviations from contract requirements (SHTM 03-01) and were found not to be clean despite having been presented for validation. Deviations include; loose internal cabling in the airflow, cable routes allowing air to bypass filters, air leakage at penetrations and possible fan replacement difficulties which need to be corrected.</p>	<p>The ventilation systems throughout the hospital should be subject to a full snagging exercise and all defects rectified before air handling units and ventilation systems are cleaned. All deficiencies identified in validation and specialist Consultant Engineer reports should be addressed as part of this.</p>	<p>P1</p>
	<p>The general ventilation design is based on four air changes per hour mechanical ventilation plus a component of natural ventilation. With a few exceptions, the mechanical component has been validated, however, design and validation information for the natural component has not been provided.</p>	<p>Demonstrate efficacy of this design in delivering the required air change rates by design calculation, modelling or tracer gas testing.</p> <p>Confirm that all areas served by this arrangement are suitable for categorisation as general ward areas or single rooms as listed in SHTM03-01a Appendix 1.</p> <p>Risk assess patient groups served for areas served by this ventilation strategy.</p>	<p>P1</p>

	<p>The pressure regimen detailed in the design will be affected by opening windows and the pressure between the room and the corridor, and therefore direction of air flow, cannot be relied upon when windows are open.</p>	<p>Ensure that clinical leads are aware that the designed pressure differences, and therefore air flows, can only be relied on when windows are closed to allow clinical service planning to account for this variability.</p>	<p>P1</p>
	<p>External doors to plant rooms</p>	<p>Ensure that excessive gaps are removed and appropriate anti vermin measures are applied to all the doors and screens.</p>	<p>P2</p>
	<p>Fire dampers in some locations cannot be adequately tested as duct access has not been provided. Also, locations of fire dampers and fire rated ductwork has been questioned.</p>	<p>Provide access so all fire dampers can be readily visually inspected to verify operation. Review fire damper provision and fire rated ductwork and confirm appropriate provision.</p>	<p>P1</p>
	<p>Air intake location - Air intakes and opening windows are sited in the courtyard below the helipad and at the adjacent RIE, but information has not been provided on the impact of downdraft on air flows and pressures or entrainment of contaminants.</p>	<p>Demonstrate the effect of helicopter landing on air flows in ventilation systems with intakes below through measurement or modelling.</p> <p>This should include the air intakes of the RIE adjacent.</p>	<p>P2 (Prior to use of Helicopter)</p> <p>Information on impact of helicopter landing has been identified by NHSL but not yet reviewed.</p>

CONFIDENTIAL DRAFT: DO NOT PRINT

Ventilation (Isolation rooms and the areas containing them)			Amber
	Isolation rooms are not served by a single ventilation system for each room as recommended in SHPN4 Supplement 1. The arrangement provided, where ventilation systems serve an area of the building including contained isolation rooms, has not yet been proven in the event of failure of an air handling unit and the implications for service impact are not yet understood.	<p>Prove that bypass connections to adjacent ventilation systems will allow safe operation of both areas and / or explain service provision strategy for loss of each area including isolation rooms.</p> <p>Develop clinical service provision strategy to reflect the potential loss of up to 5 of the 19 isolation rooms on the failure of an air handling unit and confirm impact on service continuity.</p>	P1
Ventilation Theatres			Red
	Scrub areas which are narrow and deep are unlikely to be scavenged effectively by theatre air changes and require alternative means of achieving removal of contaminants. The high level extract is unlikely to achieve sufficient dilution of contaminants or entrainment of heavier than air water droplets.	The ability of the single high level extract provided in deep plan scrub areas to effectively prevent contaminants being dispersed into theatres should be demonstrated and/or additional low level ventilation provided.	P1
	Anaesthetic rooms 31 and 34 do not demonstrate a clean air flow path to reduce exposure of staff to gasses.	Move ceiling supply to opposite side of room from extract. In room 30, move supply away from door.	P1

CONFIDENTIAL DRAFT: DO NOT PRINT

	Theatre utility rooms Extract ventilation means theatres have to be used in pairs and taking a theatre out of service reduces extract in utility room too low.	Add supplementary extract ventilation to allow for one theatre being out of service or plan for service impact following the loss of a pair of theatres.	P2
	Theatre corridor extract and pressure differentials do not comply with requirements.	Modify theatre corridor ventilation to comply and test and commission.	P1
Ventilation Critical Care			Red
	The air change rates and pressure differentials in CCU are not in accordance with SHTM 03-01 and modifications to the ventilation system are needed. This was identified by NHSL validation contractor.	Refit the CCU ventilation system in compliance with SHTM 03-01, taking the opportunity to assess the resilience of ventilation provision in this area and improve where possible.	P1

General (No specific topic – No RAG Status):

Service	Comment	Remedial Work	
General (no specific topic)			
	Information missing	Provide missing information as per information request sheet(s).	Status may change depending on information provided and review.
	Callidus compliance report, May 2019	This audit has returned a RED status. A schedule, program of completion and sign off for each identified item and demonstration mechanism is required.	P1

	Roof plant rooms	Water leaks should be traced and appropriate remedial action taken.	P2
--	------------------	---	-----------

Systems not yet tested:

Service	Comment	Remedial Action	RAG
Electrical	Not inspected yet due to priority put on water, ventilation and drainage. Will we have any material initial findings that should be in the report?		Not Tested
Fire	Not inspected yet due to priority put on water, ventilation and drainage. Will we have any material initial findings that should be in the report?		Not Tested
Medical Gasses	Not inspected yet due to priority put on water, ventilation and drainage. Will we have any material initial findings that should be in the report?		Not Tested

END.

NHS Lothian

Oversight Board

28 August 2019

Medical Director

SUPPLEMENTARY PAPER ON WATER SAFETY AND QUALITY

1 Purpose of the Report

1.1 The purpose of this report is to provide a written summary of the items discussed on Wednesday 21 August 2019 at the third water workshop and the actions agreed. A verbal update was provided to the Oversight Board on Thursday 22 August 2019.

1.2 Any member wishing additional information should contact the Executive Lead in advance of the meeting.

2 Recommendations

The Oversight Board is asked to note the seven changes agreed and to agree that these provide, once complete, a significant assurance against the required standards and guidance. Their impact on the RAG rating provided by NSS colleagues about the safety and quality of water at the new RHCYP/DCN site is yet to be determined.

3 Discussion of Key Issues

The workshop considered in detail the actions previously agreed. A detailed note with attendees and a record of the discussion is held by the Incident Management team of NHS Lothian (now renamed the Executive Steering group).

Changes: seven changes were agreed in headline terms which will be translated into the necessary board changes to be presented via IHSL to Bouyges (Hard FM providers for the site). All board changes will be signed off by the NHS Lothian Executive Steering group (the renamed Incident Management Team for this project).

The first three relate to the risks associated with *Pseudomonas aeruginosa*:

1. **Action on known positive outlets:** it was agreed by all that this was the most pressing to progress with. Testing approximately six weeks before identified a small number of positive outlets. The existing guidance (in the SHTN and in the draft guidance from HPS on testing in augmented care areas) is silent about the actions to eliminate *Pseudomonas* from an outlet once it is found. Bouyges have a known methodology in use in other parts of the UK and it was agreed by all in the interests of speed of progress to use this method. The caveat that any elimination could not be guaranteed to be long lasting was understood by all.
2. **Agree a method statement for future positive outlets:** John Bryson (expert involved in WGH work from Westfield Caledonian) and Denis Kelly (AE water) had both provided advice. Different methods would be assessed and a method statement would be developed and agreed to pass to Bouyges for future action.
3. **Agree changes to maintenance regime to comply with draft HS guidance on augmented care areas** and to mirror SHTN 04-01, the standard of practice in England and Wales. This requires detailed specification of the areas considered to be augmented care areas.

The following two changes relate to the whole water system:

4. **Agree a change to the current regime** to reflect that the building is unoccupied and will remain so for some time.
5. **Agree a method statement for a flush to the whole system prior to occupation.** Such a statement should consider the points emerging in HPS QUEH report.

The final two relate to specific items of equipment:

6. **Agree a maintenance (for Bouyges) and cleaning (for NHS Lothian) regime for Zip taps** and agree which, if any, are to be removed based on a risk assessment by patient type and clinical setting.
 7. **Agree a maintenance and cleaning regime for Arjo baths**, should it be possible to decontaminate these from *Pseudomonas*, and it be agreed that these baths, or similar, with a rise and fall mechanism are required. Following completion of such a risk assessment, it may be that certain baths in higher risk areas for patients with open wounds (burns and oncology) require removal. Such a change should not be progressed without clearly understanding any alternative bath and its associated risks including manual handling.
- 3.1 A fourth workshop will be held on 4th September 2019 and will concentrate on the completion of outstanding actions and the HPS report into water quality issues in QUEH in 2017-8 published in August 2019, as it recognised that some of the recommendations being proposed are in relation to these emerging issues.

4 Key Risks

The actions described do not meet the requirements of HPS and HFS and assurance is not provided that the water is safe and a maintenance regime for quality agreed.

Standards and guidance are met but emerging concerns from QUEH prevent a public statement of sufficient reassurance for staff, patients, families and the public.

5 Risk Register

- 5.1 The delayed move into the new facility is on the corporate risk register.

6 Resource Implications

- 6.1 The resource implications are to be determined.

Tracey Gillies
Medical Director
 27 August 2019

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

- [Redacted]
- [Redacted]

[Redacted]

[Redacted]

[Redacted]

- [Redacted]
- [Redacted]

[REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

SBAR

Clinical Risk Assessment of the potential to move Children's Outpatient services into the new Hospital in advance of inpatient and associated services.

Situation

The planned move of RHSC has been delayed due to concerns about ventilation in the paediatric Critical Care Unit. As a result, Health Facilities Scotland and Health Protection Scotland have been asked by Scottish Government to undertake a technical review of all aspects of the building design and build, to confirm that these meet the appropriate standards. This review is currently ongoing.

In the meantime, DCN and Children's services have been asked to do a clinical risk assessment of the potential for a phased migration of services, which for Children's services would be the Outpatient service, as inpatient services cannot be moved piecemeal. This work has now been completed.

Background

All Speciality teams at RHSC were asked to carry out a structured risk assessment for their own outpatient service, setting out:

- what supporting clinical and other services they required to have access to in order to run their outpatient service safely and effectively
- their assessment of the risks, potential mitigation of risks and benefits of a phased move of outpatient services.

These clinical risk assessment templates have now been received and assessed by the Children's Clinical Management team.

Assessment

Benefits of a phased move of outpatient services

1. The much improved environment and space in the new hospital would be the main benefit for patients and staff alike, for services which run outpatient clinics.

2. For some services, moving outpatient clinics would allow access to better equipment/imaging (ENT, Radiology)
3. For some services with currently very poor office accommodation, a move would allow them access to much better facilities in the new Clinical Management (office) suite.
4. In terms of emergency medical / winter pressures, there would also be a benefit of freeing up space in the old outpatient department, which is immediately adjacent to the Emergency Department (ED), as it would allow the ED to expand its assessment and observation space, reduce crowding in the ED and allow improved patient flow.
5. There would be some benefit for clinical support services like Labs and Pharmacy where staff resources are currently stretched to provide full inpatient and outpatient services on the current site.

Risks

1. For the majority of services, split site working between RHSC (to support/ provide inpatient care) and the new site (to run outpatient clinics) will result in a loss of capacity due to travel time between the sites.
2. This will impact on both outpatient waiting times and inpatient waiting times, as clinic templates would need to be slightly reduced and theatre lists adjusted.
3. If the delay in the full move of the inpatient service was only going to be a short one, this loss of capacity would have less impact, but any significant time lag between a partial move and the full hospital migration would have a detrimental impact on capacity and waiting times across all specialities which would be very difficult to recover, due to the constraints on capacity (mainly staffing) in Children's services and the lack of external provider capacity.
4. There would be an impact on ED and emergency care/4 hour access if clinical teams who can currently respond quickly to urgent requests for specialist review are off site running outpatient clinics.
5. Urgent care/ PICU/ inpatient care would be impacted if specialist clinical teams are not available flexibly as now on site (there are a number of single handed specialists/very small specialist teams)
6. For some services, the equipment they need to run both outpatient services and inpatients services would not be available on both sites (eg Ophthalmology, Dental, Respiratory Physiology) and it would be unrealistic/unaffordable/take too long/ to purchase additional equipment.
7. There are not currently enough OPD nursing staff to run clinics in RHSC for those services who could not move in advance, as well support services whose clinics who could move as a standalone to the new site, as well as running existing clinics at Lauriston Building (to be

retained as city centre provision) and some current SJH clinics. Funding could be provided for extra posts, but Paediatric nursing recruitment is very challenging and vacancies levels are already high, so this would not be a quick solution.

Recommendation

The Children's Clinical Management Team (CMT) has reviewed all of the information, risks and benefits for the different specialties and services.

There is a clear clinical consensus that inpatient and outpatient services should move as a whole and that a phased move of outpatients before the inpatient service should not be supported.

The CMT's view is that while a small number of services could in theory move in advance of the inpatient service, the only efficient way to run outpatients would be for the service to move in its entirety.

The CMT agrees that patient care, particularly urgent care, would be impacted by teams having to split their time between 2 sites, bearing in mind the small size of many specialist teams.

The CMT acknowledges that a phased move of outpatients would inevitably result in a loss of capacity and this would impact on patient care, resulting in longer waiting times. Unless the time between a partial and then full move of the RHSC services was quite short, this loss of capacity would be significant and difficult to recover.

For all of these reasons, the CMT would not recommend a phased move of outpatient services.

August 2019

TERMS OF REFERENCE: NHS Lothian Executive Steering Group: Royal Hospital for Children & Young People and Department of Clinical Neurosciences.

1. REMIT

To provide a forum for NHS Lothian executive management to consider all business relating to responding to and addressing the delay to the Royal Hospital for Children & Young People and Department of Clinical Neurosciences.

The work of the executive steering group will inform what NHS Lothian executive management provides to and responds to:

- The Scottish Government Oversight Board: Royal Hospital for Children & Young People, Department of Clinical Neurosciences and Child & Adolescent Mental Health Services (Oversight Board);
- The NHS Lothian Finance & Resources Committee;
- The NHS Lothian Healthcare Governance Committee; and
- Lothian NHS Board.

The Royal Hospital for Children & Young People and Department of Clinical Neurosciences Programme Board will address issues relating to communicating with staff and managing contingency arrangements in the period until it has been confirmed when the transfer of services will occur.

Once the Scottish Government Oversight Board has confirmed that the transfer of services can occur, the Royal Hospital for Children & Young People, Department of Clinical Neurosciences Programme Board will resume responsibility for the planning and management of the transfer. At this point the executive steering group will cease to meet.

2. MEMBERSHIP

Susan Goldsmith, Director of Finance – Chair
 Tim Davison, Chief Executive
 Tracey Gillies, Medical Director
 Alex McMahon, Nurse Director
 Jacquie Campbell, Chief Operating Officer
 Janis Butler, Director of HR and OD
 Judith Mackay, Director of Communications
 Iain Graham, Director of Capital Planning and Projects
 Brian Currie, Project Director
 George Curley, Director of Facilities
 Donald Inverarity, Lead Infection Control Doctor
 Lindsay Guthrie, Lead Infection Control Nurse
 Sorrel Cosens, Programme Manager

3. QUORUM

The Executive Steering Group is a management meeting, and does not interfere with the established reporting lines and responsibilities and accountability of its members. Consequently there is no quorum, and members may send deputies to represent them.

4. FREQUENCY OF MEETINGS

The Executive Leadership Team will meet once a week (Monday), but may convene additional meetings if required. The Business Manager (Chair, Chief Executive's and Deputy Chief Executive's Office) is the secretary of this meeting.

5. REFERENCES

- [NHS Lothian Board Members Handbook](#)
- [NHS Lothian Scheme of Delegation](#)

6. DATE OF APPROVAL OF THESE TERMS OF REFERENCE:

7. DATE BY WHICH THESE TERMS SHOULD BE REVIEWED:

REQUESTS FOR INFORMATION – Freedom of Information requests; Parliamentary Questions as at 27/08/19

Reference	Name	Date of request	Response due	Request	Actions	Link to draft response	Status
FOI 3799	Andrew Picken, BBC	19/08/2019	awaiting clarification	A copy of the minutes for all meetings of the NHS Lothian project board responsible for the new children's hospital at Little France.	RM checking for precedent	Fol Requests\3799 - Project Board minutes	
FOI 3770	Hannah Rodger	08/08/2019	03/10/2019	<ul style="list-style-type: none"> > A copy of all SCART documentation for the new Edinburgh Royal hospital for children and young people. > Who were the designers for the RHCYP, and who was in the design team? Please provide their name and job title. > Who was in the project team for the RHCYP, and who was the project manager? Please provide their name and job title. > A copy of the water safety plan for the build? > Who the commissioning manager was for the build? Please provide their name and job title. > Who was in the commissioning team for the build? Please include their name and job title. > All sign-off documents for each stage of the project? > All documentation for the build which details comments, advice and recommendations from any member of your infection control team, at each stage of the building process? 	<p>Drafted response to RM except the IPCT query</p> <p>SC to discuss with J MacK and FC</p>	Fol Requests\3770 - Hannah Rodger - various	
3809	Henry Anderson, healthandcare.scot	21/08/2019	18/09/2019	<ul style="list-style-type: none"> > Copy of the agreement between NHS Lothian and Downing Group, as publicised in September 2017, regarding the sale of the old Sick Kids Hospital in Marchmont. I see this request was denied in 2017 because "this is still a live document with various conditions were being finalised" but I assume this is no longer valid. > Any correspondence in 2019 (including emails, memos and other written communication) between NHS Lothian and Downing Group, and NHS Lothian and the Scottish Government, regarding the old Sick Kids hospital site in Marchmont. 	RM drafting response	Fol Requests\3809 - Downing contract	
FOI 3800	Andrew Picken, BBC	19/08/2019	16/09/2019	A copy of all fire protection and fire compartmentation surveys commissioned by the consortium responsible for the new children's hospital building at the Little France which have been passed to NHS Lothian.	Propose H&S exemption	Fol Requests\3800 - fire surveys	
FOI 3801	Andrew Picken, BBC	19/08/2019	16/09/2019	A copy of any guidance or briefings (in written or video form) which has been issued to staff in relation to fire safety in the new children's hospital building at Little France.	NHS Training Video with RM; further video requested from BYES	Fol Requests\3801 - fire training	

REQUESTS FOR INFORMATION – Freedom of Information requests; Parliamentary Questions as at 27/08/19

Reference	Name	Date of request	Response due	Request	Actions	Link to draft response	Status
FOI 3802	Andrew Picken, BBC	19/08/2019	16/09/2019	A copy of all 'snagging' reports about the issues at the new children's hospital building at the Little France issued to NHS Lothian from the IHSL consortium which built the facility.	Propose exemption on grounds that work in progress	Fol Requests\3802 - snagging reports	
3803	Andrew Picken, BBC	19/08/2019	16/09/2019	A copy of the Building Completion Certificate for the new children's hospital building at Little France, as passed from the consortium responsible for securing it to NHS Lothian.	RM drafting response	Fol Requests\3803 - completion certificate	
3808	Henry Anderson, healthandcare.scot	21/08/2019	11/09/2019	> Any payments that have been, or will be, made to developer Downing by NHS Lothian, or any financial penalties NHS Lothian will bear, in 2019 in relation to the former Royal Hospital for Sick Children site in Edinburgh and the reasons for any payment or financial penalty. > Could you confirm if the developer had planned to take "complete vacant possession" of the aged hospital building in January 2020 as reported in media and if there have been any changes to this timescale in light of the delayed opening of the new Sick Kids Hospital >Whether NHSL will incur any addt financial costs or penalties if this deadline is missed- and if so, what will theres costs be per month for	RM drafting response	Fol Requests\3808 - impact of delay on disposal	
FOI 3785	Andrew Picken, BBC	09/10/2019	04/09/2019	With regards to the £80m of "enabling and equipment works" for the new children's hospital at Little France, please could you supply a full breakdown of this expenditure. This should state where the money was spent, ie diversion of sewer pipes or the provision of flood defences, and how much money was spent in each category.	Requested from NB	Fol Requests\3785 - breakdown of £80m capital costs	
FOI 3764	Paul Hutcheon, Herald	06/08/2019	03/09/2019	All communications between Tim Davison or Susan Goldsmith and the Scottish Government (both ways) in June and July 2019 on the new Sick Kids hospital. This should include the content of attachments in emails.	Sent to: T Davison S Goldsmith To follow up with A Walker	Fol Requests\3764 - Scot Govt correspondance of Chief Exec and DoF	

REQUESTS FOR INFORMATION – Freedom of Information requests; Parliamentary Questions as at 27/08/19

Reference	Name	Date of request	Response due	Request	Actions	Link to draft response	Status
FOI 3765	Policy & Research Office, Scottish Labour	06/08/2019	03/09/2019	<p>> A copy of all recorded correspondence with Audit Scotland concerning the project, including a copy of any relevant email attachments.</p> <p>> A copy of the final report and/or outcomes of the project which have been received by the health board.</p>	<p>Sent to:</p> <p>S Goldsmith; Iain Graham</p> <p>Info req from NB & BC</p>	Fol Requests\3765 - Audit Scotland re Settlement Agreement	
FOI 3756	Press Office, Scottish Liberal Democrats	31/07/2019	22/08/2019	> The total amount spent on adverts promoting the Royal Hospital for Children and Young People's move to the new site at Little France, a move scheduled for July 2019.			closed 27/08/19
PQ S5W-24645	Alex Cole-Hamilton	08/08/2019	21/08/2019	To ask the Scottish Government, prior to the opening being postponed in July, how many patients were scheduled to have appointments at the RHCYP, broken down by month.	Responded to SG 21/08/19		closed
PQ S5W-24651	Alex Cole-Hamilton	08/08/2019	21/08/2019	To ask the Scottish Government who is on the project board of the Royal Hospital for Children and Young People, and whether it will place in the Scottish Parliament Information Centre (SPICe) the (a) minutes of the board's meetings and (b) feedback provided to the Cabinet Secretary for Health and Sport by the Scottish Government representatives on the board.	Responded to SG 21/08/19		closed
PQ S5W-24652	Alex Cole-Hamilton	08/08/2019	21/08/2019	To ask the Scottish Government, further to the answer to question S5W-01841 by Shona Robison on 5 September 2016, which states that completion of the Royal Hospital for Children and Young People was expected in 2017, what other dates it has previously given for its opening.	Responded to SG 21/08/19		closed
PQ S5W-24653	Alex Cole-Hamilton	08/08/2019	21/08/2019	To ask the Scottish Government who independently certified and signed off the Royal Hospital for Children and Young People on 22 February 2019 when it was handed over to NHS Lothian; who appointed the independent certifier; how long the assessment took; what it involved, and whether (a) it and (b) NHS Lothian agreed with the findings.	Responded to SG 21/08/19		closed
PQ S5W-24250	Daniel Johnson	05/07/2019	20/08/2019	What discussions or correspondence the Cabinet Secretary for Health and Sport has had since 26 June 2018 with (a) Integrated Health Solutions Lothian and (b) NHS Lothian regarding the opening date of the new Royal Hospital for Sick Children, Edinburgh.			Closed

REQUESTS FOR INFORMATION – Freedom of Information requests; Parliamentary Questions as at 27/08/19

Reference	Name	Date of request	Response due	Request	Actions	Link to draft response	Status
PQ S5W-24253	Daniel Johnson	05/07/2019	20/08/2019	What discussions or correspondence the Cabinet Secretary for Health and Sport has had since 26 June 2018 with (a) Integrated Health Solutions Lothian and (b) NHS Lothian regarding the ventilation system at the new Royal Hospital for Sick Children, Edinburgh.			Closed

From: [Marinitsi, Katerina](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Crowe B \(Barbara\)](#); [Chief Medical Officer](#); [McLaughlin C \(Christine\)](#); [Colin Sinclair](#); [Cosens, Sorrel](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); [Gordon James](#); [Graham, Chris](#); [Jacqui Reilly](#); [Joyce, Alex](#); [Judith Mackay](#); [Little, Kerryann](#); [McMahon, Alex](#); [Nicoll, Nadine](#); [Peter Reekie](#); [Roche R \(Rowena\)](#); [Trotter, Audrey](#); [Walker, Anna](#)
Cc: [Graham, Chris](#)
Subject: RHCYP, DCN and CAMHS Oversight Board - 5th September 2019
Date: 04 September 2019 10:16:35
Attachments: [AGENDA RHCYP&DCN Oversight Board 190905.docx](#)
[2_RHCYP OB 29-08-19 Minutes - Draft Final.doc](#)
[6.1 RHCYP DCN migration dependencies and programming 20190903.docx](#)

Dear All

Please find attached Agenda and papers for the RHCYP & DCN Oversight Board on Thursday 5th September.

If you are not attending in person, you can connect to this meeting by dialling [REDACTED] and entering participant code [REDACTED]

Kind Regards,
Katerina

Katerina Marinitsi | Support Officer | NHS Lothian Corporate Governance Team | Waverley Gate | 2-4 Waterloo Place | Edinburgh, EH1 3EG | [REDACTED]

The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service. For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 5 September 2019, 8:00 – 9:30am

Venue: Room 5, Waverley Gate, EH1 3EG

AGENDA

1.	Chair's Welcome and Introductions	CMc	V
	Apologies:		
2.	Minutes of previous meeting – for Approval	CMc	*
3.	Matters Arising		
	3.1 Haematology-oncology requirements	TG	V
	3.2 HFS and HPS report: NHS Lothian RHCYP & DCN Review	GJ	#
4.	Technical Reviews progress		
	4.1 Ventilation	BC/GJ	
	4.2 Water quality	BC/GJ	
	4.3 Drainage	BC/GJ	
	4.4 Fire	BC/GJ	
	4.5 Electrical	BC/GJ	
	4.6 Medical gases	BC/GJ	
5.	Contract and Commercial Progress	SG	V
6.	Programme / Occupation Timelines	TG	*
	6.1 Migration dependencies and programming		
7.	Communications		
	7.1 Staff communications	JM	V
	7.2 Requests for information	SC	V
8.	Any Other Competent Business		
9.	Date of Next Meeting	All	V
	12 September 2019, 08.00-09.30, Room 5, Waverley gate		

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 29 August 2019 in Media 2 at St Andrew's House, Edinburgh.

Present: Ms C. McLaughlin, Chief Finance Officer, Scottish Government (chair); Ms T. Gillies, Medical Director, NHS Lothian; Ms S. Goldsmith, Director of Finance, NHS Lothian; Mr P. Reekie, Chief Executive, Scottish Futures Trust; Dr C. Calderwood, Chief Medical Officer, Scottish Government and

Present by Telephone: Professor A. McMahon, Nurse Director, NHS Lothian; Professor F. McQueen, Chief Nursing Officer, Scottish Government; Dr Gregor Smith, Deputy Chief Medical Officer, Scottish Government

In Attendance: Mr B. Currie, Project Director, NHS Lothian; Mr G. James, Director of Facilities, Health Facilities Scotland; Eddie McLaughlan, Assistant Director, Engineering, Environment and Decontamination, Health Facilities Scotland; Ms R Roche, Health Finance Division Scottish Government; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

In Attendance by Telephone: Professor J. Reilly, Lead Consultant, Infection Prevention and Control, Health Protection Scotland; Ms Mary Morgan, Director of Strategy, Performance and Service Transformation, NHS National Services Scotland; Mr Gordon Archibald, Joint Staff Side Representative;

Apologies: Ms J. Mackay, NHS Lothian Director of Communications; Mr C. Sinclair, Chief Executive, NHS National Services Scotland; Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side) and Alan Morrison, Capital Accounting and Policy Manager, Scottish Government.

The Chair welcomed members to the meeting and members introduced themselves.

The Chair stated that as there had been a number of reports produced over the previous week, showing a good pace of work, the focus of today's meeting would be on the NSS Health Facilities Scotland & Health Protection Scotland draft report; Critical Care Position; Haematology and Oncology position as well as the water and ventilation issues.

1. NSS Health Facilities Scotland & Health Protection Scotland 3rd Draft Report

Gordon James and Jacqui Reilly ran through draft report and key issues.

- 1.1 It was noted that this was the 3rd draft report with a view to issuing the final draft report on 4th September 2019. This draft had been shared with Scottish Government colleagues on 23 August 2019. There had also been a meeting with NHSL on 26 September 2019 to go through the report and consider suggested changes, terminology and any references to contractual positions.

1.2 There was discussion and consideration of the 4 Sections of the report and the status of key findings which relate to management and assurance; water systems; drainage, and ventilation.

1.3 Management and Assurance Specific Points

- 1 Some reporting mechanisms are not in place at this time and there needs to be work done to align to the Scottish Health Technical Memorandum (SHTM) suite of guidance. Mrs Goldsmith confirmed that NHSL were keen to work to best practice and would look for HFS support to achieve this and close any gaps. The Assurance work would be across all NHSL facilities not just the RHCYP+DCN.
- 2 Prioritisation – Noted that issues identified were not show stoppers and actions would be developed and implemented ahead of occupation.

NHSL/HFS

1.4 Water Systems Specific Points

- 1 Pseudomonas prioritised actions to be taken prior to occupation.
- 2 Some technical points around infection control to be phrased in a more precise way
- 3 How do the key issues noted align to the comment that there are no major issues to water supply.
- 4 More detail needed from Mr James on the changes to be made in relation to widespread fungal and mould contamination. Otherwise actions are underway to address the rest of the priority areas.
- 5 Next Water Workshop to be held on 4th September 2019.
- 6 There is a need to recognise that all of this information will be in the public domain – for public and other professionals reference back to infection control guidance or standards needs to be clear.
- 7 Mr James to review report wording and focus between water and ventilation issues.
- 8 It was recognised that most people would read the key issues report in isolation of the main report so would not appreciate the full context, in particular around there being no systematic water issues. For this reason, consideration to be given to how each issue is categorised and described in one place.
- 9 It would be helpful to see the process of how actions taken allowed the status of each of the key issues to get to the position where these would be at an acceptable level for the hospital to open. Report to include current key issues, mitigation actions and resulting residual issues and categorisation.

GJ

1.5 Drainage Specific Point

- 1 Written confirmation awaited of verbally provided information.

1.6 Ventilation Specific Points

- 1 Literature review now complete - demonstrated limited and sub optimal evidence around air changes and clinical outcomes. Most evidence had been expert opinion, modelling and outbreak reports
- 2 Need now for some risk assessment at RHCYP+DCN on a ward by ward level around air changes. Infection Control team has started assessment of all rooms and this should be complete by the end of next week.
- 3 Risk Assessments to be complete before any broader review or commissioning group work.
- 4 Air changes is not a specific hurdle to get over but is the level generally found to be suitable in the majority of developed countries.
- 5 Buildings over last few years are much more air tight than used to be, 4 or 6 air changes per hour is not a lot of ventilation versus an old style 'leaky' building
- 6 Air changes are covered by guidance not standards. Guidance states air changes can be a combination of mechanical and naturally ventilated but there has to be an element of control about it.
- 7 NHSL did not make a decision to move to 4 air changes per hour. 6 air changes by multi-modes was accepted at the point of the settlement agreement.
- 8 Plus 2 air changes would be acceptable but at moment there is no confidence that there is 2 being achieved through other mechanisms.
- 9 Extremely difficult to test natural ventilation given the presence of lots of variables
- 10 All single rooms have natural ventilation
- 11 Bypass Arrangements if any Air Handling Unit fails – piece work to demonstrate what happens with isolation rooms in such a situation. Waiting for Multiplex to demonstrate how this works in practice.
- 12 NHSL is struggling to achieve the necessary engagement from Multiplex around the needed changes signalled which NHSL would agree to. There had been supply change challenges and progress is at an impasse until Multiplex sort out their own liabilities.
- 13 IHSL position needs to be formalised
- 14 Critical Care Position - Commercial paper concluded NHSL would not provide any waiver to Multiplex given the experience of engagement over the last 2 or 3 weeks, NHSL would now progress the formal board change process for critical care.

1.7 Other areas: Fire - National Fire Adviser from Caledonian University on site 29th and 30th August 2019 – work progressing, timescale remains 4 to 6 weeks

1.8 Other areas: Electrical and Medical Gases - work on site complete report awaited.

2. **Haematology / Oncology Provision for Children in RHCYP/DCN**

2.1 Miss Gillies reported that the work around this area remained ongoing and therefore this paper was confidential and not for wider circulation. The information provided in the paper followed on from the question raised by Professor McQueen at the previous oversight board meeting.

- 2.2 The paper was noted. Miss Gillies added that she had discussed with one of the clinical lead providers about who goes into what setting, how this is assessed and what the intended clinical practice was to be. This information formed the way in which it was intended to occupy wards and isolation areas.
- 2.3 Mrs Goldsmith made the point that it had been suggested to issue a board change now for haematology. This would give IHSL 15 working days to come back. This would mean 2 separate board changes being submitted at the same time.
- 2.4 It was recognised that there could be more detail around critical care in the NSS Health Facilities Scotland & Health Protection Scotland report. The Chair suggested Mr James take account of this as to whether this would be within the scope set out for the report. There was discussion on the most appropriate approach to ensure clear categorisation of each issue within the report and if the report should reference things going on outside advice to NHSL. Mr James would reflect on this also.

GJ

3. Minutes of Previous Meeting – 22 August 2019, for approval

- 3.1 The minutes were approved subject to clarification at paragraph 5.1 that the 7 board changes related to water only.

4. Matters Arising

- 4.1 Cabinet Secretary Briefing
 4.2 HFS Literature Review on Ventilation
 4.3 Requirements for Neutropenic Patients

- All covered in previous discussion above.

- 4.4 Staff communications - See 9.1 below

5. Technical Reviews

- 5.1 Covered in previous discussion above.

6. Commercial Progress

- 6.1 Covered in previous discussion above.

7. Migration Planning

- 7.1 Clinical risk assessment of the potential move to Children's Outpatient services in the new hospital in advance of inpatient and associated services - Miss Gillies stated that there was too much risk to manage working across a split site and moving some services ahead of other services. It was noted that DCN could move in one block and all children services also in one block.

8. Programme / Occupation Timelines

- 8.1 Mr Currie to update the timelines document and circulate. It was noted that the timelines referred to duration and did not specify calendar dates for what would happen when.

BC

9. NHS Lothian Executive Steering Group (formerly Incident Management Team)

- 9.1 Terms of Reference - The circulate terms of reference for the group were noted.

10. Communications

- 10.1 Mrs Goldsmith confirmed that the staff letter cleared after the previous meeting was still to be issued and it was likely that this would now be held until any information around the proposed board changes could be added. A revised letter would be drafted for next week with a view to being cleared next Thursday (5th September 2019).

- 10.2 Tracker of requests for information – Ms Cosens stated that in relation to FOIs there were a couple of points that she would clarify with Mr Morrison. The Chair pointed out that it would be helpful if the themes around FOI requests could be shared.

SC/AM

11. Any Other Business

- 11.1 Terms of Reference and Membership – To add Mr Archibald as Staff Side deputy to the membership.

SC

12. Date of Next Meeting

- 12.1 The next meeting of this group would take place at **8.00 am on Thursday 5 September 2019, Meeting Room 5, Waverley Gate**. It was agreed that future meetings would be from **8.00 - 9.30 am** and meeting invites updated.

NHS Lothian - Royal Hospital for Children and Young People & Department of Clinical Neurosciences

NHS National Services Scotland – Review of: Water,
Ventilation, Drainage and Plumbing Systems

CONFIDENTIAL & DRAFT



September 2019
Version D0.20

Contents

1.	Executive Summary	3
1.1	Overview	3
1.2	Summary of findings.....	4
2.	Review methodology	5
2.1	Review process	5
2.2	Standards and Guidance	5
2.3	Reporting methodology	7
3.	Analysis of information provided	8
3.1	Information provided	8
4.	Findings	10
4.1	Management and assurance	10
4.2	Ventilation	11
4.3	Water.....	16
4.4	Drainage and Plumbing	20

1. Executive Summary

1.1 Overview

A decision was taken on 2 July 2019 to delay moving to the new Royal Hospital for Children and Young People & Department of Clinical Neurosciences (RHCYP & DCN) on 9 July. This followed an inspection of the facility which raised concerns regarding the ventilation arrangements for critical care beds and other areas of the hospital. NHS National Services Scotland (NSS) received a commission from Scottish Government to undertake an external series of checks, led by Health Facilities Scotland (HFS) and Health Protection Scotland (HPS), to ensure that the relevant technical specifications and guidance applicable to the new hospital have been followed and are being implemented.

The objectives of the review in relation to RHCYP & DCN were:

- To provide a report by September 2019 to Scottish Government on whether the relevant technical specifications and guidance applicable to the RHCYP & DCN are being followed and implemented.
- Where relevant technical specifications and guidance have not been followed, identify necessary remedial actions.

Given the specific focus on the control of Healthcare Associated Infections (HAI), the review concentrated on a system wide approach for ventilation, water and drainage systems. The process involved site visits, sample inspections and a targeted review of available documentation.

From an early stage of the review process, it was apparent that elements of the Critical Care Unit (CCU) ventilation system required redesign and modification to ensure compliance with guidance. Additionally, Haematology / Oncology is also being reviewed as a result of the review as specific risks were identified. NSS provided advice relating to the design instruction for elements of the CCU ventilation system and similar advice will be provided in relation to Haematology / Oncology.

The review commenced on the 9th July 2019 with this final report published in September 2019 for consideration by the established RHCYP & DCN Oversight Board.

1.2 Summary of findings

The findings have been collated based on information provided by NHS Lothian and on-site reviews of the RHCYP & DCN. Expert advice was sought within the key focus areas of ventilation, water and drainage systems and their overarching management and assurance processes. The following table outlines the status of key findings:

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Management & Assurance	Omissions identified in key roles within the management structure, ease of access to information and prioritisation of building system alarms.	-	-	1	2	-
Ventilation Systems	Remedial action is required within both general and theatre ventilation systems. Critical Care redesign was already being considered separately by the Board. Haematology / Oncology is also being reviewed as a result of the review as specific risks were identified. Risk assessments are underway as part of the general ward risk assessments being done locally requested as part of the review.	-	1	2	1	-
Water Systems	Independent testing identified no widespread contamination of the water systems, however, remedial action is required on a number of water system areas as well as system wide disinfection prior to occupation.	-	1	2	-	-
Drainage & Plumbing	The drainage system has multiple redundancies in place; active monitoring is required. Elements of plumbing require monitoring and routine disinfection.	-	-	-	1	-

The following definitions were used to categorise the findings:

Priority	Definition
1	Significant – Concerns requiring immediate attention, no adherence with guidance
2	Major – Absence of key controls, major deviations from guidance
3	Moderate – Not all control procedures working effectively, elements of noncompliance with guidance
4	Minor – Minor control procedures lacking or improvement identified based on emerging practice
5	Observation and improvement activity

Overall remedial action is required to be undertaken within the ventilation and water systems prior to the occupation. Following acceptance of this report, the review team are ready to assist the NHS Lothian team in developing a programme of activity and remedial actions to allow a timeline to be constructed which could inform the decision to migrate towards occupancy on a phased basis.

2. Review methodology

2.1 Review process

2.1.1 The review process initially took place between 9th July and 30th August 2019. For this report no further information has been considered after 30th August 2019.

2.1.2 The approach taken was to gather information relating to the services detailed in section 1.2 in drawing, specification, report and oral form and to compare these to the standards and guidance appropriate for the building type, drawing conclusions on whether what is provided matches the requirements. In addition to existing standards and guidance, learning generated from recent experience and national and international guidance and expertise was also used to inform the review. This learning will also inform future guidance development in Scotland.

2.1.3 The review has included

- Establishing a brief.
- Establishing the baseline data to allow the brief to be met.
- Preparation of several question sets to get a greater understanding of the project.
- Preparation and management of detailed question sets and information requests.
- Commissioning UK topic experts to review certain aspects of the project.
- Several site visits.
- Several meetings.
- Analysis of data.
- Analysis of microbiology results related to the hot and cold water systems.
- A rapid review of the literature and international guidance on ventilation systems.

2.2 Standards and Guidance

2.2.1 HFS currently provides a range of advisory and delivery services across a wide variety of topics from a portfolio which covers the built estate, engineering and environment and facilities management. With some exceptions these services are largely advisory in nature, identifying best practice and developing national guidance and standards.

2.2.2 HPS currently provides advice and guidance on all aspects of health protection nationally in Scotland, inclusive of expert advice and guidance on the topic of Healthcare Associated Infections (HAI) and antimicrobial resistance. It maintains and continues to develop a practice guide (National Infection Prevention and Control Manual – NIPCM) as well as a HAI Compendium of all extant guidance and policy appropriate for use in NHSScotland. Like HFS, these services are largely advisory in nature, identifying best practice and developing national guidance and standards. The NHSScotland NIPCM was first published on 13 January 2012 as mandatory guidance, by the Chief Nursing Officer (CNO (2012)1), and updated on 17 May 2012

(CNO(2012)01-update). The NIPCM provides guidance for all those involved in care provision and should be adopted for infection, prevention and control practices and procedures. The NIPCM is mandatory policy for NHSScotland.

The authority of guidance produced by NSS and other national organisations e.g. Healthcare Improvement Scotland is best described by the definitions outlined below (SHMT 00 – Best practice guidelines for healthcare engineering):

Regulations are law, approved by Parliament. These are usually made under the Health and Safety at Work etc Act following proposals from the Health & Safety Commission. Regulations identify certain risks and set out specific actions which must be taken.

Approved Codes of Practice give advice on how to comply with the law by offering practical examples of best practice. If employers follow the advice, they will be doing enough to comply with the law.

Approved Codes of Practice have a special legal status. If employers are prosecuted for a breach of health and safety law, and it is proved that they did not follow the relevant provisions of an Approved Code of Practice, they will need to show that they have complied with the law in some other way, or a court will find them at fault.

Standards (British or European), institutional guides and industry best practice play a large part in how things should be done. They have no direct legal status (unless specified by Regulations). However, should there be an accident; the applied safety practices at the place of work would be examined against existing British or European Standards. It would be difficult to argue in favour of an organisation where safety was not to the described level.

Guidance is issued in some cases to indicate the best way to comply with Regulations, but the guidance has no legal enforcement status.

- 2.2.3 Whilst guidance is deemed not compulsory by HSE (not legally enforceable), where compliance with guidance is specified in a contract, it becomes a contractual requirement. Therefore, any permitted deviation from it would be expected to follow a formal process with input from all relevant parties with clarity around how the outcome was reached, including risk assessments where appropriate and sign off by all those authorised to approve it.
- 2.2.4 The terms of standards and guidance are used in the report to refer to the publications setting out the expectations about the level of service to be provided, including legislation, approved codes of practice and guidance. Compliance with guidance is reported on, regardless of whether this implies a contractual requirement, as contract compliance is out with the scope of this report. For the avoidance of doubt we have not considered the project agreement and contractual compliance in accordance with its terms as this is subject to a separate review commissioned by Scottish Government.
- 2.2.5 The contract model for this project is known as a Non Profit Distribution (NPD) model, which amongst other things is intended to deliver benefits such as:
- Single delivery mechanism.
 - Whole life costing.
 - Design efficiencies.
 - Lifecycle maintenance.
 - Improved service provision.

Based on the Board's Construction Requirements (BCRs), including which guidance is to be followed and other parameters, the Special Purpose Vehicle (SPV) develops the design and agrees operational (clinical) functionality with the Board before construction commences and during the Reviewable Design Data process (RDD). It is usual to have an Independent Tester (IT) involved in the project. The IT is a joint appointment to the SPV and the Board. The IT role is to certify the completion of the building as referenced in the project agreement and completion criteria of the contract.

2.3 Reporting methodology

2.3.1 For clarity this report organises issues with each of the systems considered into a priority rating, identifying the importance of deviations from what would be expected based on the standards and guidance. The distinction between the categories is based on NSS judgement of the degree of non-compliance and the implications of that non-compliance. The criteria used are described below.

Priority	Definition
1	Significant – Concerns requiring immediate attention, no adherence with guidance
2	Major – Absence of key controls, major deviations from guidance
3	Moderate – Not all control procedures working effectively, elements of noncompliance with guidance
4	Minor – Minor control procedures lacking or improvement identified based on emerging practice
5	Observation and improvement activity

3. Analysis of information provided

3.1 Information provided

- 3.1.1 The support of the NHS Lothian project team in responding to questions and accessing data is gratefully acknowledged.
- 3.1.2 At the time of writing the majority of the information required had been received and whilst the timescale for the review means a selective targeted review of documentation was necessary, the main themes appear clear. However, some information remains outstanding, particularly information requested from Integrated Health Solutions Lothian (IHSL)¹, and NHS Lothian colleagues continue to pursue a response.
- 3.1.3 The Special Purpose Vehicle (SPV), Contractor, sub-contractors, Facilities Management Contractor and Independent Tester were not directly involved in the production of this report, nor were they requested to verify its contents and they may have additional information not considered here. It is acknowledged that some of the information provided by NHS Lothian came directly from these sources.

Ventilation systems

- 3.1.4 Prior to this review NHS Lothian commissioned a specialist contractor to validate the performance of ventilation systems within the facility and their report identified that elements of the ventilation system in CCU was not in accordance with current guidance (SHTM 03-01). Whilst this report notes that finding and NSS has been asked to support NHS Lothian in achieving a solution in compliance with guidance, this report focuses primarily on other ventilation issues.
- 3.1.5 Awaited is the explanation and validation of the ventilation strategy whereby areas with air handling units out of service for whatever reason are served by an adjacent air handling unit, which also continues to serve its own area.
- 3.1.6 The theatre ventilation appears not to have been installed in accordance with current guidance in respect to required pressure cascades in corridors and removal of contaminants from scrub areas. The Board has sought demonstration of compliance from IHSL in relation to issues identified.

Water systems

- 3.1.7 Whilst elements of the water testing carried out as part of this review are not detailed in current guidance, and NHS Lothian could not have been expected to be aware, lessons learned recently across health systems suggest that any potential pathogenic contamination found should be eradicated before patients and staff move in. Water test results in RHCYP & DCN indicate some fungi in the water, mainly at taps, as well as higher than anticipated total viable counts (TVC). The latter may be related to the fact that the building is unoccupied with only maintenance processes in place to ensure water turnover. In augmented care areas there is evidence of *Pseudomonas aeruginosa* found in some taps. There would appear to be no systemic contamination of the hot and cold water systems, rather, contamination has

¹ IHSL are the Special Purpose Vehicle (SPV)
September 2019

been found at outlets, and particularly outlets with complex interstices and organic components which can make them more susceptible to persistent contamination.

Drainage and plumbing systems

- 3.1.8 The drainage for the hospital utilises one gravity system and two pumped systems. The pumped systems are used to overcome gravity as they are installed below the local water table and level of the external drains. The main concern is the pumped system in the basement in the location of the kitchen. This system has multiple pump backups as well as alternative power supplies. The risk is that if these fail the kitchen drains will back up requiring the kitchen to close, which would have an impact on the services to the hospital. At this stage in the process there appears to be no alternative to locating the drainage system sump in the basement, at least without major structural alterations to the basement and courtyard. It appears that extensive use of standby equipment and power supplies is in place, such that multiple failures would need to occur to cause sewage to back up into the basement. Procedures for maintenance and repair have been extensively considered but will need to be tested in operation.

4. Findings

4.1 Management and assurance

Summary

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Management & Assurance	Omissions identified in key roles within the management structure, ease of access to information and prioritisation of building system alarms.	-	-	1	2	-

Main Findings

Priority	Review	Action Assessment
4	Structures and processes are not fully in place to assure the Board that the facility is being operated in compliance with contract requirements. These should be in place from the point where the building services referred to in this report are put into use.	NHS Lothian and IHSL should adopt the management and reporting processes as described in SHTM 00 - Best Practice Guidance for Healthcare Engineering and the SHTMs for each critical engineering service.
3	Some of the records and documents necessary for the effective and safe operation of the hospital could not be found. The document management system appears to lack a logical structure which will impact on the ability to readily find necessary information. Some of the sections contain none, or only part, of the documentation they should have as required by the Construction (Design and Management) Regulations 2015.	The Board should require IHSL to rectify the filing structure of the documentation and verify that the information contained is both complete and accurate as required by the Construction (Design and Management) Regulations 2015.
4	The alarms for the building are reportedly un-prioritised, resulting in a very large number of alarms potentially masking critical alarms.	Prioritise alarms to make most critical failures visible and manageable. Until alarms are prioritised, have procedures and staff in place to ensure critical alarms are not missed as per SHTM08-05 - Specialist services building management systems.

Detailed Narrative

- 4.1.1 Healthcare organisations have a duty of care to patients, their workforce and the general public to ensure a safe and appropriate environment. This requirement is identified in a wide range of legislation. At the most senior level within an organisation, the appointed responsible person should have access to a robust structure which delivers governance, assurance and compliance through a formal reporting mechanism.
- 4.1.2 The review identified that for both IHSL and NHS Lothian, there were omissions in the identification, appointment and definition of key roles in an effective management structure. Additionally, some records which are necessary to demonstrate compliance with appropriate standards and guidance remain outstanding.
- 4.1.3 The Board cannot pass its responsibilities under health and safety law to a third party. It can pass duties, but the responsibility for ensuring the safety of those accessing its premises remains with the Board. To discharge its duties, the Board should ensure appropriate structures, processes and personnel are in place to ensure that those responsible for operating the facility are doing so in compliance. The structures and processes set out in the Scottish Health Technical Memorandum (SHTM) suite of guidance, Statutory Compliance Audit and Risk Tool (SCART)² and Healthcare Associated Infection-System for Controlling Risk in the Built Environment (HAI_SCRIBE)³ produced by Health Facilities Scotland, should form the core of this. These arrangements should be in place as soon as practicable and prior to occupation of the RHYCP & DCN.

4.2 Ventilation

Summary

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Ventilation Systems	Remedial action is required within both general and theatre ventilation systems. Critical Care redesign was already being considered separately by the Board. Haematology / Oncology is also being reviewed as a result of the review as specific risks were identified. Risk assessments are underway as part of the general ward risk assessments being done locally requested as part of the review.	-	1	2	-	-

² SCART is a risk based tool used by Boards in NHS Scotland to measure their compliance against statutory and non-statutory position.

³ HAI_SCRIBE provides Built Environment Infection Prevention and Control information for Design Teams, Construction Teams, Infection Prevention and Control Teams and Estates & Facilities Teams, as well as an assessment process allowing the identification and management of infection control risks in the built environment.

Main Findings

Priority	Review	Action Assessment
2	<p>General Ventilation Systems - Provision for maintenance or plant failure in the ventilation systems has not been validated in accordance with SHTM 03-01 Ventilation for Healthcare Premises. The bypass arrangements and functioning of ward ventilation in the event of plant failure remains to be demonstrated.</p>	<p>Demonstrate efficacy of approach of utilising adjacent air handling unit to supply areas not served by failed plant.</p> <p>Commission and validate isolation rooms and general ward spaces in the event of supply by adjacent air handling unit.</p> <p>Engage clinical leads and Infection Prevention and Control colleagues in developing service provision strategies in the event of air handling plant failure.</p> <p>Confirm damper operation and compliance with fire requirements in bypass mode.</p>
	<p>Air handling units and ductwork contain numerous deviations from contract requirements (SHTM 03-01) and were found not to be clean despite having been presented for validation. Deviations include: loose internal cabling in the airflow, cable routes allowing air to bypass filters, air leakage at penetrations and possible fan replacement difficulties which need to be corrected</p>	<p>The ventilation systems throughout the hospital should be subject to a full snagging exercise and all defects rectified following which air handling units and ventilation systems are cleaned. All deficiencies identified in validation and specialist Consultant Engineer reports should be addressed as part of this.</p>
	<p>The general ward ventilation design is based on four air changes per hour mechanical ventilation plus a component of natural ventilation. With a few exceptions, the mechanical component has been validated. However, design and validation information for the natural component has not been proven.</p>	<p>Confirm that all areas served by this arrangement are suitable for categorisation as general ward areas or single rooms as listed in SHTM03-01a Appendix 1.</p> <p>Undertake an IPCT risk assessment ward by ward/ speciality specific in relation to the guidance.</p>
	<p>The pressure regimen detailed in the design, and reflecting the environmental matrix, will be affected by opening windows and the pressure between the room and the corridor, and therefore direction of air flow, cannot be relied upon when windows are open.</p>	<p>A full assessment of the services and patient population should be carried out and mechanisms for monitoring established.</p>

NHS Lothian RHCYP & DCN review

	<p>External doors to plant rooms</p> <p>Ensure that excessive gaps are removed and appropriate anti vermin measures are applied to all the doors and screens as per SHTM 03-01 and HFS Interim Guidance - Managing the Risk of Contamination of Ventilation Systems by Fungi from Bird Droppings – February 2019.</p>	
<p>Fire dampers in some locations cannot be adequately tested as duct access has not been provided. Also, locations of fire dampers and fire rated ductwork has been questioned in relation to the requirements of SHTM 03-01.</p>	<p>Provide access so all fire dampers can be readily visually inspected to verify operation. Review fire damper provision and fire rated ductwork and confirm appropriate provision</p>	
<p>Air intake location - Air intakes and opening windows are sited in the courtyard below the helipad and at the adjacent RIE. Information has not been provided on the impact of downdraft on air flows and pressures or entrainment of contaminants as per SHTM 03-01.</p>	<p>Demonstrate the effect of helicopter landing on air flows in ventilation systems with intakes below through measurement or modelling. This should include the air intakes of the RIE adjacent.</p>	
<p>3</p>	<p>Theatre Ventilation Systems - Scrub areas which are narrow and deep are unlikely to be scavenged effectively by theatre air changes and require alternative means of achieving removal of contaminants as per SHTM 03-01. The efficacy of the high level extract to achieve sufficient dilution of contaminants or entrainment of heavier than air water droplets is not demonstrated.</p> <p>Anaesthetic rooms 31 and 34 do not demonstrate a clean air flow path to reduce exposure of staff to gasses as per SHTM 03-01.</p> <p>Theatre utility rooms Extract ventilation means theatres have to be used in pairs and taking a theatre out of service may reduce the extract in utility room below the levels as per SHTM 03-01.</p>	<p>The ability of the single high level extract provided in deep plan scrub areas to effectively prevent contaminants being dispersed into theatres should be demonstrated and/or additional low level ventilation provided.</p> <p>Move ceiling supply to opposite side of room from extract. In room 30, move supply away from door.</p> <p>Add supplementary extract ventilation to allow for one theatre being out of service or plan for service impact following the loss of a pair of theatres. <i>NHS Lothian has advised that the appropriate pressure differentials</i></p>

3	<p>Isolation Room Ventilation Systems - are not served by a single ventilation system for each room as recommended in SHPN4 Supplement 1. The arrangement provided, where ventilation systems serve an area of the building including contained isolation rooms, has not yet been proven in the event of failure of an air handling unit and the implications for service impact are not yet understood.</p>	<p><i>are maintained when only one theatre is operation. Validation evidence is to be provided.</i></p> <p>Prove that bypass connections to adjacent ventilation systems will allow safe operation of both areas and / or explain service provision strategy for loss of each area including isolation rooms. Also include assurance on operational effectiveness e.g. the pressure differentials and air flows being maintained.</p> <p>Develop clinical service provision strategy to reflect the potential loss of up to 5 of the 19 isolation rooms on the failure of an air handling unit and confirm impact on service continuity.</p>
---	---	--

Detailed Narrative

- 4.2.1 The ventilation systems at RHCYP & DCN were considered in relation to legislation, guidance and the lessons learned from other recent similar projects which may have an impact on the patient group.
- 4.2.2 The principal legislation which is relevant to the ventilation systems is The Control of Substances Hazardous to Health Regulations 2002 (COSHH).
- 4.2.3 The principal guidance which is relevant to the ventilation systems is: Scottish Health Technical Memorandum (SHTM) 03-01: Ventilation for healthcare premises; and Scottish Health Planning Note 04 Inpatient Accommodation, Supplement 1 Isolation Facilities in Acute Settings.
- 4.2.4 Elements of the ventilation within Critical Care were identified by NHS Lothian's validation contractor, and verified in this review, to be not in accordance with the requirements of SHTM 03-01. NHS Lothian is working with IHSL to design a suitable solution to provide the conditions required within CCU. NSS has been asked by Scottish Government to support NHS Lothian to ensure that the system delivered is compliant with requirements.
- 4.2.5 The general ventilation for non-specialist applications, such as single/shared rooms in general wards, was identified by the Board's validation contractor as having lower air change rates than specified in SHTM 03-01, i.e. 4 air changes per hour as opposed to 6. During the review, NHS Lothian supplied information about a natural ventilation component, with some documents referring to a mixed mode ventilation system. However, IHSL advised that natural ventilation is not part of their design. NSS visited the site with specialist ventilation consultants who produced a report on the general ventilation systems and noted non-compliances with air handling unit provision and installation and pressure regimens, including several identified by the Board's validation contractor.

From an infection prevention and control perspective, there is low-quality to no evidence from outbreak reports and current guidance, respectively, to support minimum ventilation requirements. Therefore, it is not possible to make conclusive statements regarding the individual minimum ventilation parameters for inpatient care areas. A rapid review of the literature found limited clinical evidence to directly implicate air change rates alone in having a direct impact on the development of an outbreak or incidence of infection. Therefore, it is reasonable that, in the absence of evidence, healthcare design teams should continue to adhere to current national guidance. In the event of a deviation from the current recommended ventilation parameters, design teams should ensure that air changes per hour are maintained as close as possible to the recommended air changes per hour without compromising other aspects of the ventilation system requirements. In addition a full assessment of the services and patient population should be carried out and mechanisms for monitoring established. Caution is advised in relying on air change rates alone to provide adequate protection from infection; this is only one part of a multifactorial process involved in creating the appropriate airflow patterns with appropriate mixing and dilution of contaminants. Further research is required to look beyond air change rates to examine the effects that other factors such as supply and exhaust location, door position and motion, spatial orientation, surface composition, temperature, humidity, and air distribution patterns have on particle migration in clinical areas.

4.2.6 Theatre ventilation was identified by NHS Lothian's validation contractor as having some deficiencies. NSS visited the site with a specialist Consultant Engineer, who was lead author on the last three iterations of the ventilation HTM guidance. This identified and confirmed several deficiencies, including lack of evidence about the efficacy of the ventilation in the scrub rooms; deviating from the standard models recommended in SHTM 03-01. The current design of the theatre ventilation system is such that maintenance might entail loss of two theatres rather than one. Additionally, there is an overuse of flexible ductwork, potentially causing problems with balancing theatre ventilation. All issues identified are rectifiable, and as such should not prevent the theatres being put into use following remedial action.

4.2.7 The building contains a number of Positive Pressure Ventilated Lobby (PPVL) isolation rooms for which the guidance, SHPN4 supplement 1, recommends that each isolation room should ideally have its own air handling unit, such that if an air handling unit fails, or is offline for maintenance, only one isolation room is out of commission.

The building, as built, has an air handling unit serving each area of the building, including any contained isolation rooms. This means that up to five out of 19 isolation rooms may be out of action in the event of an air handling unit failure. NHS Lothian have advised that the strategy for maintenance is that a bypass duct will be used to feed an area from an adjacent air handling unit. This mode has not yet been proven and the successful operation of isolation rooms and other spaces in the event of use of this bypass strategy has not been demonstrated. NHS Lothian needs to consider in its clinical service model how each isolation room and ward will function in the event of loss of an air handling unit. This will require full design and validation of air change rates, pressure differentials and direction of air flow for each area in this mode, as well as predicted times to rectify any plant failure.

4.2.8 IHSL has advised that the design of the isolation rooms is as per Scottish Health Planning Note (SHPN) 04-01 Supplement 1: In-patient Accommodation: Options for
[September 2019](#) [D0.20](#) [Page 15 of 21](#)

NHS Lothian RHCYP & DCN review

Choice Supplement 1: Isolation Facilities in Acute Settings. This guidance notes that isolation rooms ideally should have its own air handling unit (AHU) and the ventilation systems should be as robust as possible so that standby fans are not required. The guidance acknowledges that in high rise buildings a common supply and extract may be the only feasible solution with duct branches fitted with spring close gas tight dampers in the event of failure. The height of this building is less than that defined in the Scottish Building Standards Technical Handbook - Non-Domestic, for high rise (18m). The solution at RHCYP & DCN does not include the gas tight dampers at ward level as required by the validated design parameters detailed in SHPN 04-01 Supplement 1.

- 4.2.9 Additional observations during a site visit by NSS have highlighted potential concerns linked to the location of some high risk wards, including Haematology / Oncology in relation to the helipad. A demonstration of the effect of helicopter landing/take-off on airflows needs to be completed by NHS Lothian.

4.3 Water

Summary

Review	Summary Assessment	No. of Issues per priority				
		1	2	3	4	5
Water Systems	Independent testing identified no widespread contamination of the water systems, however, remedial action is required on a number of water system areas as well as system wide disinfection prior to occupation.	-	1	2	1	-

Main Findings

Priority	Review	Action Assessment
4	Water Services Critical Care - Pseudomonas found in taps, in critical care areas. (SHTM 04-01 Part A published in July 2014)	All taps (not just TMT/TMV ⁴) to be disinfected and retested. Inspect and replace, as appropriate, taps, tap components and pipework. Replace tap strainers and cartridges in CCU TMT taps.
3	Water Services Non Critical Care - Swarf and biofilm found in tap strainers, contrary to SHTM 04-01 Water safety for healthcare premises.	Replace tap strainers in all areas.

⁴ TMT – Thermostatic Mixing Taps, TMV – Thermostatic Mixing Values
September 2019

NHS Lothian RHCYP & DCN review

2	<p>Showers - Shower hose lengths do not comply with Scottish Water bye laws and guidance in SHTM 04-01 Water safety for healthcare premises.</p>	<p>Shorten hose length, or add retaining ring, to ensure that shower head cannot reach WC or drain Disinfect showers, hose and drain after rectification.</p>
3	<p>Water General - Testing has found some fungal / mould contamination. <i>Legionella</i> risk assessment actions not recorded as required by HSE Approved Code of Practice and Guidance L8 - Legionnaires' disease. The control of <i>Legionella</i> bacteria in water systems. <i>Legionella</i> risk assessment insufficient to reflect system contamination in general. Those responsible for the system have a responsibility under the Control of Substances Hazardous to Health Regulations 2002 (COSHH) to prevent exposure to microorganisms.</p> <p>Designated roles and responsibility as per SHTM 00 Best practice guidance for healthcare engineering.</p> <p>Water tanks as per SHTM 04-01 Water safety for healthcare premises.</p> <p>Hot and cold water temperatures / flushing. SHTM 04-01 Water safety for healthcare premises</p> <p>Filtration Plants</p>	<p>The water system should be disinfected and re-tested.</p> <p>The <i>Legionella</i> Risk assessment Feb 2019 identified a range of actions. The Action Tracker does not demonstrate that the issues raised have been resolved or a timeline provided for resolution. Record rectification of actions. The risk assessment is heavily focussed on <i>Legionella</i> and not taking into account other organisms in line with patient type that will occupy the building. Broaden to reflect system contamination in general. Develop analysis categorisation of patient type and consideration to susceptibility for each area.</p> <p>The current Responsible Person (RP) has not been appointed in writing and uncertain as to whether received RP training. Additionally, has no previous experience of healthcare.</p> <p>To be inspected. The Raw Water and Filtrate water tanks are interconnected at the drain. These must be separated.</p> <p>There was an issue with raised cold water temperatures during the boiler outage – this requires investigation.</p> <p>From lessons learned by NSS in recent work, microbiological growth potential was identified as part of the Backwash cycle. Consideration should be given to Chlorine dioxide addition to backwash water tank to counter microbiological and biofilm development on filters.</p>

Instant Boil Taps and Rise and Fall Baths

These were found to be contaminated and need to be disinfected and tested to demonstrate safe water delivery as per SHTM 04-01 Water safety for healthcare premises.

Detailed Narrative

- 4.3.1 The domestic hot and cold water services (DHCWS) at RHCYP & DCN were considered in relation to legislation, guidance and the lessons learned from other recent similar projects which may have an impact on the patient group.
- 4.3.2 The legislation which is relevant to the water system are Public Water Supplies (Scotland) Regulations SSI 2014/364 and The Control of Substances Hazardous to Health Regulations 2002 (COSHH). In relation to COSHH, the Health and Safety Executive (HSE) note that "*Micro-organisms are covered in COSHH by the term biological agents. These are defined as any micro-organism, cell culture, prion or human endoparasite whether or not genetically modified which may cause infection, allergy, toxicity or otherwise create a hazard to human health.*"
- 4.3.3 The guidance which is relevant to the water system are HSE Approved Code of Practice L8: Legionnaires' disease. The control of *Legionella* bacteria in water systems; HSE 274: Legionnaires' disease: Technical guidance; Scottish Healthcare Technical Memorandum (SHTM) 04-01: Water safety for healthcare premises and HPS document: *Pseudomonas aeruginosa* routine water sampling in augmented care areas for NHS Scotland (*published in draft September 2018*).
- 4.3.4 From initial inspection of the Independent Tester's reports, there is evidence that areas of the pipe work systems were installed without end protection. This may have allowed dust and organic material to enter the pipe system and this may not have been eradicated by the disinfection process.
- 4.3.5 From the construction commissioning records contained within the electronic operating and maintenance document repository, it is noted that there is no record of leachate flushing of the system.
- 4.3.6 The Facilities Management (FM) contractor Bouygues FM (BFM) commissioned a *Legionella* risk assessment when they took possession of the site from the construction contractor. This report has yet to be provided and will be reviewed and assessed when presented.
- 4.3.7 NHS Lothian commissioned a specialist safety consultant in May 2019 to conduct an overall safety audit of the RHCYP & DCN. Contained within their report is a section on the water system. They assessed the risk condition of the system as "high" mainly as a result of BFM's *Legionella* risk assessment, the lack of evidence of flushing across the system, the lack of maintenance on shower heads and outstanding information on the water management responsibilities by BFM.
- 4.3.8 NHS Lothian separately commissioned water testing from a specialist water safety consultant, on 12th July 2019, which indicated that certain tap outlets within the augmented care areas were positive for *Pseudomonas aeruginosa*. This report also

NHS Lothian RHCYP & DCN review

noted high Total Viable Counts (TVC). In addition, *Pseudomonas aeruginosa* was recorded in the Instant Boil Taps and the rise and fall baths. The consultant concluded that there was no evidence of wide spread contamination of the water system.

4.3.9 As part of the NSS review, a specialist water consultant carried out water tests around the facility on 18th July 2019 to determine if there were any significant issues.

4.3.10 In summary the NSS specialist contractor concluded from their investigations and as a result of the microbiological samples taken by them and others that: -

- There was no indication that the water system (as a whole) was cause for concern referenced to existing guidance.
- There was no atypical mycobacteria found in the 60 samples taken (mainly from neonatal and intensive care areas); however, there was some Gram-negative activity and mould present.
- Concern was expressed regarding the management of the water system given the lack of occupancy and turnover of the water system.
- The management aspects of the water system by IHSL's FM contractor were not satisfactorily demonstrated.
- The system showed signs of biofilm and swarf contamination, particularly at the taps.
- Shower heads and hoses do not meet the required standards with respect to length.
- During the site investigation it was noted that the cold water temperatures were rising and the hot water temperatures decreasing. In discussions with BFM it was discovered that a boiler had tripped, together with the circulating pumps, and the other boilers did not come on as they should have. The result of this was that the temperature of the water for both hot and cold domestic water systems fell into the *Legionella* growth band for approximately a 12 hour period.
- The NSS commissioned consultant engaged noted that at commissioning only 5% sampling of the number of taps across the whole hospital was completed.
- The management strategy for the Kemper system (water temperature regulation system) requires close control to ensure that water is not "dumped" unnecessarily in an effort to control cold water temperatures.

4.3.11 The tests for atypical mycobacteria proved negative. However fungi were identified in 22% of the samples taken in the water system based on a sample size of 60 taps from a population of c2000. These are not required to be tested as part of the current guidance. However, based on NSS experiences at other hospital sites it was considered prudent to have these tests done.

4.3.12 As a direct result of lessons learned by NSS from work undertaken after the construction of RHCYP & DCN, it is recommended that components parts of the water system are replaced and the originals tested, particularly those which have proven to be problematic.

4.4 Drainage and Plumbing

Summary

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Drainage & Plumbing	The drainage system has multiple redundancies in place, however, active monitoring is required. Elements of plumbing require disinfection.	-	-	-	1	-

Main Findings

Priority	Review	Action Assessment
4	Sinks drains	Initial testing indicates that these are not significantly contaminated, however the horizontal drain and protruding seal means they retain stagnant water and they need to be disinfected periodically prior to and post occupancy to maintain their condition. From lessons learned, there should be a system of periodic testing and disinfection for wash hand basins with particular focus on augmented care areas.
	Bottle traps	There would appear to be an inconsistency of installation and potential of back-feed from trap to drain. This requires review and rectification.
	Trough Sinks	From previous projects, the drains in trough sinks have been identified as high risk potential due to high microbiological activity. This requires review and treatment strategy considered.
	Pumped Drainage	The internal pumped sewage drainage system presents the potential for sewage to back up through basement drains on pump failure and will require active monitoring.

Detailed Narrative

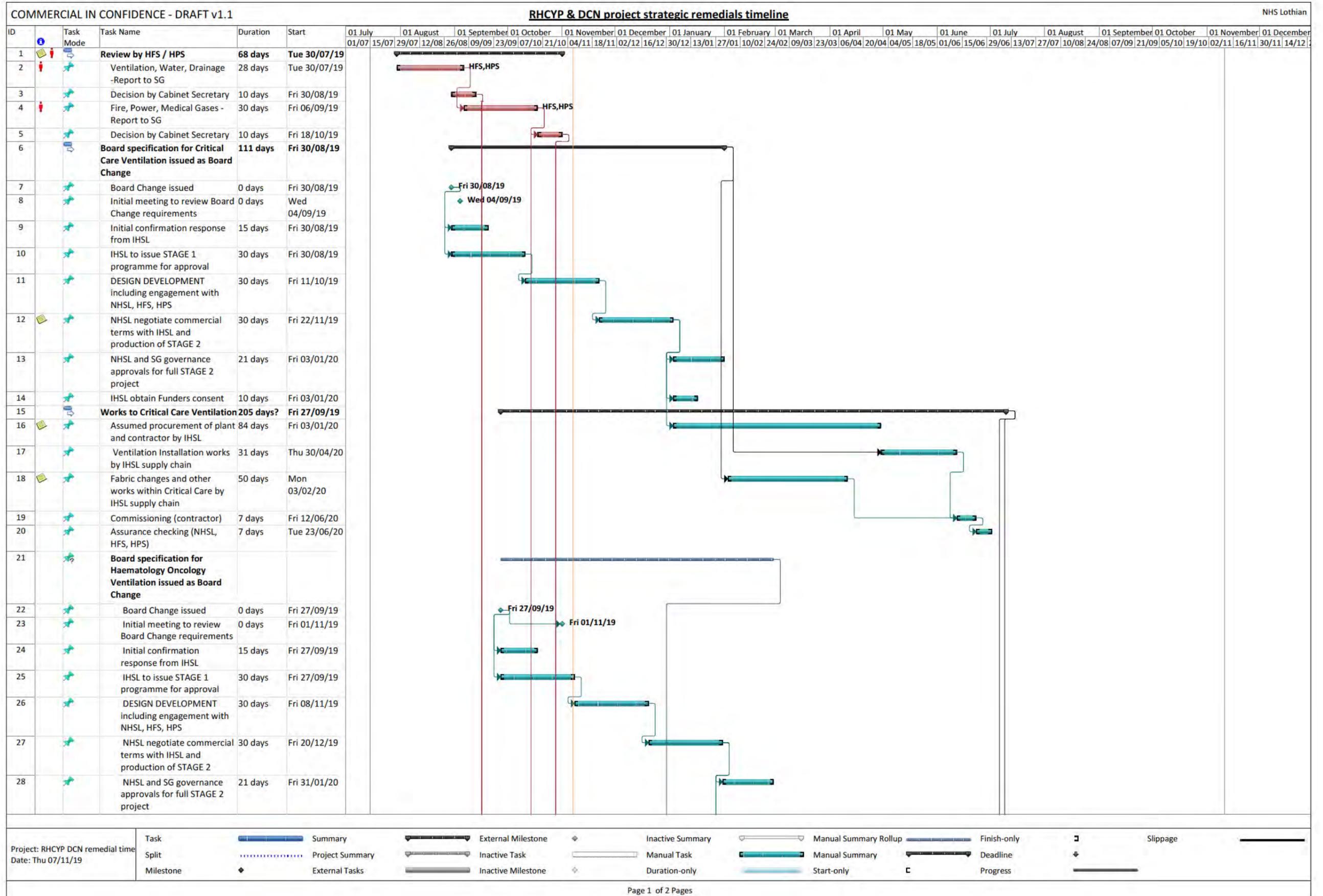
- 4.4.1 The range of clinical and non-clinical wash hand basins chosen by the SPV are from a recognised manufacturer of healthcare drainage products. There is no facility to

NHS Lothian RHCYP & DCN review

connect the tap on the sink as the taps are panel mounted. The drain connection is at the rear of the sink bowl and there is no overflow, all as per guidance.

- 4.4.2 The connection on to the wash hand basin from the drain has proven to be an area where water does not drain freely as the connection reduces the diameter of the drainage outlet and creates a dam effect. Lessons learned by NSS from other projects, after commencement of the construction of RHCYP & DCN, have shown that various organisms were grown from this area in some circumstances.
- 4.4.3 The waste connection from the sink to the main above ground drainage system is via “bottle trap” rather than a conventional “U-bend”. Lessons learned by NSS from other projects, after commencement of the construction of RHCYP & DCN, identify this arrangement as a risk for bacterial growth.
- 4.4.4 The plumbing system is connected to the main sewage system via three drainage systems. The first is a gravity fed system. The second is a sump pump arrangement in the external courtyard. The third is a sump in the basement area of the hospital. The rationale behind the use of the sumps is that the basement areas are below the water table and any waste material has to be pumped up and out to the sewer.
- 4.4.5 The Independent Tester has noted in their report of 30th June 2017 that an issue had been raised regarding the capacity of the basement sump. In further investigation this appears to be related to the fact that more areas/floors were connected to this system than NHS Lothian had originally been made aware of.
- 4.4.6 The main drainage risk lies with the basement sump. It has a resilience system of back-up power supplies, multiple pumps and alarm systems to three different locations. There are two discharge pipes to sewer, reducing the risk of blockage and the consequent risk of sewage backing up into the basement in the proximity of the kitchen. In addition, if a failure occurred or a maintenance activity was to take place, the location of this sump chamber would mean that all traffic flow through the basement corridor would have to be halted to permit a safe operating procedure to be implemented.
- 4.4.7 The external courtyard sump has a duty/standby pump as well as a spare submersible pump and also has similar alarm arrangements to the basement pumps. In the event of a catastrophic blockage and spillage the court yard would be impacted.

End of Report



Migration dependencies and programming
RHCYP & DCN Oversight Board
5 September 2019

Introduction

A draft programme has been prepared to identify known migration dependencies and develop a possible critical path analysis. Assurance on the programme is currently not possible due to the considerable number of variables. It is intended to review these with the Oversight Board prior to developing a more robust programme. The Board are reviewing the option for DCN to move into the new facility ahead of RHCYP and CAMHS services, and the parameters and considerations included in the programme are outlined below.

Partnership and contract relationships

In order to progress to work, including design, outline specifications require to be issued by the Board to IHSL for implementation by their supply chain. There are mechanisms within the Project Agreement (PA) to undertake such “changes” and these include a series of steps to agree the scope, cost and programme prior to any work being undertaken.

Engaging with the commercial partners to abbreviate these procedures has to date been “commercial” as improved risk positions have been sought (e.g. waiver of liabilities for the works done in critical care, limited cost control, retained Intellectual Property rights, etc).

Nonetheless there has been positive engagement with IHSL and there is every indication that they plan to work with the Board to deliver the changes required. The programming does not take into account any potential delay due to commercial intransigence but has allowed for periods of negotiation, assurance and approvals based on experience to date.

Review by HFS and HPS

The key assumption and dependency for programming is that the Cabinet Secretary’s decisions post receipt of the technical review reports will be the trigger for the implementation of actions. The Board Change for Critical Care Ventilation has gone ahead of the reviews but only after agreement at the Oversight Board and briefings.

At this point it is still not fully clear what further works will be required to address the other ventilation issues, with a lack of clarity from IHSL/MPX on what they accept as non-compliance, and therefore will agree to undertake remedial works. Equally there will require to be ongoing input from HFS and HPS to ensure that any further specifications and works meet standards. A workshop on Ventilation chaired by the Board’s Medical Director is planned for the 4 September to consider what further specifications are required. This will include representation from HFS/HPS.

It is assumed that the Funders will be supportive and progress all approvals quickly.

Critical Care Ventilation

There has been ongoing engagement over a period of weeks with IHSL, their supply chain and the Board’s representatives working alongside HFS and HPS representatives. This culminated in the issue of the High Value Board Change for Critical Care Ventilation on 30 August 2019 by NHSL to IHSL. The initial meeting to consider the change, as required by the PA takes place on the 4 September.

It is recognised in the programme that the procurement of Air Handling Unit(s) for critical care and other remedial ventilation works cannot commence until the design is developed sufficiently to

ensure that it will be verifiable as fit for purpose and it will be based on an agreed specification from the Board supported by HFS / HPS. The procurement is understood to have a long lead time. Therefore in order to mitigate against any delay, an order (such as a Letter of Comfort or Letter of Intent) may be required in advance of full sign off of the whole scheme. This raises programme and commercial risks for all parties. For the programme a conservative starting point has been identified as the completion of the commercial position.

There is an opportunity to run the commercial and legal workstreams in parallel.

Remedial works

It has been assumed for the programme that there will be low value works or service amendments required against all the HFS / HPS review elements: detailed requirements have not been confirmed and therefore timeframes are unknown, however it is assumed that these can be undertaken and completed in line with other programmed works.

Based on information available the anticipated works, to be prioritised in line with the proposal to move DCN ahead of RHCYP, are:

- Drainage
 - Information awaited from HFS / HPS to define if any works required
- Water
 - Action plan to be signed off by all parties
 - Action plan to be implemented – timing and process dependant on the extent of works. Most anticipated to be Operational Service changes
- Ventilation
 - 7 priorities from 54 on the first IOM review schedule (including Theatre Ventilation and DCN AHU's)
 - IHSL are arranging for a sample benchmark before seeking HFS / HPS confirmations and thereafter to instructions by NHSL being issued.
 - Other HFS ventilation issues, e.g. outcome of Helipad review may affect programming for DCN
 - Change of ventilation requirements for rooms in Lochranza Ward (haematology /oncology) – a Board change is likely to be required. The impact on DCN is thought to be minimal.
 - Any works identified in IOM's review of non-critical care ventilation – nothing significant has been noted for DCN
 - Possible requirement for works to change air changes / hour in general rooms; this would become a critical path item for DCN occupation.
- Operational Board Changes (issued already)
 - Some of these remain to be completed by IHSL and their supply chain but are being actioned presently. Examples include automatic doors and stair access control
- Fire / Electrical / Medical gases –
 - Information awaited from HFS / HPS in order to define scope and timescales for works, if any.
- Helpdesk outstanding calls are being addressed through the current operational mechanisms and have therefore not being programmed separately. Issues include:
 - Volume of outstanding remedial works
 - Follow up through helpdesk

Disposal of Sciennes

Engagement with the developer about a potential timeframe for vacant possession will be required in advance of all assurances and decision points. The period for decommissioning is based on current knowledge and may be varied following further engagement with the developer and estates personnel.

DCN Relocation

In conclusion, the timeframe for DCN moves in advance of RHSC migrations can be brought forward if remedial works affecting the DCN areas of the facilities are prioritised; and no RHCYP works impact on those facilities and services for DCN. The specification of remedial works requires to be agreed to confirm detailed programming.

No additional time has been added for escalating staffing levels and procedures to cope with a partially occupied Facility (e.g. additional security measures).

Communications

The long lead time for consultant and staff rotas and patient scheduling will require to be programmed in dependant on works. A date to commence this element in advance of final assurance sign off will be required in order to avoid a fallow period where the DCN Facility is ready but unused.

Notices to the wider public and Scottish Ambulance Service, for example, will be to a different timeframe.

The programming to date has not taken into account winter pressures or holiday shut down periods. Prolongation of works due to holiday periods or migration timing will need to be considered further.

Iain F Graham
Director of Capital Planning and Projects
NHS Lothian
4 September 2019

From: [Marinitsi, Katerina](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Crowe B \(Barbara\)](#); [Chief Medical Officer](#); [McLaughlin C \(Christine\)](#); [Colin Sinclair](#); [Cosens, Sorrel](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); [Gordon James](#); [Graham, Chris](#); [Jacqui Reilly](#); [Joyce, Alex](#); [Judith Mackay](#); [Little, Kerryann](#); [McMahon, Alex](#); [Nicoll, Nadine](#); [Peter Reekie](#); [Roche R \(Rowena\)](#); [Trotter, Audrey](#); [Walker, Anna](#); [Graham, Iain](#); [Marriott, Craig](#); [Taylor, Kizzy](#)
Subject: RHCYP, DCN and CAMHS Oversight Board - 12th September 2019
Date: 11 September 2019 11:49:20
Attachments: [AGENDA RHCYP&DCN Oversight Board 190912.docx](#)
[RHCYP OB 05-09-19 Minutes - Final Draft.doc](#)
[3.2 HVC 096 - Haem Onc Ventilation Change Notice and Letter 06_09_19.pdf](#)
[4.1 2019-09-09 RHCYP & DCN Final Report V1.0.pdf](#)
[4.2 NHSI response to NSS Actions for RHCYPDCN Sept 2019 v2.0.pdf](#)
Importance: High

Dear All

Please find attached Agenda and papers for the RHCYP & DCN Oversight Board on Thursday 12th September.

If you are not attending in person, you can connect to this meeting by dialling [redacted] and entering participant code [redacted].

Please note that the meeting will be held in Room 8 Waverley Gate.

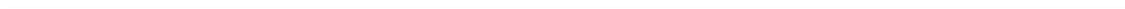
Kind Regards,
Katerina

Katerina Marinitsi | Support Officer | NHS Lothian Corporate Governance Team | Waverley Gate | 2-4 Waterloo Place | Edinburgh, EH1 3EG | [redacted]

Achieving [deadlines](#) means you are respecting your colleagues and supporting effective decision-making

The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service. For more information please visit <http://www.symanteccloud.com>



Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 12 September 2019, 8:00 – 9:30am

Venue: Room 5, Waverley Gate, EH1 3EG

AGENDA

1.	Chair's Welcome and Introductions	CMc	v
	Apologies: Susan Goldsmith, Judith Mackay, Gordon James		
2.	Minutes of previous meeting – for Approval	CMc	*
3.	Matters Arising		
	3.1 Cabinet Secretary communications 11 September	CMc	V
	3.2 Haematology-oncology Board Change – for noting	BC	*
4.	Reports		
	4.1 NSS Review – final report for noting	CS	*
	4.2 NHS Lothian action plan	TG	*
5.	Plans for existing RHSC & DCN sites	TG/CM	#
	STANDING AGENDA ITEMS		
6.	Technical Reviews progress		
	6.1 Ventilation	TG	V
	6.2 Water quality	TG	V
	6.3 Drainage	BC	V
	6.4 Fire	EM	V
	6.5 Electrical	EM	V
	6.6 Medical gases	EM	V
7.	Commercial Progress	IG	V
8.	Programme / Occupation Timelines	IG	V
9.	Communications		
	9.1 Staff communications	JM	V
	9.2 Requests for information	SC	V
10.	Any Other Competent Business		

11.	Date of Next Meeting	All	v
	Thursday 19 th September 2019, 8am, Meeting Room 5, Waverley Gate		

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 5 September 2019 in Meeting Room 8, Waverley Gate, Edinburgh.

Present: Ms C. McLaughlin, Chief Finance Officer, Scottish Government (chair); Ms T. Gillies, Medical Director, NHS Lothian; Ms S. Goldsmith, Director of Finance, NHS Lothian; Professor A. McMahon, Nurse Director, NHS Lothian; Mr P. Reekie, Chief Executive, Scottish Futures Trust; Dr C. Calderwood, Chief Medical Officer, Scottish Government and Professor F. McQueen, Chief Nursing Officer, Scottish Government;

In Attendance: Mr B. Currie, Project Director, NHS Lothian; Ms J. Mackay, NHS Lothian Director of Communications; Ms M. Morgan, Director of Strategy, Performance and Service Transformation, NHS National Services Scotland; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Mr G. Archibald, Joint Staff Side Representative; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian; Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian; Ms L. Aitken, Scottish Government Communications and Mr C. Graham, Corporate Governance Team (minutes).

In Attendance by Telephone: Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland; Mr G. James, Director of Facilities, Health Facilities Scotland and Mr C. Sinclair, Chief Executive, NHS National Services Scotland;

Apologies: Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side).

The Chair welcomed members to the meeting and members introduced themselves.

1. Minutes of previous meeting – for Approval

- 1.1 The minutes of the meeting held on 29 August were approved, subject to minor amendments submitted from Mr James in relation to sections 1.6 and 1.8 under ventilation.

2. Matters Arising

2.1 Haematology-Oncology Requirements Key Points

1. Opportunity now being taken to bring all 12 single rooms (in addition to the 5 isolation) up to the required standard for neutropenic patients.
2. Face to face meeting has been held with the oncology team to agree this position and working up of the required board change is in progress.
3. Scope of work is similar to that undertaken with the critical care board change.
4. The whole ward being at this standard does not increase the total number of isolation rooms.

5. Until one air handling units is demonstrated as compliant then a timeline for the ventilation works, including critical care and haematology-oncology, cannot be confirmed.
6. The finalised board change can be progressed without having to come back to the oversight board for clearance. This will go ahead in the next couple of days as long as HFS/HPS are content, and will come to the oversight board next week simply for noting.

2.2 HFS and HPS report: NHS Lothian RHCYP & DCN Review Key Points

1. The revised approach to prioritisation was welcomed and useful to help people have clarity around work to be undertaken ahead of patients moving into areas.
2. Important to note that HFS/HPS did not look at critical care as this was to be dealt with separately, however it may be more transparent to include reference in the report.
3. The HFS/HPS and KPMG reports would be made public next week and it was important that the reports were as clear as possible and that key messages taken from the report were up front in the summary.
4. Detailed action list that has been compiled by HFS/HPS, separate to the report, to be shared with NHSL as soon as possible so this can be incorporated with NHSL's own action list and used as a basis for ongoing monitoring of progress.
5. 11 main action areas should be responded to by NHSL and these reports would be published side by side at the same time on Scottish Government website.
6. There would be a staff update letter from Cabinet Secretary published on 11 September along with the reports. Public facing, jargon free information would also be developed.
7. It would be helpful to have all action areas addressed with a NHSL narrative against them.
8. Any final comments about factual accuracy on the HFS/HPS report to be submitted by end of today (Thursday) to allow the final report to be concluded, completed and accurate by close of play Friday or early Monday next week.
9. There is a need for clarification around what needs to happen before any occupation of the building can begin.

3. **Technical Reviews progress**

3.1 Ventilation Key Points

1. It had been confirmed with IHSL that Multiplex are continuing with remedial works.
2. Issues of impasse (part of the 7 issues) were now being progressed by IHSL if there is no large financial cost associated with the works.
3. Focus is on air handling issues relating to everything other than the Air Handling Units themselves, for which there is a long list of items around workmanship for rectification.
4. There remains two "show stoppers" in relation to the Air Handling Units – presence of inverters inside the units and the cabling running through the units. These faults apply to all 36 Air Handling Units. One third of the Units sat within DCN and would delay any move until they are rectified. IHSL were working with the manufacturer to bring back a fix to see if this could be sufficient. The issue around cabling had also been included in the IOM report.

5. Wrapping or trunking of the cabling within the units would not be acceptable.
6. A demonstration of a specimen Air Handling Unit is being arranged in the next couple of weeks. It was not yet clear whether the sub-contractor, Mercury, would undertake rectification without being paid to do so and the uncertainty around this was contributing to the inability to describe any timeline. Consideration would be given to the course of action required, should the sub contractor not rectify the issue
7. There was confidence that the issues could be rectified however the timeline remained unclear. There would be a requirement to undertake revalidation of each of the Air Handling Units once work was completed.
8. HPS to develop and work on a critical path document based on what was known and to bring this back to the oversight board.
9. Risk Assessments had been completed for DCN and all concerned are content with 4 mechanical air changes, plus natural ventilation.
10. Miss Gillies to provide further ventilation update on Friday (6 September 2019) following a meeting with Cystic Fibrosis consultants.

3.2 Water Quality Key Points

1. Water workshop held yesterday with authorising engineer for water in attendance. Work in progress and happening including cleaning of taps which were known outlets for pseudomonas, and work with Arjo Baths and Zip Taps.

3.3 Drainage Key Points

1. HFS/HPS review of drainage complete, with resilience and management measures incorporated into the water management plan.
2. Plumbing work as links to water (above) progressing well.

3.4 Fire and Electrical Key Points

1. Experts have been on site on a number of occasions now. Final reports from experts are awaited.
2. High level report with caveats and any major issues identified would be shared.

3.5 Medical Gases Key Points

1. Expert to be on site at the beginning of next week (9 September 2019).

4. **Contract and Commercial Progress**

- 4.1 Previously covered above.

5. **Programme / Occupation Timelines Key Points**

- 5.1 There are a number of unknowns at this stage, which will impact on the timescales. Time will also require to be built in for contractual negotiation and for validation. In summary, based on the information available today, we discussed the possibility of spring for DCN and summer for Childrens services – but possibly requiring some contingency for validation.

6. Communications

- 6.1 No substantive issues raised, other than planning for communications following the cabinet secretary giving an update to Parliament on 11 September. The Chair and Mrs Goldsmith to discuss later today on telephone.

7. Any Other Business

- 7.1 There was no other business.

8. Date of Next Meeting

- 8.1 The next meeting of this group would take place at **8.00 am** on **Thursday 12 September 2019**, *Meeting Room 5, Waverley Gate*.

PROUD HISTORIES | NEW CHAPTERS



Wallace Weir
Project Co Representative
IHS Lothian Limited
c/o Pinsent Masons
13 Queens Road
Aberdeen
AB15 4YL

Date: 6th Sept 2019
Our Ref : SG/JC/IHSL
Enquiries to: B Currie
Extension:
Direct Line: 
E-mail: 

Dear Sir,

**Re-Provision of RHSC and DCN at Little France
Board Change Notice – High Value Change 096 - Lochranza ward (Haematology/
Oncology) Ventilation.**

I refer to the above matter.

Please find enclosed Board Change Notice 096 for a High Value Change. I should be grateful if you would please acknowledge receipt.

As you know, parties must within 5 Business Days of receipt by Project Co of any High Value Change Notice discuss and review the nature of the High Value Change, including a discussion as to which of the items set out in paragraph 3.4 of Section 4 (High Value Changes) of Schedule Part 16 (Change Protocol) of the Project Agreement are appropriate to be included within the High Value Change Proposal. We are available on the undernoted dates to discuss these matters. Please confirm your availability.

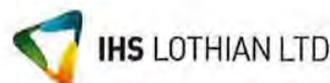
Yours sincerely



Brian Currie
Board's Representative
For and on behalf of NHS Lothian

Note referred to:-
10am, Tuesday 10th September, 2019
10am, Friday 13th September, 2019

RHSC + DCN Project Office
Little France Crescent
EDINBURGH
EH16 4TJ



High Value Change Notice

Project:	RHCYP & DCN
----------	-------------

1 – Issue of Change Notice to Project Co

Title:	Lochranza ward (Haematology/ Oncology) Ventilation		
Reference No: 096			Date: 6 th September, 2019
Target Cost Capital:	£1.9m exc VAT	Target Cost Revenue:	TBA

High Value Change Requirements (Schedule Part 16, Section 4, Clause 2.1.3)

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems which will deliver **10 air changes/hour at +10pa** as per SHTM 03-01, Appendix 1, Table A1 and fit Hepa filters (H12 grade) to the air inlets to the following rooms at the Facilities:

Room Number	Room Type
3-C1.4-059	Single Bedroom
3-C1.4-057	Single Bedroom
3-C1.4-055	Single Bedroom
3-C1.4-046	Single Bedroom
3-C1.4-032	Single Bedroom
3-C1.4-018	Single Bedroom
3-C1.4-016	Single Bedroom
3-C1.4-013	Single Bedroom
3-C1.4-010	Single Bedroom
3-C1.4-074	Single Bedroom
3-C1.4-076	Single Bedroom
3-C1.4-078	Single Bedroom
3-C1.4-084	Multi-Bed (3) Day Care
3-C1.4-061	Multi-Bed (6) Day Care

(the "Ventilation Works and Services").

In addition the design must provide means by which the windows cannot be opened whilst maintaining ventilation requirements.

All environmental requirements for all spaces in the Facilities served by or affected by the Ventilation Works and Services systems shall be met and maintained – including but not limited to, temperature and control, lighting levels, noise, and humidity. These should be consistent to the agreed parameters throughout the Facilities to meet the specific clinical and operational needs for each space in the Facilities.

The Ventilation Works and Services shall fully comply with SHTM 03-01 requirements which includes, without limitation, implementation of the Ventilation Works and Services so that the system installation, finishes and maintenance regime shall be in accordance with SHTM 03-01 requirements, together with the clinical and operational constraints identified below:

1. All Ventilation Works and Services shall be carried out and monitored after and with reference to a collaborative full Stage 3 HAI SCRIBE assessment being approved by the Board.
2. The fire strategy and systems agreed for the Facilities will be maintained throughout the Ventilation Works and Services and the Operational Term and such that the ventilation systems will integrate with the fire strategy and systems and all other building management systems comprised in the

HVCN



<p>Facilities.</p> <ol style="list-style-type: none"> 3. The location of the installation within the rooms, external areas, route across such spaces and the take out of any windows, etc, will enable the current operational functionality and safety policies and procedures to be maintained. 4. The design, layouts, finishes and other details etc for the Ventilation Works and Services, at all stages (including during the design development stages), will require to be agreed with the Board's Representative (and in turn the clinical service and related stakeholders and Project Co recognises that in order to achieve agreement from the Board's Representative's the Board's Representative will seek input from the Board and all appropriate stakeholders. 5. Design must provide resilience in compliance with SHTM 03-01 to ensure performance of ventilation to rooms during maintenance downtime. 	
<p>Value for Money Assessment (Schedule Part 16, Section 4, Clause 2.1.4)</p>	
<p>The Board will, in consultation with Project Co, continue to review costs as the design develops and at other stages. In order for the Board to assess whether the High Value Change Stage 2 Submission offers it value for money the submission shall include as a minimum the following information:</p> <ul style="list-style-type: none"> • A detailed and fully quantified pricing schedule for the construction works • A detailed breakdown of all Preliminaries and general cost items • Construction issue drawings and specification • Proposed, construction and commissioning/testing programme • Construction phase method statement 	
<p>Date by which parties are required to meet to review the High Value Change Notice and agree the content for the High Value Change Proposal (Schedule Part 16, Section 4, Clause 2.3.1)</p>	<p>06/09/19</p>
<p>To: IHS Lothian</p> <p>We require the Change described above. Please advise when Project Co will submit a High Value Change Proposal for the above.</p> <p>Signed on behalf of NHS Lothian: [REDACTED]</p> <p>Name of Signatory (type or print): <u>BRIAN CURRIE</u></p> <p>Date: <u>06/09/2019</u></p>	

HVCN



NHS Lothian - Royal Hospital for Children and Young People & Department of Clinical Neurosciences

NHS National Services Scotland – Review of: Water, Ventilation, Drainage and Plumbing Systems



09 September 2019
Version 1.0

Contents

1.	Executive Summary	3
1.1	Overview	3
1.2	Summary of findings.....	4
2.	Review methodology	5
2.1	Review process	5
2.2	Specifications and Guidance	5
2.3	Reporting methodology	7
3.	Analysis of information provided	8
3.1	Information provided.....	8
4.	Findings	10
4.1	Management and assurance	10
4.2	Ventilation	11
4.3	Water.....	16
4.4	Drainage and Plumbing	20

1. Executive Summary

1.1 Overview

A decision was taken on 2 July 2019 to delay moving to the new Royal Hospital for Children and Young People & Department of Clinical Neurosciences (RHCYP & DCN) on 9 July 2019. This followed an inspection of the facility, which raised concerns regarding the ventilation arrangements for critical care beds (intensive care and high dependency) and other areas of the hospital. NHS National Services Scotland (NSS) received a commission from Scottish Government to undertake an external series of checks, led by Health Facilities Scotland (HFS) and Health Protection Scotland (HPS), to ensure that the relevant technical specifications and guidance applicable to the new hospital have been followed and are being implemented.

The objectives of the review in relation to RHCYP & DCN were:

- To provide a report by September 2019 to Scottish Government on whether the relevant technical specifications and guidance applicable to the RHCYP & DCN are being followed and implemented.
- Where relevant technical specifications and guidance have not been followed, identify necessary remedial actions.

Given the specific focus on the control of Healthcare Associated Infections (HAI), the review concentrated on a system wide approach for ventilation, water and drainage systems. The process involved site visits, sample inspections and a targeted review of available documentation.

NHS Lothian informed the reviewers at the start of the process that elements of the Critical Care ventilation system required redesign and modification to ensure compliance with guidance. Additionally, Haematology / Oncology is also being reviewed as a result of changing clinical needs, and specific risks were identified. NSS provided advice relating to the design instruction for elements of the Critical Care ventilation system and similar advice will be provided in relation to Haematology / Oncology.

The review commenced on the 9th July 2019 with this final report published in September 2019 for consideration by the established RHCYP & DCN Oversight Board.

1.2 Summary of findings

The findings have been collated based on information provided by NHS Lothian and on-site reviews of the RHCYP & DCN. Expert advice was sought within the key focus areas of ventilation, water and drainage and plumbing systems and their overarching management and assurance processes relating to these systems. The following table outlines the status of key findings:

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Management & Assurance	Omissions identified in key roles within the management structure, ease of access to information and prioritisation of building system alarms.	-	-	1	2	-
Ventilation Systems	Remedial action is required within both general and theatre ventilation systems. Critical Care redesign was already being considered separately by the Board. Haematology / Oncology is also being reviewed as a result of changing clinical need and specific risks were identified. Risk assessments are underway as part of the ward by ward risk assessments being done locally, requested as part of the review.	-	1	2	-	-
Water Systems	Independent testing identified no widespread contamination of the water systems, however, remedial action is required on a number of water system areas as well as system wide disinfection prior to occupation.	-	1	2	1	-
Drainage & Plumbing	The drainage system has multiple redundancies in place; active monitoring is required. Elements of plumbing require inspection and appropriate remedial action taken.	-	-	-	1	-

The following definitions were used to categorise the findings:

Priority	Definition
1	Significant – Concerns requiring immediate attention, no adherence with guidance
2	Major – Absence of key controls, major deviations from guidance
3	Moderate – Not all control procedures working effectively, elements of noncompliance with guidance
4	Minor – Minor control procedures lacking or improvement identified based on emerging practice
5	Observation and improvement activity

Overall remedial action is required to be undertaken within the ventilation and water systems prior to occupation. Following acceptance of this report, the review team are ready to assist the NHS Lothian team in developing a programme of activity and remedial actions.

2. Review methodology

2.1 Review process

- 2.1.1 The review process initially took place between 9th July and 30th August 2019. For this report no further information has been considered after 5th September 2019.
- 2.1.2 The approach taken was to gather information relating to the services detailed in section 1.2 in drawing, specification, report and oral form and to compare these to the specifications and guidance appropriate for the building type, drawing conclusions on whether what is provided matches the requirements. In addition to existing specifications and guidance, learning generated from recent experience and national and international guidance and expertise was also used to inform the review. This learning will also inform future guidance development in Scotland.
- 2.1.3 The review has included
- Establishing a brief.
 - Establishing the baseline data to allow the brief to be met.
 - Preparation of several question sets to get a greater understanding of the project.
 - Preparation and management of detailed question sets and information requests.
 - Commissioning UK topic experts to review certain aspects of the project.
 - Several site visits.
 - Several meetings.
 - Analysis of data.
 - Analysis of microbiology results related to the hot and cold water systems.
 - A rapid review of the literature and international guidance on ventilation systems in relation to infection.

2.2 Specifications and Guidance

- 2.2.1 HFS currently provides a range of advisory and delivery services across a wide variety of topics from a portfolio which covers the built estate, engineering and environment and facilities management. With some exceptions these services are largely advisory in nature, identifying best practice and developing national guidance and standards.
- 2.2.2 HPS currently provides advice and guidance on all aspects of health protection nationally in Scotland, inclusive of expert advice and guidance on the topic of Healthcare Associated Infections (HAI) and antimicrobial resistance. It maintains and continues to develop a practice guide (National Infection Prevention and Control Manual – NIPCM) as well as a HAI Compendium of all extant guidance and policy appropriate for use in NHS Scotland. Like HFS, these services are largely advisory in nature, identifying best practice and developing national guidance and standards. The NHS Scotland NIPCM was first published on 13 January 2012 as mandatory

guidance, by the Chief Nursing Officer ([CNO \(2012\)1](#)), and updated on 17 May 2012 ([CNO\(2012\)01-update](#)). The NIPCM provides guidance for all those involved in care provision and should be adopted for infection, prevention and control practices and procedures. The NIPCM is mandatory policy for NHS Scotland.

The authority of guidance produced by NSS and other national organisations e.g. Healthcare Improvement Scotland is best described by the definitions outlined below (SHMT 00 – Best practice guidelines for healthcare engineering):

Regulations are law, approved by Parliament. These are usually made under the Health and Safety at Work etc Act following proposals from the Health & Safety Commission. Regulations identify certain risks and set out specific actions which must be taken.

Approved Codes of Practice give advice on how to comply with the law by offering practical examples of best practice. If employers follow the advice, they will be doing enough to comply with the law.

Approved Codes of Practice have a special legal status. If employers are prosecuted for a breach of health and safety law, and it is proved that they did not follow the relevant provisions of an Approved Code of Practice, they will need to show that they have complied with the law in some other way, or a court will find them at fault.

Standards (British or European), institutional guides and industry best practice play a large part in how things should be done. They have no direct legal status (unless specified by Regulations). However, should there be an accident; the applied safety practices at the place of work would be examined against existing British or European Standards. It would be difficult to argue in favour of an organisation where safety was not to the described level.

Guidance is issued in some cases to indicate the best way to comply with Regulations, but the guidance has no legal enforcement status.

- 2.2.3 Whilst guidance is deemed not compulsory by HSE (not legally enforceable), where compliance with guidance is specified in a contract, as is the case here, it becomes a contractual requirement. Therefore, any permitted deviation from it would be expected to follow a formal process with input from all relevant parties, with clarity around how the outcome was reached, including risk assessments where appropriate and sign off by all those authorised to approve it.
- 2.2.4 The terms specifications and guidance are used in the report to refer to the publications setting out the expectations about the level of service to be provided, including legislation, approved codes of practice and guidance. Compliance with guidance is reported on, regardless of whether this implies a contractual requirement or not, as contract compliance is outwith the scope of this report. For the avoidance of doubt we have not considered the project agreement and contractual compliance in accordance with its terms, as this is subject to a separate review commissioned by Scottish Government.

2.3 Reporting methodology

2.3.1 For clarity this report organises issues with each of the systems considered into a priority rating, identifying the importance of deviations from what would be expected based on the specifications and guidance. The distinction between the categories is based on NSS judgement of the degree of non-compliance and the implications of that non-compliance. The criteria used are described below.

Priority	Definition
1	Significant – Concerns requiring immediate attention, no adherence with guidance
2	Major – Absence of key controls, major deviations from guidance
3	Moderate – Not all control procedures working effectively, elements of noncompliance with guidance
4	Minor – Minor control procedures lacking or improvement identified based on emerging practice
5	Observation and improvement activity

3. Analysis of information provided

3.1 Information provided

- 3.1.1 The support of the NHS Lothian project team in responding to questions and accessing data is gratefully acknowledged.
- 3.1.2 At the time of writing the majority of the information required had been received and whilst the timescale for the review means a selective targeted review of documentation was necessary, the main themes appear clear. However, some information remains outstanding, and NHS Lothian colleagues continue to pursue a response.
- 3.1.3 The Special Purpose Vehicle (SPV), Contractor, sub-contractors, Facilities Management Contractor and Independent Tester were not directly involved in the production of this report, nor were they requested to verify its contents and they may have additional information not considered here. It is acknowledged that some of the information provided by NHS Lothian came directly from these sources.

Ventilation systems

- 3.1.4 Prior to this review NHS Lothian commissioned a specialist contractor to validate the performance of ventilation systems within the facility and their report identified that elements of the ventilation system in Critical Care Units was not in accordance with current guidance (SHTM 03-01). Whilst this report notes that finding and NSS has been asked to support NHS Lothian in achieving a solution in compliance with guidance, this report focuses primarily on other ventilation issues. Additionally, Haematology / Oncology is also being reviewed as a result of changing clinical needs and NHS NSS will support NHS Lothian in this.
- 3.1.5 An explanation and validation of the ventilation design whereby areas with air handling units out of service, for whatever reason, are served by an adjacent air handling unit, which also continues to serve its own area has not yet been provided.
- 3.1.6 The theatre ventilation appears not to have been installed in accordance with current guidance in respect to required pressure cascades in corridors and removal of contaminants from scrub areas. The Board has sought demonstration of compliance from Integrated Health Solutions Lothian (IHSL) in relation to issues identified.

Water systems

- 3.1.7 Whilst elements of the water testing carried out as part of this review are not detailed in current guidance, and NHS Lothian could not have been expected to be aware, lessons learned recently across health systems suggest that any potential pathogenic contamination found should be investigated and treated appropriately before patients and staff move in. Water test results in RHCYP & DCN indicate some fungi in the water, mainly at taps, as well as higher than anticipated total viable counts (TVC). The latter may be related to the fact that the building is unoccupied with only maintenance processes in place to ensure water turnover. In augmented care areas testing carried out for NHS Lothian identified *Pseudomonas aeruginosa* found in approximately 10% of taps tested. There would appear to be no systemic

contamination of the hot and cold water systems, rather, contamination has been found at outlets, and particularly thermostatic mixing taps with complex interstices and polymeric components, which can make them more susceptible to persistent contamination.

Drainage and plumbing systems

- 3.1.8 The drainage for the hospital utilises one gravity system and two pumped systems. The pumped systems are used to overcome gravity as they are installed below the local water table and level of the external drains. The main concern is the pumped system in the basement, in the vicinity of the kitchen, may fail. The risk is that if these fail the kitchen drains will back up requiring the kitchen to close, which would have an impact on food services to the hospital. Extensive use of standby equipment and power supplies is in place, such that multiple failures would need to occur to cause sewage to back up into the basement. Procedures for maintenance and repair have been extensively considered but will need to be tested in operation.

4. Findings

4.1 Management and assurance

Summary

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Management & Assurance	Omissions identified in key roles within the management structure, ease of access to information and prioritisation of building system alarms.	-	-	1	2	-

Main Findings

Priority	Review	Action Assessment
4	Structures and processes are not fully in place to assure the Board that the facility is being operated in compliance with contract requirements. These should be in place from the point where the building services referred to in this report are put into use.	NHS Lothian and IHSL should adopt the management and reporting processes as described in SHTM 00 - Best Practice Guidance for Healthcare Engineering and the SHTMs for each critical engineering service.
3	Some of the records and documents necessary for the effective and safe operation of the hospital could not be found. The document management system appears to lack a logical structure which will impact on the ability to readily find necessary information. Some of the sections contain none, or only part, of the documentation they should have as required by the Construction (Design and Management) Regulations 2015.	The Board should require IHSL to rectify the filing structure of the documentation and verify that the information contained is both complete and accurate as required by the Construction (Design and Management) Regulations 2015.
4	The alarms for the building are reportedly un-prioritised, resulting in a very large number of alarms potentially masking critical alarms.	Prioritise alarms to make most critical failures visible and manageable. Until alarms are prioritised, have procedures and staff in place to ensure critical alarms are not missed as per SHTM 08-05 - Specialist services building management systems.

NHS Lothian RHCYP & DCN review

Detailed Narrative

- 4.1.1 Healthcare organisations have a duty of care to patients, their workforce and the general public to ensure a safe and appropriate environment. This requirement is identified in a wide range of legislation. At the most senior level within an organisation, the appointed responsible person should have access to a robust structure which delivers governance, assurance and compliance through a formal reporting mechanism.
- 4.1.2 The review identified that for both IHSL and NHS Lothian, there appeared to be omissions in the identification, appointment and definition of key roles in an effective management structure. Additionally, some records which are necessary to demonstrate compliance with appropriate specifications and guidance remain outstanding.
- 4.1.3 The Board cannot pass its responsibilities under health and safety law to a third party. It can pass duties, but the responsibility for ensuring the safety of those accessing its premises remains with the Board. To discharge its duties, the Board should ensure appropriate structures, processes and personnel are in place to ensure that those responsible for operating the facility are doing so in compliance. The structures and processes set out in the Scottish Health Technical Memorandum (SHTM) suite of guidance, Statutory Compliance Audit and Risk Tool (SCART)¹ and Healthcare Associated Infection-System for Controlling Risk in the Built Environment (HAI_SCRIBE)² produced by Health Facilities Scotland, should form the core of this. These arrangements should be in place as soon as practicable and prior to occupation of the RHYCP & DCN.

4.2 Ventilation**Summary**

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Ventilation Systems	Remedial action is required within both general and theatre ventilation systems. Critical Care ventilation redesign was already being considered separately by the Board. Haematology / Oncology is also being reviewed as a result of changing clinical need and specific risks were identified. Risk assessments are underway as part of the ward by ward risk assessments being done locally, requested as part of the review.	-	1	2	-	-

¹ SCART is a risk based tool used by Boards in NHS Scotland to measure their compliance against statutory and non-statutory position.

² HAI_SCRIBE provides Built Environment Infection Prevention and Control information for Design Teams, Construction Teams, Infection Prevention and Control Teams and Estates & Facilities Teams, as well as an assessment process allowing the identification and management of infection control risks in the built environment.

Main Findings

Priority	Review	Action Assessment
2	<p>General Ventilation Systems - Provision for maintenance or plant failure in the ventilation systems has not been validated in accordance with SHTM 03-01 Ventilation for Healthcare Premises. The bypass arrangements and functioning of ventilation in the event of plant failure remains to be demonstrated.</p>	<p>Demonstrate efficacy of approach of utilising adjacent air handling unit to supply areas not served by failed plant. Commission and validate isolation rooms, singles and multi-bed spaces in the event of supply by adjacent air handling unit. Clinical leads and Infection Prevention and Control colleagues to consider the effect of air handling plant failure in developing service provision strategies. Confirm damper operation and compliance with fire requirements in bypass mode.</p>
	<p>Air handling units and ductwork contain numerous deviations from contract requirements (SHTM 03-01) and were found not to be clean despite having been presented for validation. Deviations include: loose internal cabling in the airflow, cable routes allowing air to bypass filters, air leakage at penetrations and possible fan replacement difficulties which need to be corrected.</p>	<p>The ventilation systems throughout the hospital should be subject to a full snagging exercise and all defects rectified following which air handling units and ventilation systems are cleaned. All deficiencies identified in validation and specialist Consultant Engineer reports should be addressed as part of this.</p>
	<p>The single and multi-bed ventilation design is based on four air changes per hour mechanical ventilation and there is a component of natural ventilation which is not part of the design. With a few exceptions, the mechanical component has been validated. However the natural component has not been proven.</p>	<p>Confirm that all areas served by this arrangement are suitable for categorisation as listed in SHTM 03-01 Part A, Appendix 1. Undertake an IPCT risk assessment ward by ward/ speciality specific in relation to the guidance.</p>
	<p>The pressure regimen detailed in the design, and reflecting the environmental matrix, will be affected by opening windows and the pressure between the room and the corridor, and therefore direction of air flow, cannot be</p>	<p>A full assessment of the services and patient population should be carried out and mechanisms for monitoring established.</p>

<p>relied upon when windows are open.</p>	
<p>External doors to plant rooms</p>	<p>Ensure that excessive gaps are removed and appropriate anti vermin measures are applied to all the doors and screens as per SHTM 03-01 and HFS Interim Guidance - Managing the Risk of Contamination of Ventilation Systems by Fungi from Bird Droppings – February 2019.</p>
<p>Fire dampers in some locations cannot be adequately tested as duct access has not been provided. Also, locations of fire dampers and fire rated ductwork has been questioned in relation to the requirements of SHTM 03-01 and confirmation of compliant provision is awaited.</p>	<p>Provide access so all fire dampers can be readily visually inspected to verify operation. Review fire damper provision and fire rated ductwork and confirm appropriate provision</p>
<p>Air intakes and opening windows are sited in the courtyard below the helipad and at the adjacent RIE. Information has not been provided on the impact of downdraft on air flows and pressures or entrainment of contaminants as per SHTM 03-01.</p>	<p>Demonstrate the effect of helicopter landing on air flows in ventilation systems with intakes below through measurement when test flights take place or through modelling. This should include the air intakes of the RIE adjacent.</p>
<p>3</p>	<p>Theatre Ventilation Systems - Scrub areas which are narrow and deep are unlikely to be scavenged effectively by theatre air changes and require alternative means of achieving removal of contaminants as per SHTM 03-01. The efficacy of the high level extract to achieve sufficient dilution of contaminants or entrainment of heavier than air water droplets is not in accordance with the requirements of SHTM 03-01 and has not been demonstrated as equivalent.</p> <p>Anaesthetic rooms 31 and 34 do not demonstrate a clean air flow path to reduce exposure of staff to gasses as per SHTM 03-01. Room 30 supply is too close to the door</p>
<p>The ability of the single high level extract provided in deep plan scrub areas to effectively prevent contaminants being dispersed into theatres should be demonstrated and/or additional low level ventilation provided.</p>	<p>Move ceiling supply to opposite side of room from extract.</p> <p>In room 30, move supply away from door.</p>

	Theatre utility rooms extract ventilation means theatres have to be used in pairs and taking a theatre out of service may reduce the extract in utility room below the levels as per SHTM 03-01.	Add supplementary extract ventilation to allow for one theatre being out of service or plan for service impact following the loss of a pair of theatres. <i>NHS Lothian has advised that the appropriate pressure differentials are maintained when only one theatre is operation. Validation evidence is to be provided.</i>
3	Isolation Room Ventilation Systems are not served by a single ventilation system for each room as recommended in SHPN4 Supplement 1. The arrangement provided, where ventilation systems serve an area of the building including contained isolation rooms, has not yet been proven in the event of failure of an air handling unit and the implications for service impact are not yet understood.	Prove that bypass connections to adjacent ventilation systems will allow safe operation of both areas and / or explain service provision strategy for loss of each area including isolation rooms. Also include assurance on operational effectiveness e.g. the pressure differentials and air flows being maintained. Develop clinical service provision plan to reflect the potential loss of design conditions in up to 5 of the 19 isolation rooms on the failure of an air handling unit and confirm impact on service continuity.

Detailed Narrative

- 4.2.1 The ventilation systems at RHCYP & DCN were considered in relation to legislation, guidance and the lessons learned from other recent similar projects which may have an impact on the patient group.
- 4.2.2 The principal legislation which is relevant to the ventilation systems is The Control of Substances Hazardous to Health Regulations 2002 (COSHH).
- 4.2.3 The principal guidance which is relevant to the ventilation systems is: Scottish Health Technical Memorandum (SHTM) 03-01: Ventilation for healthcare premises; and Scottish Health Planning Note 04 Inpatient Accommodation, Supplement 1 Isolation Facilities in Acute Settings.
- 4.2.4 Elements of the ventilation within Critical Care were identified by NHS Lothian's validation contractor, and verified in this review, to be not in accordance with the requirements of SHTM 03-01. NHS Lothian is working with IHSL to design a suitable solution to provide the conditions required within Critical Care. NSS has been asked by Scottish Government to support NHS Lothian to ensure that the system delivered is compliant with requirements.
- 4.2.5 The general ventilation for non-specialist applications, such as single / multi-bed rooms, was identified by the Board's validation contractor as having lower air change rates than specified in SHTM 03-01, i.e. 4 air changes per hour as opposed to 6.

During the review, NHS Lothian supplied information about a natural ventilation component, with some documents referring to a mixed mode ventilation system. However, IHSL later advised that natural ventilation is not part of their design. NSS visited the site with specialist ventilation consultants who produced a report on the general ventilation systems and noted non-compliances with air handling unit provision and installation and pressure regimens, including several identified by the Board's validation contractor.

- 4.2.6 From an infection prevention and control perspective, there is low-quality to no evidence from outbreak reports and current guidance, respectively, to support minimum ventilation requirements. Therefore, it is not possible to make conclusive statements regarding the individual minimum ventilation parameters for inpatient care areas. A rapid review of the literature found limited clinical evidence to directly implicate air change rates alone in having a direct impact on the development of an outbreak or incidence of infection. Therefore, it is reasonable that, in the absence of evidence, healthcare design teams should continue to adhere to current national guidance. In the event of a deviation from the current recommended ventilation parameters, design teams should ensure that air changes per hour are maintained as close as possible to the recommended air changes per hour without compromising other aspects of the ventilation system requirements. In addition a full assessment of the services and patient population should be carried out and mechanisms for monitoring established. Caution is advised in relying on air change rates alone to provide adequate protection from infection; this is only one part of a multifactorial process involved in creating the appropriate airflow patterns with appropriate mixing and dilution of contaminants. Nationally, further research is required to look beyond air change rates to examine the effects that other factors such as supply and exhaust location, door position and motion, spatial orientation, surface composition, temperature, humidity, and air distribution patterns have on particle migration in clinical areas.
- 4.2.7 Theatre ventilation was identified by NHS Lothian's validation contractor as having some deficiencies. NSS visited the site with a specialist Consultant Engineer, who was lead author on the last three iterations of the ventilation HTM guidance. This identified and confirmed several deficiencies, including lack of evidence about the efficacy of the ventilation in the scrub rooms; deviating from the standard models recommended in SHTM 03-01. The current design of the theatre ventilation system is such that maintenance might entail loss of two theatres rather than one. Additionally, there is an overuse of flexible ductwork, potentially causing problems with balancing theatre ventilation.
- 4.2.8 The building contains a number of Positive Pressure Ventilated Lobby (PPVL) isolation rooms for which the guidance, SHPN4 supplement 1, recommends that each isolation room should ideally have its own air handling unit, such that if an air handling unit fails, or is offline for maintenance, only one isolation room is out of commission.

The building, as built, has an air handling unit serving each area of the building, including any contained isolation rooms. This means that up to five out of 19 isolation rooms may be not performing as intended in the event of an air handling unit failure. NHS Lothian have advised that the strategy for maintenance is that a bypass duct will be used to feed an area from an adjacent air handling unit. This mode has

NHS Lothian RHCYP & DCN review

not yet been proven and the successful operation of isolation rooms and other spaces in the event of use of this bypass has not been demonstrated. NHS Lothian needs to consider in its clinical service model how each isolation room and ward will function in the event of loss of an air handling unit. This will require full design and validation of air change rates, pressure differentials and direction of air flow for each area in this mode, as well as predicted times to rectify any plant failure.

- 4.2.9 IHSL has advised NHS Lothian that the design of the isolation rooms is as per Scottish Health Planning Note (SHPN) 04-01 Supplement 1: In-patient Accommodation: Options for Choice Supplement 1: Isolation Facilities in Acute Settings. This guidance notes that isolation rooms ideally should have its own air handling unit (AHU) and the ventilation systems should be as robust as possible so that standby fans are not required. The guidance acknowledges that in high rise buildings a common supply and extract may be the only feasible solution with duct branches fitted with spring close gas tight dampers in the event of failure. The height of this building is less than that defined in the Scottish Building Standards Technical Handbook - Non-Domestic, for high rise (18m). At the time of writing the provision of gas tight dampers at ward level as required by the validated design parameters detailed in SHPN 04-01 Supplement 1 had not been evidenced.
- 4.2.10 Additional observations during a site visit by NSS have highlighted potential concerns linked to the location of some high risk wards, including Haematology / Oncology in relation to the helipad. A demonstration of the effect of helicopter landing/take-off on airflows needs to be completed by NHS Lothian.

4.3 Water

Summary

Review	Summary Assessment	No. of Issues per priority				
		1	2	3	4	5
Water Systems	Independent testing identified no widespread contamination of the water systems, however, remedial action is required on a number of water system areas as well as system wide disinfection prior to occupation.	-	1	2	1	-

Main Findings

Priority	Review	Action Assessment
4	Water Services Augmented Care - Pseudomonas found in taps, in Paediatric Medical Inpatients and DCN Inpatients. (SHTM 04-01 Part A published in July 2014)	All taps (not just TMT/TMV ³) to be disinfected and retested. Inspect and replace, as appropriate, taps, tap components and pipework. Replace tap strainers and cartridges in affected TMT taps.

³ TMT – Thermostatic Mixing Taps, TMV – Thermostatic Mixing Valves
09 September 2019

3	<p>Water Services Non Augmented Care - Swarf and biofilm found in tap strainers, contrary to SHTM 04-01 Water safety for healthcare premises.</p>	Replace tap strainers in all areas.
2	<p>Showers - Shower hose lengths do not comply with Scottish Water byelaws and guidance in SHTM 04-01 Water safety for healthcare premises.</p>	Shorten hose length, or add retaining ring, to ensure that shower head cannot reach WC or drain Disinfect showers, hose and drain after rectification.
3	<p>Water General - Testing has found some fungal / mould contamination and high total viable counts. <i>Legionella</i> risk assessment actions not recorded as required by HSE Approved Code of Practice and Guidance L8 - Legionnaires' disease. The control of <i>Legionella</i> bacteria in water systems. <i>Legionella</i> risk assessment insufficient to reflect system contamination in general. Those responsible for the system have a responsibility under the Control of Substances Hazardous to Health Regulations 2002 (COSHH) to prevent exposure to microorganisms.</p> <p>Designated roles and responsibility as per SHTM 00 Best practice guidance for healthcare engineering.</p> <p>Water tanks as per SHTM 04-01 Water safety for healthcare premises.</p> <p>Hot and cold water temperatures / flushing. SHTM 04-01 Water safety for healthcare premises</p>	<p>Given a number of indicators the water system should be disinfected and re-tested.</p> <p>The <i>Legionella</i> Risk assessment Feb 2019 identified a range of actions. The Action Tracker does not demonstrate that the issues raised have been resolved, or a timeline provided for resolution. Record rectification of actions. The risk assessment is heavily focussed on <i>Legionella</i> and not taking into account other organisms in line with patient type that will occupy the building. Broaden to reflect system contamination in general. Develop analysis categorisation of patient type, and consideration to susceptibility, for each area.</p> <p>The current Responsible Person (RP) has not been appointed in writing and uncertain as to whether received RP training. Additionally, has no previous experience of healthcare.</p> <p>To be inspected. The Raw Water and Filtrate water tanks are interconnected at the drain. These must be separated.</p> <p>There was an issue with raised cold water temperatures during the boiler outage – this requires investigation.</p>

Filtration Plants	From lessons learned by NSS in recent work, microbiological growth potential was identified as part of the Backwash cycle. Consideration should be given to Chlorine dioxide addition to backwash water tank to counter microbiological and biofilm development on filters.
Instant Boil Taps and Rise and Fall Baths	These were found to be contaminated and need to be disinfected and tested to demonstrate safe water delivery as per SHTM 04-01 Water safety for healthcare premises.

Detailed Narrative

- 4.3.1 The domestic hot and cold water services (DHCWS) at RHCYP & DCN were considered in relation to legislation, guidance and the lessons learned from other recent similar projects which may have an impact on the patient group.
- 4.3.2 The legislation which is relevant to the water system are Public Water Supplies (Scotland) Regulations SSI 2014/364 and The Control of Substances Hazardous to Health Regulations 2002 (COSHH). In relation to COSHH, the Health and Safety Executive (HSE) note that “*Micro-organisms are covered in COSHH by the term biological agents. These are defined as any micro-organism, cell culture, prion or human endoparasite whether or not genetically modified which may cause infection, allergy, toxicity or otherwise create a hazard to human health.*”
- 4.3.3 The guidance which is relevant to the water system are HSE Approved Code of Practice L8: Legionnaires' disease. The control of *Legionella* bacteria in water systems; HSE 274: Legionnaires' disease: Technical guidance; Scottish Healthcare Technical Memorandum (SHTM) 04-01: Water safety for healthcare premises and HPS document: *Pseudomonas aeruginosa* routine water sampling in augmented care areas for NHS Scotland (*published in draft September 2018*).
- 4.3.4 From initial inspection of the Independent Tester's reports, there is evidence that areas of the pipe work systems were installed without end protection. This may have allowed dust and organic material to enter the pipe system and this may not have been eradicated by the disinfection process.
- 4.3.5 The Facilities Management (FM) contractor Bouygues FM (BFM) commissioned a *Legionella* risk assessment when they took possession of the site from the construction contractor. This report has yet to be provided and will be reviewed and assessed when presented.
- 4.3.6 NHS Lothian commissioned a specialist safety consultant in May 2019 to conduct an overall safety audit of the RHCYP & DCN. Contained within their report is a section on the water system. They assessed the risk condition of the system as “high” mainly as a result of BFM's *Legionella* risk assessment, the lack of evidence of flushing across the system, the lack of maintenance on shower heads and outstanding information on the water management responsibilities by BFM.

- 4.3.7 NHS Lothian separately commissioned water testing from a specialist water safety consultant, on 12th July 2019, which indicated that certain tap outlets within the augmented care areas were positive for *Pseudomonas aeruginosa*. This report also noted high Total Viable Counts (TVC). In addition, *Pseudomonas aeruginosa* was recorded in the Instant Boil Taps and the rise and fall baths. The consultant concluded that there was no evidence of wide spread contamination of the water system.
- 4.3.8 As part of the NSS review, a specialist water consultant carried out water tests around the facility on 18th July 2019 to determine if there were any significant issues.
- 4.3.9 In summary the NSS specialist contractor concluded from their investigations and as a result of the microbiological samples taken by them and others that: -
- There was no indication that the water system (as a whole) was cause for concern referenced to existing guidance.
 - There was no atypical mycobacteria found in the 60 samples taken (mainly from neonatal and intensive care areas); however, there was some Gram-negative activity and mould present.
 - Concern was expressed regarding the management of the water system given the lack of occupancy and turnover of the water system.
 - The management aspects of the water system by IHSL's FM contractor were not satisfactorily demonstrated.
 - The system showed signs of biofilm and swarf contamination, particularly at the taps.
 - Shower heads and hoses do not meet the required standards with respect to length.
 - During the site investigation it was noted that the cold water temperatures were rising and the hot water temperatures decreasing. In discussions with BFM it was discovered that a boiler had tripped, together with the circulating pumps, and the other boilers did not come on as they should have. The result of this was that the temperature of the water for both hot and cold domestic water systems fell into the *Legionella* growth band for approximately a 12 hour period.
 - The NSS commissioned consultant engaged noted that at commissioning only 5% sampling of the number of taps across the whole hospital was completed.
 - The management strategy for the Kemper system (water temperature regulation system) requires close control to ensure that water is not "dumped" unnecessarily in an effort to control cold water temperatures.
- 4.3.10 The tests for atypical mycobacteria proved negative. However fungi were identified in 22% of the samples taken in the water system based on a sample size of 60 taps from a population of c2000. These are not required to be tested as part of the current guidance. However, based on NSS experiences at other hospital sites it was considered prudent to have these tests done.
- 4.3.11 Based on NSS experiences at other hospital sites that became apparent after the construction of RHCYP & DCN, it is recommended that specific components parts of

NHS Lothian RHCYP & DCN review

the water system such as pressurisation unit, meter etc are replaced and the originals tested, particularly those which have proven to be problematic.

4.4 Drainage and Plumbing

Summary

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Drainage & Plumbing	The drainage system has multiple redundancies in place, however, active monitoring is required. Elements of plumbing require inspection and appropriate remedial action taken.	-	-	-	1	-

Main Findings

Priority	Review	Action Assessment
4	Sinks drains	Initial testing indicates that these are not significantly contaminated, however the horizontal drain and protruding seal means they retain stagnant water and they need to be disinfected periodically prior to and post occupancy to maintain their condition. From lessons learned, there should be a system of inspection and appropriate remedial action taken.
	Bottle traps	There would appear to be an inconsistency of installation and potential of back-feed from trap to drain. This requires review and rectification.
	Pumped Drainage	The internal pumped sewage drainage system presents the potential for sewage to back up through basement drains on pump failure and will require active monitoring.

Detailed Narrative

- 4.4.1 The range of clinical and non-clinical wash hand basins chosen by the IHSL are from a recognised manufacturer of healthcare drainage products. There is no facility to connect the tap on the sink as the taps are panel mounted. The drain connection is at the rear of the sink bowl and there is no overflow, all as per guidance.
- 4.4.2 The connection on to the wash hand basin from the drain has proven to be an area where water does not drain freely as the connection reduces the diameter of the

drainage outlet and creates a dam effect. Lessons learned by NSS from other projects, after commencement of the construction of RHCYP & DCN, have shown that various organisms were grown from this area in some circumstances.

- 4.4.3 The plumbing system is connected to the main sewage system via three drainage systems. The first is a gravity fed system. The second is a sump pump arrangement in the external courtyard. The third is a sump in the basement area of the hospital. The rationale behind the use of the sumps is that the basement areas are below the water table and any waste material has to be pumped up and out to the sewer.
- 4.4.4 The Independent Tester has noted in their report of 30th June 2017 that an issue had been raised regarding the capacity of the basement sump. In further investigation this appears to be related to the fact that more areas/floors were connected to this system than NHS Lothian had originally been made aware of.
- 4.4.5 The main drainage risk lies with the basement sump. It has a resilience system of back-up power supplies, multiple pumps and alarm systems to three different locations. There are two discharge pipes to sewer, reducing the risk of blockage and the consequent risk of sewage backing up into the basement in the proximity of the kitchen. In addition, if a failure occurred or a maintenance activity was to take place, the location of this sump chamber would mean that all traffic flow through the affected area would have to be halted to permit a safe operating procedure to be implemented.
- 4.4.6 The external courtyard sump has a duty/standby pump as well as a spare submersible pump and also has similar alarm arrangements to the basement pumps. In the event of a catastrophic blockage and spillage the court yard would be impacted.

End of Report



Royal Hospital for Children and Young People and Department of Clinical Neurosciences

**NHS Lothian response to actions identified in the
NSS National Services Scotland – Review of: Water, Ventilation, Drainage and Plumbing Systems**

NHS Lothian response to NHS National Services Scotland Review of: Water, Ventilation, Drainage and Plumbing Systems in RHCYP & DCN

Introduction

Following the decision to delay moving to the new Royal Hospital for Children and Young People & Department of Clinical Neurosciences in July 2019, NHS National Services Scotland (NSS) were commissioned by Scottish Government to undertake a series of checks to ensure that the relevant technical specifications and guidance applicable to the new hospital had been followed and were being implemented.

Health Facilities Scotland (HFS) and Health Protection Scotland (HPS) have provided their report to Scottish Government on whether the relevant technical specifications and guidance applicable to the RHCYP & DCN are being followed and implemented. The report provides an assessment of actions required where relevant technical specifications and guidance have not been met.

NHS Lothian engaged with NSS throughout the review and addressing follow-up actions. Updates on each action identified in the NSS Review are provided in this response.

Glossary

AHU	Air handling unit
Board	refers to NHS Lothian
HFS	Health Facilities Scotland
HPS	Health Protection Scotland
IHSL	IHS Lothian Limited
IPCT	Infection Prevention and Control Team
NSS	National Services Scotland
SHPN	Scottish Health Planning Note
SHTM	Scottish Health Technical Memorandum
TMT	Thermostatic mixing taps
TMV	Thermostatic mixing valves

NHS Lothian response to NHS National Services Scotland Review of: Water, Ventilation, Drainage and Plumbing Systems in RHCYP & DCN

Management and Assurance

NSS Review: Omissions identified in key roles within the management structure, ease of access to information.

NHS Lothian response: Management roles and responsibilities and will be identified and the responsibility matrix will be reviewed on a regular basis. Archiving of information will be revised in line with guidance and contract requirements

through NHS Lothian's Corporate Management Team.

Issue	NSS Review	NSS Action Assessment	NHS Lothian action
Structures and processes	<i>Structures and processes are not fully in place to assure the Board that the facility is being operated in compliance with contract requirements. These should be in place from the point where the building services referred to in this report are put into use.</i>	<i>NHS Lothian and IHSL should adopt the management and reporting processes as described in SHTM 00 – Best Practice Guidance for Healthcare Engineering and the SHTMs for each critical engineering service.</i>	AGREED Contract management arrangements will follow SHTM 00.
Contract requirements	<i>Some of the records and documents necessary for the effective and safe operation of the hospital could not be found. The document management system appears to lack a logical structure which will impact on the ability to readily find necessary information. Some of the sections contain none, or only part, of the documentation they should have as required by the Construction (Design and Management) Regulations 2015.</i>	<i>The Board should require IHSL to rectify the filing structure of the documentation and verify that the information contained is both complete and accurate as required by the Construction (Design and Management) Regulations 2015.</i>	AGREED A review and demonstration of completeness has been requested from IHSL and additional information has been provided by them.
Alarms	<i>The alarms for the building are reportedly un-prioritised, resulting in a very large number of alarms potentially masking critical alarms.</i>	<i>Prioritise alarms to make most critical failures visible and manageable. Until alarms are prioritised, have procedures and staff in place to ensure critical alarms are not missed as per SHTM 08-05 - Specialist services building management systems.</i>	AGREED NHS Lothian has requested a programme to confirm this in place by the end of September.

NHS Lothian response to NHS National Services Scotland Review of: Water, Ventilation, Drainage and Plumbing Systems in RHCYP & DCN

Ventilation

***NSS Review:** Remedial action is required within both general and theatre ventilation systems. Augmented care redesign was already being considered separately by the Board. Haematology / Oncology is also being reviewed as a result of the review as specific risks were identified. Risk assessments are underway as part of the ward by ward risk assessments being done locally requested as part of the review.*

NHS Lothian response: The required remedial actions are underway with expert input from the engineers. Two Board changes have been progressed for the areas to be redesigned. Discussion with clinical staff and the Infection Prevention and Control Team (IPCT) will guide patient placement in line with documented risk assessments.

Issue	NSS Review	NSS Action Assessment	NHS Lothian action
General ventilation systems 1	<i>Provision for maintenance or plant failure in the ventilation systems has not been validated in accordance with SHTM 03-01 Ventilation for Healthcare Premises. The bypass arrangements and functioning of ward ventilation in the event of plant failure remains to be demonstrated.</i>	<p><i>Demonstrate efficacy of approach of utilising adjacent air handling unit to supply areas not served by failed plant.</i></p> <p><i>Commission and validate isolation rooms and general ward spaces in the event of supply by adjacent air handling unit.</i></p> <p><i>Engage clinical leads and Infection Prevention and Control colleagues in developing service provision strategies in the event of air handling plant failure.</i></p> <p><i>Confirm damper operation and compliance with fire requirements in bypass mode.</i></p>	<p>The date for the demonstration of bypass arrangements is to be confirmed by 13 September 2019.</p> <p>AGREED</p> <p>Patient safety in the event of a reduction of air exchange, for any reason, will be managed through infection prevention and control guidance and clinical risk assessment.</p> <p>Work is ongoing with contractors to ensure damper operation is compliant. The programme of works is to be provided by IHSL by 13 September 2019</p>

NHS Lothian response to NHS National Services Scotland Review of: Water, Ventilation, Drainage and Plumbing Systems in RHCYP & DCN



Issue	NSS Review	NSS Action Assessment	NHS Lothian action
General ventilation systems 2	<i>Air handling units and ductwork contain numerous deviations from contract requirements (SHTM 03-01) and were found not to be clean despite having been presented for validation. Deviations include: loose internal cabling in the airflow, cable routes allowing air to bypass filters, air leakage at penetrations and possible fan replacement difficulties which need to be corrected.</i>	<i>The ventilation systems throughout the hospital should be subject to a full snagging exercise and all defects rectified following which air handling units and ventilation systems are cleaned. All deficiencies identified in validation and specialist Consultant Engineer reports should be addressed as part of this.</i>	We are working closely with IHSL to ensure all the issues identified in the reports have been rectified. A specimen AHU with all the deficiencies rectified will be made available to NHS Lothian for inspection by HFS and our engineers in September 2019.
General ventilation systems 3	<i>The general ward ventilation design is based on four air changes per hour mechanical ventilation plus a component of natural ventilation. With a few exceptions, the mechanical component has been validated. However, design and validation information for the natural component has not been proven.</i>	<i>Confirm that all areas served by this arrangement are suitable for categorisation as general ward areas or single rooms as listed in SHTM 03-01 Part a, Appendix 1. Undertake an IPCT risk assessment ward by ward/ speciality specific in relation to the guidance.</i>	A risk assessment undertaken by IPCT and clinical teams will be completed by 13 September to ensure that patient placement recognises the general ward ventilation provision.
General ventilation systems 4	<i>The pressure regimen detailed in the design, and reflecting the environmental matrix, will be affected by opening windows and the pressure between the room and the corridor, and therefore direction of air flow, cannot be relied upon when windows are open.</i>	<i>A full assessment of the services and patient population should be carried out and mechanisms for monitoring established.</i>	AGREED Ward level risk assessments will recognise the contribution of open windows to the ventilation provided mechanically.
General ventilation systems 5	<i>External doors to plant rooms</i>	<i>Ensure that excessive gaps are removed and appropriate anti vermin measures are applied to all the doors and screens as per SHTM 03-01 and HFS Interim Guidance - Managing the Risk of Contamination of Ventilation Systems by Fungi from Bird Droppings – February 2019.</i>	AGREED This will be addressed by the end of September. All doors will then comply with the guidance.
General ventilation	<i>Fire dampers in some locations cannot be adequately tested as duct access has not been</i>	<i>Provide access so all fire dampers can be readily visually inspected to verify operation.</i>	AGREED Access to fire dampers will be

NHS Lothian response to NHS National Services Scotland Review of: Water, Ventilation, Drainage and Plumbing Systems in RHCYP & DCN



Issue	NSS Review	NSS Action Assessment	NHS Lothian action
systems 6	<i>provided. Also, locations of fire dampers and fire rated ductwork has been questioned in relation to the requirements of SHTM 03-01 and confirmation of compliant provision is awaited.</i>	<i>Review fire damper provision and fire rated ductwork and confirm appropriate provision</i>	corrected as part of the work to air handling units.
General ventilation systems 7	<i>Air intake location - Air intakes and opening windows are sited in the courtyard below the helipad and at the adjacent RIE. Information has not been provided on the impact of downdraft on air flows and pressures or entrainment of contaminants as per SHTM 03-01.</i>	<i>Demonstrate the effect of helicopter landing on air flows in ventilation systems with intakes below through measurement when test flights take place or through modelling. This should include the air intakes of the RIE adjacent.</i>	Modelling information has been shared with NSS. The effects of test flights on air flows will be measured in September/ October 2019.
Theatre ventilation systems 1	<i>Scrub areas which are narrow and deep are unlikely to be scavenged effectively by theatre air changes and require e alternative means of achieving removal of contaminants as per SHTM 03-01. The efficacy of the high level extract to achieve sufficient dilution of contaminants or entrainment of heavier than air water droplets is not in accordance with the requirements of SHTM 03-01 and has not demonstrated as equivalent.</i>	<i>The ability of the single high level extract provided in deep plan scrub areas to effectively prevent contaminants being dispersed into theatres should be demonstrated and/or additional low level ventilation provided.</i>	AGREED Evidence to confirm the adequate dispersal of contaminants has been requested. If this not satisfactory then a Board change will be instructed to provide low level ventilation.
Theatre ventilation systems 2	<i>Anaesthetic rooms 31 and 34 do not demonstrate a clean air flow path to reduce exposure of staff to gasses as per SHTM 03-01. Move ceiling supply to opposite side of room from extract. In room 30, move supply away from door.</i>	<i>Move ceiling supply to opposite side of room from extract. In room 30, move supply away from door.</i>	Demonstration of a clean air path has been requested by 13 September 2019; otherwise the supply will be moved.
Theatre ventilation systems 3	<i>Theatre utility rooms Extract ventilation means theatres have to be used in pairs and taking a theatre out of service may reduce the extract in utility room below the levels as per SHTM 03-01.</i>	<i>Add supplementary extract ventilation to allow for one theatre being out of service or plan for service impact following the loss of a pair of theatres. NHS Lothian has advised that the appropriate pressure differentials are maintained when only one theatre is operation. Validation</i>	IHSL have provided evidence that this arrangement meets the standard. Final checks on this are being completed.

NHS Lothian response to NHS National Services Scotland Review of: Water, Ventilation, Drainage and Plumbing Systems in RHCYP & DCN

Issue	<i>NSS Review</i>	<i>NSS Action Assessment</i>	NHS Lothian action
Isolation room ventilations systems	<i>Isolation rooms are not served by a single ventilation system for each room as recommended in SHPN4 Supplement 1. The arrangement provided, where ventilation systems serve an area of the building including contained isolation rooms, has not yet been proven in the event of failure of an air handling unit and the implications for service impact are not yet understood.</i>	<p><i>evidence is to be provided.</i></p> <p><i>Prove that bypass connections to adjacent ventilation systems will allow safe operation of both areas and / or explain service provision strategy for loss of each area including isolation rooms. Also include assurance on operational effectiveness e.g. the pressure differentials and air flows being maintained.</i></p> <p><i>Develop clinical service provision strategy to reflect the potential loss of up to 5 of the 19 isolation rooms on the failure of an air handling unit and confirm impact on service continuity.</i></p>	<p>The date for the demonstration of bypass arrangements is to be confirmed by 13 September 2019.</p> <p>Detailed advice from the infection control team to allow bespoke risk assessments would be followed in such circumstances.</p>

NHS Lothian response to NHS National Services Scotland Review of: Water, Ventilation, Drainage and Plumbing Systems in RHCYP & DCN

Water

NSS Review: Independent testing identified no widespread contamination of the water systems, however, remedial action is required on a number of water system areas as well as system wide disinfection prior to occupation.

NHS Lothian response: Remedial actions are underway and will be complete prior to occupation. Changes to the regime to maintain water quality have been made to address the findings of this review. System-wide disinfection will take place in the required timeframe prior to occupation.

Issue	NSS Review	NSS Action Assessment	NHS Lothian action
Water services augmented care	<i>Pseudomonas found in taps, in Paediatric Medical Inpatients and DCN Inpatients . (SHTM 04-01 Part A published in July 2014)</i>	<i>All taps (not just TMT/TMV4) to be disinfected and retested. Inspect and replace, as appropriate, taps, tap components and pipework. Replace tap strainers and cartridges in affected TMT taps.</i>	AGREED All taps found positive for pseudomonas prior to occupation will be disinfected and retested using an agreed method statement. To be completed by the end of September 2019.
Water services non-augmented care	<i>Swarf and biofilm found in tap strainers, contrary to SHTM 04- 01 Water safety for healthcare premises.</i>	<i>Replace tap strainers in all areas.</i>	AGREED All tap strainers will be cleaned and replaced if necessary. To be complete by the end of October 2019.
Showers	<i>Shower hose lengths do not comply with Scottish Water by-laws and guidance in SHTM 04-01 Water safety for healthcare premises.</i>	<i>Shorten hose length, or add retaining ring, to ensure that shower head cannot reach WC or drain. Disinfect showers, hose and drain after rectification.</i>	AGREED Shower hoses will be rectified by addition of a retaining ring. These have been ordered and will be fitted by end of September.
Water General 1	<i>Testing has found some fungal / mould contamination and high total viable counts.</i>	<i>Given a number of indicators the water system should be disinfected and re-tested.</i>	AGREED The water system will be disinfected and tested prior to occupation.
Water General 2	<i>Legionella risk assessment actions not recorded as required by HSE Approved Code of Practice and</i>	<i>The Legionella Risk assessment Feb 2019 identified a range of actions. The Action Tracker</i>	AGREED Changes to the water

NHS Lothian response to NHS National Services Scotland Review of: Water, Ventilation, Drainage and Plumbing Systems in RHCYP & DCN



Issue	NSS Review	NSS Action Assessment	NHS Lothian action
	<i>Guidance L8 - Legionnaires' disease. The control of Legionella bacteria in water systems. Legionella risk assessment insufficient to reflect system contamination in general. Those responsible for the system have a responsibility under the Control of Substances Hazardous to Health Regulations 2002 (COSHH) to prevent exposure to microorganisms.</i>	<i>does not demonstrate that the issues raised have been resolved or a timeline provided for resolution. Record rectification of actions. The risk assessment is heavily focussed on Legionella and not taking into account other organisms in line with patient type that will occupy the building. Broaden to reflect system contamination in general. Develop analysis categorisation of patient type and consideration to susceptibility for each area.</i>	management plan have been made to reflect this.
Water General 3	<i>Designated roles and responsibility as per SHTM 00 Best practice guidance for healthcare engineering.</i>	<i>The current Responsible Person (RP) has not been appointed in writing and uncertain as to whether received RP training. Additionally, has no previous experience of healthcare.</i>	AGREED The name of the responsible person has been confirmed; their qualifications will be provided.
Water General 4	<i>Water tanks as per SHTM 04-01 Water safety for healthcare premises.</i>	<i>To be inspected. The Raw Water and Filtrate water tanks are interconnected at the drain. These must be separated.</i>	AGREED This work will be complete by the end of September 2019.
Water General 5	<i>Hot and cold water temperatures / flushing. SHTM 04-01 Water safety for healthcare premises</i>	<i>There was an issue with raised cold water temperatures during the boiler outage – this requires investigation.</i>	AGREED Regular monitoring of hot and cold water temperatures is part of the water maintenance plan.
Water General 6	<i>Filtration Plants</i>	<i>From lessons learned by NSS in recent work, microbiological growth potential was identified as part of the Backwash cycle. Consideration should be given to Chlorine dioxide addition to backwash water tank to counter microbiological and biofilms development on filters.</i>	CLOSED NHS Lothian will consider new advice as it is produced and incorporate this into the water management plan as necessary.
Water General 7	<i>Instant Boil Taps and Rise and Fall Baths</i>	<i>These were found to be contaminated and need to be disinfected and tested to demonstrate safe water delivery as per SHTM 04-01 Water safety for healthcare premises.</i>	AGREED This action is underway in conjunction with the manufacturers.

NHS Lothian response to NHS National Services Scotland Review of: Water, Ventilation, Drainage and Plumbing Systems in RHCYP & DCN

Drainage and Plumbing

NSS Review: The drainage system has multiple redundancies in place, however, active monitoring is required. Elements of plumbing require disinfection.

NHS Lothian Response: Monitoring arrangements for drainage are incorporated into the building maintenance schedule. All necessary disinfection of plumbing will be incorporated into the maintenance schedules.

Issue	NSS Review	NSS Action Assessment	NHS Lothian action
Drainage and plumbing 1	Sinks drains	<i>Initial testing indicates that these are not significantly contaminated, however the horizontal drain and protruding seal means they retain stagnant water and they need to be disinfected periodically prior to and post occupancy to maintain their condition. From lessons learned, there should be a system of inspection and appropriate remedial action taken.</i>	CLOSED This will be incorporated into the water management plan prior to occupation of the building.
Drainage and plumbing	Bottle traps	<i>There would appear to be an inconsistency of installation and potential of back-feed from trap to drain. This requires review and rectification.</i>	CLOSED Disinfection of the bottle traps will be incorporated into the regular maintenance regime.
Drainage and plumbing 3	Pumped drainage	<i>The internal pumped sewage drainage system presents the potential for sewage to back up through basement drains on pump failure and will require active monitoring.</i>	CLOSED The monitoring of pumped drainage is in place and is on the critical alarm list.

RHCYP & DCN Oversight Board

12 September 2019

Enhanced arrangements for RHSC and DCN for winter 2019/20

DCN

- Remains part of Western General Hospital campus for site and flow management
- Critical care capacity on the WGH will remain at 16 beds and will not reduce to 10 till after DCN moves. This is a planned temporary reduction to allow remedial works for improving water safety
- WGH have a case at the Scottish Government Capital investment Group next Tuesday for the upgrade of Ward 15 to make this available as a contingency for a winter ward as part of a broader WGH Haematology capital case.

RHSC

- A plan is underway to increase the floor space in the ED by approximately 50%. This will aid ED patient flow management, and be achieved by relocating some Outpatient clinics into our Surgical Admissions Unit (SAU)
- SAU activity is going to be absorbed into the surgical wards
- We are creating an additional 14 Medical beds (over and above our usual extra Winter bed capacity) by moving orthopaedic and spinal surgery into another ward area.
- We are out to recruitment currently for our usual additional Winter staffing (ED and Ward nursing)
- The Business case submitted for additional year- round ED staffing, particularly to support evening and night activity pressures, was approved some months ago and we have recruited most of the staff for Phase 1, including an Advanced Paediatric Nurse Practitioner for the ED
- SJH Children's ward is now open 4 nights/ week, which will reduce the pressure on the RHSC ED and inpatient service this Winter, compared to 2017/18 and 2018/19 when the SJH ward was closed completely to inpatients

Tracey Gillies

Medical Director

DCN Interventional Neuro-Radiology

Intermittent Fault risk - Replacement Options

Situation

The Department of Clinical Neuro-Science (DCN) based at the Western General Hospital is currently the only centre in Scotland delivering a full Neuro-Interventional Service for the population of Scotland. The waiting times for elective neuro-interventional procedures are increasing to levels which are clinically concerning with the potential for unacceptable consequences including patient harm. Currently 41 patients are waiting up to 10 weeks for their Neuro interventional procedures. The waiting time is normally 6-8 weeks.

The reasons for the increase in waiting time are:

1. The unreliability of the bi-plane imaging equipment based in catheterisation lab within DCN has resulted in limited capacity.
2. Since January 2018 NHS Lothian has been supporting NHS Greater Glasgow and Clyde to deliver an Interventional Neuroradiology Service which has resulted in DCN receiving all of Scotland elective demand. This exceeds the current DCN capacity, increasing the waiting time, adding additional stress on the equipment which has resulted in further equipment failure.

As a result of old unreliable equipment in both NHS Lothian and GG&C we recently experienced a situation when both Bi-planes failed at the same time over a weekend resulting in a limited Scottish INR service. The GG&C Bi-plane imaging equipment is very old and will be at end of life in Dec 2019. GG&C are working with Capital Planners to replace the equipment. There is considerable fragility of the national service.

Staffing Capacity

Extending current sessions or adding additional sessions to reduce the waiting times on the existing DCN bi-plane unit is not possible in the short term due to the time required to recruit and train the required specialist Interventional Neuroradiologists, Nurses and Radiographers. The current team in DCN are already stretched in providing additional elective capacity to cover West of Scotland elective patient procedures working flexibly between DCN and the WGH main department.

Background

The Siemens Bi-plane imaging equipment is 7 years old and has for a number of years been consistently unreliable.

The table below outlines the number of occasions the unit has failed over the past two years and the impact on service delivery.

Calendar Year	No, of down time occasions	No. of hours down
2018	41	171.6hrs
2019 to date	29	216.6hrs

Due to reliability issues and the delayed DCN move, there is a requirement for the service to consider options on how to maintain delivery of both elective and acute procedures.

NHS Lothian and GG&C are currently the only two boards in Scotland who provide INR services for NHS Scotland. There has been a weekend rota in place for alternating centres to provide cover for the whole of Scotland for acute interventions for subarachnoid haemorrhage for many years.

Since January 2018, the GG&C service has experienced service delivery problems. This has resulted in significant collaboration between the two centres with agreement that NHS Lothian consultants and staff would take on increased workload through varying service provision initiatives. Details of actions taken to address these delivery issues are noted in Appendix 1.

Assessment

NHS Lothian has one bi-plane unit which is the standard equipment necessary to undertake specialist procedures.

Activity often does not match capacity for a number of reasons including:

- Equipment failure
- Cancelled cases due to urgent acute cases
- Cancelled cases due to clinical reason

Due to the service delivery issues in Glasgow, the location of interventions has moved to NHS Lothian alone. Overall demand for Scotland has not increased, however this has increased demand at DCN which is outweighing current capacity.

The longer the patients wait the higher the risk of vascular eruption.

Options Appraisal

There are 3 options for consideration;

1. Do nothing
2. The Bi-plane equipment is replaced with an equitable specification unit in a rapid replacement programme.
3. Identify an alternative clinical area for a temporary second bi-plane unit

Option 1 – Do Nothing

Accepting the current arrangement will not improve the capacity required to meet demand. Due to the recognised clinical risk of such clinical conditions, allowing the waiting list to grow and do nothing to reduce the risk of equipment failure it is not considered reasonable. Ad hoc additional sessions may be possible, but will be severely limited by staff availability and equipment uptime.

- Advantage no additional capital cost
- Disadvantage delayed treatment and potential loss of life whilst waiting for treatment

Costs

Only ad hoc additional sessions where possible

Option 2 – Equipment Replacement

An equipment replacement programme could be commissioned which would see the current equipment being removed and replaced with a modern fit for purpose specified product. Lead time for equipment replacement is expected to be in the region of 3 months.

Costs

Exact costs would need to be confirmed, however indicative costs include:

- Replacement equipment £650K + VAT
- Turnkey costs £30K + VAT
- No revenue implication other than those required to reduce the waiting times in advance

Impact

The impact will be significant, effecting both acute and elective work. The unit would be without Bi-plane equipment for a minimum of 4 weeks. The waiting lists for elective work could increase by approximately 16 cases and acute work would need to be undertaken in other departments and / or Glasgow.

This option will require significant pre-project planning to initially reduce the elective work prior to the equipment replacement in an attempt to minimise impact on waiting times.

During the 4 weeks down time the acute service where appropriate could be delivered either in a single plane system located in the WGH main X-Ray department or some of the referrals could be redirected to GG&C.

Advantage –

- The old unreliable equipment is replaced.
- The replacement could be a suitable standard to undertake thrombectomy as a proposed second facility in RHSC/DCN, accommodation at the Little France site has yet to be confirmed.

Disadvantage –

- waiting times will increase and a significant compromise of service will be experienced due to the loss of equipment for 4 weeks.
- Reliance on Newcastle/Manchester/Preston to help with emergency cases
- Capital cost of £680K + VAT

Thrombectomy indicative costs

Indicative Capital Costs		Construction costs – Angio Suite - £500,000 Bi-Planar Medical Equipment for Angio Suite - £1,000,000 HASU Monitoring Equipment - £30,000 per bed
---------------------------------	--	--

Indicative Revenue Costs (over and above staffing)		Annual maintenance of bi-planar equipment - £50,000 Annual maintenance of HASU monitoring equipment - £TBC Consumables for Angio-Suite - £8,000 per case. (£2m pa)
---	--	--

Option 3 – Temporary Unit

Two areas have been considered within the DCN footprint where an additional Bi-plane could be accommodated. This additional Bi-plane unit could be relocated to the Little France site when DCN moves assuming suitable accommodation is found.

3.a. Potential Location 1

Bespoke Modular Pod with Bi-plane imaging equipment

A bespoke pod to be designed and installed in the DCN car park. There would be a need to connect the Pod with the DCN building and as a result careful planning would be required and consideration given to utilities (power, IT water etc) and loss of parking.

Early discussion with Siemens and their design partners suggest this option could be realised within a 5 month time frame once a purchase order has been received. Costs to be confirmed but expected to be in the region of £900K. Modular build commissioning of bespoke system estimate £800k.

Advantage –

- no loss of activity during the install and a second biplane system available to the service offering reliability.
- This bi-plane unit could be transferred to undertake thrombectomy as a proposed second facility in RHSC/DCN, accommodation for this at the Little France site has yet to be confirmed.
- No reliance on Newcastle/Manchester/Preston to help with emergency cases

Disadvantage –

- Cost to be explored, loss of parking, timeframe involved

3.b. Potential Location 2

Brain Research Imaging Centre (BRIC) MRI unit.

This current space is empty as a result of University of Edinburgh closed down the unit due to the planned move to the Little France site which was subsequently cancelled. This space is regarded as unsuitable as there are a number of issues which would need to be resolved including:

- Lead lining
- Ceiling struts to support the Bi-plane unit
- A new air exchange unit (24 exchanges per hour are required) at a cost of £250K +VAT

Recommendations

It is clear that the migration of the INR service as part of the DCN reposition to Little France is urgent to avoid further risk to patients caused by the currently unreliable bi-plane unit.

With the above in mind it is proposed that the preferred options are:

- **Move within 3 months**
 - Option 1
Do nothing – maintain the current service on the existing equipment
- **Move approx 6 months**
 - Option 1 or option 3a to be considered to ensure continuity of service and avoid any downtime.
Temporary Unit - Bespoke Modular Pod with Bi-plane imaging equipment
- **Move approx 9 months or more**
 - Option 3a to be considered to enable continuity of service and avoid any downtime.
Temporary unit - Bespoke Modular Pod with Bi-plane imaging equipment

It is evident there is no option which singularly meets both the need to increase capacity and reduce the amount of equipment down time. Embedding the Thrombectomy plans as part of the solution is a great risk, as the business case has yet to be approved.

Appendix 1

- Both centres cover alternate weekends.
 - NHS Lothian within their current establishment
 - GG&C through either within their own establishment or with locum staff support
- Acute work during the week is covered by both centres
- Elective work from within the West of Scotland catchment are discussed at an MDT attended by Lothian INRs with the procedures performed in NHS Lothian by the Lothian team
- Communication is maintained through a fortnightly management led teleconference

Option	Timescale	Approximate Cost	Advantages	Disadvantages
Option 1 Do Nothing	N/A	None	No additional cost	Fragile service with risk of equipment downtime
Option 2 Equipment Replacement	3 months	£816K	Replace old / unreliable equipment Back up equipment Future proof service and potential to accommodate Thrombectomy.	Increased waiting times in the short term Significant impact to service due to loss of equipment for 4 weeks Reliance on external centres for emergency cases
Option 3a Bespoke Modular Pod with Bi-plane imaging equipment	5 months following purchase order	£1.7m	No loss of activity due to down time Back up equipment Future proof service and potential to accommodate Thrombectomy.	Full cost unknown Estimate for modular build Revenue impact TBC Loss of parking Timeframe involved
Option 3b Brain Research Imaging Centre (BRIC) MRI unit	TBC	£1.2 million	Back up unit	Space regarded as unsuitable

From: [Graham, Chris](#)
Subject: RHCYP, DCN, CAMHS Oversight Board
Date: 24 September 2019 11:35:41
Attachments: [image001.png](#)
[RHSCSt Johns.msg](#)
[RHCYP OB 19-09-19 Minutes - Draft.doc](#)

Dear Colleagues,

Please find attached the oversight board minute from last week along with an email closing off Tracey Gillies' action around use of St John's to relieve winter pressures at RHSC.

PLEASE ALSO NOTE THAT THIS WEEK'S OVERSIGHT BOARD (26/9) HAS BEEN CANCELLED TO ALLOW TIME TO ASSESS THE FIRE RISK POSITION AND THE SPECIMEN AIR HANDLING UNITS.

The next oversight board will be held on 3 October.

Kind regards
Chris

Chris Graham
Secretariat Manager

Achieving [deadlines](#) means you are respecting your colleagues and supporting effective decision-making.



The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use,

disclosure, copying or alteration of this message is
strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>



Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 19 September 2019, 8:00 – 9:30am

Venue: Room 5, Waverley Gate, EH1 3EG

AGENDA

1.	Chair's Welcome and Introductions	CMc	V
	Apologies:		
2.	Minutes of previous meeting – for Approval	CMc	*
3.	Matters Arising		
	3.1 Senior Programme Director appointment and updated Oversight Board Terms of Reference	CMc	*
	3.2 Winter capacity for paediatrics in RHSC / SJH	TG	V
	3.3 DCN Interventional neuroradiology	CMc / TG	V
	3.4 Drainage concerns from staff side	GA	V
4.	Senior Programme Director Update	MM	V
5.	Briefing on contractual change process and governance	BC	*
	STANDING AGENDA ITEMS		
6.	Technical Reviews progress		
	6.1 Ventilation	TG	V
	6.2 Water quality	TG	V
	6.3 Drainage	BC	V
	6.4 Fire	GJ	V
	6.5 Electrical	GJ	V
	6.6 Medical gases	GJ	V
7.	Commercial Progress	BC	V
8.	Programme / Occupation Timelines	BC	V
9.	Communications		
	9.1 Staff communications	JM	V
	9.2 Requests for information	SC	V
10.	Any Other Competent Business		

11.	Date of Next Meeting	All	v
	Thursday 26 th September 2019, 8am, Meeting Room 5, Waverley Gate		

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 12 September 2019 in Meeting Room 8, Waverley Gate, Edinburgh.

Present: Ms C. McLaughlin, Chief Finance Officer, Scottish Government (chair); Ms T. Gillies, Medical Director, NHS Lothian; Professor A. McMahon, Nurse Director, NHS Lothian (until 9am); Professor F. McQueen, Chief Nursing Officer, Scottish Government (until 9am); Mr C. Marriott, Deputy Director of Finance, NHS Lothian (for Susan Goldsmith); Mr C. Sinclair, Chief Executive, NHS National Services Scotland and Mr G. Archibald, Joint Staff Side Representative.

Present by Telephone: Mr P. Reekie, Chief Executive, Scottish Futures Trust;

In Attendance: Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Mr B. Currie, Project Director, NHS Lothian; Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

In Attendance by Telephone: Ms M. Morgan, Director of Strategy, Performance and Service Transformation, NHS National Services Scotland; Mr E McLaughlan, Assistant Director, Engineering, Environment and Decontamination, Health Facilities Scotland; Ms K Taylor, NHS Lothian Communications and Ms Laura Imrie, Nurse Consultant, Infection Prevention and Control, Health Protection Scotland.

Apologies: Ms S. Goldsmith, Director of Finance, NHS Lothian; Mr G. James, Director of Facilities, Health Facilities Scotland; Ms J. Mackay, NHS Lothian Director of Communications; Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side) and Dr C. Calderwood, Chief Medical Officer, Scottish Government.

The Chair welcomed members to the meeting and members introduced themselves.

1. Minutes of previous meeting – for Approval

1.1 The minutes of the meeting held on 5 September were accepted.

2. Matters Arising

2.1 Cabinet Secretary Communications 11 September – The Chair thanked those involved in helping to prepare for yesterday's Cabinet Secretary statement. The Chair gave an update following yesterday's discussion in parliament. The role of the oversight board continues with support from HPS as necessary. The change to level 4 escalation had been noted and Ms Morgan had been appointed to the Senior Programme Director role, working within NHS Lothian and reporting directly to Scottish Government. Ms Morgan would be starting this new role from Monday 16 September 2019. There would be formal communication issued to NHS Lothian and this role would fit in with existing NHS Lothian governance. The oversight board terms of reference would need to be updated to reflect Ms Morgan's new role.

- 2.2 Haematology-oncology Board Change – for noting - The Board Change, approved at the Executive Steering Group, was noted. It was agreed that it would be helpful to form a small group with Miss Gillies, HPS and Professor McQueen or a nominated deputy, to provide clarity around the decisions made and the governance route for this change.

Agreed that a briefing to the oversight board on the contractual process involved in submitting a board change, and governance arrangements, would be useful at a future meeting. Using the haematology-oncology change as an example.

3. Reports

- 3.1 NSS Review – final report for noting - The Chair passed formal thanks to everyone involved with the work around producing the report.

3.2 NHS Lothian Response to NSS Report

1. Point of clarification: this is not the Action Plan, but a response to NSS report.
2. Report reflects that some actions require evidence from IHSL not NHSL.
3. Confirmation that there is need to address issues formally through steering board meetings with IHSL, as well as progressing them on site with Multiplex colleagues.
4. Mr I Graham to assist in preparing correspondence to go out on behalf of the oversight board to IHSL around the need for evidence to address and close issues.
5. IHSL are requesting clarification on the NHSL response published: Mr Graham is liaising with them.
6. Focus needs to remain on getting work moving and getting the building occupied and the meeting noted the opportunity for Ms Morgan to sit down with IHSL, following discussion with Mr Currie, Mr I Graham and the team, to work together on moving issues forward.
7. Miss Gillies proposed NHS Lothian bring the approximately 80 item action plan to the oversight board as a one off paper, including detail around process, and then only items which were stuck or where there was a difference of opinion to resolve should come back to the group. The role of the oversight board was not to replace internal NHSL governance arrangements.
8. There would be consideration of a more visual presentation or reporting tool once Ms Morgan started her new role.

4. Plans for Existing RHSC & DCN Sites

4.1 Arrangements for RHSC and DCN for winter 2019/20

1. Miss Gillies to explore and report back on options for capacity / service at St John's Hospital.
2. Mr Marriott to pull together costs report for proposed arrangements and circulate outside the meeting.

4.2 DCN Interventional Neuro-Radiology Intermittent Fault risk - Replacement Options

1. Current machine at end life and pursuing options including a bespoke modular build at WGH, which would be the NHS Lothian preferred option (3a in the report).
2. NHS Lothian has a dependable workforce but issues with kit, NHS Greater Glasgow and Clyde have better kit but problems with workforce. However both Boards equipment was coming to the end of its life.

3. The Chair to follow up on alternatives as indicated by Cabinet Secretary in the statement to parliament yesterday.
4. NHS Lothian is working with Siemens on replacement option timeframe and costs.
5. NHS Lothian to confirm that NHS GG&C are supportive of the preferred option.

4.3 RHSC Disposal

Noted that the developer had come back positively following the Cabinet Secretary announcement and Mr I Graham would bring further details to the oversight board as appropriate.

5. **Technical Reviews progress**

5.1 Ventilation Key Points

1. Workshop planned for 12 September to narrow down action items.
2. A number of items require evidence or demonstration from IHSL; this has been requested.
3. Delay with the Specimen Air Handling Unit demonstration
4. There remains an issue with cabling inside the Air Handling Units to be resolved, despite guidance being clear around Units not containing anything which can initiate or sustain combustion. Ms Morgan to take this forward with IHSL and the project team. Further update to be provided ahead of next week's oversight board.

5.2 Water Quality Key Points

1. Actions as described in the NHS Lothian response are progressing.

5.3 Drainage Key Points

1. Mr Archibald to check with staff side colleagues and bring back any concerns highlighted around drainage to the oversight board.
2. Difference between drainage issues and flooding incidents to be made clearer in public communications moving forward.

5.4 Fire Key Points

1. Work on smoke dampers, fire doors and cladding compliance confirmation ongoing. Report expected 7 October 2019.

5.5 Electrical Key Points

1. Review is complete and report is being written up for 7 October 2019.

5.6 Medical Gases Key Points

1. Work started earlier this week with a view to reporting by 7 October 2019. Mr McLaughlan noted that a weekly status report for phase 2 reviews (fire, electrical and medical gases) would continue to be provided for NHS Lothian.

6. **Commercial Progress**

- 6.1 Already covered.

7. Programme / Occupation Timelines Key Points

7.1 Mr I Graham to pick this up with Ms Morgan once she begins her new role.

8. Communications

8.1 Staff Communications - The Cabinet Secretary letter and message from NHS Lothian Chief Executive issued yesterday were noted. There remains an open communications channel between NHS Lothian and Scottish Government communications.

8.2 Requests for information – no new requests received at this time.

9. Any Other Business

9.1 There was no other business.

10. Date of Next Meeting

10.1 The next meeting of this group would take place at **8.00 am on Thursday 19 September 2019, Meeting Room 5, Waverley Gate.**

**Oversight Board:
NHS Lothian Royal Hospital for Children and Young
People, Department of Clinical Neurosciences and
Child and Adolescent Mental Health Services**

Terms of Reference

Date Published: July 2019
Version: V1.0
Document Type: ToR
Review Date: N/A

DOCUMENT CONTROL SHEET



Key Information:

Title:	Terms of Reference
Date Published/Issued:	
Date Effective From:	
Version/Issue Number:	1.0
Document Type:	ToR
Document Status:	Draft
Author:	Christine McLaughlin
Owner:	Scottish Government
Approver:	Malcolm Wright, DG Health & Social Care and Chief Executive NHS Scotland
Approved by and Date:	
Contact:	
File Name:	

Approvals: *This document requires the following signed approvals:*

Name	Title	Date	Version
Malcolm Wright	Director General and NHSScotland Chief Executive		
Ms Freeman	Cabinet Secretary		

Distribution:

This document has been distributed to:

Name:	Date of Issue:	Version:

1. Name of the Board
Oversight Board: NHS Lothian Royal Hospital for Sick Children, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services
2. Background
<p>Following the decision to halt the planned move to the new Hospital facilities on 9 July an Oversight Board is being established to provide advice to ministers on the readiness of the facility to open and on the migration of services to the new facility.</p> <p>On Tuesday 2 July, NHS Lothian alerted the Scottish Government to an issue with the ventilation system at the Royal Hospital for Children and Young People (RHCYP) in Edinburgh.</p> <p>The Cabinet Secretary was not satisfied that the issue could be resolved within the very short timeframe available before services were to move to the new hospital, and required further assurance on all aspects of compliance with standards across the new hospital. For this reason, the planned move was halted in the interests of patient safety.</p> <p>Work has been initiated to identify the solution needed to ensure the ventilation in the critical care unit in the new site meets the required clinical and safety standards. Scottish Government has commissioned NHS National Services Scotland (NSS) to undertake a detailed assessment of all buildings systems in the new hospital which could impact safe operation for patients and staff, recognising how infection prevention must always be embedded within the design, planning, construction and commissioning activities of all new and refurbished healthcare facilities. This work will be phased, with assessment of water, ventilation and drainage systems prioritised, including the proposed fix for the ventilation unit. This will determine the timeframe for migration of services to the new hospital and a full report is anticipated in September.</p> <p>In order to provide co-ordinated advice to ministers, an Oversight Board is being established which will seek assurance from NHS Lothian that according to its due diligence and governance, the facility is ready to open; and from NHS NSS that its agreed diligence has been successfully completed.</p>
3. Scope of work
<p>The Oversight Board will provide advice in relation to:</p> <ul style="list-style-type: none"> • Advice on phased occupation; • Advice on the proposed solution for ventilation in critical care areas and on any other areas that require rectification works; • Advice on facility and operational readiness to migrate; • Gain information and give advice to NHS Lothian about commercial arrangements with IHSL for completion of works; • The approach to NPD contract management • Identification of areas that could be done differently in future

4. Membership
<p>The Board membership will be:</p> <p>Christine McLaughlin, Chief Finance Officer, Scottish Government Catherine Calderwood, Chief Medical Officer, Scottish Government Prof Fiona McQueen, Chief Nursing Officer, Scottish Government Susan Goldsmith, Director of Finance, NHS Lothian Tracey Gillies, Executive Medical Director, NHS Lothian Prof Alex McMahon, Nurse Director, NHS Lothian Peter Reekie, Chief Executive, Scottish Futures Trust Colin Sinclair, Chief Executive, NHS National Services Scotland Alex Joyce, representative from NHS Lothian Joint Staff Side (deputy Gordon Archibald)</p> <p>Attending the Board to provide advice and assurance will be:</p> <p>Mary Morgan, Senior Programme Director Brian Currie, Project Director, NHS Lothian Judith Mackay, Director of Communications, NHS Lothian Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work Gordon James, Health Facilities Scotland, NHS National Services Scotland IHSL would be in attendance on as 'as required' basis</p>
5. Governance
<p>The Board will provide advice to the Cabinet Secretary</p>

6. Meetings
<p>The Board will commence their work in August 2019 and will meet frequently for the first 3 months as appropriate and will agree a plan of work which will determine future meetings. The first meeting will take place on Thursday 8 August 2019.</p>
7. Outputs
<p>The Board will provide advice to the Cabinet Secretary on the decisions set out in the scope</p>

RHCYP & DCN Oversight Board

19 September 2019

Board Change Procedure

- NHSL issues a Board High Value Change Notice (“Notice”) identifying the target cost and requirements to be satisfied together with a note on how value for money will be assessed.
- Within 5 Business Days of receipt of the Notice parties are obliged to discuss and review the Change.
- As soon as practicable and in any event within 15 Business Days of receipt of the Notice, IHSL must notify the Board if it is entitled to refuse the Change. This is unlikely here.
- Within 30 Business Days of receipt of the Notice IHSL must submit a proposal or notify the Board when the proposal will be submitted, noting that they are obliged to use all reasonable endeavours to obtain all information required to submit a proposal expeditiously. There is an opportunity to challenge the time being taken via DRP.
- The proposal must contain the information set out in paragraph 3.4 of the Change Procedure, which ensures cost control, certainty and transparency. There is no detailed design at this stage only an outline building solution and design.
- NHSL then reviews the proposal in good faith and has the opportunity to comment on any unsatisfactory elements. If the proposal is approved it becomes a Stage 1 Approved Project.
- Within 10 Business Days of the Change becoming a Stage 1 Approved Project, the Parties will agree a time period for the detailed submission. In the absence of agreement on the time period, this can again be determined by DRP. Thereafter IHSL will proceed regularly and diligently to produce a Stage 2 submission.
- The requirements for the Stage 2 Submission are set out at paragraph 4.3 of the Change Procedure, which at this stage will include the detailed design solutions (to RIBA Level D) and again ensures cost control, transparency and programme certainty.
- The Change is then considered in good faith by NHSL using the approval criteria set out (which includes elements of cost control).
- If the Change is rejected pursuant to the criteria set out then there are certain costs incurred by IHSL that NHSL need to meet.
- It should be noted that NHSL’s right to procure the Change via any other routes available to them is still reserved.
- If the Change is approved it is implemented so as to minimize any inconvenience to the Board and to the provision of the Board Services (programme having been agreed as part of the stage 2 submission).
- Payment is made in accordance with the payment schedule agreed as part of the Stage 2 submission.
- Any changes to ASP are calculated to ensure that IHSL is in no better or worse position.

RHSC & DCN**TIMETABLE FOR HIGH VALUE CHANGE TO IMPLEMENT VENTILATION WORKS IN CRITICAL CARE**

Action	Date
NHSL issues a Board High Value Change Notice (“Notice”) stating:- <ul style="list-style-type: none"> • That it is a High Value Change; • The target cost; • Any requirements to be satisfied as part of the High Value Change Proposal; and • How the Board will assess value for money. 	T
Parties to discuss and review the nature of the Notice, including a discussion on which items in paragraph 3.4 of Section 4 of Schedule Part 16 (Change Protocol) require to be included in the proposal.	By T + 5 BD
IHSL must notify the Board if it is considers it is entitled to refuse the Change. The grounds on which IHSL are entitled to refuse are set out in paragraph 1.2 Section 4 of Schedule Part 16 (Change Protocol). We believe it would be difficult for IHSL to successfully argue they are entitled to refuse the Change.	As soon as practicable and in any event by T + 15 BD (“D1 day”)
Time limit for NHSL to dispute (via the DRP procedures in the PA) any argument by IHSL that they are entitled to refuse the Change.	D1 Day + 20 BD
IHSL submit a proposal or notify NHSL when the proposal will be submitted, noting that they are obliged to use all reasonable endeavours to obtain all information required to submit a proposal expeditiously. There is an opportunity to challenge the time being taken by IHSL to issue the proposal at DRP. The proposal requires to include the information set out in paragraph 3.4 of Section 4 of Schedule Part 16 (Change Protocol) (unless otherwise agreed between the parties).	T + 30 BD
Once the proposal has been submitted there are provisions for liaison by NHSL with IHSL and relevant end users and then consideration of the proposal by NHSL in good faith. NHSL is not obliged to approve the proposal.	
If NHSL approves the proposal is becomes a Stage 1 Approved Project.	S1

Parties to discuss and review the nature of the Stage 1 Approved Project, including a discussion as to what items set out in paragraph 4.3 require to be included within the Stage 2 submission.	S1 + 5BD
Parties to agree a time period for submission of the Stage 2 submission. In the absence of agreement, the time period can be determined at DRP.	S1 + 10BD
IHSL to proceed regularly and diligently to produce stage 2 submission within agreed or determined timescale. There are requirements on the parties in relation to liaison whilst the stage 2 submission is being finalised and NHSL has certain obligations in relation to co-operation.	
<p>Once submitted the stage 2 submission shall be valid for three months and there are provisions and associated timescales governing:-</p> <ul style="list-style-type: none"> • the process for approval / rejection of the Change; • any changes to the requirements / approval criteria for the Change; and • costs which NHSL are obliged to meet where the stage 2 submission is approved / rejected. <p>There are also provisions, applicable only where the Change is properly rejected by NHSL in accordance with the Change Protocol, for NHSL to procure the implementation of the Change without further recourse to IHSL (provided that NHSL must ensure the change is undertaken in accordance with Good Industry Practice).</p>	
Where the project is approved, the Change is implemented in accordance with the agreed programme and payment made in accordance with the agreed payment schedule (all of which requires to be detailed as part of the stage 2 submission).	

From: [Graham, Chris](#)
Subject: RHCYP, DCN, CAMHS Oversight Board Papers - 03/10/19..
Date: 02 October 2019 11:31:13
Attachments: [image001.png](#)
[Oversight Board Papers_03-10-19.pdf](#)

Dear Colleagues

Please find attached the papers for tomorrow's oversight board meeting to be held in Room 6&7 Waverley Gate from 8-9.30am.

Please note that there are links to and from papers/agenda within the pdf.

Dial in Details for the meeting remain the same:

[REDACTED]
participant code [REDACTED]

Kind regards
Chris

Chris Graham
Secretariat Manager
[REDACTED] 4

Achieving [deadlines](#) means you are respecting your colleagues and supporting effective decision-making.



The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems

please notify the originator immediately. The unauthorised use,
disclosure, copying or alteration of this message is
strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 3 October 2019, 8:00 – 9:30am

Venue: Room 5, Waverley Gate, EH1 3EG

AGENDA

1.	Chair's Welcome and Introductions	CMc	V
	Apologies:		
2.	Minutes of previous meeting on 19/09/19 – for approval	CMc	*
3.	Matters Arising		
	3.1 Drainage concerns from Unison	MM	V
4.	Senior Programme Director Update	MM	*
5.	Programme Milestones and Dependencies	MM	V
	STANDING AGENDA ITEMS		
6.	Technical Reviews progress		
	6.1 Ventilation RHCYP & DCN – Air Handling Units remedial works proposal RHCYP & DCN Ventilation rate risk assessment – for approval Haematology Oncology provision in RHCYP – for approval	BC TG TG	# * *
	6.2 Water quality	BC	V
	6.3 Drainage Drainage summary report	BC	*
	6.4 Fire	GJ	*
	6.5 Electrical	GJ	*
	6.6 Medical gases	GJ	*
7.	Commercial Progress	SG	*
8.	Communications		
	8.1 Staff communications	JM	V
	8.2 Requests for information	SC	V
9.	Any Other Competent Business		
	Single action plan for the Cabinet Secretary: Planning for continuity on existing sites	TG	V

10.	Date of Next Meeting	All	
	Thursday 10 October 2019, 8am, Meeting Room 5, Waverley Gate		

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 19 September 2019 in Meeting Room 8, Waverley Gate, Edinburgh.

Present: Ms C. McLaughlin, Chief Finance Officer, Scottish Government (chair); Ms S. Goldsmith, Director of Finance, NHS Lothian; Ms T. Gillies, Medical Director, NHS Lothian; Professor A. McMahon, Nurse Director, NHS Lothian; Mr P. Reekie, Chief Executive, Scottish Futures Trust; Mr C. Sinclair, Chief Executive, NHS National Services Scotland; Ms Diane Murray, Associate Chief Nursing Officer, Scottish Government (for Professor F. McQueen) and Mr G. Archibald, Joint Staff Side Representative.

In Attendance: Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Mr B. Currie, Project Director, NHS Lothian; Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian; Mr G. James, Director of Facilities, Health Facilities Scotland; Ms M. Morgan, Senior Programme Director; Ms J. Mackay, NHS Lothian Director of Communications; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

In Attendance by Telephone: Mr E McLaughlan, Assistant Director, Engineering, Environment and Decontamination, Health Facilities Scotland.

Apologies: Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side); Professor F. McQueen, Chief Nursing Officer, Scottish Government; Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work and Dr C. Calderwood, Chief Medical Officer, Scottish Government

The Chair welcomed members to the meeting.

1. Minutes of previous meeting – for Approval

1.1 The minutes of the meeting held on 12 September were accepted.

2. Matters Arising

2.1 Senior Programme Director appointment and updated Oversight Board Terms of Reference – Chair welcomed Ms Morgan officially into her new role. The updated terms of reference were accepted.

2.2 Public Inquiry Announcement – The announcement of the statutory inquiry was noted. There would be no change to the role or remit of the oversight board.

2.2 Winter Capacity for Paediatrics in RHSC/SJH – Miss Gillies has provided a written update to Dr Gregor Smith following up on the Cabinet Secretary's concerns and any way to relieve pressures at the Sciennes site. The potential to move some unscheduled care work to St John's Hospital was being considered. It was agreed to circulate the written report to the oversight board.

TG/SC

- 2.3 DCN Interventional Neuroradiology – It was agreed that Miss Gillies would report back to the oversight board on the timelines around the modular build and DCN move and bring an options paper to the group for discussion.

TG

- 2.4 Drainage Concerns from Staff Side - Further discussion to clarify the question being asked to be held out with the meeting and an SBAR to be developed and brought back to the next oversight board.

MM

3. Senior Programme Director Update

1. Ms Morgan reported that it had been nice to have the Chief Executive from the Edinburgh Childrens Hospital Charity along to the recent programme team meeting. Feedback from families on seeing the building has been wholly positive
2. Mr Bruce Barron and Mr Alan Sinclair would be providing specialist advice and support as from 23/9/19 and Ms Morgan would be providing regular reporting from next week.

MM

4. Briefing on contractual change process and governance

1. Mr Currie clarified the high value change process. It was recognised that the process did not provide certainty around timelines but was helpful to understand.
2. It was agreed to allow the work around the process to continue and for reporting to come back to oversight board as appropriate, also to undertake escalation and to involve Mr Reekie and SFT as appropriate.

MM/SG

5. Technical Reviews progress

5.1 Ventilation

1. No formal ventilation group held in the previous week
2. A single list of expectations has been drawn up to compare against the specimen air handling unit when ready for inspection.
3. Meeting this afternoon (19/9/19) with IHSL to consider issues around the cabling, anaesthetics grills and extraction grills.
4. Haematology-oncology – risk assessment going to ESG on 23/9/19 for approval has been a very helpful exercise.
5. Single ventilation solution for the whole ward, including the playroom and social areas being investigated, including back flow from the courtyard in these areas to be checked at same time as the helicopter landing practice. It was noted that this flight had been delayed until repair work was completed on equipment on the helipad.
6. Infection control and clinical experts have looked at this and are in agreement that this is the right thing to do. The risk assessment will come to the next oversight board.
7. It was also noted that an improved reporting mechanism to the oversight board was in development.

MM/SC

5.2 Water Quality – Informal workshop held yesterday (18/9/19). Next formal workshop to be held on 25/9/19.

5.3 Drainage – Final SBAR to come back for confirmation, item can then be removed from agenda.

MM

5.4 Fire, Electrical and Medical Gases

1. Timeline for reporting on Fire, Electrical and Medical Gases remains week commencing 7 October 2019.
2. Fire – experts from Glasgow Caledonian Building School had been on site and the initial draft report had been shared for early visibility. Concern raised in relation to provision of smoke and fire dampers. Further information sought from IHSL on this key point.
3. Remedial actions around workmanship were also identified but these were not felt to be critical issues.
4. Given the need to know if smoke and fire dampers were going to be a significant issue, it was agreed that HFS/HPS would look to undertake a desktop exercise looking at drawings of where smoke and fire dampers were located. This would be added to the action plan and Mr James would advise on the timeline for completion of such an exercise. **GJ**
5. Determining this issue quickly was important as this would have an impact on the mapping route to occupation. It was recognised that this was an area that could go into dispute if there was non compliance. The Chair asked for the group to be made aware as soon as clarity on this issue had been provided and this would come back for update at the next oversight board.
6. Electrical – nothing further to report following last week's oversight board.
7. Medical Gases – verbal feedback is positive, no major issues identified at this time.

6. Commercial Progress

6.1 Mr I Graham reported from a recent meeting with representatives from Bouygues on engagement with the change process. It was noted that there had been positive engagement from Bouygues.

7. Programme / Occupation Timelines Key Points

7.1 Programme milestones and dependencies paper to be submitted to next oversight board for more detailed discussion.

SG

8. Communications

1. Communication around the public inquiry had been issued to staff.
2. Further staff communication to go out in a couple of week's once further clarity available.
3. A frequently asked questions document for staff was being developed.
4. Planning for the Cabinet Secretary visit on Monday 23 September was underway
5. Potential for a further Cabinet Secretary letter to staff – The Chair to confirm this with Ms Mackay if this is to happen
6. Mr Archibald to relay an update to Staffside at their meeting on 23 September.

9. Any Other Business

9.1 NSS FOI Request – It was noted that an FOI request had been received by NSS in relation to the RHCYP, DCN and CAMHS project.

10. Date of Next Meeting

10.1 The next meeting of this group would take place at **8.00 am** on **Thursday 26 September 2019**, *Meeting Room 5, Waverley Gate*.



RHCYP & DCN - Senior Programme Director's Report

Report Date	w/e 29/09/19	Programme RAG Status (now)	A
Submitted by	Mary Morgan	Programme RAG Status (previous Oversight Board)	n/a

General Update		<p>Senior Programme Director in post from 16/09/19</p> <p>Cabinet Secretary visit to existing RHSC & DCN 23/09/19; a letter summarising the issues highlighted is expected.</p> <p>IHSL have reported a number of commercial issues raised by BYES. HSL, BYES and NHSL workshop 04/10/19.</p> <p>It is not yet possible to determine the programme milestones and dependencies due to outstanding activities (fire) and commercial negotiation.</p> <p>Project governance, roles and responsibilities are being updated for next meeting.</p>
----------------	--	---

Project Workstreams	RAG Status	Comments
Ventilation	R	2 high value Board Change Notices issued to IHSL: critical care and Lochranza Ward ventilation. IHSL have not been able to provide an initial response due to commercial issues raised by BYES. Lochranza Ward and general risk assessments have been completed and submitted to HPS. Demonstration of proposed air handling unit 27/09/19 - HFS, IOM and NHSL attended - further work required by IHSL on various aspects including cabling.
Water Safety	A	Final Water Safety Review meeting on 25/09/19 confirmed all outstanding actions and escalation routes. Currently 26 open actions and 4 closed. 4 Board Change Notices issued to IHSL (BYES) - disinfection of all taps found positive for pseudomonas not yet complete, work in progress.
Drainage	G	ESG reassured of sump drainage design and management 23/09/10. BC/MM meeting with Unison on 02/10/19 to close out the issue.
Fire Safety	R	NHSL working with NSS to review early observations, including sharing with HSL/MPX/BYES; final report due 07/10/19. Workshop held with IHSL, HFS and NHSL to discuss principally provision of fire and smoke dampers, their operation and resetting. Clarification of interpretation of extant guidance and requirements for healthcare premises is needed. Work to estimate the consequences of retro-fitting smoke dampers is underway.
Electrical	A	NHSL working with NSS to review initial observations, including sharing with HSL/MPX/BYES; final report due 07/10/19
Medical gases	A	Final report due 07/10/19 - no indications of problems arising.

Key Achievements / Highlights since last Oversight Board

Next Period Key Activities / Challenges

Reports on fire, electricity and medical gases due on 07/10/19.
Commercial workshop 04/10/19.
Risk register review 03/10/19.

RHCYP & DCN – LITTLE FRANCE

September 2019

Summary:

Assessment and discussion of the possible impact and mitigation against possible HAI risk from ventilation design and ventilation delivery in the RHCYP and DCN with clinical teams has been completed and a risk assessment (RA) documents produced.

NHS Lothian RHCYP & DCN Executive Steering Group should note and accept the content of this SBAR assessment and relevant appendices on behalf of NHS Lothian as providing assurance that safe patient care with the controls described at section 4 of this paper can be provided in the new RHCYP & DCN building once all other remedial work specified in the Board action plan are completed.

1. Purpose of the Report

- 1.1 The purpose of this report is to provide an update on outcomes of the clinical department Risk Assessments (RA) led by NHSL Lead Consultant and Lead Nurse for Infection Prevention and Control with support from clinical teams and project team.
- 1.2 In conducting the RA, consideration was given to what would be provided in each ward taking account of patient risk factors and type of procedures undertaken in each area
- 1.3 The RA excluded Paediatric Critical care, which is being addressed separately.
- 1.4 Haematology Oncology has also been risk assessed separately (appendix document attached)

2. RA outcome

- 2.1 The RA process provided assurance that on completion of remedial works that any residual risk relating to infection prevention and control could be safely managed within the RHCYP and DCN Building.
- 2.2 As noted in the SBAR, ventilation in healthcare premises is designed to achieve a number of objectives including management of temperature and humidity, removal of odour (particularly required in wards with cancer patients receiving chemotherapy), provide a clean air path directing flow from 'clean' to 'dirty' and dilution of airborne contaminants. These latter two points are of most significance from infection prevention & control perspective.

3. Key Risks and mitigation

- 3.1 For Wards shared by multiple clinical specialties, it is recognised that there will be competition for single rooms and isolation room and the possible permutations of the need for isolation, taking into account transmission routes, are vast .
- 3.2 Mitigation is covered by the pre-existing NHS Lothian Isolation Prioritisation Risk Assessment guidance (attached) which is freely available on the NHS Lothian intranet (co-located with all Infection Prevention and Control Guidance) and has been in use in NHS Lothian for a couple of years.
 - 3.2.1 This guidance is currently being updated but the updated version differs little from the one attached and is yet to be ratified through our usual processes.

4. Recommendations

- 4.1 Staff at RHCYP and DCN should refer to and implement the NHS Lothian Prioritisation of Isolation Guidelines to ensure that all patients with a suspected or known infection risk, or who are vulnerable to opportunistic infections, are placed appropriately within all clinical care environments.
- 4.2 All NHS Lothian staff should continue to implement standard and transmission based precautions in line with national policy. This includes, but is not limited to, ensuring that patients with known or suspected infections are cared for in single or isolation room accommodation and the door to the room remains closed.
- 4.3 All children, young people or adults cared for in RHCYP & DCN who are receiving chemotherapy, radiotherapy or who are considered to be immunosuppressed should be prioritised for single room or isolation room accommodation where possible.
- 4.4 In line with national policy, co-horting of children with confirmed respiratory viral illness should be considered where this is clinically appropriate and demand for single room isolation has been exceeded. Strict application of standard and transmission based precautions is required for the duration of this

SBAR- Risk Assessment regarding Impact of Design Ventilation on managing HAI risk in RHCYP & DCN clinical areas (not including Paediatric Critical Care)

1. Situation:

NHS Lothian are required by the National Oversight Group *“to consider its clinical service model in light of the ventilation arrangements in place for general wards and other non critical areas (incorporating literature review and design information not yet available)”*.

“Engage clinical leads and Infection Prevention and Control colleagues in developing service provision strategies in the event of air handling plant failure”

In relation to the project design provided which aims to deliver the 6 air changes required by SHTM 03-01 Part A to shared bed spaces and single room accommodation through mechanical supply for 4 air changes and 2 air changes through natural ventilation (although investigation is underway to establish if this is deliverable through window opening as had been designed). NSS have required that NHS Lothian *“Confirm that all areas served by this arrangement are suitable for categorisation as general ward areas or single rooms as listed in SHTM 03-01 Part a, Appendix 1.Undertake an IPCT risk assessment ward by ward/ speciality specific in relation to the guidance”*

Independent verification (by IOM) of the ventilation system has highlighted some areas where the ventilation performance requires further review and adjustment to ensure this performs in line with the design specification outlined above. This includes shared bed spaces and single room accommodation. NHS Lothian have been asked to demonstrate through risk assessment, that the Board is assured that the provision of 4 air changes per hour on mechanical supply, rather than 6 air changes per hour on mechanical supply does not compromise patient safety by introducing either an increased risk of transmission of infection or acquisition of healthcare associated infection.

2. Background:

In line with mandatory guidance (SHPN04-01 Adult In-patient facilities; HBN 23 Hospital accommodation for children and young people), RHCYP & DCN building provides a high percentage (greater than 50%) of single room accommodation for both children and adults. RHCYP provides 62% single room accommodation, and DCN 88% single room accommodation. This represents a significant increase in single room capacity over that which is currently available.

SHTM 03-01 part A (appendix 1) and SHPN 04 Supplement 1: Isolation facilities in acute settings define the air change rates, filter requirements, mode of delivery and pressure differentials required for hospital ventilation systems. The ventilation system at RHCYP & DCN was designed to deliver the following ventilation

	SHTM 03-01 requirement	Design specification	Current performance	Comments
General ward (multi-bedded bays)	6 air changes per hour (Ach/hr) – mix of supply and natural at balanced or slightly negative	4 air changes per hour supply	Awaiting clarification from IOM	

20190927 General Ventilation IPC risk assessment v1.0 final

	pressure			
Single en-suite rooms	6 air changes per hour - mix of supply, extract and natural ventilation Balanced or negative pressure	4 air changes per hour supply Balanced or negative pressure	Awaiting clarification from IOM	
Isolation rooms (Positive pressure ventilated lobby-PPVL)	10 air changes per hour Lobby at 10 Pascals positive pressure	10 air changes per hour Lobby at 10 Pascals positive pressure	Compliant	
Treatment Room	10 air changes per hour Positive pressure		Awaiting clarification from IOM	

The ventilation design and performance for some multi-bedded bays and single rooms does not conform to SHTM 03-01 part A, in terms of supply ventilation. Independent verification (by IOM) of the ventilation system has highlighted some areas where the ventilation performance requires further review and adjustment to ensure this performs in line with the design specification .

Lochranza ward (Haematology Oncology) does not have HEPA filters in the air supply ventilation to the single rooms which is indicated for rooms where neutropenic patients would be managed. The grade of air filter fitted in the supply air for these rooms (F9) is of a higher standard than the filters advocated for general ward areas or single rooms in SHTM 03-01 Part A Appendix 1 (G4 filter). As such the supply air in the single rooms of Lochranza is of a “cleaner” quality than a general ward but is not of a High Efficiency Particulate Air (HEPA) standard and this benefit would be immediately removed by opening a window to outside air as windows in the single rooms will open. The supply air ventilation in the 5 PPVL isolation rooms does pass through HEPA filters in the room lobbies. The 5 PPVL rooms do perform to the parameters set in SHTM 03-01 for rooms where all neutropenic patients can be safely placed. Windows in the PPVL isolation rooms are sealed units and do not open.

It is understood that all multi bedded bays and single rooms which do not have an opening window are provided with 6 air changes per hour (achieved through mechanical supply and extract) and positive pressure maintained to the corridor. This will be confirmed on receipt of the IOM report on the performance of all rooms against the design specification.

Assessment:

3.1 A review of all clinical departments was undertaken by the clinical leads from the project team (Janice Mackenzie, Dorothy Hanley, Fiona Halcrow); lead infection prevention and control nurse (Lindsay Guthrie) and lead infection control doctor & consultant microbiologist (Dr Donald Inverarity). This was discussed with key clinical colleagues in paediatrics and neurosciences for comment and input prior to submission to the NHS Lothian Executive Steering Group: Royal Hospital for Children and Young People and Department of Clinical Neurosciences for approval.

- 3.2 In view of planned revision of ventilation systems in Critical Care & Neonatal Unit to meet conformance with SHTM 03-01, it was agreed that these locations did not require to be part of this review, and will not be considered further in this paper.
- 3.3 A summary table of all wards, bed configuration and clinical service types which informed this risk assessment is provided in [Appendix 1]. This outlines the risk profile of patients being cared for in each area based on the clinical speciality, known patient risk factors and type of treatment or interventions provided. It also identifies anticipated HAI/IPC risks associated with each clinical area.
- 3.4 The highest risk patient groups are defined as:
- Any haematology/oncology patient
 - Any neutropenic patient
 - Any other immunocompromised patient (related to underlying disease process or treatment induced)
 - Any patient with Cystic Fibrosis
 - Any patient with a complex wound dressing or burn treated in the Plastics Dressing Clinic (Dunvegan Ward)
 - Any patient with a known infection alert (known colonisation or history of infection with alert organism)
 - Any patient presenting with a suspected or confirmed infection transmitted by contact, droplet or airborne transmission

This categorisation of patient risk is in line with the definitions provided in [Scottish Health Facilities Note 30 Part B: HAI Scribe Implementation strategy and assessment process](#); [Health Protection Scotland interim guidance](#) for routine sampling of *Pseudomonas* in augmented care areas (2018); and [HPS National Infection Prevention and Control Manual](#).

- 3.5 Paediatric renal dialysis is not provided at RHCYP. Any child or young person requiring this is referred to QEUH in Glasgow.
- 3.6 Paediatric organ transplantation is not provided at RHCYP. Any child or young person requiring this is referred to QEUH in Glasgow or specialist services in NHS England. The number of patients requiring transplantation are small, but following treatment they may be admitted to RHCYP to either a surgical ward (Tantallon) or medical ward (Dalhousie). These patients would be considered immunocompromised and managed in line with the NHS Lothian Prioritisation of Isolation Guidance, attached as [Appendix 2].
- 3.7 Within Lochranza (Haematology/Oncology), although the five PPVL isolation rooms provide 10 Air Changes/hour and 10 Pascals positive pressure from lobby to corridor, none of the single rooms available meet the specification for 'Neutropenic patient ward' defined in SHTM 03-01 Appendix 1 (also 10 Air Changes plus 10 Pascals positive pressure). Based on current occupancy, it is estimated by clinicians that currently there may be 5-10 neutropenic patients being cared for in RHSC on any given day. Although it is acknowledged that not all chemotherapy regimens result in the same intensity of immunosuppression and neutropenia, within the new facility, there may be a shortfall in the number of rooms which meet the SHTM 03-01 standard for safe placement of all neutropenic patients.
- 3.8 Appropriate patient placement and management is considered against the HPS National Infection Prevention and Control Manual (Appendix 11) and NHS Lothian Prioritisation of

Isolation Guidelines. The latter was developed by the IPCT in Lothian to assist clinical teams to risk assess and provide safe, effective patient care where demand for isolation or single room accommodation is exceeded by demand. Paediatric and Neuroscience teams have previously been directed to use this document which is applicable for placement of both paediatric and adult patients.

- 3.9 The review group agreed that the wards with the highest perceived overall risk of demand for isolation exceeding capacity (and thereby potential risk of onward transmission of infection) are: Castle Mey ward (Paediatric acute receiving unit); Dalhousie ward (Medical in-patients); Lochranza ward (Haematology/Oncology)
- 3.10 Ventilation in healthcare premises is designed to achieve a number of objectives including management of temperature and humidity, removal of odour (particularly required in wards with cancer patients receiving chemotherapy), provide a clean air path directing flow from 'clean' to 'dirty' and dilution of airborne contaminants. These latter two points are of most significance from infection prevention & control perspective.
- 3.11 The burden of seasonal respiratory viruses is recognised as a risk, particularly for RHCYP. This risk is however mitigated via the provision of a significantly increased availability of en-suite single room accommodation with doors. HPS National Manual Appendix 11 advocates that patients are cared for in such rooms. The risk of droplet transmission is greatest within 3 feet/1 metre of the patient. The primary protection therefore offered by en-suite single rooms is physical separation greater than 1 metre and containment of infectious patients by means of a closed door. The impact on transmission risk of a reduced air exchange rate from 6 to 4 air changes per hour in each shared bed space is unknown.
- 3.12 A review of all alert organism reports in the past 2 years for the current wards at RHSC and DCN demonstrates that the Paediatric Acute Receiving Unit (Castle Mey) is likely to experience the highest burden of patients with presentations due to respiratory viral infections, loose stool or diarrhoeal illness and will have both the highest turnover of patients and the highest demand on isolation and single rooms.
- 3.13 The risk of transmission of infection is also mitigated by application of other aspects of transmission based precautions i.e. enhanced cleaning with chlorine 1000ppm av chlorine, use of dedicated or single use equipment, use of appropriate facial or respiratory protection The application of standard infection prevention and control measures such as personal protective equipment used optimally, optimal hand hygiene and access to alcohol based hand rub across all clinical areas will also mitigate some risk of transmission of infection.
- 3.14 HFS have also asked that NHS Lothian risk assess and define the actions required if one or more air handling unit fails resulting in the loss of isolation room supply ventilation, noting that between 1 and 5 isolation rooms are provided off single air handling units in the new building. This specifically affects both Lochranza and Dalhousie wards. Taking cognisance of the above assessment, in the absence of an infectious disease of high consequence, and providing all other standard and transmission based precautions required by HPS NIPCM are in place, the risk of infection to patients, staff or visitors is likely to be low as SICPs would remain in use and physical isolation in a single room with doors would be maintained. Additionally an air flow from room to toilet air extract would likely continue even if supply air ventilation failed rendering the rooms at slight negative pressure or balanced pressure to the corridor with doors shut.
- 3.15 Depending on the nature and duration of the AHU failure, and in line with NHS Lothian Prioritisation of Isolation Guidance, a clinical risk assessment would be required in conjunction

with the IPCT to determine any further actions required on a case by case basis. This would take account of: the patient's overall clinical condition, the ward type, the infection risk and mode of transmission, the risk profile of adjacent patients and isolation room capacity unaffected by the outage.

- 3.16 Additional mitigating actions specific to infectious diseases of high consequence (such as MERS or Multi Drug Resistant TB) would also be required in the event of supply ventilation failure. However it is recognised that due to the low incidence and high risk consequence of such infections, that a multi disciplinary ward round or problem assessment group would likely be convened in response to a single case to support appropriate risk assessment and management.
- 3.17 The provision of PPVL isolation rooms rather than conventional negative pressure lobbied isolation rooms was discussed with the paediatric Infectious Diseases consultant on 11th September. It is recognised that some concern has been expressed at the suitability of this design for the care of patients with infectious diseases of high consequence (for example MERS, Multidrug resistant Tuberculosis).
- 3.18 It was noted that the PPVL rooms in the medical unit (Dalhousie) are served by AHU which discharge extract ventilation air through high level grilles on the roof. Therefore any potential risk to others from extracted air is minimised through upwards displacement, dilution and dispersal.
- 3.19 There is an agreed plan to manage any child or young person presenting through the emergency department with a suspected viral haemorrhagic fever (VHF). A change notice was discussed and agreed between the IPCT and Project team on 11/09/2015 to provide containment within 1 area of the ED including provision for ante room, toilet and treatment areas. Temporary hoarding will be installed which provides a physical/visual barrier to staff access.
- 3.20 NHS Lothian instructed IOM to confirm that the ventilation in this area was performing in line with the design specification and is balanced to corridor.
- 3.21 A written plan detailing how a child with potential VHF or other infectious disease of high consequence (e.g. MERS) would be managed will be developed and submitted to the Emerging Infections Preparedness Group chaired by the acute services nurse director for further scrutiny and approval. Where a high probability of VHF is suspected, the patient would be transferred directly to the nearest high level isolation facility (Freeman Hospital Newcastle)
- 3.22 In discussion with the senior Paediatric Haematology/Oncology clinical and management team on 3rd September, it was agreed that based on the changing risk appetite in NHS Scotland and changes in clinical practice which mean some children are rendered neutropaenic by palliative treatment, that it would be appropriate to bring all single room ventilation to the required specification for managing neutropenic patients. This is possible due to the delay in the migration of paediatric services onto the site. NHS Lothian instructed this additional work through a board change request on 6th September 2019.
- 3.23 A meeting was held with senior clinical staff and management from adult Neurosciences on 4th September. It was agreed that the ward configuration, patient pathways and predictable infection risks associated with both neurological and neurosurgical patients (including neuro-oncology patients) could safely be managed in the ward configuration and ventilation performance provided.
- 3.24 A meeting was held with a number of senior clinicians who care for children with Cystic Fibrosis on 6th September. It was agreed that further discussion relating to ventilation in RHCYP

and the impact on CF patient management would be concluded at a meeting with the wider CF team on 23rd September, with the agreement that the new hospital ventilation and delivery was not considered a barrier to safe management of patients with CF (as in-patients or out-patients). It was agreed that a service specific SOP will be developed in by a multidisciplinary CF specialist working group in conjunction with IPCT to guide appropriate CF patient placement and management of transmissible infections affecting this patient group (including Mycobacterium abscessus). It is anticipated that this work will be completed by Spring 2020.

- 3.25 The IPCT and Medical Director also met with Consultants in general medicine and other medical specialties on 11th Sept 2019. No concerns relating to ventilation, patient placement or patient safety were identified and staff were content with the actions described above as appropriate mitigation for the risk of transmission of infection.
- 3.26 The Lead Infection Prevention and Control Nurse and Doctor in conjunction with representatives from the NHS Lothian project team and Mott MacDonald (Technical Advisors to NHSL) undertook a full review of the ventilation design specification as provided by the environmental matrix, intended room function, patient risk profile and current ventilation performance based on initial IOM validation testing. A summary of that review is being finalised.
- 3.27 This detailed review did not reveal any further significant areas of non compliance or concern. A small number of actions were identified in relation to patient placement in OPD areas and these will be addressed through local standard operating procedures for the CF specialists, haematology oncology and therapies teams.

4. Recommendations

- 4.1 Staff at RHCYP and DCN should refer to and implement the NHS Lothian Prioritisation of Isolation Guidelines to ensure that all patients with a suspected or known infection risk, or who are vulnerable to opportunistic infections, are placed appropriately within all clinical care environments.
- 4.2 All NHS Lothian staff should continue to implement standard and transmission based precautions in line with national policy. This includes, but is not limited to, ensuring that patients with known or suspected infections are cared for in single or isolation room accommodation and the door to the room remains closed.
- 4.3 All children, young people or adults cared for in RHCYP & DCN who are receiving chemotherapy, radiotherapy or who are considered to be immunosuppressed should be prioritised for single room or isolation room accommodation where possible.
- 4.4 In line with national policy, co-horting of children with confirmed respiratory viral illness should be considered where this is clinically appropriate and demand for single room isolation has been exceeded. Strict application of standard and transmission based precautions is required for the duration of this
- 4.5 NHS Lothian RHCYP & DCN Executive Steering Group should note and accept the content of this SBAR assessment and relevant appendices on behalf of NHS Lothian as providing assurance that safe patient care with the controls described above can be provided in the new RHCYP & DCN building once all other remedial work specified in the Board action plan are completed. .

Appendix 1: Risk assessment patient profile, clinical activity & HAI risk

RHCYP DCN – Accommodation profile and HAI/IPC risk assessment September 2019

August 2019Ward	Total Beds	Multi bed Room	Single Room	Isolation Room	Clinical Specialties/Patient type/Procedure type	HAI/IPC Risk	Comments/Mitigation
Dalhousie: Medical Inpatients	23	3x4	3 (transitional care) 4	1 (transitional care) 3	Transitional care: <ul style="list-style-type: none"> • awaiting discharge • awaiting home care • step down from critical care Main ward: <ul style="list-style-type: none"> • Diabetes • Cystic Fibrosis • Rheumatology • Cardiology • Infectious Diseases • Meningitis (non critical care) • End of life care 	Immunocompromised patients Drug induced neutropaenia (Rheumatology patients) <ul style="list-style-type: none"> • Known alert organism colonisation • Respiratory infection • Loose stool or diarrhoea • Febrile Rash • Febrile returning traveller 	Transitional care not used for CF patient care
Kildrummy: Sleep Lab	2	0	2	0	Sleep studies Elective only - well children		

20190927 General Ventilation IPC risk assessment v1.0 final

August 2019 Ward	Total Beds	Multi bed Room	Single Room	Isolation Room	Clinical Specialties/Patient type/Procedure type	HAI/IPC Risk	Comments/Mitigation
Lochranza: Haematology/ Oncology	17*	0	12	5	Solid organ cancers Haematology ID immunocompromised patients (e.g. HIV) – protective isolation	Mixture of solid organ cancer & haematology Fluctuating demand for haematology beds 5 rooms for seriously neutropaenic patients Immunocompromised patients	In pt – *only 10 funded opened at any one time (any configuration of multi/single/isolation rooms)
Lochranza: day case		1x3 (TCT)	0	0		<ul style="list-style-type: none"> • Neutropaenia/Neutropaenic sepsis • Known alert organism colonisation • Respiratory infection • Loose stool or diarrhoea 	Have separate treatment room – clean utility etc
Dunvegan: Surgical short Stay	14	2x4	6	0	(Elective, CEPOD & Trauma) All surgical specialities: <ul style="list-style-type: none"> • Burns/Plastics • Orthopaedics • ENT • General Surgery • Oncology surgical procedures 	<ul style="list-style-type: none"> • Known alert organism colonisation <p>Less control over non elective patient risk factors</p> <p>Immunocompromised</p>	<p>≤72 hrs length of stay</p> <p>Elective patients-cancelled if 'infectious'</p>

20190927 General Ventilation IPC risk assessment v1.0 final

August 2019Ward	Total Beds	Multi bed Room	Single Room	Isolation Room	Clinical Specialties/Patient type/Procedure type	HAI/IPC Risk	Comments/Mitigation
						patients (inc short gut babies)	
Tantallon: Surgical Long Stay	15	2x4	7	0	(Elective, CEPOD & Trauma) <ul style="list-style-type: none"> • Orthopaedic & Spinal patients – #femur and ortho trauma • Oncology surgical procedures • Neonates (<10 days) requiring UV treatment (non infectious jaundice) post discharge from Simpsons 	<ul style="list-style-type: none"> • Known alert organism colonisation Neonates –unclear if single rooms. Non infectious jaundice. Immunocompromised patients	Community midwife referrals as well as Simpsons
Dirleton: Programmed investigations		1x 4 (trolleys) 1x 5 (chairs)	3	0	Semi elective- inc. GP referral Medical day case Rash Specialist nurse clinics Diabetes <u>Excludes</u> <ul style="list-style-type: none"> • oncology patients 	<ul style="list-style-type: none"> • Known alert organism colonisation Immunocompromised patients (IgG clinic)	Separate waiting area to segregate any child with potential infection

August 2019Ward	Total Beds	Multi bed Room	Single Room	Isolation Room	Clinical Specialties/Patient type/Procedure type	HAI/IPC Risk	Comments/Mitigation
Castle Mey: Paediatric Acute Receiving Unit (PARU)	34	3 x 4	21	1	<ul style="list-style-type: none"> All medical specialties <p>Excludes</p> <ul style="list-style-type: none"> Cystic Fibrosis Diabetics 	<ul style="list-style-type: none"> Known alert organism colonisation Respiratory infection Loose stool or diarrhoea Febrile Rash Febrile returning traveller 	Single room accommodation
Crichton: Surgical Admissions Unit	18	9x recovery trolley 6x pre theatre 3x chair day case	3		All surgical specialities: <ul style="list-style-type: none"> Burns/Plastics Orthopaedics ENT General Surgery Oncology surgical procedures Medical elective procedures (GI) Oncology day care (Weekly Intrathecal list; line replacement) Oncology CEPOD or urgent cases 	<ul style="list-style-type: none"> Known alert organism colonisation 	Elective & CEPOD Includes Oncology patients

August 2019 Ward	Total Beds	Multi bed Room	Single Room	Isolation Room	Clinical Specialties/Patient type/Procedure type	HAI/IPC Risk	Comments/Mitigation
Borthwick: Paediatric Neurosciences	12	2 x 4	3 - 2 x telemetry rooms	1	<ul style="list-style-type: none"> • Neurosurgery • Neuro-oncology • Neurology 	Elective & non <ul style="list-style-type: none"> • Known alert organism colonisation • Respiratory infection • Loose stool or diarrhoea • Febrile Rash • Febrile returning traveller • Meningitis 	Paediatric Neuro-oncology neutropaenic patients would be managed in Lochranza ward
Critical Care & Neonatal Unit					Critical Care Neonates		See separate risk assessment
Plastic Dressings Clinic					<ul style="list-style-type: none"> • Complex dressing changes • Burns dressing changes (very low numbers) 	<ul style="list-style-type: none"> • Known alert organism colonisation 	ARJO bath for soaking dressings – water safety plan to apply
ED					Accident and Emergency	<ul style="list-style-type: none"> • Known alert organism colonisation 	Cubicles. Short length of stay (<4 hr)
Ward 130: Adult Neurosciences acute care	24	2x4	15	1	<ul style="list-style-type: none"> • LOS ≤72 hrs • Emergency admission (“new”/unknown 	<ul style="list-style-type: none"> • Known alert organism colonisation • Respiratory 	No level 2 or 3 capacity – go to RIE 118 (Adult Critical Care)

20190927 General Ventilation IPC risk assessment v1.0 final

August 2019 Ward	Total Beds	Multi bed Room	Single Room	Isolation Room	Clinical Specialties/Patient type/Procedure type	HAI/IPC Risk	Comments/Mitigation
					<ul style="list-style-type: none"> pt) SAH, trauma Recovered craniotomy patients e.g. de-bulking of tumours Spinal surgery e.g. anterior decompression New cancers (undiagnosed) 	<ul style="list-style-type: none"> infection Loose stool or diarrhoea Febrile Rash Febrile returning traveller Immunocompromised patients Repatriated Neurosciences patients with MDRO/CPE risks 	SOP to guide appropriate boarding from RIE to be developed in conjunction with IPCT, clinical services & site management team.
DCN theatres: Adult Day of surgery area		5 x couches			<ul style="list-style-type: none"> admission/prep for surgery 		Elective only Return to ward 230 post recovery
Ward 230: Adult Neurosurgery	24	0	23	1	<ul style="list-style-type: none"> Step down from RIE 118 and 130 Post operative patients (recovering) Some direct elective admission 	<ul style="list-style-type: none"> Known alert organism colonisation 	Single room accommodation
Ward 231: Adult Neurology	19*		18- 4 x telemetry	1	<ul style="list-style-type: none"> Existing DCN patients – emergency admissions 	<ul style="list-style-type: none"> Known alert organism colonisation Respiratory 	*15 funded beds Single room accommodation

August 2019Ward	Total Beds	Multi bed Room	Single Room	Isolation Room	Clinical Specialties/Patient type/Procedure type	HAI/IPC Risk	Comments/Mitigation
	4	3 x chair 1 x trolley			<ul style="list-style-type: none"> • Planned elective investigations PIU – neurology pt for investigations	infection <ul style="list-style-type: none"> • Loose stool or diarrhoea 	PIU Monday-Friday elective day case only

Appendix 2: NHS Lothian Prioritisation of Isolation Guideline (2017)

Patient Isolation Prioritisation and Assistance with Isolation Prioritisation Risk Assessment

1. Occupants of all single rooms should be reviewed daily by the clinical team of doctors and nurses managing the patient with regard to why they are still occupying a single room and whether that reason or reasons remain legitimate. This will include consideration of patients receiving end of life care.
2. The optimal and safe placement of infected patients and the patients who they may have contact with should be foremost in planning isolation prioritisation.
3. In prioritising isolation rooms, particularly where there demand for single rooms is greater than capacity, staff must consider:
 - The organism/disease (confirmed or probable) – see table 1
 - Patient symptoms (presenting patient)
 - Type of ward/environmental factors, and
 - Risk profile of other patients in immediate area.
4. If isolation is mandatory or preferable but not possible, the inability to isolate presents a significant clinical risk to patients and should be escalated to:
 - The site and capacity team
 - the clinical nurse manager/senior nurse on call for the area, and
 - the infection prevention and control team.
5. Immediate actions required by ward staff:
 - Arrange increased frequency of bed space cleaning immediately (using Chlor clean)
 - Reinforce and promote staff hand hygiene
 - Ensure compliance with the appropriate transmission based precautions (TBPs) enforced.
 - Consider restriction of any patient movement from the room or bay where the patient has been placed.
 - A clear risk assessment should be documented in case notes as to why isolation has not occurred.
6. If site & capacity staff or clinical teams are uncertain how to apply any part of this guidance; or prioritise a single room between 2 or more patients with conditions on this the list; a Microbiologist, Virologist or Infection Prevention & Control Nurse **MUST** be contacted to agree prioritisation of single room accommodation.

Table 1: Isolation Priorities

<p style="text-align: center;">MANDATORY ISOLATION</p> <p style="text-align: center;">‘MUST ISOLATE’</p>	<p style="text-align: center;">ISOLATION IS OPTIMAL AND PREFERABLE</p> <p style="text-align: center;">Further risk assessment required (see footnotes)</p>	<p style="text-align: center;">ISOLATION NOT REQUIRED</p>
<p><u>Viral</u> Unexplained loose stool, diarrhoea¹ and vomiting (i.e. suspected infectious diarrhoea or proven Norovirus)²</p> <p>Community acquired respiratory infection with cough and fever > 38°C pending viral investigation results^{3,4}</p> <p>Respiratory Syncytial Virus (RSV)⁴</p> <p>Adenovirus^{3,4}</p> <p>Human metapneumovirus^{3,4}</p> <p>Measles</p> <p>Middle Eastern Respiratory Syndrome (MERS)⁵</p> <p>Viral Haemorrhagic Fevers⁵ (suspected or proven) with direct person to person transmission e.g. Ebola, Lassa Fever, Congo Crimean Fever</p> <p>Rubella</p> <p>Chicken Pox (Varicella)</p> <p>Shingles if vesicles are on face or if patient is</p>	<p><u>Viral</u> Hepatitis A^{14, 24}</p> <p>Hepatitis E¹⁴</p> <p>Shingles¹⁵</p> <p>Rhinovirus^{3,4}</p> <p>Parainfluenza^{3,4}</p> <p>Mumps</p>	<p><u>Viral</u> Viral Haemorrhagic Fevers that do not generally transmit directly person to person e.g. Dengue, Chikungunya, West Nile Fever</p> <p>Viral Meningitis</p> <p>HIV</p> <p>Hepatitis B²⁰</p> <p>Hepatitis C²⁰</p> <p>Glandular Fever/Epstein Barr Virus infection</p> <p>Herpes simplex virus</p> <p>Cytomegalovirus</p>

<p>immunocompromised.</p> <p>Any patient with an undiagnosed vesicular rash</p> <p>Vesicular rash due to an enterovirus.</p> <p>Influenza A or B ^{4,6}</p> <p>Rotavirus</p> <p><u>Bacterial</u></p> <p><i>C. difficile</i> (toxin positive) with diarrhoea¹</p> <p><i>C. difficile</i> equivocal with diarrhoea¹</p> <p>Untreated Smear Positive Pulmonary (Open) TB ^{5,7}</p> <p>Drug Resistant TB ⁵</p> <p>Streptococcus pyogenes (Group A Strep) infections including Scarlet Fever (untreated or within 48 hours of starting antibiotics) ⁸</p> <p>Panton Valentine Leukocidin (PVL) producing Staphylococcus aureus or PVL producing MRSA (with active soft tissue infection) ⁹</p> <p><i>Bordetella pertussis</i> (Whooping cough) ²⁵</p> <p>Salmonella with diarrhoea¹</p> <p><i>Salmonella typhi</i> or <i>Salmonella paratyphi</i></p>	<p><u>Bacterial</u></p> <p>Non Pulmonary (Closed) TB or smear negative pulmonary TB ¹⁶</p> <p>Necrotising Fasciitis ¹⁷</p> <p>MRSA ¹⁸</p> <p>Mycoplasma ^{3,4}</p> <p>Multidrug resistant (MDR) Gram negative bacteria ¹⁹</p> <p><i>Haemophilus influenzae</i> ³ (from respiratory samples)</p> <p><i>Streptococcus pneumoniae</i>³ (from respiratory samples)</p>	<p><u>Bacterial</u></p> <p>Non Tuberculous Mycobacteria e.g. <i>M. avium</i>, <i>M. intracellulare</i>, <i>M. abscessus etc.</i>²¹</p> <p>Legionella</p> <p><i>C. difficile</i> equivocal with no diarrhoea¹</p> <p><i>C. difficile</i> (toxin positive) with no diarrhoea¹ for > 48 hours</p> <p>Invasive meningococcal disease (meningitis or septicaemia) after first 24 hours of antibiotic treatment</p> <p><i>Streptococcus pyogenes</i> (Group A Strep) infection after first 24 hours of antibiotic treatment and evidence of a clinical response (e.g. resolution of temperature, normalisation of pulse and blood pressure, resolving cellulitis) ⁸</p> <p><i>Stenotrophomonas</i></p>
---	---	--

<p>(carriage or infection)</p> <p>Shigella carriage or infection</p> <p>Campylobacter with diarrhoea¹</p> <p>Verotoxin Producing <i>E. coli</i> (VTEC) carriage or infection</p> <p>Gram negative organisms resistant (or intermediate) to Meropenem (e.g. CPE, Acinetobacter)^{10,11,12}</p> <p>Suspected bacterial meningitis but pathogen unknown</p> <p>Petechial rash with fever or other manifestations of invasive meningococcal disease (meningitis or septicaemia) within first 24 hours of antibiotic treatment.</p> <p>Neutropenic sepsis (post cytotoxic chemotherapy)¹³</p> <p>Vancomycin Resistant Enterococci (VRE)</p>		<p><i>maltophilia</i>²¹</p> <p><i>Burkholderia cepacia</i>²¹</p> <p><i>Pseudomonas aeruginosa</i>²¹</p> <p><i>Listeria monocytogenes</i>²²</p>
<p><u>Other</u></p> <p>Body Lice</p> <p>Scabies</p>	<p><u>Other</u></p> <p>Pneumocystis jirovecii²³</p> <p>Head Lice</p>	<p><u>Other</u></p> <p>Cryptococcal meningitis</p> <p>Intestinal parasites with no diarrhoea¹</p>
<p>Adapted from CDC 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. http://www.cdc.gov/ncidod/dhqp/pdf/isolation2007.pdf</p>		

Consider the following factors to allocate isolation rooms where demand is greater than single room capacity for patients with the same infection.

Table 2: Risk factors affecting isolation priority

Risk Factors For Transmission of Infection		
	Higher Risk of Transmission	Lower Risk of Transmission
Source Patient	<ul style="list-style-type: none"> • Incontinent of Stool • Loose stool or diarrhoea • Discharging skin lesions • Skin lesions not dressed or covered • Requires extensive hands on care • Is immunosuppressed • In ITU • Has invasive devices in situ • Poor compliance with personal hygiene or infection control practices e.g. cognitively impaired • Coughing patient (within 1 metre of other patients) 	<ul style="list-style-type: none"> • Continent • Good personal hygiene • Skin lesions or wounds covered by dressings • Good respiratory hygiene • Able to self care • Complies with infection control precautions
Pathogen	<ul style="list-style-type: none"> • Survives well in environment (e.g. <i>C difficile</i>, <i>Streptococcus pyogenes</i>) • Low infective dose (e.g. <i>E coli</i> 0157, <i>Shigella</i>, norovirus) • Airborne (e.g. influenza, RSV) • Spread by direct contact (e.g. MRSA) • Able to colonise devices • Can have an asymptomatic carrier state (e.g. MRSA) 	<ul style="list-style-type: none"> • Unable to survive long in environment • High infective dose • Low pathogenicity (e.g. campylobacter) • Short period of infectivity
Ward Environment	<ul style="list-style-type: none"> • Poor ward hygiene • Shared equipment • Equipment not adequately decontaminated between patients • Crowded facilities • Shared facilities (e.g. showers, baths, toilets, commodes, taps) 	<ul style="list-style-type: none"> • Good ward hygiene • Dedicated equipment • Adequate bed spacing • Dedicated toilet and bathroom facilities • Low patient to nurse ratio

	<ul style="list-style-type: none"> • High patient to nurse ratio • Normal pressure ventilation and airborne pathogen 	
Susceptibility of potential contacts if source patient not isolated	<ul style="list-style-type: none"> • ITU patients • Patients requiring extensive hands on care • Indwelling devices or invasive procedures being performed • Non intact skin • Debilitated, malnourished • Extremes of age • Recent antibiotic treatment • Immunosuppression • Not immunised against circulating pathogen (e.g. influenza) 	<ul style="list-style-type: none"> • Able to self care • No indwelling devices • Intact skin and mucous membranes • Normal immune system • Immunised against circulating pathogen
Adapted from "Routine Practices and Additional Precautions For Preventing The Transmission of Infection in Health Care Settings" (2013) Public Health Agency of Canada.		

Appendix A: Explanatory Notes for Situations Listed in Table 1.

¹ World Health Organisation definition of diarrhoea is, “the passage of three or more loose or liquid stools per day (or more frequent passage than is normal for the individual). Frequent passing of formed stools is not diarrhoea, nor is the passing of loose, “pasty” stools by breastfed babies.”

² If patient has vomited or had diarrhoea within a multiply occupied area then the whole area/bay should close to admissions and transfers and the whole area/bay cleaned with Chlor Clean. The source patient should be isolated if possible and the remaining patients cohorted for observation of symptoms of D&V over the following 48 hours. If no single rooms are available for the source patient they should remain in the closed area cohorted with the other exposed patients.

³ If patient febrile ($>38^{\circ}\text{C}$), coughing or sneezing then isolation is a priority but if has positive laboratory test but none of the above symptoms then isolation is not absolutely necessary as long as not in direct contact with immunocompromised patients or patients with chronic lung disease or cardiac disease. The need for isolation of respiratory infections is often driven more by the susceptibility of contacts than the pathogenicity of the organism e.g. effects are much more severe in patients undergoing cytotoxic chemotherapy and bone marrow transplant. There order of priority for isolation with respiratory viral infections is adenovirus takes priority over human metapneumovirus which takes priority over parainfluenza which takes priority over rhinovirus.

⁴ If within 1 metre of patient who is coughing a fluid repellent fluid shield and eye protection should be worn.

If performing aerosol generating procedures then an FFP3 mask should be worn.

⁵ Negative pressure isolation room should be used. Transfer of an already isolated patient with a novel or emerging pathogen (e.g. MERS) solely to accommodate in a negative pressure room is not advised.

⁶ Close contacts of influenza patients prior to their isolation may benefit from post exposure prophylaxis with oseltamivir. The influenza vaccination history of close contacts must also be known to assess their risk of secondary infection.

⁷ Patient can only be removed from isolation once the following criteria are met:

- The patient has had a minimum of 14 days of appropriate therapy **and**;
- The patient has had at least 3 consecutive negative sputum smears taken on separate days, or complete resolution of cough **and**;
- The patient has had a definite clinical improvement as a response to therapy, for example remaining afebrile for 1 week **and**;
- The patient has demonstrated tolerance to therapy and ability to agree to adhere to treatment **and**;
- Advice has been sought from a member of the Infection Prevention and Control Team (IPCT) before removing a patient from isolation. The IPCT should ensure that the patient is not placed by patients who are immuno-compromised.

⁸ If treatment is only partial (e.g. devitalised or necrotic tissue or ulcer remains) carriage (and risk of onward transmission) can remain for up to 6 months. If there is a risk or evidence (e.g. *S. pyogenes* continues to be cultured from the patient) of persisting carriage, patient should remain in isolation until negative sample cultures are received. Clearance sampling should be collected 72 hours after antibiotics have stopped. Examples of patients that should remain in isolation are:

- Patients with significant discharge of infectious bodily fluids
- Patients with invasive Group A Strep (iGAS) infections
- Patients with infected eczema or other skin conditions associated with significant skin shedding
- Mothers and neonates on maternity units
- Patients on burns units

⁹ Active lesions should also be covered with an appropriate dressing.

¹⁰ Isolation must continue for the entire duration of the admission and should optimally occur within 6 hours of organism identification.

¹¹ Does not include *Stenotrophomonas maltophilia* which is always resistant to Meropenem.

¹² Screening of the source patient and contacts will be required. Discuss with infection control team.

¹³ Isolation is to protect the patient from the environment and ideally the room should be under positive pressure compared to the corridor. If not possible normal atmospheric pressure is acceptable but negative pressure should not be used. Note that only patients who are neutropenic post cytotoxic chemotherapy require isolation, a transient drop in neutrophils below $1 \times 10^9/L$ can occur in severe sepsis in immunocompetent people but in such patients neutrophils have transiently left the blood stream and are functional at the site of infection and so isolation is not required.

¹⁴ Only needs isolation if PCR positive. Isolation not required if only serology is positive.

¹⁵ Vesicles should be covered and patient should not be in contact with immunocompromised, non-immune or pregnant individuals. Shingles on the face or in individuals who are immunosuppressed should be treated as per chickenpox.

¹⁶ If there is significant exudate or drainage then isolation is preferable. Only patients on appropriate treatment with evidence of response to treatment should be considered as appropriate candidates not to isolate. Any tuberculous lesions must be enclosed within the body or covered and the patient must not come into contact with immunocompromised patients.

¹⁷ If the causative organism is not *Streptococcus pyogenes*, *Bacillus anthracis* or PVL producing MRSA or PVL producing MSSA isolation is not required.

¹⁸ If patient is exuding body fluids, incontinent or shedding significant volumes of skin squames then isolation should be considered mandatory.

¹⁹ Should be resistant to 3 or more of the following classes of antibiotic e.g. beta lactams ((such as amoxicillin, coamoxyclav, piperacillin-tazobactam, temocillin) cephalosporins (ceftriaxone, cefalexin, cefuroxime), monobactams (aztreonam)), aminoglycosides (gentamicin, amikacin), fluoroquinolones (ciprofloxacin, levofloxacin), glycylicyclines (Tigecycline) to merit isolation. Isolation should be prioritised if patient has loose stools or diarrhoea or discharging wounds. The requirement for isolation is prioritised as ESBL producing *Klebsiella sp.* > carbapenem resistant *Pseudomonas aeruginosa* > ESBL *E. coli* > AmpC producing Enterobacteriaceae.

²⁰ Isolation is not required if there is little possibility of body fluid contamination of the environment. If patient is bleeding or at risk of contaminating environment with body fluids (e.g. active bleeding) consider isolating. Patients for haemodialysis MUST be isolated.

²¹ Isolate if patient has cystic fibrosis and/or likely to be in close contact with patients with cystic fibrosis, bronchiectasis or lung transplant.

²² Presents a risk to pregnant individuals, neonates and immunocompromised patients and so may need to isolate the patient with *Listeria* infection if contact with such people is likely.

²³ Do not isolate in a ward with transplant patients.

²⁴ Post exposure vaccination should be considered for non immune contacts.

²⁵ If the patient has not been treated with appropriate antibiotics for a full 5 days- discuss with Microbiologist. Respiratory protection is required by staff (surgical face mask) until 5 days of appropriate antibiotic treatment is complete.



[Back to Agenda](#)

RHCYP & DCN Oversight Board

3 October 2019

Haematology Oncology provision in RHCYP

Situation

The events in Glasgow and the delayed move into RHCYP has led to questions and discussion about the room specifications in Lochranza, the designated ward for Haematology Oncology patients in the new building

Background

This ward is designed as a 17 bedded ward, with all single rooms. There are 5 isolation rooms and 12 single rooms, around a courtyard. The single rooms are to the standard ward specification (of 6 air changes/hour) rather than the specification for neutropaenic patients (of 10 air changes/ hour at 10 Pa positive pressure with a HEPA filter). The isolation rooms meet the current standards.

It was known in 2017 that the SHTM was not met and this was progressed to Project Co through the normal routes. They were not able to change the design or build and it was accepted that this would need to be managed by clinical risk assessments to support the preferential placement of certain patients in the isolation rooms (those with the most severe neutropaenia and those at most risk of fungal infections). This was agreed and signed off by the clinical team, the project team and Infection Control colleagues as the only option at the time.

Assessment

The situation has changed as of mid 2019 with the following developments:

- The building has not been occupied as planned, so there will be a time window of opportunity prior to occupation in which to undertake rectifications and bring the 12 single rooms up to the required standard.
- The risk appetite across NHS Scotland has changed with regard to the care in hospital of neutropaenic patients with an increasing recognition of the potential impact of the environment. For example, the refurbishment of the adult haematology ward at WGH will deliver this standard for all rooms, and it would be hard to explain why this is not also delivered for children requiring inpatient care in a state of the art new facility.
- The current chemotherapy regimes in use are more effective but in doing so induce more neutropaenia, and are used in clinical situations where previously there was no therapeutic option.
- Increasing numbers of children from the East Coast are managed for inpatient care in Edinburgh where they might previously have received care in Grampian or Tayside
- The helipad is by the courtyard and there is a risk of downdraughts blowing particles into the air inlets and windows.

Recommendation

A board change should be developed and progressed to bring the 12 single rooms up to the required specification for the care of neutropaenic patients. This will involve:

- Increase the air changes from 6 to 10 per hour
- Increase the positive pressure to 10pa
- Fit HEPA filters to the air inlets for the rooms (H12 grad)
- Seal windows and trickle vents

Tracy Gillies

Appendix: Supplementary risk assessment – Ventilation in- Lochranza Ward (paediatric haematology/oncology)

Supplementary risk assessment – Ventilation in- Lochranza Ward (paediatric haematology/oncology)

18th Sept 2019

Environment & Task

1. Lochranza is a 17 bedded inpatient ward comprising 12 single bed en-suite rooms, and 5 positive pressure ventilation lobby (PPVL) isolation rooms and a day care area comprising of one 6 bedded bay and one 3 bedded bay.
2. The PPVL isolation rooms are designed to, and provide 10 air changes per hour at 10 Pa positive pressure (compliant)
3. The single en-suite rooms will have the existing ventilation increased to provide 10 air changes per hour at 10 Pa positive pressure to the corridor, with HEPA filtered air supply (compliant on completion of upgrade work)
4. Extract ventilation is provided through extract grilles in the en-suite shower rooms (where these are in place) or extract grilles in the patient room. All patient shower rooms currently, or will following planned improvement work, provide a minimum of 10 air changes on extract (lower air pressure in the toilet than in bedroom to enable flow of air from room to toilet) (compliant on completion of upgrade work)
5. The assisted bathroom has extract ventilation providing 10 air changes and exceeds SHTM03-01 requirement of 3 air changes (compliant).
6. The ward footprint also includes the following spaces:
 - Treatment room (x 2)-clinical space
 - Dirty utility room –non clinical space
 - Clean utility room -non clinical space
 - Domestic services rooms-non clinical space
 - Disposal room-non clinical space
 - Store rooms-non clinical space
 - Play room-non clinical space
 - Quiet space-non clinical space
 - Hub (social space) -non clinical space
 - Complementary therapy room (parents only) -non clinical space
 - Office spaces -non clinical space
7. The treatment rooms have been confirmed as designed and delivering with 10 air changes per hour and 10 Pa positive pressure to corridor (compliant). Clinical teams have confirmed that any procedures which require a higher standard of ventilation (as defined by Humphreys et al. Guidelines on the facilities required for minor surgical procedures and minimal access interventions. Journal of Infection Control 2012: 8 : 103 – 109) will be performed in a conventional operating theatre which delivers 25 air changes per hour with positive pressure air cascade (compliant).
8. Non clinical rooms including clean and dirty utility rooms, domestic rooms, store rooms have been confirmed as meeting or exceeding the air change and pressure required by SHTM 03-01 and other technical guidance (typically 6 air changes- and balanced, negative or positive pressure to adjoining spaces as required by room function) (compliant)

9. There are no specific ventilation parameters provided in SHTM 03-01 or other technical guidance for the play room, quiet space or hub. These are specifically designated as 'safe spaces' for children and young people, as no personal care, clinical intervention or treatment will take place in these areas. It is anticipated that children and young people will not spend extended periods in these rooms.

Mitigation of Risk – non clinical spaces accessed by patients

1. All hospital spaces (clinical and non clinical) are provided using materials which are durable and will withstand regular cleaning and disinfection.
2. Regular domestic cleaning in Lochranza will be provided more frequently than general ward areas in line with HFS National Cleaning Specification Guidance.
3. All staff are required to comply with standard and transmission based precautions for infection prevention and control. This compliance is monitored locally and by the IPCT, and feedback given to drive any local improvement required.
4. A bespoke, patient centred clinical risk assessment will be undertaken by the Clinical team in charge of patient care to determine as to whether a child or young person can access shared and public spaces within the ward without being considered at risk of pulmonary aspergillosis (or similar lung infections) and rest of the hospital (where there is not HEPA filtered air) safely relative to their clinical diagnosis, treatment regime and current clinical status.

Actions required

1. NHS Lothian recognise that it may be more pragmatic and cost effective to provide a single ventilation pressure to all spaces in Lochranza (10 air changes 10 Pa pressure) and that this is not directly linked to any clinical risk associated with room function or patient risk factors. NHS Lothian will therefore seek the opinion of their Authorising Engineer (Ventilation) on the feasibility and costs associated with this. The Executive Steering Group will then determine if the high value board change that has currently been submitted to IHSL would require to be amended to instruct this work.

Monitoring

1. Critical system ventilation maintenance and verification will be monitored through the NHS Lothian Ventilation Strategy Group, which reports directly into the Pan Lothian Infection Control Committee, and via Healthcare Governance Committee to the Board.
2. The IPCT maintain active, electronic alert organism surveillance through a direct interface with microbiology and virology laboratory results, and would highlight any clinical case of concern for further investigation and management in conjunction with clinical teams.

Dr Donald Inverarity & Lindsay Guthrie (NHS Lothian Lead Infection Control Doctor & Lead Nurse)

Dorothy Hanley & Janice MacKenzie (NHS Lothian Project Team RHSC Commissioning Manager & Clinical Director)



RHCYP & DCN Oversight Board

3 October 2019

Summary Report – RHCYP + DCN Drainage**1. Introduction & Background**

Very early in the briefing and initial design process it was identified as necessary to incorporate a basement into the facility. As a result, it was always known that there would be an internal sump pump to remove water from the basement outlets, given the invert level of the existing public sewer. This had been included in the project documents from the start. During early construction it became evident that the location of this sump was less than optimal (outside the main access to the kitchen). However, moving it was not an option as it would invalidate the concrete design and waterproofing of the entire basement.

Throughout the construction phase the Board sought and received assurances that the sump was only serving outlets in the basement. It was formally confirmed by Multiplex in August 2018 that this was not the case and several areas of the facility were draining to this internal sump. The potential risk is that in the event of a blockage occurring or complete failure the sump would not be able to cope with the volume of drainage. The Board immediately escalated concerns and after several workshops robust mitigation and monitoring measures were installed.

2. Relevant Documentation

- Settlement Agreement – In order to provide a formal vehicle to allow review and close out of the design of the mitigation measures, drainage was included in the settlement agreement. This placed a positive obligation on IHSL to provide a satisfactory solution that would provide early warning of issues and had built in resilience. The resulting installation was subject to review and witnessing by the Board and Independent Tester who was also responsible for signing it off as complete.
- Foul Drainage Technical Pack for SA – This document was produced by IHSL to demonstrate that the additional works to the sump would provide the necessary resilience. The pack contains design information for all pumps installed as well as the controls and alarm strategy. Also included are details of the FM provider (Bouygues FM) maintenance and response protocols.
- Board Risk Assessment – In order to fully prepare for the unlikely event that all mitigation measures are compromised, the board have prepared an

incremental risk assessment and continuity plan detailing Board actions at each stage of any failure.

- Technical Reports by the Board's Technical Adviser
- IHSL Technical Report
- MPX Technical Report
- Independent Tester Certification
- File Note by the Board's Contracts Manager stating operational measures

3. Failure Scenarios

In order for there to be a complete failure that would cause flooding in the basement several individual failures would need to occur, these are as follows:

Issue	Most likely Result
Large item(s) would need to pass local bends, joints etc,	Item(s) would become trapped at local outlet causing local blockage
Large item(s) would need to pass along all horizontal and vertical runs including bends and joints	Item(s) would become trapped at bend or joint causing blockage in local branch
Large item(s) would need to pass through manhole	Item(s) would become trapped at manhole causing blockage in stack(s)
Large item(s) would need to reach sump	Item(s) remaining in sump will be cleared through planned preventative maintenance.
Large item(s) would need to foul first pump	First pump trips and sends critical alarm to Bouygues, Bouygues respond and repair before second pump trips
Large item(s) would need to foul second pump	Second pump trips and sends critical alarm to Bouygues, Bouygues respond and repair before third pump trips
Large item(s) would need to foul third pump	Third pump trips and sends critical alarm to Bouygues, Bouygues respond and repair using submersible pump and/or suction lorry. Flooding may occur at this point

At each of the above stages there is an opportunity to intervene to prevent the issue reaching the next stage and six failures would need to occur before a major issue arose

4. Mitigation

Several mitigation measures have been installed to minimise the risk of complete failure, these are as follows:

- Provision of fully automatic third pump
- Provision of second separate discharge line

- Provision of separate control panel with auto changeover dual electrical supplies on generator back up
- Provision of digital monitoring of pump status and water levels with alarm to helpdesk, hand held devices and building management system
- Provision of identical monitoring system for the third pump
- Provision of additional alarms from level switches linked to the building management system.
- Provision of two spare pumps
- Provision of Emergency submersible pump

5. Operational

Bouygues FM have detailed, within the drainage technical pack, enhanced maintenance regimes to ensure the sump is monitored and equipment is maintained and tested to provide the necessary resilience and reassurance. Bouygues have carried out trial maintenance activities such as changing over pumps and testing various failure scenarios with varying water flows with no issues identified.

NHS staff must also contribute to the safe use of the drainage system, encouraging colleagues and patients not to dispose of items such as pads, gloves, nappies, paper towels etc into any drainage outlet. If this inadvertently happens staff should call the Bouygues helpdesk immediately.

6. Conclusion

Whilst the location of the sump is not ideal, it can be concluded that there are sufficient mitigation measures in place to deal with reasonable and foreseeable issues including abnormal items in the system. The fact that six consecutive individual failures, with opportunities to intervene at each, have to occur before a significant problem presents provides reassurance that such an issue is extremely unlikely. The automatic monitoring and maintenance measures in place provide the extra assurance required.

Ronnie Henderson 23rd September 2019



RHCYP & DCN Oversight Board

3 October 2019

Commercial progress

Introduction

At the Oversight Board on the 19 September members received a summary of the Board change procedure required to deliver the changes to ventilation within critical care and haematology/ oncology. In line with that procedure NHSL issued a Board high value change for Critical care on the 30th August and for haematology / oncology on the 6th September 2019. Discussions have taken place with IHSL on these changes on multiple occasions, but formally at the 19 September IHSL/NHSL steering group, established as part of the Settlement Agreement, meeting the obligation for both parties to discuss and review the change within 5 business days.

Recommendations

The Oversight Board is asked to:

- note the position
- support NHSL's recommendation to refuse full relief from payment mechanism during construction works
- engage in further dialogue with both IHSL and BYES

Current position

In line with the procedure IHSL were due to notify NHSL within 15 business days if it is entitled to refuse the change. We have not received any notification to this effect but were advised by IHSL that they required more time to conclude discussions with their FM provider, Bouygues (BYES). Once the Project becomes operational all Board changes are delivered by the FM provider.

On the 27 September an email was received from IHSL advising that they had not yet been able to secure Bouygues agreement to undertake the changes. This was followed up that day by a conference call between IHSL and NHSL where it was established that there are 4 commercial issues for BYES.

1. An indemnity from the Board

There is a concern that due to the (potentially) extensive work required to rectify the ventilation this will invalidate the warranties provided by Multiplex which are valid for 12 years. This is clearly something that would require consideration but until the design is developed is not possible to assess. BYES have agreed to provide draft wording for this indemnity due to be received on the 30 Sept but still awaited.

2. No Offsets

BYES require assurance that any future deductions in relation to performance would not be offset against the capital costs of the build. NHSL has offered the option of a Project bank account but it is understood that IHSL are considering an account held in Trust. This would require to be agreed with their Lenders and they are currently exploring this with them.

3. Payment Mechanism Relief

BYES have requested full relief from the payment mechanism whilst the works are being undertaken. IHSL have been advised that this could not be agreed given that these changes are likely to be the first of many through the life of the Project. The process for agreeing any relief is set out in the Project Agreement and would require to be aligned with the scope and nature of the works. This does require more detail on the design to be agreed

4. Deductions

A significant level of deductions have already been applied by the Board, which in turn IHSL have levied against BYES. Many of these relate to performance issues caused by defects and the final obligation lies with MPX. However this has created cash flow/financial pressure for BYES. IHSL have now made an offer of relief to BYES to help alleviate and we await confirmation that this will be sufficient.

Next Steps

IHSL have indicated that a meeting may be required with all players this week to resolve these commercial issues. By far this most significant issue is the full relief from deductions and this is not something the Board can support. Nonetheless it is proposed that NHS Lothian engage in this meeting to ensure that as a minimum we achieve progress on the design.



From: [Graham, Chris](#)
Subject: RHCYP+DCN Oversight Board Papers - 10-10-19..
Date: 09 October 2019 15:15:59
Attachments: [image001.jpg](#)
[image002.png](#)
[191010 - RHCYP&DCN Oversight Board Papers.pdf](#)
Importance: High

Dear Colleagues

Please find attached the papers for tomorrow's oversight board meeting – Item 3.1 Revised Terms of Reference, is marked as to follow.

For ease of navigation please note:

- The PDF contains bookmarked items  as well as hyperlinks from the agenda to items in **blue**;
- the **blue** item numbers take you back to the agenda and;
- the **green** buttons at the end of items take you back to the start of that item.

Please note that the dial in details for the meeting remain the same:


Participant code – 

Kind regards
Chris

Chris Graham
Secretariat Manager


Achieving [deadlines](#) means you are respecting your colleagues and supporting effective decision-making.

[fonline3.png](#)



The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 10th October 2019, 8:00 – 9:30am

Venue: Room 5, Waverley Gate, EH1 3EG

AGENDA

1.	Chair's Welcome and Introductions	FMc	V
	Apologies: Gordon James – Jim Miller deputising		
2.	Minutes of previous meeting on 03/10/19 – for approval	FMc	*
3.	Matters Arising		
	3.1 Revised Terms of Reference	AM	#
	3.2 Interventional neuroradiology provision	TG	V
	3.3 Continuity of service provision in current DCN & RHSC	SG/TG	*
4.	Senior Programme Director Update & Dashboards	MM	*
5.	NSS Report on Fire, Electrical and Medical Gas reviews	JM	*
	STANDING AGENDA ITEMS		
6.	Technical Reviews progress		
	6.1 Ventilation	MM/BC	V
	6.2 Water quality ARJO baths	MM/BC	*
	6.3 Fire	MM/BC	V
	6.4 Electrical	MM/BC	V
	6.5 Medical gases	MM/BC	V
7.	Commercial Progress	SG	V
8.	Communications		
	8.1 Staff communications	JM	V
	8.2 Requests for information	SC	V
9.	Any Other Competent Business		
10.	Date of Next Meeting	All	
	Thursday 17 October 2019, 8am, Room 5, Waverley Gate		

2.

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 3 October 2019 in Meeting Room 6&7, Waverley Gate, Edinburgh.

Present: Ms C. McLaughlin, Chief Finance Officer, Scottish Government (chair); Ms S. Goldsmith, Director of Finance, NHS Lothian; Ms T. Gillies, Medical Director, NHS Lothian; Professor A. McMahon, Nurse Director, NHS Lothian; Mr P. Reekie, Chief Executive, Scottish Futures Trust; Mr C. Sinclair, Chief Executive, NHS National Services Scotland; Professor F. McQueen, Chief Nursing Officer, Scottish Government and Mr G. Archibald, Joint Staff Side Representative.

In Attendance: Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Mr B. Currie, Project Director, NHS Lothian; Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian; Ms M. Morgan, Senior Programme Director; Ms J. Mackay, NHS Lothian Director of Communications; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian; Mr C. Henderson, Scottish Government and Mr C. Graham, Corporate Governance Team (minutes).

In Attendance by Telephone: Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland; Mr G. James, Director of Facilities, Health Facilities Scotland; Mr I Storrar and Mr J. Miller, Health Facilities Scotland;

Apologies: Dr C. Calderwood, Chief Medical Officer, Scottish Government and Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side).

The Chair welcomed members to the meeting; Ms McLaughlin confirmed that this would be her last meeting as Chair with Professor McQueen taking over the chair of the oversight board at the next meeting. Ms McLaughlin would remain a member of the group.

1. Minutes of previous meeting – for Approval

1.1 The minutes of the meeting held on 19 September were accepted.

2. Matters Arising

2.1 Drainage Concerns from Unison

- Meeting held with Unison Trade Union representative, a range of questions raised which the public enquiry will respond to.
- Representative acknowledged work undertaken around drainage to get to the low risk position.

3. Senior Programme Director Update

3.1 First written report submitted from Ms Morgan.

General Update

- It was noted that the Cabinet Secretary had visited existing RHSC & DCN 23/09/19 and a letter summarising the issues highlighted is expected.
- IHSL have reported a number of commercial issues raised by BYES. IHSL, BYES and NHSL workshop 04/10/19.
- It is not yet possible to determine the programme milestones and dependencies due to outstanding activities (fire) and commercial negotiation.
- Project governance, roles and responsibilities are being updated for next meeting.

Project Work streams (RAG Status)

- RAG Status for ventilation, water safety, drainage, fire safety, electrical and medical gases all noted. Final reports for fire safety, electrical and medical gases expected week commencing 07/10/19.
- It was agreed that having the project work streams presented in this way was a very helpful format and this would continue.

4. Technical Reviews progress

4.1 Ventilation

RHCYP & DCN – Air Handling Units remedial works proposal - The circulated paper from Mr I Graham was noted. This had been in response to a request from the NHS Lothian Executive Steering Group to prepare a briefing paper on the options for addressing the Air Handling Units within the new facilities and followed on from the delivery of the “benchmark AHU” by MPX at the end of last week.

- There was discussion on the available 4 options. The preference for option 3 was noted but confirmation of this would be subject to satisfactory responses from IHSL and full risk assessment with clinical input. HFS supported option 3 as the pragmatic approach subject to clarification on outstanding actions as detailed in the report Appendix.
- Discussion on compliance in relation to the Air Handling Units with a further inspection scheduled for 04/10/19.
- Noted that the paper did not provide a final recommendation and that more detail would be brought back to the next oversight board.

RHCYP & DCN Ventilation rate risk assessment

- Noted that meetings had taken place with clinical teams to discuss patient placement/location and potential impact of 4 mechanical air changes rather than 6.
- Separate discussion with respiratory around Cystic Fibrosis patients.
- Staff expected to follow the normal prioritisation matrix for placement of patients.

Haematology Oncology provision in RHCYP

- Oversight Board approved in principle the development of a board change to bring the 12 single rooms up to the required specification for the care of neutropenic patients. This would involve:
 - Increase the air changes from 6 to 10 per hour
 - Increase the positive pressure to 10pa
 - Fit HEPA filters to the air inlets for the rooms (H12 grad)
 - Seal windows and trickle vents
- Additional piece of work around ongoing monitoring to be discussed out with meeting, risk assessment paragraph to be added to final documents and these to be brought back to next meeting for agreement. Update on the risk assessment of ward areas and Haematology Oncology to be provided to the Cabinet Secretary any concerns would be fed back.

TG/SC

4.2 Water Quality

- RHCYP+DCN Water Safety Action Log Dashboard was noted. Incorporating all action plans into a single plan.
- Confirmation that in terms of escalation Amber and Red actions should be part of exception reporting to the group.

MM

4.3 Drainage

4.3.1 **Drainage Summary Report**

- Noted that the 2 items in the NSS action plan re drainage had now been attended to and closed off.
- Low risk environment now reached in relation to drainage, mitigation works in place and full desktop modelling of all scenarios undertaken.
- Alignment with HFS report - low risk given mitigation actions taken and failure scenarios now also worked through. Availability of additional pumps enhances failure scenario work further.
- Agreed to remove drainage from the oversight board agenda subject to any feedback following the Cabinet Secretary update.

4.4 Fire, Electrical and Medical Gases

- Final reports for fire safety, electrical and medical gases expected week commencing 07/10/19.
- Noted that for the avoidance of any doubt the new RHCYP+DCN building had received building control certification.

5. **Commercial Progress**

- Noted that the board changes instructed on 30/08/19 and 06/09/19 had not yet moved to design stage with IHSL.
- Remains issues with BYES in relation to resources
- Senior leadership required for management of help desk and MPX relationship
- Discussion on issues to be had with MacRoberts and further update to be provided to the oversight board's next meeting.

SG/MM

6. Communications

- Discussion on preparation of key messages for staff communications – to be clarified further out with the meeting.
- Discussion on oversight board responsibilities, to be clarified further out with the meeting and group terms of reference amended as appropriate.

7. Any Other Business

- 7.1 Single Plan for Existing Sites - Noted that the NHSL Chief Officer, Acute Services would be managing the production of the overall single plan for RHCYP+DCN which would then be submitted to Scottish Government. The plan would go to the NHSL Steering Group on Monday (07/10/19) and then be brought back to the next oversight board on (10/10/19).

8. Date of Next Meeting

- 8.1 The next meeting of this group would take place at **8.00 am** on **Thursday 10 October 2019**, *Meeting Room 5, Waverley Gate*.



RHCYP + DCN

Continuity of service provision on current DCN and RHSC sites

3.3

Revision Date: 09/10/2019

Current date for tracking: 09/10/2019

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/ Closed	DCN	RHSC
Capacity										
1	Winter planning	1.1	RHSC: Increase in ED capacity to maintain flow	F Mitchell	05/07/2019	30/11/2019	Give ED some of the OPD area to expand into, by moving some OPD clinics to: - SAU, Ward 8 - 3 Rillbank Terrace (formerly CAMHS) - IPCT review complete, minor refurbishment being costed	OPEN	No	Yes
		1.2	RHSC: increase medical beds and cubicles	F Mitchell	05/07/2019	30/11/2019	Move Ward 4 (orthopaedics and spine) to Ward 5. Enabling work started. Ward 4 to become part of medical admissions unit, including PIU Monday to Thurs.	OPEN	No	Yes
		1.3	RHSC: Additional 15 winter B5 posts advertised and shortlisted, to supplement medical nurse staffing. 6 additional B2 posts will be sought from the staff bank on a guaranteed shift basis for night duty staffing on ward 4 (medical). Additional nursing posts approved in June 2019 for an increase in year-round nurse staffing levels in the ED, particularly to support evening and night activity pressures. Most posts now recruited to for Phase 1 of this expansion, including an Advanced Nurse Practitioner for the ED team.	F Mitchell	05/07/2019	30/11/2019	B5 Winter posts - first round of interviews held 2 October, further round now initiated, closing date 18 Oct. Band 2 Winter Posts - Bank Requests from November onwards. Additional permanent ED posts - ENP job descriptions being finalised for recruitment end Oct. onwards.	OPEN	No	Yes
		1.4	RHSC: Increase haem/onc day care beds by 3	F Mitchell	05/07/2019	30/11/2019	Part of ward moves already agreed above.	OPEN	No	Yes
		1.5	Sleep service expanded staffing for new hospital but there is no extra capacity in old RHSC and winter pressures can lead to sleep studies being cancelled. Look at potential for services at home being expanded to address waiting list?	F Mitchell	05/07/2019	07/10/2019	Home sleep studies have now started.	CLOSED	No	Yes
		1.6	Winter Planning adult acute services	M Pearson	05/07/2019		Due to ongoing bed closures and pseudomonas in water, DCN is currently not accessed by the WGH site for boarding. Bed pressures in down stream facilities may affect DCN; managed through operational site and capacity management. CLOSED in relation to cancelled DCN moves.	CLOSED	Yes	No
2	Paediatrics at St John's	2.1	Consideration of increasing Services at SJH to reduce pressure of RHSC and enhance care closer to home for West Lothian children.	F Mitchell	05/07/2019		The SJH Children's Ward is now open again for 4 nights/week, which will reduce the pressure on both the RHSC ED and the pressure on inpatient beds at RHSC. The patient pathway for West Lothian children who are admitted to RHSC includes repatriation to the SJH Children's Ward, where clinically appropriate, to complete their inpatient care. In addition, West Lothian children admitted to RHSC who require follow up Planned Investigations or outpatient appointments are referred back to SJH for this, so they can receive care closer to home and to reduce pressure on RHSC services. Current staffing levels in other specialist teams mean that further Outreach at SJH is not currently possible however Paediatric Programme Board will be reviewing this further on 29 October 2019. CLOSED in relation to cancelled RHSC moves.	CLOSED	No	Yes
3	Medical equipment	3.1	Interventional Neuroradiology provision: increased demand (due to service delivery issues in Glasgow) for ageing and increasingly unreliable interventional neuroradiology equipment at DCN.	M Carr	09/07/2019	23/10/2019	Work is ongoing to confirm cost and programme certainty for options. Indicative cost for replacement option is £900k. Recommendation is option to replace existing equipment. Equipment replacement program detailing timescales, impact and actions to minimise impact to be finalised.	OPEN	Yes	No

		3.2	Theatre lights in four of the operating theatres at RHSC Sciennes are old and unreliable, with no replacement parts available. New lights required.	F Mitchell	09/07/2019	TBC	Quotes received, delivery and installation dates being confirmed with the 2 suppliers as well as confirmation of any enabling works they require pre-installation. Will then require a theatre shutdown timetable to be agreed with clinical teams, to minimise impact on patient service, for removal of old lights and installation of new. Timetable for whole programme expected to be available in next 4-6 weeks	OPEN	No	Yes
		3.3	General x-ray equipment that had been installed in RHCYP required again at RHSC	F Mitchell/M Carr	09/07/2019	08/11/2019	New equipment sourced and to be installed. This equipment will be moved elsewhere on closure of RHSC. On schedule to go live on target date of 8/11/19.	OPEN	No	Yes
		3.4	Extension of maintenance contracts for elderly equipment at Sciennes and DCN.	F Mitchell/M Carr	09/07/2019	19/09/2019	Contracts and maintenance plans now in place. Will be updated on a quarterly basis.	CLOSED	Yes	Yes
		3.5	Additional scope storage is required for theatres at RHSC Sciennes as two cabinets were moved to RHCYP. Currently one is on loan, with rental charges due from October 2019.	F Mitchell/M Carr	09/07/2019	07/11/2019	Cabinets moving back to be reinstalled in Sciennes on 11/10/19. Validation process starts on 17/10/19 and takes 3 weeks. Expected to be operational from 07/11/19 onwards.	OPEN	No	Yes
		3.6	Replacement tube for CT scanner at RHSC	F Mitchell/M Carr	09/07/2019	31/07/2019	Tube replaced - COMPLETE	CLOSED	No	Yes
		3.7	Videotelemetry: access to VTEM beds has been reduced in DCN since April 2019 with the reconfiguration of wards and restrictions on admissions due to positive testing for pseudomonas aeriginosa. Delaying moves to Spring 2020 extends the limited capacity and impact on waiting times. Use of portable equipment at one bed has enabled some VTEM admissions since August, but a hardwired bed with full VTEM capability and monitoring is required.	M Pearson	01/08/2019	27/10/2019	Install hardwired VTEM into ward 33. . Utilise portable equipment for appropriate waiting list patients at home. Optima due to review on 10.10.2019 The work required will hopefully be timetabled in for wb 14.10 or 21.10.	OPEN	Yes	No
Clinical Support Services										
4	Pharmacy	4.1	Inadequate staffing to maintain opening hours for dispensary on 2 sites since in organisational change 1 dispensary manager was redeployed to another core service effective July 2019 when integration was meant to occur	A Timoney	23/09/2019	18/10/2019	Additional Band 7 dispensary manager resource required to allow provision of medicines on RIE and RHSC sites to prevent impact upon patient experience while RHSC remains open; and minimise impact of stress on staff health and wellbeing. 1.0wte band 7 Pharmacy Technician = £43,500	OPEN	No	Yes
		4.2	Inadequate pharmacy support workers (PSW) staffing to deliver an integrated medicines distribution hub for RYCYP/RIE with required staff still working on RHSC site to maintain dispensary service	A Timoney	23/09/2019	18/10/2019	Additional Band 2 and 3 PSW resource required to prevent impact upon availability of medicines on RHSC site; and minimise impact of stress on staff health and wellbeing. 1.0wte band 2 PSW plus 2.0wte band 3 PSW = £77,192	OPEN	No	Yes
		4.3	Pump-prime funding for staff resource to deliver the One Stop model has ceased, which is the backbone of medicines supply to patients to underpin management of capacity and flow at the new hospital site	A Timoney	23/09/2019	18/10/2019	Funding for pharmacy technician resource must be reinstated to continue this model to be delivered. To address 3.4 and 3.5: 1.0wte band 4 Pharmacy Technician = £29,985	OPEN	No	Yes
		4.4	Extended opening hours and weekend working rotas of the integrated pharmacy department at RIE was implemented in June 2019 in readiness for move of the RHSC in July 2019. To avoid lone staff working the full staff complement was needed on one site to full fill this rota. With pharmacy staff members remaining on RHSC the late evening	A Timoney	23/09/2019	18/10/2019	Additional Band 4 pharmacy technician resource needed to ensure extended pharmacy opening hours at RIE not put at risk, which would affect capacity and flow on RIE site See 5.3 above	OPEN	No	Yes
		4.5	One Site Lead Pharmacist redeployed to another post during organisational change to integrate the 2 pharmacy departments leaving 1 Site Lead Pharmacist to manage teams across 2 sites without a deputy to support operational day-to-day management or change management of the teams	A Timoney	23/09/2019	18/10/2019	Deputy pharmacist (Band 8a) required to support site lead pharmacist for RIE/RHSC until integration of the 2 departments is complete, which will help minimise impact of stress on site lead pharmacist health and wellbeing 1.0wte Band 8a Pharmacist = £65,625	OPEN	No	Yes
		4.6	Cross site transport of medicines 7 days a week is needed but the ad hoc arrangements currently in place (e.g. Blood bikes, taxi runs) is not suitable for the extended duration that off-site daily delivery of medicines will be needed until RHSC move. This is especially an issue for delivery of intrathecal chemotherapy agents that have unique transport requirements under CEL30 (i.e. anyone transporting these medicines must be trained and named on the intrathecal register as competent to undertake the task allocated to them including transport)	A Timoney	23/09/2019	18/10/2019	Funding to NHS transport and portering services for 1.0wte dedicated driver(s) (to be trained in CEL 30 requirements) to transport medicines between 09:00 to 17:30 Monday to Friday and 10:00 to 14:00 Saturday. 1.0wte Band 2 = £24,370	OPEN	No	Yes
5	Laboratories	5.1	Minor changes were made to on-site Blood Science laboratory hours with the announcement of the delay in July 2019, with agreement that provision would remain under constant monitoring/ review.	M Grey	09/07/2019	31/07/2019	The NHSL Blood Science laboratory service at RHSC will continue with no alteration to service but service delivery/ performance will be monitored/ kept under continuous review in order to ensure that a robust and sustainable service continues to be provided to RHSC users and their patients.	CLOSED	No	Yes
Facilities Management										
6	Catering	6.1	Extend canteen opening times and preparation of meals on RHSC site - for better utilisation of staffing and reduction in waste.	G Curley	23/09/2019	14/10/2019	Chef now on site. Collation of menus and standard ordering.	CLOSED	No	Yes
		6.2	Procurement of two fridges for RHSC facility.		23/09/2019	14/10/2019	Order placed	CLOSED	No	Yes
		6.3	Communication with catering staff about sites and rosters.		23/09/2019	08/10/2019	Chef now on site; communication with catering staff underway.	CLOSED	No	Yes
		6.4	Improved signage and marketing for RHSC service		23/09/2019	14/10/2019	Communication in place on site	CLOSED	No	Yes
		6.5	HACCP		23/09/2019	08/10/2019	Chef now on site: completion of HACCP	CLOSED	No	Yes
		6.6	Explore options for third party support for catering		23/09/2019	14/10/2019	Discuss with Edinburgh Childrens Hospital Charity	OPEN	No	Yes
7	Parent accommodation	7.1	Improve environment of parents accommodation		23/09/2019	02/10/2019	Thorough clean of parents accommodation, and enhanced cleaning within domestic services schedule.	CLOSED	No	Yes

		7.2		G Curley	23/09/2019	10/10/2019	Review parent accommodation and identify refurbishment and new furniture requirements.	OPEN	No	Yes
		7.3			23/09/2019	30/09/2019	Improve communication between FM team and Family Support re use of and care for parent accommodation. Protocol agreed	CLOSED	No	Yes
8	Domestics	8.1	Domestic services, including increased pressure on staff to make existing environment as good as it can be.	G Curley	23/09/2019	30/09/2019	Review current provision with a view to providing enhanced service to compensate for condition of the environment.	CLOSED	YES	Yes
		23/09/2019			10/10/2019	Ensure all staff only areas are in receipt of full staffing levels.	CLOSED	YES	Yes	
		23/09/2019			30/09/2019	Complete analysis of Facilities Monitoring Tool.	CLOSED	YES	Yes	
		23/09/2019			30/09/2019	Transfer of new equipment from RHCYP to RHSC /DCN	CLOSED	YES	Yes	
		23/09/2019			30/09/2019	Utilisation of staff in post to provide security at RHSC: give notice to current Security Contractor. Notice given.	OPEN	No	Yes	
9	Logistics	9.1	Logistics services	G Curley	23/09/2019	14/10/2019	Utilisation of staff in post to provide security at RHSC: give notice to current Security Contractor. Notice given.	OPEN	No	Yes
		23/09/2019			30/09/2019	Secondment opportunity for supervisor vacancy now being progressed.	CLOSED	No	Yes	
10	General estate	10.1	DCN - General state of facilities; walkround and identification of works	G Curley	23/09/2019	05/10/2019	Ward 31 additional shelving	CLOSED	Yes	No
					23/09/2019	31/10/2019	Wet room improvement works ongoing expected completion 31st Oct, Ward 31 by 20/10/19. Ward 33 by 28/10/19	OPEN	Yes	No
					23/09/2019	31/10/2019	Painting Programme (31,32,33) to start 09/10/19	OPEN	Yes	No
					23/09/2019	31/10/2019	Flooring Programme to start as 09/10/19 during painting works	OPEN	Yes	No
					23/09/2019	30/09/2019	Review existing accommodation - plans for refurb and improvements.	CLOSED	No	Yes
Staff										
11	Communication with staff	11.1	General staff communications, including annual leave, pay, expenses, car parking, delaying retirement	J Butler	23/09/2019	10/07/2019	Frequently asked questions updated and published on intranet 10/07/19	CLOSED	Yes	Yes
12	Staff wellbeing	12.1	Supporting staff wellbeing	J Butler	23/09/2019	29/10/2019	Regular Exec Team/Senior Team Walkarounds. Next Exec Team are at RHSC on 29 October. Ongoing involvement of Partnership. RHSC Healthy Working Lives Programme ongoing.	OPEN	Yes	Yes
13	Retention/ Recruitment of DCN nursing staff	13.1	In light of staff leaving DCN in anticipation of the move to RIE, the nursing workforce has been reduced. There is a need to ensure we retain current staff, and quickly fill vacancies.	G McAuley / M Pearson	07/10/2019	31/03/2020	On going action. Consideration of nursing requirements to ensure retention of existing group of staff and recruitment into new posts by nursing team.	OPEN	Yes	No
Patients and public										
14	Patient appointments and communications	14.1	Inform patients of any changes to appointments	J Campbell	09/07/2019	31/07/2019	All patients with appointment in July and August were contact by phone to reschedule to the old sites. All further appointments have been notified by letter.	CLOSED	Yes	Yes

4.1

RHCYP & DCN - Senior Programme Director's Report

Report Date	08/10/2019	Programme RAG Status (now)	A
Submitted by	Mary Morgan	Programme RAG Status (previous Oversight Board)	A

General Update		IHSL and NHSL liaison meeting 04/10/19 to discuss commercial issues; outcome awaited pending IHSL and BYES discussion. It is not yet possible to determine the programme milestones and dependencies due to outstanding activities (fire) and commercial negotiation. Project governance, roles and responsibilities are being updated.
----------------	--	---

Project Workstreams	RAG Status	Comments
Ventilation	R	2 high value Board Change Notices issued to IHSL: critical care and Lochranza Ward ventilation. IHSL have not been able to provide an initial response due to commercial issues raised by BYES. Lochranza Ward and general area ventilation risk assessments have been approved by the Oversight Board. Workstream Red Status due to absence of a delivery programme for High Value Changes Following demonstration of proposed air handling unit solution on 27/09/19; outcome on further work required by IHSL awaited.
Water Safety	A	Currently 24 open actions and 6 closed. Scottish Water have attended to assist with Shower Hose and Arjo Bath solutions. 4 Board Change Notices issued to IHSL (BYES) - disinfection of all taps found positive for pseudomonas due by 31/10/19.
Drainage	B	Oversight Board approved sump drainage design and management report. Meeting held with Tom Waterson, Unison 02/10/19; no specific issues raised. Workstream closed.
Fire Safety	R	NHSL working with NSS to review early observations, including sharing with IHSL/MPX/BYES; final report due w/c 07/10/19. Workshops held with IHSL, HFS and NHSL to discuss, principally, provision of smoke dampers, their operation and resetting. Work to estimate the impact and consequences of retro-fitting smoke dampers is underway.
Electrical	A	NHSL working with NSS to review initial observations, including sharing with IHSL/MPX/BYES; final report due w/c 07/10/19
Medical gases	A	Final report due w/c 07/10/19 - no indications of problems arising.

Key Achievements / Highlights since last Oversight Board

Project risk register reviewed and updated
IHSL and NHSL liaison meeting held 04/10/19 - reported progress against previously agreed actions, commercial position re High Value Changes and agreed future planned meeting structure for strategic, operational and High Value Change delivery.

Next Period Key Activities / Challenges

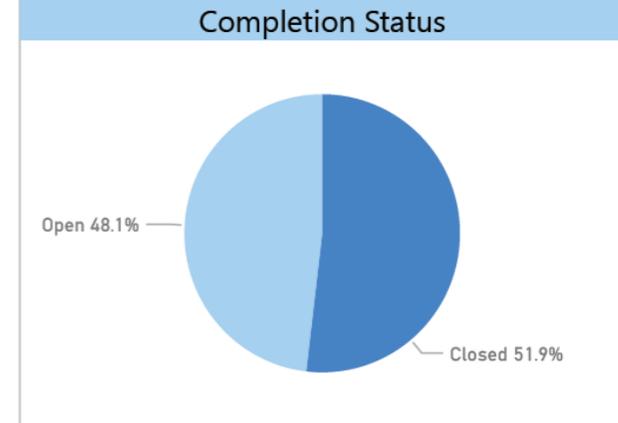
Reports on fire, electricity and medical gases due w/c 07/10/19.

RHCYP+DCN - Venla on Acon Log Dashboard

08/10/2019

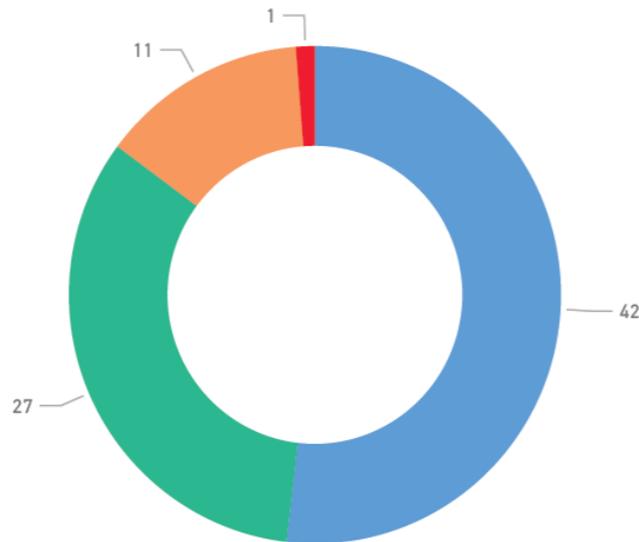
OPEN
39

CLOSED
42



Status against Target Date

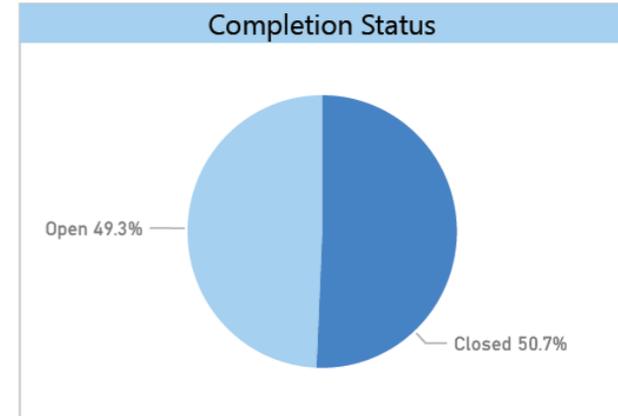
- Due Status
- Closed
 - Acons on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN

OPEN
36

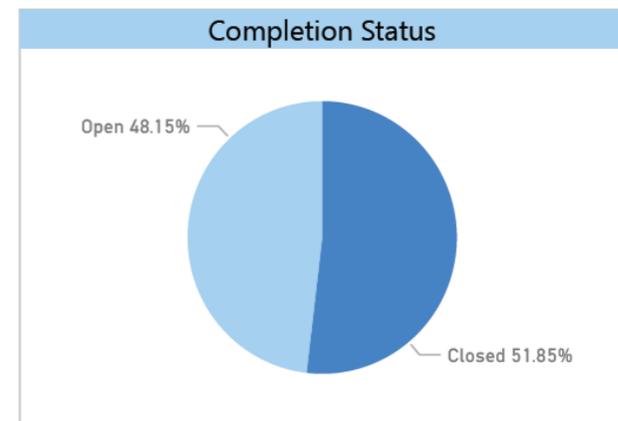
CLOSED
37



Priority for RHCYP

OPEN
39

CLOSED
42

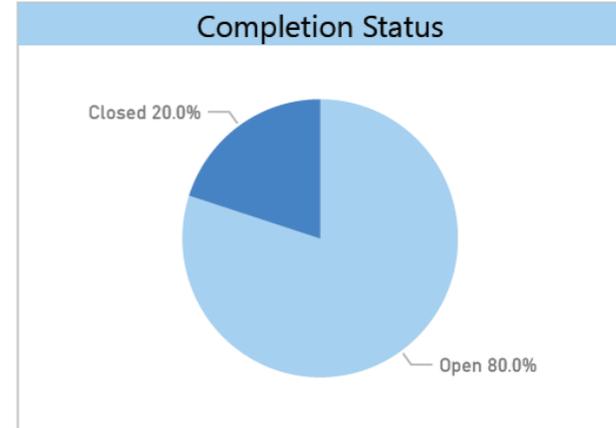


RHCYP+DCN - Water Safety Acon Log Dashboard

09/10/2019

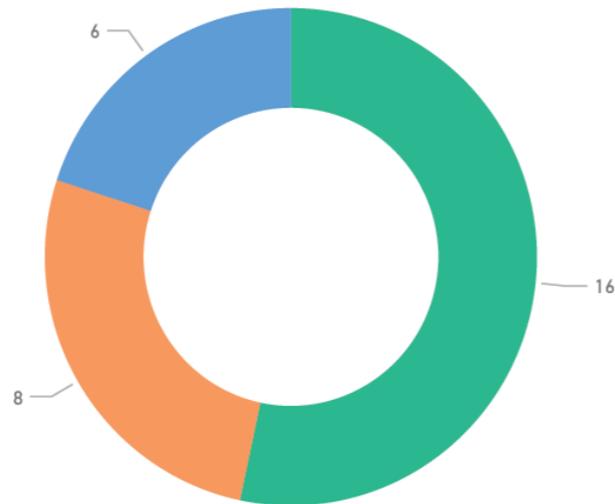
OPEN
24

CLOSED
6



Status against Target Date

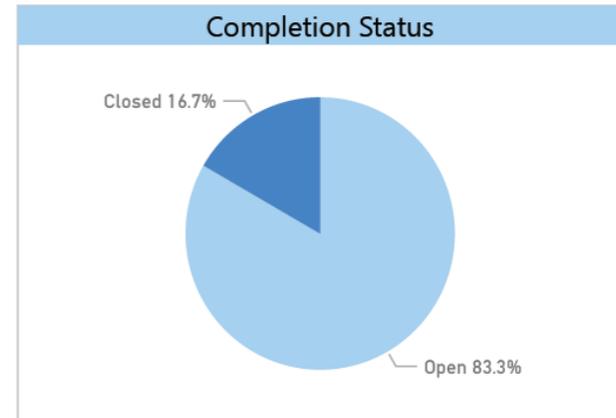
- Due Status
- Acons on Target
 - Up to 2 Weeks Beyond Target Date
 - Closed
 - Over 2 Weeks Beyond Target Date



Priority for DCN

OPEN
20

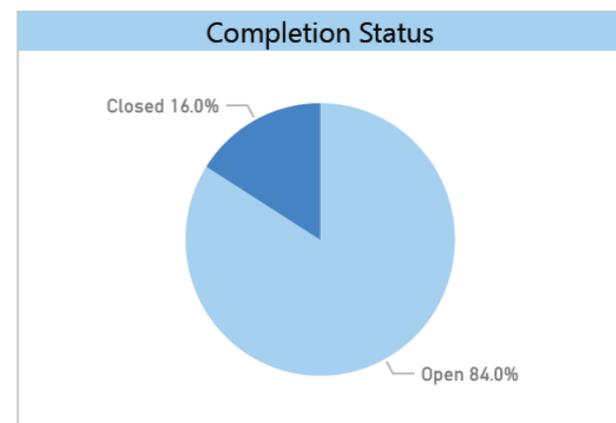
CLOSED
4



Priority for RHCYP

OPEN
21

CLOSED
4



5.



NSS Health Facilities Scotland & Health Protection Scotland

NHS Lothian - Royal Hospital for Children and Young People & Department of Clinical Neurosciences

Review of Fire systems, Electrical Systems and Medical gas installations

October 2019

Version Draft 0.11



Contents

1. Executive Summary	3
1.1 Overview	3
1.2 Summary of findings.....	3
2. Analysis of information provided	5
2.1 Information provided.....	5
3. Findings	6
3.1 Management and assurance	6
3.2 Fire.....	8
3.3 Electrical.....	10
3.3 Medical gas installations.....	12

1. Executive Summary

1.1 Overview

This document is supplementary to the NSS report issued on 9th September 2019. The objectives of this part of the review were to focus on the provision of the fire, electrical services and medical gas systems at RHCYP & DCN and:-

- To provide a report by October 2019 to Scottish Government on whether the relevant technical specifications and guidance applicable to the RHCYP & DCN are being followed and implemented.
- Where relevant technical specifications and guidance have not been followed, identify necessary remedial actions.

This part of the report deals mainly with engineering aspects and there is limited commentary on Healthcare Associated Infection (HAI) associated with these three disciplines as there is little or no impact on HAI from the services considered. The process involved site visits, sample inspections and a targeted review of available documentation.

The review commenced on the 12th of August 2019, with this supplementary report published for consideration by the established RHCYP & DCN Oversight Board.

1.2 Summary of findings

The findings have been collated based on information provided by NHS Lothian and on-site reviews of the RHCYP & DCN. Expert advice was sought within the key focus areas of Fire, Electrical and Medical Gas systems and their overarching management and assurance processes relating to these systems. The following table outlines the status of key findings:

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Management & Assurance	Omissions identified in key roles within the management structure, ease of access to information and possible lack of appropriately qualified personnel in safety critical roles.			2	2	
Fire systems	Action is required to include remotely resettable fire and smoke dampers within the ventilation system serving all sleeping accommodation areas. Identified fire doors should be upgraded.		1	3	1	
Electrical Systems	Remedial action is required within both the high voltage (HV) and low voltage (LV) installations.		2		1	
Medical gas systems	The review of the medical gas installations confirmed that they have been designed installed and commissioned in accordance with the relevant standards.				1	2

NHS Lothian RHCYP & DCN review

The following definitions were used to categorise the findings:

Priority	Definition
1	Significant – Concerns requiring immediate attention, no adherence with guidance
2	Major – Absence of key controls, major deviations from guidance
3	Moderate – Not all control procedures working effectively, elements of non-compliance with guidance
4	Minor – Minor control procedures lacking or improvement identified based on emerging practice
5	Observation and improvement activity

Overall remedial action is required to be undertaken within the fire, electrical and medical gas installations systems prior to occupation. Following acceptance of this report, the review team are ready to assist the NHS Lothian team in developing a programme of activity and remedial actions.

2. Analysis of information provided

2.1 Information provided

- 2.1.1 The support of the NHS Lothian project team in responding to questions and accessing data is gratefully acknowledged.
- 2.1.2 At the time of writing the majority of the information required had been received and whilst the timescale for the review means a selective targeted review of documentation was necessary, the main themes appear clear. However, some information remains outstanding, and NHS Lothian colleagues continue to pursue a response.
- 2.1.3 The Special Purpose Vehicle (SPV), Contractor, sub-contractors, Facilities Management Contractor and Independent Tester were not directly involved in the production of this report, nor were they requested to verify its contents and they may have additional information not considered here. It is acknowledged that some of the information provided by NHS Lothian came directly from these sources.

3. Findings

3.1 Management and assurance

Summary

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Management & Assurance	Omissions identified in key roles within the management structure, ease of access to information and possible lack of appropriately qualified personnel in safety critical roles.			2	2	

Main findings

Priority	Review	Action Assessment
4	Structures and processes are not fully in place to assure NHS Lothian that the facility is being operated in compliance with contract requirements. These should be in place from the point where the building services referred to in this report are put into use.	NHS Lothian and IHSL should adopt the management and reporting processes as described in SHTM 00 - Best Practice Guidance for Healthcare Engineering and the SHTMs for each critical engineering service.
4	Some of the records and documents necessary for the effective and safe operation of the hospital could not be found.	NHS Lothian should require IHSL to rectify the filing structure of the documentation and verify that the information contained is both complete and accurate as required by the Electricity at Work Act (1989) and the Construction (Design and Management) Regulations 2015.
3	There appeared to be a lack of qualified and experienced Authorised Persons and Competent Persons for both the HV and LV electrical installations.	The number of HV and LV Competent Persons should be reviewed. NHS Lothian should require IHSL satisfy themselves that adequate numbers are provided as required by the Electricity at Work Act (1989) and SHTM 00, SHTM 06-01 and SHTM 06-02.
3	There is no responsible person formally identified for the high voltage electrical installation.	NHS Lothian should require IHSL satisfy themselves that a suitable responsible person is appointed as required by the Electricity at Work Act (1989) and SHTM 00, SHTM 06-01 and SHTM 06-02.

Detailed Narrative

- 3.1.1 Healthcare organisations have a duty of care to patients, their workforce and the general public to ensure a safe and appropriate environment. This requirement is identified in a wide range of legislation. At the most senior level within an organisation, the appointed responsible person should have access to a robust

structure which delivers governance, assurance and compliance through a formal reporting mechanism.

- 3.1.2 The review identified that for both IHSL and NHS Lothian, there appeared to be omissions in the identification, appointment and definition of key roles in an effective management structure. Additionally, some records which are necessary to demonstrate compliance with appropriate specifications and guidance remain outstanding.

CONFIDENTIAL & DRAFT

3.2 Fire

Summary

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Fire Systems	Action is required to include remotely resettable fire and smoke dampers within the ventilation system serving all sleeping accommodation areas. Identified fire doors should be upgraded.		1	3	1	

Main Findings

Priority	Review	Action Assessment
2	Fire and smoke dampers are installed at compartment and sub-compartment level. However, smoke dampers are not fitted to corridors serving sleeping accommodation.	Remotely resettable fire and smoke dampers should be fitted to prevent the travel of smoke between sleeping accommodation areas.
3	On sample testing, elements of the ventilation ductwork has no means of smoke sensation fitted which would prevent the travel of smoke between adjoining sleeping accommodation areas.	Consideration should be given to the fitting of smoke and fire dampers between sleeping accommodation where ductwork passes in the cavity above the rooms.
3	Based on sample inspection some doors within the escape routes from sleeping accommodation are not fire door sets.	NHS Lothian and IHSL should ensure the appropriate fire rated door sets are installed.
3	The half leaf "penny farthing" doors are not fitted with self-closing devices.	Half leaf doors should be fitted with the same self-closing device as on the main leaf.
4	A number of remedial snagging and housekeeping issues were identified; damage to fire doors, seals and workmanship; penetrations in compartment walls; delineation of rooftop escape.	A number of the items have already been identified and logged by NHS Lothian via the helpdesk process. NHS Lothian and ISHL should ensure all works are undertaken prior to occupation. Procedures should be adopted to ensure rooftop escape remains clear.

Detailed narrative

- 3.2.1 The Building (Scotland) Regulations 2004 specify that every building must be designed and constructed in such a way that in the event of an outbreak of fire within the building, the occupants, once alerted to the outbreak of the fire, are provided with the opportunity to escape from the building, before being affected by fire or smoke.

3.2.2 Relevant extracts from the Building (Scotland) Regulations 2004 state:

Compartmentation

2.1. Every building must be designed and constructed in such a way that in the event of an outbreak of fire within the building, fire and smoke are inhibited from spreading beyond the compartment of origin until any occupants have had the time to leave that compartment and any fire containment measures have been initiated.

Separation

2.2. Every building, which is divided into more than one area of different occupation, must be designed and constructed in such a way that in the event of an outbreak of fire within the building, fire and smoke are inhibited from spreading beyond the area of occupation where the fire originated.

Escape

2.9. Every building must be designed and constructed in such a way that in the event of an outbreak of fire within the building, the occupants, once alerted to the outbreak of the fire, are provided with the opportunity to escape from the building, before being affected by fire or smoke.

- 3.2.3 In forming our opinion the follow documents were reviewed in addition to Building (Scotland) Regulations 2004. These documents included relevant Scottish Health Technical Memoranda; British Standard (BS 9999 – 2008); British Standard (BS 5588 – 1999); Non-Domestic Technical Handbook (2013); Fire (Scotland) Act 2005 and Fire Safety (Scotland) Regulations 2006.
- 3.2.4 Section 33.4.5.4 states “Where the use of a building presents a high or special life hazard, e.g. if it is used as an hotel or other building involving a sleeping risk (other than blocks of flats), fire/smoke dampers should usually be actuated by smoke detector controlled automatic release mechanisms in addition to being actuated by thermally actuated devices.”
- 3.2.5 Thermally operated fire dampers should not be used to protect escape routes nor in smoke control systems.

3.3 Electrical

Summary

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Electrical installations	Remedial action is required within both the high voltage (HV) and low voltage (LV) installations.		2		1	

Main Findings

Priority	Review	Action Assessment
4	<p>All 3 Uninterruptable Power Supplies (UPS) are contained in the same room, thereby reducing resilience if a major localised failure should occur.</p> <p>The UPS and output switchboards are a significant distance from the point of load. From this point there is no alternative supply within the internal infrastructure thereby increasing the potential for a single point of failure contrary to clause 4.6 of SHTM 06-01.</p>	<p>NHS Lothian should require IHSL to demonstrate compliance with the technical intent of SHPN 00-07 Resilience planning for healthcare estates, providing mitigation measures to maximise resilience of co-located equipment.</p> <p>NHS Lothian should require IHSL to provide agreed mitigation strategies to meet SHPN 00-07 and SHTM 06-01 to avoid internal failure of the single electrical supply to the critical electrical services such as Medical IT cabinets serving life support and other critical systems.</p>
2	Medical IT system (IT electrical system fulfilling specific requirements for medical applications) final circuit cabling exceeds manufacturer and SHTM recommended values. Final circuits are in excess of the 30 cable metre length of run set out in Clause 16.34 of SHTM 06-01 and Regulation 134.1.1 of BS 7671.	The designer should indicate their derogation of the manufacturer recommendations, BS 7671 and SHTM 06-01 requirements. The mitigations should also include consideration of the capacitive leakage current effects associated with multiple long runs of final circuits.
2	Child and Adult Mental Health Service (CAMHS) Unit Electrical installation. It was observed that there may be the potential to defeat the ligature reduction measures.	<p>NHS Lothian and IHSL should check that the provision of access hatches in bedrooms and en-suites are consistent with the risk assessment approach to ligature reduction measures for the CAMHS.</p> <p>Isolation of services is not possible outside the room and this should be checked and rectified in compliance of HBN 03-01 (clause 11.13).</p> <p>The luminaire type (particularly bedhead) should be checked against HBN 03-01 to confirm that they meet the requirements.</p>

Detailed narrative

- 3.3.1 The high voltage and low voltage electrical systems at RHCYP & DCN were considered in relation to legislation, guidance and the lessons learned from other recent similar projects which may have an impact on the patient group and staff.
- 3.3.2 The principal legislation which is relevant to the electrical systems is The Electricity at Work Act (1989).
- 3.3.3 The principal guidance which is relevant to the electrical systems are: Scottish Health Technical Memorandum (SHTM) 06-01: Electrical services supply and distribution; SHTM 06-02: Electrical safety guidance for low voltage systems; SHTM 06-03: Electrical Safety Guidance for High Voltage Systems and British Standard (BS) 7671 (also known as the wiring regulations).
- 3.3.4 During the site investigation works it was noted that the installation has potential for the ligature reduction measures intended for the CAMHS unit to be overcome. These include the provision of access hatches in these areas, the impact resistance and fixings of certain light fittings, excessive cable lengths and omission of security fixings.
- 3.3.5 It was observed that there was no Responsible Person (RP) identified for the HV or LV systems and there are limited numbers of Authorised Persons and Competent persons available on the site. There was no HV mimic diagram displayed and there is no version in the document management system; this and other items should have been highlighted as part of an Authorising Engineer's audit.
- 3.3.6 The Medical IT (isolated power supply) system which serves the critical care areas (such as theatres, recovery, intensive care, etc.) should be reviewed. The cable lengths from the distribution board to the final outlets are in excess of those required by BS 7671. There is also the potential for single points of failure due to the length (and routing) of cables between these distribution boards and the uninterruptable power supply (UPS). The power supply to medical IT systems should be fire rated / protected and it is not clear if this has been achieved. The medical IT protective conductors are not wired from the respective medical IT cabinet which is contrary to BS 7671 fig 710.2. Typical theatre layout.
- 3.3.7 It was observed that fire stopping was not present in some trunking above the ceiling as it traversed wall compartment penetrations.
- 3.3.8 A number of the wall mounted Earth Bonding Bars (EBB) are not installed correctly. This was directly observed, additionally, dirt and debris ingress material could be spread when the EBB are opened for the annual testing. This should be considered by the service provider as part of their maintenance plan.

3.3 Medical gas installations

Summary

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Medical gas installations	The review of the medical gas installations confirmed that they have been designed installed and commissioned in accordance with the relevant standards.				1	2

Main Findings

Priority	Review	Action Assessment
4	The provision of the outlets in the following areas are slightly different from the requirements of SHTM 02-01. <ul style="list-style-type: none"> Assisted bathrooms. In-patient bed spaces. Theatre anaesthetic rooms. 	NHS Lothian should check that the installed provision meets their contract and operational requirements.
5	There is duplication within the ZUTEC electronic documentation system and some elements are omitted.	NHS Lothian and IHSL should ensure that duplicated documents are removed and ensure all missing documentation is provided.
5	As the system has been "idle" for some time it is recommended that the systems be re-commissioned and revalidated.	NHSL and IHSL to re-commission MGPS as and when operational elements of the building become live.

Detailed narrative

- 3.4.1 The review of the medical gas installations (including medical gas pipeline systems (MGPS), associated dental air and vacuum systems (DAVS) and pathology laboratory gas systems (PLGS)) confirmed that they have been designed installed and commissioned in accordance with the relevant standards.
- 3.4.2 The commissioning of the medical gas installations had been overseen by a qualified Chartered Engineer which provided a degree of independence in the process.
- 3.4.3 The gas quality checks and identity testing were performed by a registered Quality Controller (MGPS) who again provided a degree of independence.
- 3.4.4 The provision of terminal units is generally as indicated in the guidance given in SHTM 02-01. This provision is slightly different in the following areas, which may have occurred as a result of operational requirements: -
- Assisted bathrooms.
 - In-patient bed spaces.
 - Theatre anaesthetic rooms.

NHS Lothian RHCYP & DCN review

- 3.4.5 It is recommended that the gas quality and identity tests are carried out again when the hospital or its departments become operational, particularly in relation to those pendants where outlets are connected to the MGPS via flexible hoses.
- 3.4.6 It is also recommended that the information in ZUTEC is reviewed to omit any duplication and the documentation noted above be included.

End of report



CONFIDENTIAL & DRAFT

6.2

SBAR summary- Meeting with ARJO Huntleigh – Pseudomonas aeruginosa contamination ARJO baths RHCYP DCN

1st October 2019

Present: Dorothy Hanley (NHS Lothian Project team service lead); Lindsay Guthrie (Lead IPCN); Dr Donald Inverarity (Cons Microbiologist & Lead ICD); Ian Clark (Authorising Engineer (water) BYES); Peter Rendall (BYES maintenance staff); Bettina Fitt (CEO ARJO Huntleigh); Andy Ellis (Director – Quality & Regulatory Compliance ARJO Huntleigh)

Situation:

ARJO baths were found to be contaminated with *Pseudomonas aeruginosa* on water sampling undertaken at RHCYP DCN in July 2019 by Westfield Caledonian on behalf of NHS Lothian. This testing focused on water sampling in augmented care areas prior to transfer of service on site. This transfer of services is now anticipated Spring 2020 (for DCN) and Autumn 2020 (for children's services).

The sampling identified that all of the ARJO baths tested, all were found to be positive (n=4). These are located in Ward 231 (adult neurology), DCN outpatients, Lochranza ward (Paediatric haematology-oncology) and Dalhousie ward (Paediatric medical in patients).

Background:

The RHCYP & DCN building has 9 ARJO baths fitted, and all are the 'System 2000' model. These do not have any enhanced features (e.g. Jacuzzi function, water jets).

Mott MacDonald [technical advisors to NHS Lothian] confirmed that ARJO baths are group 1 equipment items. In accordance with Schedule Part 11 of the Project Agreement, Project Co shall at its own cost repair, maintain, replace, decommission and dispose of the Group 1 Equipment.

ARJO baths are in place in a number of other NHS Lothian hospitals.

Assessment:

Specific focus was given to 3 issues:

1. Areas requiring further clarity around the manufacturer's instructions for use ('IFU') which form the basis of all use, care, decontamination, planned and unplanned maintenance for this equipment
2. Roles and responsibilities in relation to manufacturers IFU (instructions for use) for routine maintenance and testing (these are described in relation to the manufacturer's IFU, and the actions required for known contamination)
3. Options appraisal to outline actions required and responsibility to decontaminate known contamination in ARJO baths.

Manufacturer's instructions for use (IFU)

- ARJO Huntleigh agreed to provide a statement of compatibility for use of combined detergent and chorine releasing products (i.e. Chlorclean) up to a concentration of

10,000ppm av chlorine to allow NHS Lothian to comply with national infection prevention & control policy and national cleaning specification requirements.

- Daily flushing of baths is required, and the IFU also stipulate the bath should be run for 5 mins prior to the first use of each day. ARJO to clarify if this is in addition to daily flushing
- The IFU outline a programme of planned preventative maintenance for daily, weekly and monthly tasks. This includes a statement on water sampling.
- ARJO to clarify and possibly amend the advice provide in the IFU for the use of a 'spray' for applying disinfection
- ARJO to clarify and possibly amend the IFU description of scrubbing for routine cleaning, and the equipment required for this. This requires clarity on the impact of scrubbing on the integrity and lifespan of the bath surfaces.
- ARJO to clarify and confirm if rinsing is required after all disinfection of hard surfaces during routine cleaning – this would have impact on both domestic and clinical staff time to clean and SOP required.
- ARJO to clarify and confirm if flexible hoses are replaced as part of standard annual maintenance (part of a 'service kit') or whether these are only replaced as part of reactive maintenance where *P. Aeruginosa* is detected.
- ARJO to clarify and confirm the action required in relation to drain cleaning. Currently this states disinfectant should be sprayed into the drain and scrubbed using a long handled brush. This creates a significant risk of dislodging biofilm in the drain and creating further contamination of outlets associated with aerosolisation etc.
- ARJO to clarify and define what 'checks' are required in relation to the statement "check water every month" as part of routine planned maintenance.
- IHSL to confirm what aspects of ARJO bath planned preventative maintenance are covered in existing service level agreement, or by BYES, or through an existing service contract with ARJO
- ARJO indicated that the timescale to provide a response to all questions relating to the IFU may be challenging (relating to their internal review, consistency and governance procedures) – agreed to provide *indicative timescales* to address all points by 11/10/19

Actions required in response to *Pseudomonas aeruginosa* contamination

- ARJO agreed to provide their internal decision making tree which guides the actions required if *Pseudomonas aeruginosa* is detected in water sampling. They advise that a bespoke version of this guide can be provided for NHS Lothian.
- The approach outlined in the decision making tree is based on HTM 04-01, and reflects a stratified approach depending on the level of contamination, and whether this originates from a pre and/or post flush sample.
- A two stage decontamination methodology was described. Stage 1 involves the replacement of some basic bath components (hoses, pipes, and filters) prior to chemical disinfection of the internal pipe work. A product called ARJO CLEAN is recommended and used for this purpose. ARJO agreed to forward the technical data sheets and COSHH data for this product. Agreed timescale to provide information – by 11/10/19.
- ARJO agreed to confirm to NHS Lothian if the product is available to order via National Procurement. Agreed timescale to provide information – by 11/10/19.

- A specific chemical dosing 'tool'; is required to deliver the ARJO CLEAN disinfectant to the system. These are not provided as standard to customers.
- On completion of decontamination, BYES would be required to obtain further water samples to demonstrate that the water was no longer contaminated, and provide evidence of these results to NHS Lothian.
- Currently this level of decontamination is only provided by ARJO in response to customer request. It was suggested that this could be provided Monday-Friday (standard office hours) by an ARJO engineer who is likely to be within 2.5 hours travel distance from Edinburgh. However, ARJO stated that the available engineers may not hold all required tools and stock to allow a same day response. It was suggested that there may be a time delay of up to 2 days before an engineer could attend site. This has implications for both service delivery (bath out of use for clinical teams) and a known positive *Pseudomonas* source remaining in situ in the absence of controls.
- ARJO indicated that this service is not included in the standard service contract in place for this equipment. An additional charge would be incurred for each call out and treatment. A cost for this was not provided at the meeting.
- ARJO suggested that they could provide training to the local hard FM provider (BYES) and provide sign off of competency in relation to this. This training is not covered by existing contract, and ARJO indicated that a price to deliver this could be negotiated. It is unclear if this training would be provided as a one off event, or if it would include further refresher training sessions.
- Point of use filters cannot be used on the water outlet (water delivery) in ARJO baths, although ARJO indicated they are currently in discussion with PAL who manufacturer the POU filters in relation to this, with a view to providing a suitable filter for use.
- Stage 2 of the disinfection methodology includes a 'deeper disinfection' of the device, and may include removal of the bath off site to an ARJO facility to achieve this action.
- ARJO were unable to provide any written testimonial, case study or publication which confirms the efficacy of this approach, and stated that it this had not happened very often, and cited only 2 examples involving unnamed NHS England hospitals.
- ARJO would charge a further cost to achieve this stage 2 enhanced decontamination where this is required
- BYES indicated that they did not believe that routine maintenance was part of service level agreement, and that a further board change may be required to instruct them to undertake this. They further indicated that if the preferred NHS Lothian approach was to instruct ARJO to train BYES maintenance engineers in the decontamination procedure, that this would also require a further written instruction from NHS Lothian. However, following the meeting it was clarified that the bath, as stated previously in the document, as a Group 1 item, in accordance with Schedule Part 11 of the Project Agreement, Project Co shall at its own cost repair, maintain, replace, decommission and dispose of the Group 1 Equipment.
- BYES Authorising Engineer (Water) indicated that ARJO maintenance and water sampling is not currently part of the local water plan. This needs to be revised going forwards.
- In response to the current issue (4 ARJO baths confirmed with *P. aeruginosa*) 3 options were tabled for consideration:

- A. Replace the affected baths with new models – based on a cost benefit analysis of the work and cost required to ensure the devices were safe and fit for purpose at the time patients move onto site. ARJO advised the cost of replacement would be significantly higher than costs associated with enhanced decontamination.
 - B. ARJO to remove the affected baths and return these to an ARJO site (probably Poland, but UK sites to be explored) for enhanced decontamination. These would then be returned to NHS Lothian with a statement of assurance that the device is free from *P. aeruginosa*
 - C. ARJO to provide the enhanced level of decontamination for the affected baths in situ – noting that the building is not yet occupied by patients. Further information required to confirm if affected baths could be treated in parallel or only sequentially. Agreed timescale to provide information – by 11/10/19.
- ARJO agreed to provide further information of the feasibility, risks and relative costs to achieve option C. Agreed timescale to provide information – by 11/10/19.
 - ARJO agreed to provide a timescale inclusive of lead in time, completion of work for options B and C. Agreed timescale to provide information – by 11/10/19.

Recommendations:

1. From a clinical/infection prevention and control perspective, the preferred option to address known *P. Aeruginosa* contamination in ARJO baths is option B to remove the baths from site, undertake enhanced decontamination and provide a certificate of assurance that the device is free from contamination on reinstallation.
2. For future reactive maintenance and decontamination required in response to scheduled or targeted water sampling, the IPCT preferred approach is to have ARJO undertake their defined decontamination process as outlined above. This is based on the risks associated with attrition of knowledge and turnover of competent site based staff and challenges in defining, demonstrating and maintaining competence.
3. Standard operating procedures for clinical staff should be developed in relation to daily checks and actions required for ARJO bath use in line with the manufacturer's IFU.
4. Standard operating procedures for domestic staff should be revised to reflect full compliance with the manufacturer's IFU for routine cleaning, rinsing and flushing of ARJO baths.
5. Local water safety plans for all sites with ARJO baths should reflect water testing for *P. aeruginosa* in augmented care areas only, and targeted water sampling in all other areas where instructed by the IPCT on suspicion of any hospital acquired Pseudomonas infection which may be linked to an environmental source. This should be ratified through the NHS Lothian Water Management Group.
6. Where possible, all sites with ARJO baths should ensure that remedial action including the enhanced decontamination method outlined above should be provided by ARJO in response to confirmed water contamination with *P. aeruginosa*. This will require further discussion with facilities contract management team and local management teams.

Lindsay Guthrie (Lead Nurse Infection Prevention & Control)

Dr Donald Inverarity (Consultant Microbiologist & Lead Infection Control Doctor)

Dorothy Hanley (NHS Lothian Children's Services Project Lead for Redesign and Commissioning)

From: [Graham, Chris](#)
Subject: RHCYP+DCN Oversight Board Papers - 17-10-19..
Date: 16 October 2019 08:58:48
Attachments: [image001.jpg](#)
[image002.png](#)
[RHCYP+DCN PAPERS 15-10-19.pdf](#)
Importance: High

Dear Colleagues

Please find attached the **REVISED** papers for tomorrow's oversight board meeting.

Now including the revised terms of reference at 3.3 and a NSS Report on Fire, Electrical and Medical Gas reviews update at 3.4

For ease of navigation please note:

- The PDF contains bookmarked items  as well as hyperlinks from the agenda to items in **blue**;
- the **blue** item numbers take you back to the agenda and;
- the **green** buttons at the end of items take you back to the start of that item.

Please note that the dial in details for the meeting remain the same:

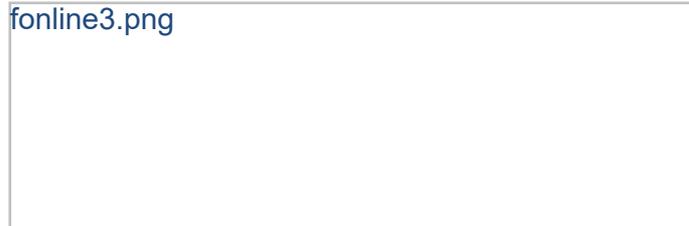
Participant code 

Kind regards

Chris

Chris Graham
Secretariat Manager


Achieving [deadlines](#) means you are respecting your colleagues and supporting effective decision-making.



The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 17th October 2019, 8:00 – 9:30am

Venue: Room 5, Waverley Gate, EH1 3EG

AGENDA

1.	Chair's Welcome and Introductions	FMc	V
	Apologies: Gordon James – Jim Miller deputising, Alan Morrison, Peter Reekie		
2.	Minutes of previous meeting on 10/10/19 – for approval	FMc	*
3.	Matters Arising		
	3.1 Interventional neuroradiology provision	TG	*
	3.2 Establishing the Commercial subgroup	SG	V
	3.3 Draft terms of reference	FMc	*
	3.4 NSS Report on Fire, Electrical and Medical Gas reviews	JM	V
4.	Senior Programme Director Update & Dashboards	MM	*
5.	Governance structure, roles and responsibilities	MM	*
	STANDING AGENDA ITEMS		
6.	Technical Reviews progress		
	6.1 Ventilation Recommendation for Air Handling Units remedial works	BC	*
	6.2 Water quality	BC	V
	6.3 Fire	BC	V
	6.4 Electrical	BC	V
	6.5 Medical gases	BC	V
7.	Commercial Progress	SG	V
8.	Communications		
	8.1 Staff communications	JM	V
	8.2 Requests for information	SC	V
9.	Any Other Competent Business		
10.	Date of Next Meeting	All	
	Thursday 24 October 2019, 8am, Room 5, Waverley Gate		

2.

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 10 October 2019 in Meeting Room 6&7, Waverley Gate, Edinburgh.

Present: Professor F. McQueen, Chief Nursing Officer, Scottish Government (chair); Ms C. McLaughlin, Chief Finance Officer, Scottish Government; Ms S. Goldsmith, Director of Finance, NHS Lothian; Ms T. Gillies, Medical Director, NHS Lothian; Professor A. McMahon, Nurse Director, NHS Lothian; Mr P. Reekie, Chief Executive, Scottish Futures Trust; Mr C. Sinclair, Chief Executive, NHS National Services Scotland; Dr C. Calderwood, Chief Medical Officer, Scottish Government and Mr G. Archibald, Joint Staff Side Representative.

In Attendance: Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Mr B. Currie, Project Director, NHS Lothian; Ms M. Morgan, Senior Programme Director; Ms J. Mackay, NHS Lothian Director of Communications; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian; Mr C. Henderson, Scottish Government; Mr J. Miller, Health Facilities Scotland (deputising for Gordon James); Ms L. Aitken, Scottish Government Communications and Mr C. Graham, Corporate Governance Team (minutes).

In Attendance by Telephone: Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland.

Apologies: Mr G. James, Director of Facilities, Health Facilities Scotland and Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side).

1. Minutes of previous meeting – for Approval

1.1 The minutes of the meeting held on 03 October 2019 were accepted.

2. Matters Arising

2.1 Revised Terms of Reference – Item carried over to next meeting.

AM

2.2 Interventional neuroradiology provision

- Agreed that issues relating to equipment pressures due to postponed opening would be a competent matter for this meeting
- Revised oversight board terms of reference to include this reference - **AM**
- Paper to be presented in two weeks clearly articulating and outlining options in relation to replacement equipment/modular unit and showing in detail the risks involved in considering use of equipment in new hospital at this time - **TG**
 - Paper to include input from key professional groups (including APF)
 - Risks involved to be articulated through communication and advice from staff

2.3 Continuity of service provision in current DCN and RHSC

- Single plan for the continuity of service provision on existing sites continues to be submitted to CM office by NHSL Chief Officer, Acute Services on weekly basis

- NHS Lothian has an Action Plan in place for both RHSC and DCN Health and Safety and Safe and Clean – being reviewed weekly
- Revised terms of reference to include what comes to oversight board and what does not - **AM**

3. Senior Programme Director Update

- Still not possible to determine key milestones and dependencies
- Ventilation action list tracker now consolidated to include HFS and IOM actions to be progressed
- Air Handling Units solution to come to oversight board for approval next week
- Output from accountable engineer to go to ESG on 14/10
- Water Safety – disinfection of all taps to be completed 31 October – subcontractor appointed and beginning work
- Drainage – now closed off
- Fire Safety, Electrical and Medical Gases – supporting investigation

4. NSS Report on Fire, Electrical and Medical Gas reviews

- Noted that the report received currently remained a confidential draft
- Investigation as commissioned from HFS was now complete and moves onto reviewing both parts of the report and actions for completion
- Final report to be available next week
- Discussion on relatively minor points to be picked up in relation to medical gases
- Two electrical issues to be resolved, expected to be progressed between today and next week
- Remains potentially significant work required in relation to fire, smoke dampers and fire guidance. Scottish Fire and Rescue Service are involved in discussions, there was discussion on other advisors that could be involved e.g. building standards commission; Mott MacDonald and ISHL supply chain. It was noted that there was potential for timescale impact although this could not be quantified at the moment due to linkages with other work and the impact this would have on negotiations with contractors.
- The final report will provide clear articulation of remedial action required
- Noted that commercials were now becoming increasingly complex due to number of issues raised, the coordination of actions required and liability
- Noted that the final report would not be coming to oversight board for approval as was Scottish Government commissioned. Oversight board would have opportunity to comment
- NHSL response to the report would be separate
- There would need to be consideration of when the report would become public, the communications around this and alignment with the NHSL response.

5. Technical Reviews progress

5.1 Ventilation - Nothing further added.

5.2 Water quality

ARJO Baths

- Circulated SBAR noted –Work required agreed with ARJO
- Unable to decontaminate baths in situ. Baths have been removed and taken back to Poland to be decontaminated and re-certified
- Baths will be reinstalled once integrity of water system certified
- Final version of SBAR to be shared with HPS as part of wider national learning and guidance

Shower Hose Length

- Some of the clips fitted remain an issue as hoses still reach wash hand basins in some rooms
- Scottish Water have undertaken a risk assessment and NHSL will comply with any necessary changes to comply with Scottish Water bylaws

5.3 Fire, Electrical and Medical Gases – Covered under Item 4 above.

6. Commercial Progress

- Acknowledged there was now a separate commercial workstream and there would be a commercial sub-group of the oversight board – details to be confirmed
- Meeting to be held with IHSL and BYES on 10/10/19 to discuss contractual mechanisms

7. Communications

7.1 Staff communications

- Communication update to be issued today focusing on works and action plan for existing sites
- Noted that NHSL Chief Executive would be undertaking media interviews this week.

7.2 Requests for information

- Discussion on preparing for public inquiry
- Noted nothing unexpected coming through FOI route

8. Any Other Competent Business

8.1 Helpline: Communications

- Noted that helpline was still running. Discussion between NHS24 and NHSL over NHSL taking the helpline over.

8.2 Staffside Meeting Feedback

- Noted that the meeting held on 09/10 had been positive, with enthusiasm around looking at new innovative models
- Health and wellbeing of staff was discussed and the work and involvement of the Edinburgh Children's Hospital Charity was recognised

- Discussion on HIS unannounced inspections of current DCN and RHSC sites and the potential impact on staff. This and Cabinet Secretary position to be checked and clarified out with the oversight board meeting.

CH

8.3 Second Biplane Room at new hospital

- Noted that all normal processes and risk assessments would be followed in investigating the addition of a second biplane room.

9. Date of Next Meeting

- 9.1 The next meeting of this group would take place at **8.00 am** on **Thursday 17 October 2019**, *Meeting Room 5, Waverley Gate*.



3.1

NHS Lothian RHCYP & DCN Oversight Board

17 October 2019

Tracey Gillies, Medical Director

Interventional neuroradiology (INR) equipment

Since the move to the new RHCYP/DCN was delayed, the concerns over the age and reliability of the equipment used for undertaking complex interventional neuroradiology (INR) work have been discussed. This equipment (biplane angiography suite) has been in increased use over the last 18 months as more cases than previously have been undertaken in Edinburgh because of workforce pressures in Glasgow, the other Scottish centre.

A detailed options appraisal has been presented to the NHS Lothian Executive Steering Group and the Oversight Board and is attached as Appendix 1. The preferred option has been hard to identify because of the changing timescales, but NHS Lothian's recommendation is to replace the equipment at DCN and when the new hospital opens, to relocate that equipment to the new hospital. The main drawback to this option is the downtime involved in the replacement but the team are working to reduce the duration of this with suppliers of equipment and skilled workmen. Additionally the impact can be off set in the following ways:

- Before, increase the number of elective cases undertaken in discussion with neurosurgery colleagues to minimise the number of patients waiting for elective procedures
- Undertake some of the urgent and emergency cases for coiling of aneurysms in uniplanar equipment which will still be available in DCN and elsewhere on the WGH site
- Coordinate rotas carefully with NHS Greater Glasgow and Clyde so that weekends in the Lothian down time are allocated to the Glasgow service, with an overall balanced position within a three month period.

The modular build option has been discounted because it has a longer lead time until it is available and given that this type of build has not been done before, there is a concern that the module may not function entirely as intended.

Additional questions have been asked about the existing and commissioned new equipment that has been installed in the new RHCYP/DCN

- Could this equipment be moved? We explored this option in July and it would not be possible to remove the fully installed equipment and move it
- Could the equipment be used for patients now?
 - The equipment and patient care requires all the normal building systems to be fully functional and validated and therefore until remedial works are completed satisfactorily , at least for that section of the building, it could not be undertaken safely

- The care of a patient undergoing elective INR procedures involves specialised multidisciplinary staff in the procedure room and providing care afterwards. These staff groups include neuroradiologists, specialised radiographers, neuroanaesthesia teams and critical care staff for recovery and immediate post procedure care. The patient is usually cared for in an HDU bed for 24 hours by staff experienced in their care and able to identify emerging complications or concerns. Ultimately all these staff will relocate to the new site when service relocates. Undertaking procedures before the wholesale relocation of DCN services introduces additional risks:
 - Split site arrangements for specialised teams potentially reducing safety for patients in the old DCN
 - Care of complex patients undergoing highly specialised procedures by those without the necessary expertise
- Can the scanners overall be used not just the INR equipment in the new building? The same points about the reliability and assurance of building systems such as electricity, water and ventilation requires to be complete before any type of patient care can be undertaken on the site.
- Additionally the planning of remedial works will require the HAI scribe process to consider any impact onto services

Clinical services and staff side have been engaged in the discussions raised in this paper, and support the recommendation for the replacement of equipment at DCN, and the rationale for not utilising INR and other scanners in the new RHCYP & DCN at this stage.

Appendix: DCN Interventional Neuro-Radiology Intermittent Fault risk - Replacement Options

DCN Interventional Neuro-Radiology

Intermittent Fault risk - Replacement Options

Situation

The Department of Clinical Neuro-Science (DCN) based at the Western General Hospital is currently the only centre in Scotland delivering a full Neuro-Interventional Service for the population of Scotland. The waiting times for elective neuro-interventional procedures are increasing to levels which are clinically concerning with the potential for unacceptable consequences including patient harm. Currently 41 patients are waiting up to 10 weeks for their Neuro interventional procedures. The waiting time is normally 6-8 weeks.

The reasons for the increase in waiting time are:

1. The unreliability of the bi-plane imaging equipment based in catheterisation lab within DCN has resulted in limited capacity.
2. Since January 2018 NHS Lothian has been supporting NHS Greater Glasgow and Clyde to deliver an Interventional Neuroradiology Service which has resulted in DCN receiving all of Scotland elective demand. This exceeds the current DCN capacity, increasing the waiting time, adding additional stress on the equipment which has resulted in further equipment failure.

As a result of old unreliable equipment in both NHS Lothian and GG&C we recently experienced a situation when both Bi-planes failed at the same time over a weekend resulting in a limited Scottish INR service. The GG&C Bi-plane imaging equipment is very old and will be at end of life in Dec 2019. GG&C are working with Capital Planners to replace the equipment. There is considerable fragility of the national service.

Staffing Capacity

Extending current sessions or adding additional sessions to reduce the waiting times on the existing DCN bi-plane unit is not possible in the short term due to the time required to recruit and train the required specialist Interventional Neuroradiologists, Nurses and Radiographers. The current team in DCN are already stretched in providing additional elective capacity to cover West of Scotland elective patient procedures working flexibly between DCN and the WGH main department.

Background

The Siemens Bi-plane imaging equipment is 7 years old and has for a number of years been consistently unreliable.

The table below outlines the number of occasions the unit has failed over the past two years and the impact on service delivery.

Calendar Year	No. of down time occasions	No. of hours down
2018	41	171.6hrs
2019 to date	29	216.6hrs

Due to reliability issues and the delayed DCN move, there is a requirement for the service to consider options on how to maintain delivery of both elective and acute procedures.

NHS Lothian and GG&C are currently the only two boards in Scotland who provide INR services for NHS Scotland. There has been a weekend rota in place for alternating centres to provide cover for the whole of Scotland for acute interventions for subarachnoid haemorrhage for many years.

Since January 2018, the GG&C service has experienced service delivery problems. This has resulted in significant collaboration between the two centres with agreement that NHS Lothian consultants and staff would take on increased workload through varying service provision initiatives. Details of actions taken to address these delivery issues are noted in Appendix 1.

Assessment

NHS Lothian has one bi-plane unit which is the standard equipment necessary to undertake specialist procedures.

Activity often does not match capacity for a number of reasons including:

- Equipment failure
- Cancelled cases due to urgent acute cases
- Cancelled cases due to clinical reason

Due to the service delivery issues in Glasgow, the location of interventions has moved to NHS Lothian alone. Overall demand for Scotland has not increased, however this has increased demand at DCN which is outweighing current capacity.

The longer the patients wait the higher the risk of vascular eruption.

Options Appraisal

There are 3 options for consideration;

1. Do nothing
2. The Bi-plane equipment is replaced with an equitable specification unit in a rapid replacement programme.
3. Identify an alternative clinical area for a temporary second bi-plane unit

Option 1 – Do Nothing

Accepting the current arrangement will not improve the capacity required to meet demand. Due to the recognised clinical risk of such clinical conditions, allowing the waiting list to grow and do nothing to reduce the risk of equipment failure it is not considered reasonable. Ad hoc additional sessions may be possible, but will be severely limited by staff availability and equipment uptime.

- Advantage no additional capital cost
- Disadvantage delayed treatment and potential loss of life whilst waiting for treatment

Costs

Only ad hoc additional sessions where possible

Option 2 – Equipment Replacement

An equipment replacement programme could be commissioned which would see the current equipment being removed and replaced with a modern fit for purpose specified product. Lead time for equipment replacement is expected to be in the region of 3 months.

Costs

Exact costs would need to be confirmed, however indicative costs include:

- Replacement equipment £650K + VAT
- Turnkey costs £30K + VAT
- No revenue implication other than those required to reduce the waiting times in advance

Impact

The impact will be significant, effecting both acute and elective work. The unit would be without Bi-plane equipment for a minimum of 4 weeks. The waiting lists for elective work could increase by approximately 16 cases and acute work would need to be undertaken in other departments and / or Glasgow.

This option will require significant pre-project planning to initially reduce the elective work prior to the equipment replacement in an attempt to minimise impact on waiting times.

During the 4 weeks down time the acute service where appropriate could be delivered either in a single plane system located in the WGH main X-Ray department or some of the referrals could be redirected to GG&C.

Advantage –

- The old unreliable equipment is replaced.
- The replacement could be a suitable standard to undertake thrombectomy as a proposed second facility in RHSC/DCN, accommodation at the Little France site has yet to be confirmed.

Disadvantage –

- waiting times will increase and a significant compromise of service will be experienced due to the loss of equipment for 4 weeks.
- Reliance on Newcastle/Manchester/Preston to help with emergency cases

- Capital cost of £680K + VAT

Thrombectomy indicative costs

Indicative Capital Costs		Construction costs – Angio Suite - £500,000 Bi-Planar Medical Equipment for Angio Suite - £1,000,000 HASU Monitoring Equipment - £30,000 per bed
Indicative Revenue Costs (over and above staffing)		Annual maintenance of bi-planar equipment - £50,000 Annual maintenance of HASU monitoring equipment - £TBC Consumables for Angio-Suite - £8,000 per case. (£2m pa)

Option 3 – Temporary Unit

Two areas have been considered within the DCN footprint where an additional Bi-plane could be accommodated. This additional Bi-plane unit could be relocated to the Little France site when DCN moves assuming suitable accommodation is found.

3.a. Potential Location 1

Bespoke Modular Pod with Bi-plane imaging equipment

A bespoke pod to be designed and installed in the DCN car park. There would be a need to connect the Pod with the DCN building and as a result careful planning would be required and consideration given to utilities (power, IT water etc) and loss of parking.

Early discussion with Siemens and their design partners suggest this option could be realised within a 5 month time frame once a purchase order has been received. Costs to be confirmed but expected to be in the region of £900K. Modular build commissioning of bespoke system estimate £800k.

Advantage –

- no loss of activity during the install and a second biplane system available to the service offering reliability.
- This bi-plane unit could be transferred to undertake thrombectomy as a proposed second facility in RHSC/DCN, accommodation for this at the Little France site has yet to be confirmed.
- No reliance on Newcastle/Manchester/Preston to help with emergency cases

Disadvantage –

- Cost to be explored, loss of parking, timeframe involved

3.b. Potential Location 2

Brain Research Imaging Centre (BRIC) MRI unit.

This current space is empty as a result of University of Edinburgh closed down the unit due to the planned move to the Little France site which was subsequently cancelled. This space is regarded as unsuitable as there are a number of issues which would need to be resolved including:

- Lead lining
- Ceiling struts to support the Bi-plane unit
- A new air exchange unit (24 exchanges per hour are required) at a cost of £250K +VAT

Recommendations

It is clear that the migration of the INR service as part of the DCN re-provision to Little France is urgent to avoid further risk to patients caused by the currently unreliable bi-plane unit.

With the above in mind it is proposed that the preferred options are:

- **Move within 3 months**
 - Option 1
Do nothing – maintain the current service on the existing equipment

- **Move approx 6 months**
 - Option 1 or option 3a to be considered to ensure continuity of service and avoid any downtime.
Temporary Unit - Bespoke Modular Pod with Bi-plane imaging equipment

- **Move approx 9 months or more**
 - Option 3a to be considered to enable continuity of service and avoid any downtime.
Temporary unit - Bespoke Modular Pod with Bi-plane imaging equipment

It is evident there is no option which singularly meets both the need to increase capacity and reduce the amount of equipment down time. Embedding the Thrombectomy plans as part of the solution is a great risk, as the business case has yet to be approved.

Appendix 1

- Both centres cover alternate weekends.
 - NHS Lothian within their current establishment
 - GG&C through either within their own establishment or with locum staff support
- Acute work during the week is covered by both centres
- Elective work from within the West of Scotland catchment are discussed at an MDT attended by Lothian INRs with the procedures performed in NHS Lothian by the Lothian team
- Communication is maintained through a fortnightly management led teleconference

Option	Timescale	Approximate Cost	Advantages	Disadvantages
Option 1 Do Nothing	N/A	None	No additional cost	Fragile service with risk of equipment downtime
Option 2 Equipment Replacement	3 months	£816K	Replace old / unreliable equipment Back up equipment Future proof service and potential to accommodate Thrombectomy.	Increased waiting times in the short term Significant impact to service due to loss of equipment for 4 weeks Reliance on external centres for emergency cases
Option 3a Bespoke Modular Pod with Bi-plane imaging equipment	5 months following purchase order	£1.7m	No loss of activity due to down time Back up equipment Future proof service and potential to accommodate Thrombectomy.	Full cost unknown Estimate for modular build Revenue impact TBC Loss of parking Timeframe involved
Option 3b Brain Research Imaging Centre (BRIC) MRI unit	TBC	£1.2 million	Back up unit	Space regarded as unsuitable



3.3

Oversight Board:
NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Terms of Reference

Date Published: July 2019
Version: V1.0
Document Type: ToR
Review Date: N/A

DOCUMENT CONTROL SHEET



Key Information:

Title:	Terms of Reference
Date Published/Issued:	
Date Effective From:	
Version/Issue Number:	1.0
Document Type:	ToR
Document Status:	Draft
Author:	Christine McLaughlin
Owner:	Scottish Government
Approver:	Malcolm Wright, DG Health & Social Care and Chief Executive NHS Scotland
Approved by and Date:	
Contact:	
File Name:	

Approvals: *This document requires the following signed approvals:*

Name	Title	Date	Version
Malcolm Wright	Director General and NHSScotland Chief Executive		
Ms Freeman	Cabinet Secretary		

Distribution:

This document has been distributed to:

Name:	Date of Issue:	Version:

1. Name of the Board
<p>Oversight Board: NHS Lothian Royal Hospital for Sick Children, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services</p>
2. Background
<p>Following the decision to halt the planned move to the new Hospital facilities on 9 July an Oversight Board is being established to provide advice to ministers on the readiness of the facility to open and on the migration of services to the new facility.</p> <p>On Tuesday 2 July, NHS Lothian alerted the Scottish Government to an issue with the ventilation system at the Royal Hospital for Children and Young People (RHCYP) in Edinburgh.</p> <p>The Cabinet Secretary was not satisfied that the issue could be resolved within the very short timeframe available before services were to move to the new hospital, and required further assurance on all aspects of compliance with standards across the new hospital. For this reason, the planned move was halted in the interests of patient safety.</p> <p>Work has been initiated to identify the solution needed to ensure the ventilation in the critical care unit in the new site meets the required clinical and safety standards. Scottish Government has commissioned NHS National Services Scotland (NSS) to undertake a detailed assessment of all buildings systems in the new hospital which could impact safe operation for patients and staff, recognising how infection prevention must always be embedded within the design, planning, construction and commissioning activities of all new and refurbished healthcare facilities. This work will be phased, with assessment of water, ventilation and drainage systems prioritised, including the proposed fix for the ventilation unit. This will determine the timeframe for migration of services to the new hospital and a full report is anticipated in September.</p> <p>In order to provide co-ordinated advice to ministers, an Oversight Board is being established which will seek assurance from NHS Lothian that according to its due diligence and governance, the facility is ready to open; and from NHS NSS that its agreed diligence has been successfully completed.</p>
3. Scope of work
<p>The Oversight Board will provide advice in relation to:</p> <ul style="list-style-type: none"> • Advice on phased occupation; • Advice on the proposed solution for ventilation in critical care areas and on any other areas that require rectification works; • Advice on facility and operational readiness to migrate; • Gain information and give advice to NHS Lothian about commercial arrangements with IHSL for completion of works; • The approach to NPD contract management • Identification of areas that could be done differently in future

- [Advice on the plans for the existing sites for Royal Hospital for Sick Children and Department for Clinical Neurosciences where there are significant implications from a service delivery or capital investment point of view](#)

4. Membership

The Board membership will be:

Prof Fiona McQueen, Chief Nursing Officer, Scottish Government (Chair)
 Christine McLaughlin, Chief Finance Officer, Scottish Government
 Catherine Calderwood, Chief Medical Officer, Scottish Government
 Susan Goldsmith, Director of Finance, NHS Lothian
 Tracey Gillies, Executive Medical Director, NHS Lothian
 Prof Alex McMahon, Nurse Director, NHS Lothian
 Peter Reekie, Chief Executive, Scottish Futures Trust
 Colin Sinclair, Chief Executive, NHS National Services Scotland
 Alex Joyce, representative from NHS Lothian Joint Staff Side (deputy Gordon Archibald)

Attending the Board to provide advice and assurance will be:

Mary Morgan, Senior programme Director
 Brian Currie, Project Director, NHS Lothian
 Judith Mackay, Director of Communications, NHS Lothian
 Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work
 Gordon James, Health Facilities Scotland, NHS National Services Scotland
 IHSL would be in attendance on as 'as required' basis

5. Governance

The Board will provide advice to the Cabinet Secretary

6. Meetings

The Board will commence their work in August 2019 and will meet frequently for the first 3 months as appropriate and will agree a plan of work which will determine future meetings. The first meeting will take place on Thursday 8 August 2019.

7. Outputs

The Board will provide advice to the Cabinet Secretary on the decisions set out in the scope



4.

RHCYP & DCN - Senior Programme Director's Report

Report Date	15/10/2019	Programme RAG Status (now)	A
Submitted by	Mary Morgan	Programme RAG Status (previous Oversight Board)	A

General Update		It is not yet possible to determine the overall programme milestones and dependencies due to outstanding activities (fire) and commercial negotiation for High Value Changes. Project governance and key roles and responsibilities have been updated and are appended for approval
-----------------------	--	--

Project Workstreams	RAG Status	Comments
Ventilation	R	2 high value Board Change Notices issued to IHSL: critical care and Lochranza Ward ventilation. Meeting with Bouygues UK Team on Thurs 10th October was constructive with a number of enabling actions to be progressed; indemnity position still being negotiated; IHSL have stated that the High Value Change Proposal will be submitted 13th November 2019. Workstream Red Status due to absence of a delivery programme for High Value Changes and other Ventilation issues (Theatres corridor, Scrub and Anaesthetic Rooms) Following demonstration of proposed air handling unit solution on 27/09/19 and responses to subsequent issues raised, it is recommended that the AHU solution be approved (separate agenda item).
Water Safety	A	Programme is Amber due to missed timelines and outstanding actions to be agreed: ongoing liaison between HFS/HPS and NHSL
Drainage	B	Workstream closed.
Fire Safety	R	NHSL working with NSS to establish facility status prior to final report publication due w/c 28/10/19. Work to estimate the impact and consequences of retro-fitting smoke dampers is underway - Mott McDonald asked to undertake scenario planning with a range of assumptions; Contractual/commercial impact being considered by OsB sub group.
Electrical	A	NHSL working with NSS to establish facility status prior to final report publication due w/c 28/10/19
Medical gases	G	Final report due w/c 28/10/19 - no indications of problems arising.

Key Achievements / Highlights since last Oversight Board

OsB commercial sub group established to identify options and approach to commercial engagement. Evaluation of options to be undertaken through coming week.
Technical agreement on AHU remedial solution

Next Period Key Activities / Challenges

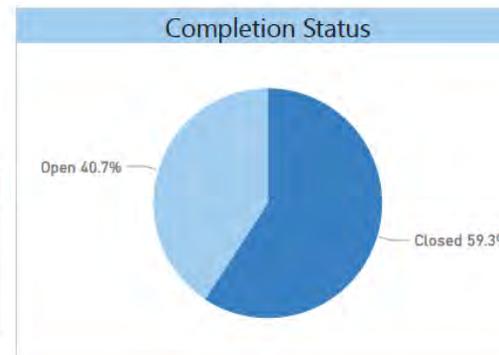
Reports on fire, electricity and medical gases due w/c 28/10/19.

RHCYP+DCN - Ventilation Action Log Dashboard

14/10/2019

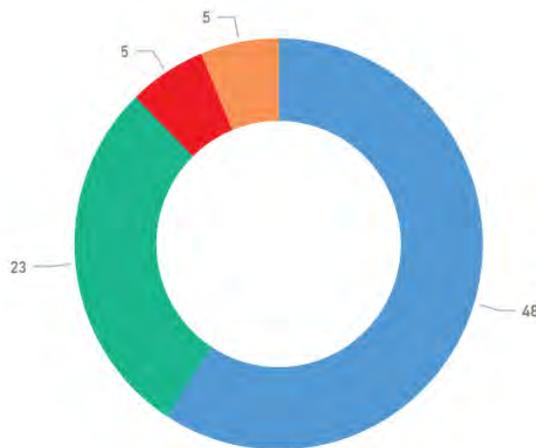
OPEN
33

CLOSED
48



Status against Target Date

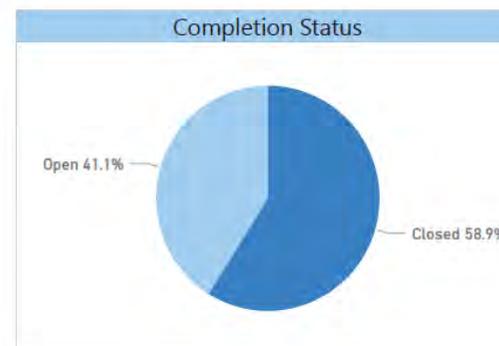
- Due Status
- Closed
 - Actions on Target
 - Over 2 Weeks Beyond Target Date
 - Up to 2 Weeks Beyond Target Date



Priority for DCN

OPEN
30

CLOSED
43



Priority for RHCYP

OPEN
33

CLOSED
48

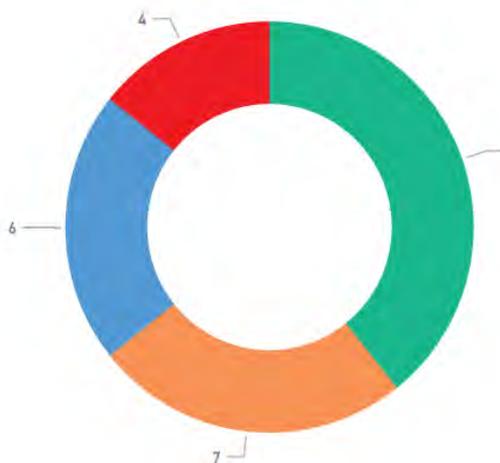


RHCYP+DCN - Water Safety Action Log Dashboard

15/10/2019

Status against Target Date

- Due Status
- Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Closed
 - Over 2 Weeks Beyond Target Date



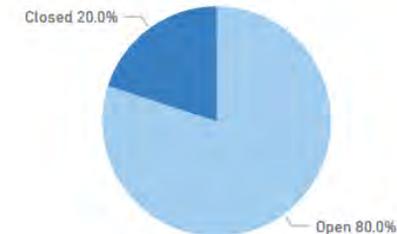
OPEN

24

CLOSED

6

Completion Status



Priority for DCN

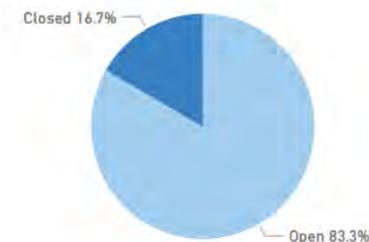
OPEN

20

CLOSED

4

Completion Status



Priority for RHCYP

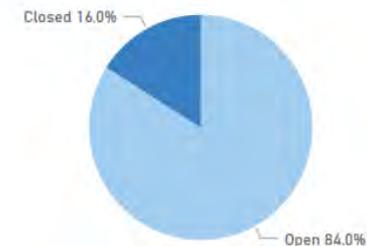
OPEN

21

CLOSED

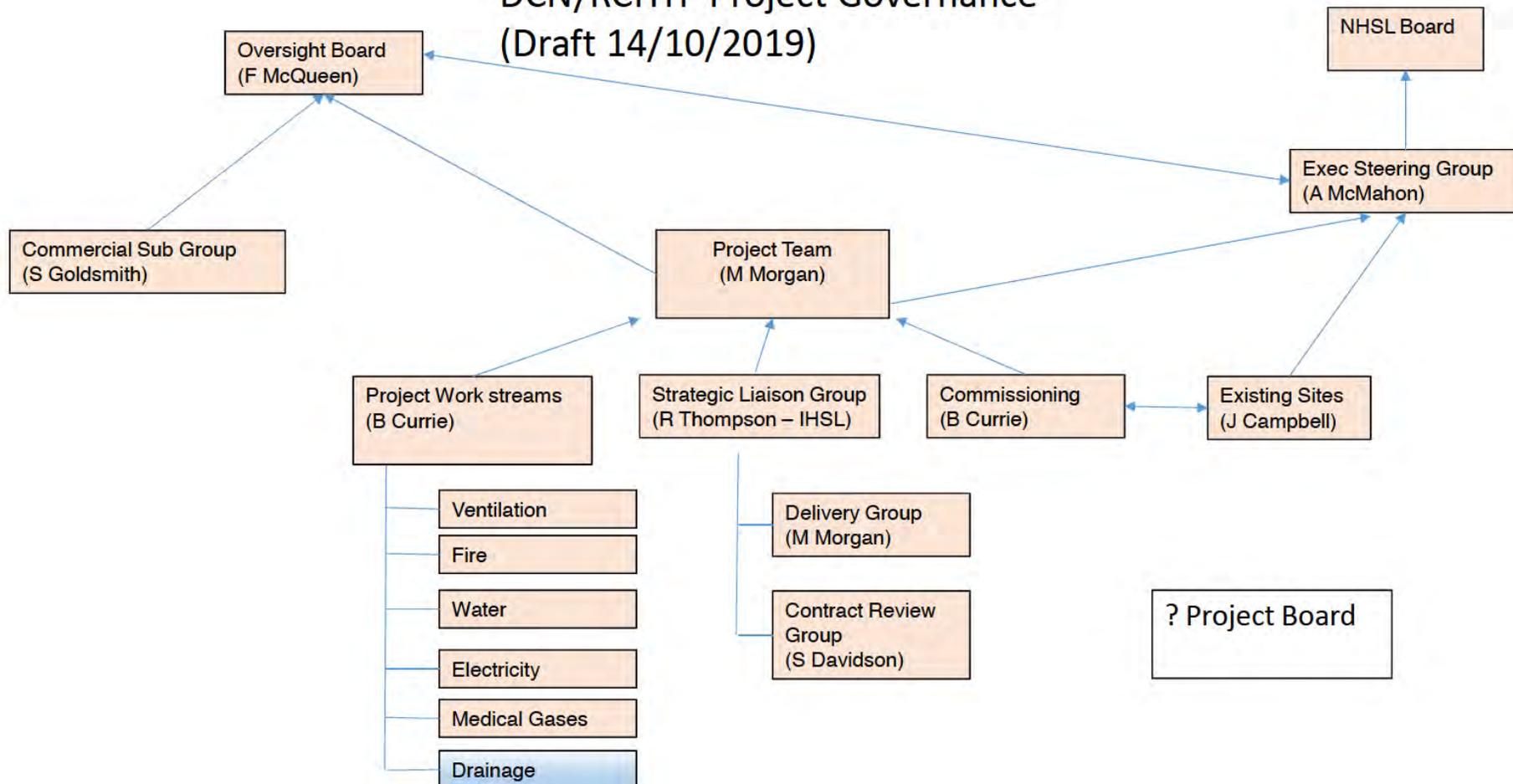
4

Completion Status



5.

DCN/RCHYP Project Governance (Draft 14/10/2019)



Roles & Responsibilities

Executive Lead (The NHSL Senior Responsible Officer)

- Owns the overall service change which the project is supporting or enabling, for NHSL.
- Chairs the project board and Commercial Group
- Ensures that the project remains focussed on success, has the resources to deliver it and considers implications of project decisions on the wider service change and for NHSL (and vice versa).

Senior Programme Director

- Reports to the Oversight Board Chair
- Responsible for the actions required to ensure that the project facility is fit for occupation
- Provides the interface between programme oversight, ownership and delivery - Acts as a focal point between the Oversight Board, NHSL Board & Executive and the Project Director.

Project Director

- Leads, manages and co-ordinates the project activities and the project team on a day-to-day basis.
- Responsible to the Senior Programme Director to ensure that the facility is fit for occupation (Including commissioning) and to the NHSL Executive Lead for all other project actions relating to the existing sites and service migration
- Reports to the NHSL Executive Lead



17 October 2019

Brian Currie, Project Director

Recommendation for Air Handling Units Remedial Work

Situation

Multiplex have completed a benchmark air handling unit (AHU) with what the contractor has stated is the extent of remedial works they will undertake across all units to achieve “compliance”. These works were inspected by all interested parties on Friday 27th September 2019 and discussed at subsequent technical workshops again attended by all interested parties. IHSL/MPX’s provision of further information, response to points of clarification and confirmation that additional requirements will be undertaken has enabled a consensus view to emerge that the remedial works offered and to be altered by subsequent discussions are acceptable.

Background

The validation and engineering reports into the technical condition of the new RHCYP / DCN facilities identified a number of issues with the AHU installation - 36 units, of which 16 relate to DCN facilities alone. These were deemed to be one of the key rectification points by HFS / HPS and were initially raised by IOM as part of their validation inspections of the site for NHSL and the concerns were echoed by Facilities and Infection Control representatives. This IOM report included:

Air Handling Units (AHU) - Confirm AHU comply with the requirements of SHTM 03-01, including fan change, filter bypass, air leakage etc.

The AHU Sub issues noted by IOM as:

Cabling inside AHU; Filter orientation; Evidence of airflow bypassing filters; Magnahelic gauges not marked for clean and dirty limits; Surplus drip tray not blanked off; Incorrect trap arrangements; Plant labelling incorrect; Branch ducts not generally marked up; Auto change over to be tested (see also 27); SOME motors running at over 95% speed – maintenance & service issues flow from that; Thermal wheels; AHU Pressure controls and Plant Controls (both BMS) ; Ultra Clean Ventilation and Theatre Surgeons panel alarms

“Ventilation meetings” with all relevant NHS representatives were held weekly with IHSL, Multiplex and Bouygues. These meetings worked through the detail of the requirements and monitored works undertaken by Multiplex and others in the IHSL supply chain (e.g. six items of the IOM “AHU sub issues” were closed off, amongst other actions, after work undertaken by IHSL and their supply chain).

Multiplex arranged a site inspection of an AHU on 7th August 2019 with the AHU manufacturer, suppliers, installers and contractors where NHS representation, including IOM, explained the key issues of compliance concerns.

Subsequent to the HFS / HPS views and 7th August site inspection, Multiplex agreed to present a “benchmark AHU” with remedial works undertaken by their supply chain. MPX stated directly, and through IHSL, that the benchmark would be the extent of works they would undertake to be compliant. The contract and commercial view of Multiplex is therefore that any further works would require to be instructed as a “Board Change”

At a NHS only meeting on 4th September 2019, chaired by the NHSL Medical Director, the view of HFS engineering colleagues was that amongst the other issues, cables within the AHU required to be removed from within the AHU as it was not practical to seal trunking consistently (e.g. when maintenance is required, there is a risk of contamination). This view was supported by NHSL colleagues from Facilities and engineering advisers.

The report from HFS / HPS, published on 11th September, detailed the relevant remedial work as:

Air handling units and ductwork contain numerous deviations from contract requirements (SHTM 03-01) and were found not to be clean despite having been presented for validation. Deviations include: loose internal cabling in the airflow, cable routes allowing air to bypass filters, air leakage at penetrations and possible fan replacement difficulties which need to be corrected.

The ventilation systems throughout the hospital should be subject to a full snagging exercise and all defects rectified following which air handling units and ventilation systems are cleaned. All deficiencies identified in validation and specialist Consultant Engineer reports should be addressed as part of this.

On Friday 27th September, following the contractor’s remedial work, the benchmark AHU was inspected jointly by NHSL, HFS and IOM, along with IHSL and MPX.

In simple terms a number of changes to the single benchmark unit, as required by HFS / HPS and supported by NHSL, were completed by Multiplex’s supply chain. Rather than removing the loosely strung and grouped control cables from within the AHU, these have been encased in bespoke metalwork to fix them in place within the unit. Joints and grommets have been enhanced by insitu work and fittings.

Assessment

The Oversight Board requires to identify the appropriate course of action in response to the assessed requirements to meet guidance (SHTM 03-01) and the stated position of Multiplex (and therefore assumed to be that of IHSL).

The options are:

1. **Require the replacement of all AHU.** This will require Dispute Resolution Procedures initiated and / or a Board High Value Change instructed. It will be a requirement to ensure that a fully compliant AHU capable of installation into the

existing plant rooms at RHCYP / DCN is selected. This option comes with significant time and cost implications, for example, market availability has not been tested.

2. **Accept the AHU as installed.** This will require further risk assessment with a change in assessment of the risks identified from the IOM report onwards. Commercial and time implications would be removed, however, the lack of significant improvements will present problems achieving a satisfactory risk position.
3. **Accept the benchmark AHU** presented on 27^h September, with alterations as discussed at subsequent technical meetings, as the standard to be applied across all units, prioritising remedial work on those serving the DCN facilities alone.

The process and timeline for installation, warranties, verification and validation will require to be laid out initially by IHSL (Multiplex and their supply chain) and reviewed by NHSL, HFS/ HPS with respective advisers. However, IHSL/MPX have advised the Board verbally that they have estimated a construction duration of 8 weeks to undertake works to the 16 AHU's serving DCN and a following 8 – 9 weeks for the remaining 20 AHU's serving the rest of the facility. Updated maintenance protocols and ongoing validation will potentially require a Board Change for those services provided by Bouygues, and those by NHSL. The timeline will be dependant on Multiplex and their supply chain but it is envisaged that they will be significantly less than an overall replacement programme. Cost to NHS should be nominal.

4. **Accept the works done to date** by Multiplex *except for the cable encasement* but require further works to remove the inappropriate cabling from the units to fit externally. It is clear from the commercial position to date that this will require either Dispute Resolution Procedure or a Board Change to be issued. Note there would still be some cables within the units for light fittings, control mechanics, etc.

Recommendation

With the exception of HFS who could not attend, a consensus view arrived at on 11^h October 2019 at a technical workshop with all interested parties, and SBAR prepared by Infection Prevention and Control Team (IPCT) colleagues (see appendix 1). **It is recommended to proceed with the principle of accepting the benchmark unit** (option 3) subject to:

1. Obtaining written confirmation of acceptance from HFS, IOM and the Board's Authorising Engineer. *To date, agreement has been received from HFS and the Board's AE.*
2. All IPCT recommendations in Appendix 1 are implemented
3. All outstanding confirmations and information is provided by IHSL/MPX:
 - a) Suitable cleaning methodology
 - b) Details of anti-bacterial sealant.

Specific IPCT queries have been passed to IHSL and we await a response.

Brian Currie, Project Director

15 October, 2019

APPENIX 1: SBAR -IPC risk assessment of proposed Air Handling Solution October 2019

Situation

IOM report and subsequent review by HFS and independent experts (Malcolm Thomas) identified a series of non compliances in the design and installation of air handling units in RHCYP DCN. The design was deemed 'unconventional' and ultimately not compliant with the technical requirements of SHTM 03-01.

Of specific concern was the presence of cabling within the air handling unit duct work primarily due to uncertainty regarding whether this cabling was combustible material in the air flow and because it created a channel that bypassed critical air filters.

On the basis of these reports, the consensus view of NHS Lothian infection control team, facilities, project team, authorising engineer (ventilation) and senior management in July 2019 was that this cabling should be removed.

A design solution is now offered by Q-nis, a contractor on behalf of IHSL, which retains cabling within the air handling unit ductwork inside a metal encasement. The proposed solution to contain the cabling and address a further 23 specific items in relation to the AHU has been provided in a bespoke 'specimen' AHU and reviewed on site by HPS/HFS, NHS Lothian IPCT, Project team, facilities and NHS Lothian's technical advisors Mott MacDonald.

The Oversight Group appointed by Scottish Government to provide expert support and oversight of work required to facilitate transfer of services to RHCYP DCN will provide final approval of the proposed engineering solution and NHS Lothian plan to address any residual risks associated with ventilation systems.

NHS Lothian has been asked by HPS/HFS to provide a clinical/infection prevention and control risk assessment to identify any potential clinical or infection hazards associated with the proposed solution, and mitigation required to provide assurance of patient safety going forwards.

Background

The presence of cabling and other wiring within the ductwork of the AHU is not compliant SHTM 03-01. This was identified to pose 2 key risks: 1) fire risk and 2) filter bypass (and potential for patient exposure to pathogens if downstream filters were compromised).

Fire safety is outwith the competence and scope of this clinical assessment and is not considered further.

There are x36 AHU in the RHCYP DCN serving theatres, isolation rooms, critical care and general ward areas.

Assessment

- The IPCT view is that the proposed solution for a non compliant AHU moves us a position further removed from an AHU design conventional in a healthcare setting. As such the implications or

unintended consequences of the proposed solution are unknown when considered against published guidance and best practice.

- Healthcare engineering does not feature in the generic training or routine competence of a Consultant Medical Microbiologist or Infection Prevention and Control Nurse, although both the authors of this assessment have completed the Public Health England course on Engineering Aspects of Infection Control at Eastwood Park. As such, the authors would advise that the authorising engineer (ventilation) with appropriate technical training and experience in this area is consulted for their assessment and interpretation and verification that the views articulated in this document are correct.
- Four specific questions with relevance to microbiological contamination and infection control were raised as part of the review of the model AHU. These are:
 1. What maintenance will be in place to check and repair seals around the edges of the metal encasement on a regular/frequent basis?
 2. Does the method of sealing present an unintended additional microbiological hazard by facilitating growth of micro-organisms e.g. mould?
 3. Is there potential for condensation to form within the containment which would facilitate an environment conducive to growth of environmental micro-organisms which would not be visualised on routine planned preventative maintenance?
 4. Is the system secure and clinically safe for routine cleaning/disinfection work

IHSL Multiplex have provided detailed responses in writing, and a summary assessment of each of these points is provide below.

1. Monitoring and maintenance of seals

- To provide assurance that the seals are intact and do not become visibly contaminated, it is proposed that this risk would be adequately mitigated by through regular PPM. This was agreed in principle to include explicit action in monthly PPM to include external visualisation of the cable encasement to allow condition assessment to check for evidence of damage, degradation or visible contamination of sealant without disturbing the seal and potentially introducing contamination with micro-organisms.
- If degradation of seals or the encasement is identified, a job will be raised by BYES as a standard part of reactive maintenance. All exceptions (including this type of job) should be raised with the NHS Lothian Ventilation Steering Group to allow oversight of the ongoing functionality and safety of ventilation at RHCYP DCN, and identify any recurring issues. Infection Prevention & Control are core members of this group and will be able to provide ongoing clinical and infection control assessment of any potential microbiological hazard discovered and advice regarding interventions that may be required to maintain patient safety.

2. Microbiological hazard associated with sealing method

- Potential risk of introducing a surface/material which might support bacterial or fungal growth within the AHU. The sealant used is used extensively in ventilation systems and such facilitation of bacterial or fungal growth has not been reported. The sealant meets a British Standard and has been advised as having antimicrobial properties. Product information has been provided to the NHs Lothian Project Team and IPCT. Further questions in relation to the antimicrobial properties of the sealant and cleaning have been highlighted, and Multiplex have undertaken to explore these with the manufacturer.

3. Potential for condensation formation within the containment

- As the AHUs are located within the building the ambient temperature in plant rooms and tolerances for this are such that condensation should not form from cold exposure. Additionally the air temperature within this part of the AHU would not be cold air. The use of Fire rated cables has been confirmed. The cables will be encased in a sealed metal box preventing air leakage around the seal. Heat will be dissipated by air flowing within the ductwork. In addition, each cable management system has a frost coil fitted which will maintain a constant air temperature within the ductwork.

4. Is the system secure and clinically safe for routine cleaning /disinfection

- Further information is awaited from the manufacturer in relation to the sealant and the appropriate products and method of cleaning that should be used. Multiplex have confirmed that the system is secure and safe for routine cleaning.

5. General points:

- The quality of the installation of this design solution will be assessed and assured for each AHU by key stakeholders including NHS Lothian project team, facilities, NHS Lothian authorising engineer for ventilation, HFS engineer and NHSL Infection Control Team.
- Ongoing assurance of safety should be derived from successful demonstration of compliance (functionality and performance) of the ventilation system as part of annual verification in line with the requirements of SHTM 03-01 Part B.
- As minimum for all ventilation systems, this is an annual visual check, which is intended to demonstrate the system remains fit for purpose and *“prevent or control risks associated with Legionella and other potential hazardous organisms”*. For critical systems, this includes quarterly visual checks and annual verification of performance.
- The IPCT maintain alert organisms surveillance in line with Appendix 13 of the National Infection Prevention & Control Manual. ICNet receives automatic updates from the microbiology laboratory information system and provides prompt detection of any suspicious clinical isolate, and can trigger a full clinical and infection control review.

Recommendations

Based on available information, the proposed solution is acceptable on the caveats that the full unintended consequences of this solution are not known, but should be adequately mitigated and controlled providing the following recommendations are implemented and monitored.

1. NHS Lothian should seek the view of their Authorising Engineer (Ventilation) to confirm that the proposed design solution for AHU and the clinical assessment presented in support is correct and in line with current regulatory and technical requirements.
2. NHS Lothian should be assured that the ventilation systems at RHCYP DCN are fit for purpose and compliant with SHTM 03-01 requirements through the execution of an ongoing program of the planned preventative maintenance (PPM) and reactive maintenance by BYES as the facilities management provider. Any non conformance or exception reports will be tabled at the NHS Lothian Ventilation Steering Group and Pan Lothian Infection Control Committee as appropriate.
3. NHS Lothian IPCT should maintain the current programme of alert organism surveillance to facilitate early warning and prompt detection of any suspicious clinical isolate, and trigger a full clinical and infection control review where this is deemed appropriate.

4. NHS Lothian should continue to investigate and report any suspected or confirmed incident, data exceedance or outbreak in line with the mandatory requirements of Chapter 3 of the National Infection Prevention and Control Manual, seeking expert support from national partner agencies (e.g. HPS, HFS) where this is required.
5. Microbiological sampling of any part of the ventilation system is not advised in the absence of standards to distinguish “normal” from “abnormal” and a UKAS accredited standard methodology for sampling.
6. Microbiological sampling and assessment of air is only advised in the context of commissioning or re-commissioning of conventional operating theatres in the absence of any reference standards to interpret results in any other environment.

Lindsay Guthrie (Lead Nurse Infection Prevention & Control)

Dr Donald Inverarity (Consultant Microbiologist and Lead Infection Control Doctor)



From: [Graham, Chris](#)
Subject: RHCYP+DCN Oversight Board Papers - 24-10-19..
Date: 23 October 2019 10:32:32
Attachments: [image001.jpg](#)
[image002.png](#)
[191024_Oversight_Board_Papers.pdf](#)
Importance: High

Dear Colleagues

Please find attached the papers for tomorrow's oversight board meeting to be held at 8am in Meeting Room 5, Waverley Gate

For ease of navigation please note:

- The PDF contains bookmarked items  as well as hyperlinks from the agenda to items in **blue**;
- the **blue** item numbers take you back to the agenda and;
- the **green** buttons at the end of items take you back to the start of that item.

Please note that the dial in details for the meeting remain the same:

Participant code – 

Kind regards
Chris

Chris Graham
Secretariat Manager


Achieving [deadlines](#) means you are respecting your colleagues and supporting effective decision-making.

fonline3.png



The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 24th October 2019, 8:00 – 9:30am

Venue: Room 5, Waverley Gate, EH1 3EG

AGENDA

1.	Chair's Welcome and Introductions	FMc	V
	Apologies:		
2.	Minutes of previous meeting on 17/10/19 – for approval	FMc	*
3.	Matters Arising		
4.	Senior Programme Director Update & Dashboards	MM	*
5.	5.1 Updated NSS Review of Fire Systems, Electrical Systems and Medical Gas Installations	GJ	*
	5.2 NHSL response to NSS Review of Fire Systems, Electrical Systems and Medical Gas Installations	AMcM	*
	STANDING AGENDA ITEMS		
6.	Technical Reviews progress		
	6.1 Ventilation Residual ventilation issues in theatres accommodation	BC	*
	6.2 Water quality	BC	V
	6.3 Fire	BC	V
	6.4 Electrical	BC	V
	6.5 Medical gases	BC	V
7.	Commercial Progress	SG	V
8.	Communications		
	8.1 Staff communications	JM	V
	8.2 Requests for information	SC	V
9.	Any Other Competent Business		
10.	Date of Next Meeting	All	
	Thursday 31 October 2019, 8am, Room 5, Waverley Gate		

2.

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 17 October 2019 in Meeting Room 6&7, Waverley Gate, Edinburgh.

Present: Professor F. McQueen, Chief Nursing Officer, Scottish Government (chair); Ms S. Goldsmith, Director of Finance, NHS Lothian; Ms T. Gillies, Medical Director, NHS Lothian; Professor A. McMahon, Nurse Director, NHS Lothian; Mr C. Sinclair, Chief Executive, NHS National Services Scotland and Mr G. Archibald, Joint Staff Side Representative.

In Attendance: Mr B. Currie, Project Director, NHS Lothian; Ms M. Morgan, Senior Programme Director; Mr C. Henderson, Scottish Government; Mr J. Miller, Health Facilities Scotland (deputising for Gordon James); Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian; Ms L Aitken, Scottish Government Communications; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

In Attendance by Telephone: Professor J. Reilly, HAI executive lead for NHS National Services Scotland; Ms A. Burnett, Communications Manager, NHS Lothian (deputising for Judith Mackay) and Mr E McLaughlan, Assistant Director, Engineering, Environment and Decontamination, Health Facilities Scotland;

Apologies: Mr P. Reekie, Chief Executive, Scottish Futures Trust; Mr G. James, Director of Facilities, Health Facilities Scotland; Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side); Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Ms J. Mackay, NHS Lothian Director of Communications and Ms C. McLaughlin, Chief Finance Officer, Scottish Government.

1. Minutes of previous meeting – for Approval

1.1 The minutes of the meeting held on 10 October 2019 were accepted with the minor amendment to the second bullet point under item 5.2 in relation to ARJO Baths:

- Change “have been removed” to ‘will be removed’.

2. Matters Arising

2.1 Interventional Neuroradiology Provision

- Noted that the report considers options around a transitional move to use the new hospital facilities. The report sets out questions asked and reasons why it was believed it would not an appropriate option at moment and this had been discussed with services and staff side.
- The NHSL recommendation to replace the equipment at DCN and when the new hospital opens, to relocate that equipment to the new hospital was agreed by the oversight board.

2.2 Establishing the Commercial subgroup

- Noted that the subgroup had already been established and had met once on 15/10/19.
- Terms of Reference would come to oversight board in due course. **SG**

2.3 Draft terms of reference – The oversight board terms of reference were agreed.

2.4 NSS Report on Fire, Electrical and Medical Gas Reviews

- Report timeline for publication noted as 28th October 2019 as agreed with the Cabinet Secretary.
- Final report to be ready Monday or Tuesday next week subject to any further clarifications.
- Report wording now more precise around remedial action and recommissioning of medical gases.
- Smoke dampers remain a significant issue – noted that wording had now changed towards recommendation for improvements rather than failed compliance and priority was now level 5 - Observation and improvement activity. This was now an issue of fire safety enhancement rather than one of compliance.
- Agreed that it would be important for the oversight board to know if enhancing fire safety with additional dampers would then have any unintended consequences on other parts of the overall ventilation system, e.g. air changes. Noted that this work would be part of the engineered solution.
- Noted that NHSL were closing off some actions in parallel to production of the report for example work around anti-ligature protection would not be an issue once the report is finalised.
- Recognised that there was now a complete set of NSS Reports (HPS and HFS Part 1 and HFS Part 2). It was now for NHSL to respond to the issues outlined in the reports.
- NHSL Response has to be how to get patients needing DCN services into a functioning building that is safe and in the most efficient and effective way.
- NHSL Response to be prepared for ESG on Monday and to come back to the oversight board on 24/10/19.

SG

- Noted that Mott MacDonald had been asked to scenario plan around the enhancement of smoke dampers; options around this and the potential impact on timelines which would not include any required revalidation processes.
- Potential communication challenges around timelines recognised.
- Other than smoke dampers, there remains remedial work to be completed in relation to fire doors.
- Reference to “medical IT system” in report to be clarified to include an explanation that IT does not refer to Information Technology.

EMc/JM

- Agreed that the draft report could be shared with IHSL in confidence with the understanding that the report be embargoed until 28 October 2019.

MM

3. Senior Programme Director Update & Dashboards

- Noted that the milestone programme was still unavailable due to outstanding activities
- Replacement parts for taps still awaited
- Issue with shower hoses had now been resolved and solution to be rolled out across the facility.

4. Governance Structure, Roles and Responsibilities

- Noted that document mapped out key roles and responsibilities
- NHSL Project Board likely to be suspended on a temporary basis until there was a programme and recommissioning to oversee.

SG

- Document to also clarify roles and responsibilities of Executive Lead and to be kept under advisory.
- Agreed that the governance reporting lines on document should be further clarified and another reporting line from delivery group to project team to be added.

MM

5. Technical Reviews progress

5.1 Ventilation

Recommendation for Air Handling Units Remedial Works

- Report noted as an update to a previous paper, following several ventilation workshops.
- With the exception of HFS, who could not attend the technical workshop on 11/10/19a and HPS, who had not yet been asked for a formal assessment, consensus view had been reached with all interested parties, and SBAR prepared by Infection Prevention and Control Team (IPCT) colleagues.
- The oversight board agreed to the proposed recommendation to proceed with the principle of accepting the benchmark unit (option 3) subject to:
 1. Obtaining written confirmation of acceptance from HFS, IOM and the Board's Authorising Engineer (AE). To date, agreement has been received from HFS and the Board's AE.
 2. All IPCT recommendations in Appendix 1 are implemented
 3. All outstanding confirmations and information is provided by IHSL/MPX:
 - a) Suitable cleaning methodology
 - b) Details of anti-bacterial sealant.
 Specific IPCT queries have been passed to IHSL and we await a response.
- The oversight board also agreed that an overarching document now be produced using appendices outlining and pulling together all evidence and information around the air handling unit actions and discussions undertaken into one place, this should also incorporate the action log.

BC/TG

- Noted that no contractual mechanism would be issued for MPX to undertake the work but there would be reference to MPX undertaking the work in the overarching document. The document would also be submitted to the IHSL Steering Group.

SG

- Recognised that MPX were clear that they see themselves as compliant and that this would be being undertaken without prejudice and with no impact to warranties.

Other Ventilation Issues

- Noted that of the 7 initial key issues arising from the IOM log, there remained 3 issues to be addressed:
 - Theatre corridor extract – MPX had started work however there is a supply chain issue to be resolved
 - Scrub extract room – IOM particle tests witnessed by MPX – MPX supply chain to seek redress from designers as this was a non-compliance matter. Insurer monies should cover work. If not a board change would be instructed.
 - Anaesthetic rooms – IOM testing of clean air flow path witnessed by MPX. Remains a SHTM compliance issue, solution being sought. If not a board change would be instructed.
- Further update to come to next oversight board along with an illustrated non-technical document for clarification of issues.

BC

5.2 Water Quality

- Work ongoing - 57 replacement elements not started due to waiting on parts
- Maintenance and flushing regime remains ongoing

5.3 Fire, Electrical and Medical Gases - Covered under Item 2.4 above.

6. Commercial Progress

- Noted there was agreement in principle with IHSL and BYES to progress to the design stage for the two current board changes. Letter of intent being agreed and progress expected by end of this week/ start of next week.
- Four engagement review options being considered with IHSL and BYES, need for a clear audit trail and assessment of options in relation to commercial engagement.
- Noted that high value changes only impact on RHYCP and the spring 2020 timeline for DCN remains on track at this point.
- Formal position to come back to oversight board within the next 2 weeks

SG

7. Communications

7.1 Staff communications

- Letter from Cabinet Secretary issued last week as agreed.
- Information on current facilities issued to staff via email and intranet yesterday
- Next planned communication scheduled for 28 October in line with publication of the NSS Report on Fire, Electrical and Medical Gas reviews.

7.2 Requests for information

- No new requests to report.
- Media interviews with NHSL Chief Executive had taken place last week as planned – no follow up queries received.

8. Any Other Competent Business

- 8.1 Disabled Access Query – Noted that Mr Currie was pulling together the project information in relation to the query from partnership.

9. Date of Next Meeting

- 9.1 The next meeting of this group would take place at **8.00 am** on **Thursday 24 October 2019**, *Meeting Room 5, Waverley Gate*.



4.

RHCYP & DCN - Senior Programme Director's Report

Report Date	21/10/2019	Programme RAG Status (now)	A
Submitted by	Mary Morgan	Programme RAG Status (previous Oversight Board)	A

General Update		It is not yet possible to determine the overall programme milestones and dependencies due to outstanding activities (ventilation issues and smoke dampers) and commercial negotiation for High Value Changes. The Commercial sub group continues to meet. Several meetings with IHSL, MPX & BYES have taken place over the first half of this week (verbal update will be provided). The NSS report (part 2) has been shared with IHSL and a response awaited from them. NHSL draft response is provided.
----------------	--	---

Project Workstreams	RAG Status	Comments
Ventilation	R	2 high value Board Change Notices issued to IHSL: critical care and Lochranza Ward ventilation. IHSL have stated that the stage 1 proposals will be submitted 13th and 20th November 2019 respectively. Workstream Red Status due to absence of a delivery programme for High Value Changes and other Ventilation issues (Theatres corridor, Scrub and Anaesthetic Rooms). Work commenced on the approved AHU solution 21st October 2019 and will continue for 16 - 18 weeks (DCN complete 8 weeks).
Water Safety	A	Programme remains Amber due to missed timelines (parts availability) and outstanding actions to be agreed: ongoing liaison between HFS/HPS and NHSL. <i>The next workstream meeting and update to action log is on 23/10/19 so an up to date dashboard will be tabled at the Oversight Board.</i>
Drainage	B	Workstream closed.
Fire Safety	A	Final Draft NSS report received and will be published w/c 28 October 2019 Work to estimate the impact and consequences of retro-fitting smoke dampers is underway with a range of risk assessment workshops planned. IHSL response to findings and recommendations is awaited. Amber status due to absence of defined actions to address issues now identified.
Electrical	A	Final Draft NSS report received and will be published w/c 28 October 2019. NHSL draft response is provided. IHSL response to findings and recommendations is awaited. Amber status due to absence of defined actions to address issues now identified.
Medical gases	G	Final Draft NSS report received and will be published w/c 28 October 2019. Action required to ensure recommissioning and validation prior to occupation has been accepted. Other minor confirmations to be obtained by end of November.

Key Achievements / Highlights since last Oversight Board

Solution reached for Shower Hose compliance - timeline dependent on parts availability.

Next Period Key Activities / Challenges

Publication of the NSS report part 2: Fire, Electrical Systems and Medical Gases, and the NHSL response w/c 28th October.
Establishing and agreeing detailed action plan for Fire, Electrical Systems and Medical Gases with HFS.

RHCYP+DCN - Ventilation Action Log Dashboard

22/10/2019

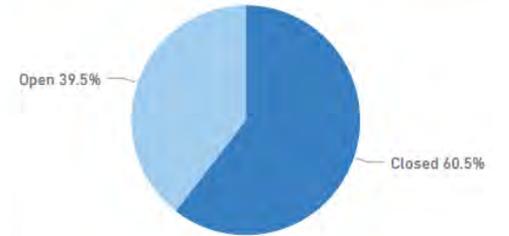
OPEN

32

CLOSED

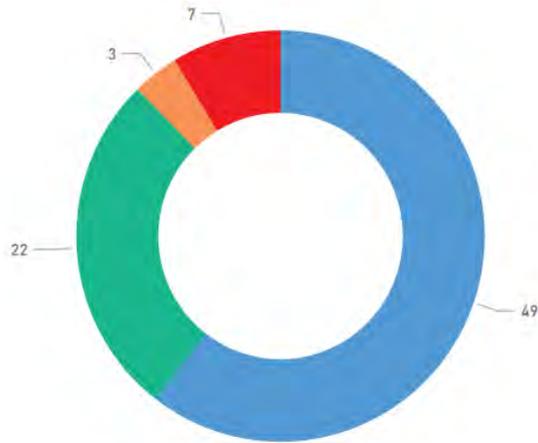
49

Completion Status



Status against Target Date

- Due Status
- Closed
- Actions on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



Priority for DCN

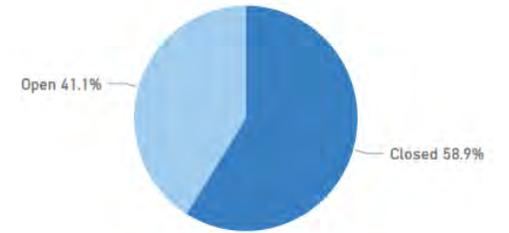
OPEN

30

CLOSED

43

Completion Status



Priority for RHCYP

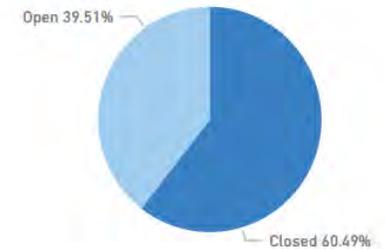
OPEN

32

CLOSED

49

Completion Status



NHS Lothian - Royal Hospital for Children and Young People & Department of Clinical Neurosciences

Review of Fire Systems, Electrical Systems and Medical
Gas Installations



October 2019

Version 1.0

Contents

1.	Executive Summary	3
1.1	Overview	3
1.2	Summary of findings.....	3
2.	Analysis of information provided	5
2.1	Information provided.....	5
3.	Findings	6
3.1	Management and assurance	6
3.2	Fire.....	7
3.3	Electrical.....	8
3.4	Medical gas installations.....	10

1. Executive Summary

1.1 Overview

This document is supplementary to the NSS report issued on 9th September 2019. The objectives of this part of the review were to focus on the provision of the fire, electrical services and medical gas systems at RHCYP & DCN and:

- To provide a report by October 2019 to Scottish Government on whether the relevant technical specifications and guidance applicable to the RHCYP & DCN are being followed and implemented.
- Where relevant technical specifications and guidance have not been followed, identify necessary remedial actions.

This part of the report deals mainly with engineering aspects and there is limited commentary on Healthcare Associated Infection (HAI) associated with these three disciplines as there is little or no impact on HAI from the services considered. The process involved site visits, sample inspections and a targeted review of available documentation.

The review commenced on the 12th of August 2019, with this supplementary report published for consideration by the established RHCYP & DCN Oversight Board.

1.2 Summary of findings

The findings have been collated based on information provided by NHS Lothian and on-site reviews of the RHCYP & DCN. Expert advice was sought within the key focus areas of Fire, Electrical and Medical Gas systems and their overarching management and assurance processes relating to these systems. The following table outlines the status of key findings:

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Management & Assurance	Omissions identified in key roles within the management structure, ease of access to information and possible lack of appropriately qualified personnel in safety critical roles.			2	2	
Fire systems	Action is recommended to include remotely resettable fire and smoke dampers within the ventilation system serving all sleeping accommodation areas where ducting leads to a corridor serving as an evacuation route. Identified fire doors should be upgraded.			2	1	1
Electrical Systems	Remedial action is required within both the high voltage (HV) and low voltage (LV) installations.		2		1	
Medical gas systems	The review of the medical gas installations confirmed that they have been designed installed and commissioned in accordance with the relevant standards.				1	2

The following definitions were used to categorise the findings:

Priority	Definition
1	Significant – Concerns requiring immediate attention, no adherence with guidance
2	Major – Absence of key controls, major deviations from guidance
3	Moderate – Not all control procedures working effectively, elements of non-compliance with guidance
4	Minor – Minor control procedures lacking or improvement identified based on emerging practice
5	Observation and improvement activity

Overall remedial action is required to be undertaken within the fire and electrical systems prior to occupation. Observations have been identified within medical gas installations and a further improvement activity within the fire system noted. Following acceptance of this report, the review team are ready to assist the NHS Lothian team in developing a programme of activity and remedial actions.

2. Analysis of information provided

2.1 Information provided

- 2.1.1 The support of the NHS Lothian project team in responding to questions and accessing data is gratefully acknowledged.
- 2.1.2 At the time of writing the majority of the information required had been received and whilst the timescale for the review means a selective targeted review of documentation was necessary, the main themes appear clear. However, some information remains outstanding, and NHS Lothian colleagues continue to pursue a response.
- 2.1.3 The Special Purpose Vehicle (SPV), Contractor, sub-contractors, Facilities Management Contractor and Independent Tester were not directly involved in the production of this report, nor were they requested to verify its contents and they may have additional information not considered here. It is acknowledged that some of the information provided by NHS Lothian came directly from these sources.

3. Findings

3.1 Management and assurance

Summary

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Management & Assurance	Omissions identified in key roles within the management structure, ease of access to information and possible lack of appropriately qualified personnel in safety critical roles.			2	2	

Main findings

Priority	Review	Action Assessment
4	Structures and processes are not fully in place to assure NHS Lothian that the facility is being operated in compliance with contract requirements. These should be in place from the point where the building services referred to in this report are put into use.	NHS Lothian and IHSL should adopt the management and reporting processes as described in SHTM 00 - Best Practice Guidance for Healthcare Engineering and the SHTMs for each critical engineering service.
4	Some of the records and documents necessary for the effective and safe operation of the hospital could not be found.	NHS Lothian should require IHSL to rectify the filing structure of the documentation and verify that the information contained is both complete and accurate as required by the Electricity at Work Act (1989) and the Construction (Design and Management) Regulations 2015.
3	There appeared to be a lack of qualified and experienced Authorised Persons and Competent Persons for both the HV and LV electrical installations.	The number of HV and LV Competent Persons should be reviewed. NHS Lothian should require IHSL satisfy themselves that adequate numbers are provided as required by the Electricity at Work Act (1989) and SHTM 00, SHTM 06-01 and SHTM 06-02.
3	There is no responsible person formally identified for the high voltage electrical installation.	NHS Lothian should require IHSL satisfy themselves that a suitable responsible person is appointed as required by the Electricity at Work Act (1989) and SHTM 00, SHTM 06-01 and SHTM 06-02.

Detailed Narrative

- 3.1.1 Healthcare organisations have a duty of care to patients, their workforce and the general public to ensure a safe and appropriate environment. This requirement is identified in a wide range of legislation. At the most senior level within an organisation, the appointed responsible person should have access to a robust

structure which delivers governance, assurance and compliance through a formal reporting mechanism.

- 3.1.2 The review identified that for both IHSL and NHS Lothian, there appeared to be omissions in the identification, appointment and definition of key roles in an effective management structure. Additionally, some records which are necessary to demonstrate compliance with appropriate specifications and guidance remain outstanding.

3.2 Fire

Summary

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Fire Systems	Action is recommended to include remotely resettable fire and smoke dampers within the ventilation system serving all sleeping accommodation areas where ducting leads to a corridor serving as an evacuation route Identified fire doors should be upgraded.			2	1	1

Main Findings

Priority	Review	Action Assessment
5	Fire and smoke dampers are installed at compartment and sub-compartment level. However, smoke dampers are not fitted to corridors serving sleeping accommodation.	Remotely resettable fire and smoke dampers should be fitted to prevent the travel of smoke between sleeping accommodation areas where ducting leads to a corridor serving as an evacuation route.
3	Based on sample inspection some doors within the escape routes from sleeping accommodation are not fire door sets.	NHS Lothian and IHSL should ensure the appropriate fire rated door sets are installed.
3	The half leaf "penny farthing" doors are not fitted with self-closing devices.	Half leaf doors should be fitted with the same self-closing device as on the main leaf.
4	A number of remedial snagging and housekeeping issues were identified; damage to fire doors, seals and workmanship; penetrations in compartment walls; delineation of rooftop escape.	A number of the items have already been identified and logged by NHS Lothian via the helpdesk process. NHS Lothian and ISHL should ensure all works are undertaken prior to occupation. Procedures should be adopted to ensure rooftop escape remains clear.

Detailed narrative

- 3.2.1 It was identified that in areas where rooms are regarded as being used as sleeping accommodation that these did not have smoke dampers, but were fitted with fire dampers. The risk consequence of this in the event of a fire could be that smoke

would travel through ventilation into adjoining rooms and the corridor which is the escape route before the fire dampers would be actuated.

- 3.2.2 There is an opportunity to improve the functionality of the design and use of the building prior to occupancy. The fitting of additional smoke dampers would be a positive enhancement to patient and public safety in the event of a fire which relied upon the corridor areas as an evacuation route. While identified as a priority 5 within the report it is recommended that this would afford a significant improvement for these areas.

3.3 Electrical

Summary

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Electrical installations	Remedial action is required within both the high voltage (HV) and low voltage (LV) installations		2		1	

Main Findings

Priority	Review	Action Assessment
4	<p>All 3 Uninterruptable Power Supplies (UPS) are contained in the same room, thereby reducing resilience if a major localised failure should occur.</p> <p>The UPS and output switchboards are a significant distance from the point of load. From this point there is no alternative supply within the internal infrastructure thereby increasing the potential for a single point of failure contrary to clause 4.6 of SHTM 06-01.</p>	<p>NHS Lothian should require IHSL to demonstrate compliance with the technical intent of SHPN 00-07 Resilience planning for healthcare estates, providing mitigation measures to maximise resilience of co-located equipment.</p> <p>NHS Lothian should require IHSL to provide agreed mitigation strategies to meet SHPN 00-07 and SHTM 06-01 to avoid internal failure of the single electrical supply to the critical electrical services such as Medical IT cabinets serving life support and other critical systems.</p>
2	<p>Medical IT system¹ final circuit cabling exceeds manufacturer and SHTM recommended values. Final circuits are in excess of the 30 cable metre length of run set out in Clause 16.34 of SHTM 06-01 and Regulation 134.1.1 of BS 7671.</p>	<p>The designer should indicate their derogation of the manufacturer recommendations, BS 7671 and SHTM 06-01 requirements. The mitigations should also include consideration of the capacitive leakage current effects associated with multiple long runs of final circuits.</p>

¹ (IT electrical system fulfilling specific requirements for medical applications. This does not refer to Information Technology)
October 2019

Priority	Review	Action Assessment
2	<p>Child and Adolescent Mental Health Service (CAMHS) Unit Electrical installation. It was observed that there may be the potential to defeat the ligature reduction measures. In addition, the power to the CAMHS unit rooms cannot be isolated outwith the room.</p>	<p>NHS Lothian and IHSL should check that the provision of access hatches in bedrooms and en-suites are consistent with the risk assessment approach to ligature reduction measures for the CAMHS. The luminaire type (particularly bedhead) should be checked against HBN 03-01 to confirm that they meet the requirements. Isolation arrangements for CAMHS room power supplies should be checked with clinical colleagues as this may require modification.</p>

Detailed narrative

- 3.3.1 The high voltage and low voltage electrical systems at RHCYP & DCN were considered in relation to legislation, guidance and the lessons learned from other recent similar projects which may have an impact on the patient group and staff.
- 3.3.2 The principal legislation which is relevant to the electrical systems is The Electricity at Work Act (1989).
- 3.3.3 The principal guidance which is relevant to the electrical systems are: Scottish Health Technical Memorandum (SHTM) 06-01: Electrical services supply and distribution; SHTM 06-02: Electrical safety guidance for low voltage systems; SHTM 06-03: Electrical Safety Guidance for High Voltage Systems and British Standard (BS) 7671 (also known as the wiring regulations).
- 3.3.4 During the site investigation works it was noted that the installation has potential for the ligature reduction measures intended for the CAMHS unit to be overcome. These include the provision of access hatches in these areas, the impact resistance and fixings of certain light fittings, excessive cable lengths and omission of security fixings. It is acknowledged that NHS Lothian have produced clinical risk assessments for the CAMHS area. If not already, it is recommended that NHS Lothian take into account all consequential construction issues and the points raised in this report into their ligature reduction risk assessment. In addition, the power to the CAMHS unit rooms cannot be isolated out with the room. This should be checked with clinical colleagues as this may require modification.
- 3.3.5 It was observed that there was no Responsible Person (RP) identified for the HV or LV systems and there are limited numbers of Authorised Persons and Competent persons available on the site. There was no HV mimic diagram displayed and there is no version in the document management system; this and other items should have been highlighted as part of an Authorising Engineer's audit.
- 3.3.6 The Medical IT (IT here refers to isolated power supply not Information Technology) system which serves the critical care areas (such as theatres, recovery, intensive care, etc.) should be reviewed. The cable lengths from the distribution board to the final outlets are in excess of those required by BS 7671. There is also the potential for single points of failure due to the length (and routing) of cables between these distribution boards and the uninterruptable power supply (UPS). The power supply to medical IT systems should be fire rated / protected and it is not clear if this has been

achieved. The medical IT protective conductors are not wired from the respective medical IT cabinet which is contrary to BS 7671 fig 710.2. Typical theatre layout.

- 3.3.7 It was observed that fire stopping was not present in some trunking above the ceiling as it traversed wall compartment penetrations.
- 3.3.8 A number of the wall mounted Earth Bonding Bars (EBB) are not installed correctly. This was directly observed, additionally, dirt and debris ingress material could be spread when the EBB are opened for the annual testing. This should be considered by the service provider as part of their maintenance plan.

3.4 Medical gas installations

Summary

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Medical gas installations	The review of the medical gas installations confirmed that they have been designed installed and commissioned in accordance with the relevant standards.				1	2

Main Findings

Priority	Review	Action Assessment
4	The provision of the outlets in the following areas are slightly different from the requirements of SHTM 02-01. <ul style="list-style-type: none"> Assisted bathrooms. In-patient bed spaces. Theatre anaesthetic rooms. 	NHS Lothian should check that the installed provision meets their contract and operational requirements.
5	There is duplication within the electronic document management system and some elements are omitted.	NHS Lothian and IHSL should ensure that duplicated documents are removed and ensure all missing documentation is provided.
5	As the system has been "idle" for some time it is recommended that the systems be re-commissioned and revalidated.	NHSL and IHSL to re-commission MGPS as and when operational elements of the building become live.

Detailed narrative

- 3.4.1 The review of the medical gas installations (including medical gas pipeline systems (MGPS), associated dental air and vacuum systems (DAVS) and pathology laboratory gas systems (PLGS)) confirmed that they have been designed installed and commissioned in accordance with the relevant standards.
- 3.4.2 The commissioning of the medical gas installations had been overseen by a qualified Chartered Engineer which provided a degree of independence in the process.

- 3.4.3 The gas quality checks and identity testing were performed by a registered Quality Controller (MGPS) who again provided a degree of independence.
- 3.4.4 The provision of terminal units is generally as indicated in the guidance given in SHTM 02-01. This provision is slightly different in the following areas, which may have occurred as a result of operational requirements: -
- Assisted bathrooms.
 - In-patient bed spaces.
 - Theatre anaesthetic rooms.
- 3.4.5 It is recommended that the gas quality and identity tests are carried out again when the hospital or its departments become operational, particularly in relation to those pendants where outlets are connected to the MGPS via flexible hoses.
- 3.4.6 It is also recommended that the information in the electronic document management system is reviewed to omit any duplication and the documentation noted above be included.

End of report



5.2



Royal Hospital for Children and Young People and Department of Clinical Neurosciences

NHS Lothian response to actions identified in the **16 October 2019 version of**

NSS National Services Scotland Review of Fire Systems, Electrical Systems & Medical Gas Installations

Formatted: Highlight

NHS Lothian response to NSS National Services Scotland Review of Fire Systems, Electrical Systems & Medical Gas Installations in RHCYP & DCN



Introduction

Following the decision to delay moving to the new Royal Hospital for Children and Young People & Department of Clinical Neurosciences in July 2019, NHS National Services Scotland (NSS) were commissioned by Scottish Government to undertake a series of checks to ensure that the relevant technical specifications and guidance applicable to the new hospital had been followed and were being implemented.

On behalf of NSS, Health Facilities Scotland (HFS) have provided their report to Scottish Government on whether the relevant technical specifications and guidance applicable to the RHCYP & DCN are being followed and implemented. The report provides an assessment of actions required where relevant technical specifications and guidance have not been met.

NHS Lothian engaged with HFS throughout the review and in addressing follow-up actions. Updates on each action identified in the NSS Review are provided in this response.

Glossary

HFS	Health Facilities Scotland
HV	High voltage
IHSL	IHS Lothian Limited
LV	Low voltage
NSS	National Services Scotland
SHPN	Scottish Health Planning Note
SHTM	Scottish Health Technical Memorandum
UPS	Uninterruptable power supplies

NHS Lothian response to NSS National Services Scotland Review of Fire Systems, Electrical Systems & Medical Gas Installations in RHCYP & DCN



Management and Assurance

NSS Review: Omissions identified in key roles within the management structure, ease of access to information and possible lack of appropriately qualified personnel in safety critical roles.

NHS Lothian response: Management roles within the structure will be identified and the responsibility matrix will be reviewed on a regular basis. Archiving of information will be revised in line with guidance and contract requirements

Issue	NSS Review	NSS Action Assessment	NHS Lothian action
Structures and processes	<i>Structures and processes are not fully in place to assure NHS Lothian that the facility is being operated in compliance with contract requirements. These should be in place from the point where the building services referred to in this report are put into use.</i>	<i>NHS Lothian and IHSL should adopt the management and reporting processes as described in SHTM 00- Best Practice Guidance for Healthcare Engineering and the SHTMs for each critical engineering service.</i>	Contract management arrangements will follow SHTM 00.
Contract requirements	<i>Some of the records and documents necessary for the effective and safe operation of the hospital could not be found.</i>	<i>NHS Lothian should require IHSL to rectify the filing structure of the documentation and verify that the information contained is both complete and accurate as required by the Electricity at Work Act (1989) and the Construction (Design and Management) Regulations 2015.</i>	Additional information has been requested from IHSL. The building information and operational manual are currently being reviewed and quality assured by IHSL. The final suite of documents will be transferred on hard drive from MPX to IHSL/NHSL in Feb 2020 as agreed.
Responsible persons	<i>There appeared to be a lack of qualified and experienced Authorised Persons and Competent Persons for both the HV and LV electrical installations.</i>	<i>The number of HV and LV Competent Persons should be reviewed. NHS Lothian should require IHSL satisfy themselves that adequate numbers are provided as required by the Electricity at Work Act (1989) and SHTM 00, SHTM 06-01 and SHTM 06-02.</i>	The numbers and qualifications of the Competent Persons are agreed within NHSL. Those for IHSL will be provided.
Responsible persons	<i>There is no responsible person formally identified for the high voltage electrical installation.</i>	<i>NHS Lothian should require IHSL satisfy themselves that a suitable responsible person is appointed as required by the Electricity at Work</i>	The appointment and qualifications of the Competent Person will be sought from IHSL.

3

October 2019
Version 1.1

NHS Lothian response to NSS National Services Scotland Review of Fire Systems, Electrical Systems & Medical Gas Installations in RHCYP & DCN



Issue	<i>NSS Review</i>	<i>NSS Action Assessment</i>	NHS Lothian action
		<i>Act (1989) and SHTM 00, SHTM 06-01 and SHTM 06-02.</i>	

DRAFT

NHS Lothian response to NSS National Services Scotland Review of Fire Systems, Electrical Systems & Medical Gas Installations in RHCYP & DCN



Fire

NSS Review: Action is recommended to include remotely resettable smoke dampers within the ventilation system serving all sleeping accommodation areas where ducting leads to a corridor serving as an evacuation route. Identified fire doors should be upgraded.

NHS Lothian response: The facility has received the necessary building warrant and completion certification to demonstrate fire safety and compliance with legislation. However, the opportunity to enhance the built environment is recognised. Risk assessment and prioritisation will be undertaken in relation to the fitting of smoke dampers. Fire doors identified as requiring modification will be upgraded.

Issue	NSS Review	NSS Action Assessment	NHS Lothian action
Fire and smoke dampers	<i>Fire and smoke dampers are installed at compartment and sub-compartment level. However, smoke dampers are not fitted to corridors serving sleeping accommodation.</i>	<i>Remotely resettable fire and smoke dampers should be fitted to prevent the travel of smoke between sleeping accommodation areas where ducting leads to a corridor serving as an evacuation route.</i>	Risk assessments will be undertaken to consider the level of enhancement this provides in different areas, the prioritisation of these reflecting other mitigating measures in place and the overall risk context.
Fire doors	<i>Based on sample inspection some doors within the escape routes from sleeping accommodation are not fire door sets.</i>	<i>NHS Lothian and IHSL should ensure the appropriate fire rated door sets are installed.</i>	Risk assessments will be undertaken to consider the level of enhancement this provides.
Fire doors	<i>The half leaf "penny farthing" doors are not fitted with self-closing devices.</i>	<i>Half leaf doors should be fitted with the same self-closing device as on the main leaf.</i>	Risk assessments will be undertaken to consider the level of enhancement this provides.
Snagging	<i>A number of remedial snagging and housekeeping issues were identified; damage to fire doors, seals and workmanship; penetrations in compartment walls; delineation of rooftop escape.</i>	<i>A number of the items have already been identified and logged by NHS Lothian via the helpdesk process. NHS Lothian and ISHL should ensure all works are undertaken prior to occupation. Procedures should be adopted to ensure rooftop escape remains clear.</i>	This work is in progress and will be completed and/or in place prior to occupation.

NHS Lothian response to NSS National Services Scotland Review of Fire Systems, Electrical Systems & Medical Gas Installations in RHCYP & DCN



Electrical

NSS Review: Remedial action is required within both the high voltage (HV) and low voltage (LV) installations.

NHS Lothian response: The actions required have been progressed as part of the contractual arrangements (Feb 2019) or simultaneously to the review report. The validation and verification evidence will be submitted for further review

Issue	NSS Review	NSS Action Assessment	NHS Lothian action
Resilience	All 3 Uninterruptable Power Supplies (UPS) are contained in the same room, thereby reducing resilience if a major localised failure should occur.	NHS Lothian should require IHSL to demonstrate compliance with the technical intent of SHPN 00-07 Resilience planning for healthcare estates, providing mitigation measures to maximise resilience of co-located equipment.	IHSL will be required to demonstrate compliance with the technical intent of SHPN 00-07.
Resilience	The UPS and output switchboards are a significant distance from the point of load. From this point there is no alternative supply within the internal infrastructure thereby increasing the potential for a single point of failure contrary to clause 4.6 of SHTM 06-01.	NHS Lothian should require IHSL to provide agreed mitigation strategies to meet SHPN 00-07 and SHTM 06-01 to avoid internal failure of the single electrical supply to the critical electrical services such as Medical IT cabinets serving life support and other critical systems.	IHSL will be required to provide the agreed mitigation strategies to meet SHPN 00-07 and SHTM 06-01.
Medical devices	Medical IT system (IT electrical system fulfilling specific requirements for medical applications) final circuit cabling exceeds manufacturer and SHTM recommended values. Final circuits are in excess of the 30 cable metre length of run set out in Clause 16.34 of SHTM 06-01 and Regulation 134.1.1 of BS 7671.	The designer should indicate their derogation of the manufacturer recommendations, BS 7671 and SHTM 06-01 requirements. The mitigations should also include consideration of the capacitive leakage current effects associated with multiple long runs of final circuits.	IHSL will be required to provide their derogation of the manufacturer recommendations, BS 7671 and SHTM 06-01, and any mitigations provided.
CAMHS	Child and Adolescent Mental Health Service (CAMHS) Unit Electrical installation. It was observed that there may be the potential to defeat the ligature reduction measures.	NHS Lothian and IHSL should check that the provision of access hatches in bedrooms and en-suites are consistent with the risk assessment approach to ligature reduction measures for the CAMHS. The luminaire type (particularly bedhead) should be checked against HBN 03-01 to confirm that they meet the requirements.	Clinical risk assessments have been completed and include any appropriate mitigations. Supplier specification for the Luminaire has been evaluated. Final inspection prior to occupation will confirm that all access

Commented [CS1]: This wording is expected to change

NHS Lothian response to NSS National Services Scotland Review of Fire Systems, Electrical Systems & Medical Gas Installations in RHCYP & DCN



Issue	<i>NSS Review</i>	<i>NSS Action Assessment</i>	NHS Lothian action
			hatches and luminaires are consistent with the risk assessment.

DRAFT

NHS Lothian response to NSS National Services Scotland Review of Fire Systems, Electrical Systems & Medical Gas Installations in RHCYP & DCN



Medical Gas Installations

NSS Review: The review of the medical gas installations confirmed that they have been designed installed and commissioned in accordance with the relevant standards.

NHS Lothian Response: The medical gas installations will be fully re-commissioned and validated prior to occupation

Issue	NSS Review	NSS Action Assessment	NHS Lothian action
Outlets	<p>The provision of the outlets in the following areas are slightly different from the requirements of SHTM 02-01.</p> <ul style="list-style-type: none"> • Assisted bathrooms. • In-patient bed spaces. • Theatre anaesthetic rooms. 	<p>NHS Lothian should check that the installed provision meets their contract and operational requirements.</p>	<p>This will be checked by 30th November.</p>
Documentation	<p>There is duplication within the ZUTEC electronic documentation system and some elements are omitted.</p>	<p>NHS Lothian and IHSL should ensure that duplicated documents are removed and ensure all missing documentation is provided.</p>	<p>The building information and operational manual are currently being reviewed and quality assured by IHSL.</p>
Commissioning	<p>As the system has been "idle" for some time it is recommended that the systems be re-commissioned and revalidated.</p>	<p>NHSL and IHSL to re-commission MGPS as and when operational elements of the building become live.</p>	<p>This will be completed prior to occupation.</p>

24 October 2019

Brian Currie, Project Director

THEATRE VENTILATION ISSUES IN RHCYP/DCN

Scrub extracts

Situation: the scrub areas are designed as part of the floor plan of the theatre (and do not match any of the eight design options considered as examples in the SHTM-0301). There is a single high level extract in each scrub area and the view of HFS and IOM is that this does not adequately allow dispersal of droplets.

Assessment: by smoke test on 27/9/19. This demonstrated that smoke moved from the scrub area to the theatre, the inference is that droplets would too.

Recommendation: low level extracts are required in the scrub areas to direct the airflow (and therefore droplets and particles) down and to the rear of the scrub area away from the theatre itself – Appendix 1: draft Board change (page 1)

Anaesthetic rooms grilles

Situation: the supply and low level extract grilles are close together: this means that there may be short circuiting of clean air from the supply grille straight out the extract grille again, not effectively changing the air in the room. This is important because of the presence of anaesthetic gases, potentially hazardous to staff subject to repeated exposure and is set out in SHTM 03-01

Assessment: demonstrations on 20/09/19 and 27/09/19 did not demonstrate short circuiting, but failed to demonstrate that clean air moved across the anaesthetic room in a reliable way

Recommendation: MPX to install different grilles capable of directing air flow in sample location. IOM to carry out smoke test in this location. If clean air path is proved, repeat in all 11 anaesthetic rooms. This will also require the repositioning of 4 supply grilles. Appendix 2: draft Board change (page 1).

Dirty utility rooms

Situation: dirty utility rooms in theatres work as a pair with potential impact on use during maintenance

Assessment: these have been tested with one of the pair in setback (ventilation at a reduced rate) (and smoke demonstrated to pass from the theatre to the dirty utility room (demonstrating one theatre can work while the other is in set back)

Recommendation: report received from IOM verifying that this item can now be closed



Appendix 1

Low Value Change Notice

Project:	RHCYP & DCN
-----------------	------------------------

1 – Issue of Change Notice to Project Co

Title:	Install Low Level Extract in all Theatre Scrub Rooms
---------------	---

Reference No:	Date: October 2019
----------------------	---------------------------

DESCRIPTION OF CHANGE:

Project Co are requested to provide low level extract ventilation in the following rooms to facilitate the effective removal of moisture laden air:

- 1-P1-034 (Theatre 30 Scrub)
- 1-P1-046 (Theatre 31 Scrub)
- 1-P1-133 (Theatre 32 Scrub)
- 1-P1-137 (Theatre 33 Scrub)
- 1-P1-148 (Theatre 34 Scrub)
- 1-P1-154 (Theatre 35 Scrub)
- 1-P1-185 (Theatre 36 Scrub)
- 1-P1-071 (Theatre 37 Scrub)
- 1-P1-080 (Theatre 38 Scrub)
- 1-P1-073 (Theatre 39 Scrub)
- 1-P1-059 (Angiography Preparation/Scrub)

Final position and design to be discussed in collaboration with the board.

Date of required implementation (only if not a Catalogue item):

To: IHS Lothian

We require the Change described above.

Please advise the cost and timescale for implementation.

Signed on behalf of NHS Lothian:

Name of Signatory (type or print):

Date:

LVCN



Appendix 2

Low Value Change Notice

Project:	RHCYP & DCN
-----------------	------------------------

1 – Issue of Change Notice to Project Co

Title:	Anaesthetic Room Ventilation – Clean Air Path
---------------	--

Reference No:	Date: October 2019
----------------------	---------------------------

DESCRIPTION OF CHANGE:

Project Co are requested to alter the position of the supply grilles in the following rooms to encourage a clean air path across staff and patient:

- 1-P1-033 (Theatre 30 Anaesthetic Room)
- 1-P1-047 (Theatre 31 Anaesthetic Room)
- 1-P1-138 (Theatre 33 Anaesthetic Room)
- 1-P1-141 (Theatre 34 Anaesthetic Room)

In addition the supply grilles in the following rooms to be changed to directional grilles of a suitable type to direct air to produce and enhance the clean air path:

- 1-P1-033 (Theatre 30 Anaesthetic Room)
- 1-P1-047 (Theatre 31 Anaesthetic Room)
- 1-P1-132 (Theatre 32 Anaesthetic Room)
- 1-P1-138 (Theatre 33 Anaesthetic Room)
- 1-P1-141 (Theatre 34 Anaesthetic Room)
- 1-P1-156 (Theatre 35 Anaesthetic Room)
- 1-P1-183 (Theatre 36 Anaesthetic Room)
- 1-P1-069 (Theatre 37 Anaesthetic Room)
- 1-P1-184 (Theatre 38 Anaesthetic Room)
- 1-P1-074 (Theatre 39 Anaesthetic Room)
- 1-P1-066 (Angiography Anaesthetic Room)

Final position and grille type to be discussed in collaboration with the board.

Date of required implementation (only if not a Catalogue item):

To: IHS Lothian

We require the Change described above.

Please advise the cost and timescale for implementation.

Signed on behalf of NHS Lothian:

Name of Signatory (type or print):

Date:



LVCN

From: [Graham, Chris](#)
Subject: RHCYP+DCN Oversight Board Papers - 31-10-19..
Date: 30 October 2019 08:01:50
Attachments: [image001.jpg](#)
[image002.png](#)
[image003.gif](#)
[191031 Oversight Board Papers.pdf](#)
Importance: High

Dear Colleagues

Please find attached the papers for tomorrow's oversight board meeting to be held at 8am in Meeting Room 5, Waverley Gate

For ease of navigation please note:

- The PDF contains bookmarked items  as well as hyperlinks from the agenda to items in **blue**;
- the **blue** item numbers take you back to the agenda and;
- the **green** buttons at the end of items take you back to the start of that item.

Please note that the dial in details for the meeting remain the same:

Participant code – 

Kind regards

Chris

Chris Graham
Secretariat Manager


Achieving [deadlines](#) means you are respecting your colleagues and supporting effective decision-making.

[fonline3.png](#)



The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 31st October 2019, 8:00 – 9:30am

Venue: Room 5, Waverley Gate, EH1 3EG

AGENDA

1.	Chair's Welcome and Introductions	FMc	V
	Apologies: Mary Morgan		
2.	Minutes of previous meetings – for approval	FMc	
	2.1 Minute of 17 October 2019		*
	2.2 Minute of 24 October 2019		*
3.	Matters Arising		
	3.1 Review of Fire Systems, Electrical Systems and Medical Gas Installations – <i>final reports for information</i> 3.1.1 NSS Review 3.1.2 NHS Lothian response	FMc	*
4.	Note of initial workshop on Risk Assessments for proposed Fire Safety Improvements	AMcM	*
5.	Commercial Progress Update	SG	*
	STANDING AGENDA ITEMS		
6.	Technical Reviews progress		
	6.1 Ventilation dashboard report	BC	*
	6.2 Water quality dashboard report	BC	*
	6.3 Fire	BC	V
	6.4 Electrical	BC	V
	6.5 Medical gases	BC	V
7.	Communications		
	8.1 Staff communications	JM	V
	8.2 Requests for information	SC	V
8.	Any Other Competent Business		
9.	Date of Next Meeting	All	
	Thursday 7 November 2019, 8am, Room 5, Waverley Gate		

2.1

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 17 October 2019 in Meeting Room 6&7, Waverley Gate, Edinburgh.

Present: Professor F. McQueen, Chief Nursing Officer, Scottish Government (chair); Ms S. Goldsmith, Director of Finance, NHS Lothian; Ms T. Gillies, Medical Director, NHS Lothian; Professor A. McMahon, Nurse Director, NHS Lothian; Mr C. Sinclair, Chief Executive, NHS National Services Scotland and Mr G. Archibald, Joint Staff Side Representative.

In Attendance: Mr B. Currie, Project Director, NHS Lothian; Ms M. Morgan, Senior Programme Director; Mr C. Henderson, Scottish Government; Mr J. Miller, Health Facilities Scotland (deputising for Gordon James); Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian; Ms L Aitken, Scottish Government Communications; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

In Attendance by Telephone: Professor J. Reilly, HAI executive lead for NHS National Services Scotland; Ms A. Burnett, Communications Manager, NHS Lothian (deputising for Judith Mackay) and Mr E McLaughlan, Assistant Director, Engineering, Environment and Decontamination, Health Facilities Scotland;

Apologies: Mr P. Reekie, Chief Executive, Scottish Futures Trust; Mr G. James, Director of Facilities, Health Facilities Scotland; Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side); Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Ms J. Mackay, NHS Lothian Director of Communications and Ms C. McLaughlin, Chief Finance Officer, Scottish Government.

1. Minutes of previous meeting – for Approval

1.1 The minutes of the meeting held on 10 October 2019 were accepted with the minor amendment to the second bullet point under item 5.2 in relation to ARJO Baths:

- Change “have been removed” to ‘will be removed’.

2. Matters Arising

2.1 Interventional Neuroradiology Provision

- Noted that the report considers options around a transitional move to use the new hospital facilities. The report sets out questions asked and reasons why it was believed it would not an appropriate option at moment and this had been discussed with services and staff side.
- The NHSL recommendation to replace the equipment at DCN and when the new hospital opens, to relocate that equipment to the new hospital was agreed by the oversight board.

2.2 Establishing the Commercial subgroup

- Noted that the subgroup had already been established and had met once on 15/10/19.
- Terms of Reference would come to oversight board in due course. **SG**

2.3 Draft terms of reference – The oversight board terms of reference were agreed.

2.4 NSS Report on Fire, Electrical and Medical Gas Reviews

- Report timeline for publication noted as 28th October 2019 as agreed with the Cabinet Secretary.
- Final report to be ready Monday or Tuesday next week subject to any further clarifications.
- Report wording now more precise around remedial action and recommissioning of medical gases.
- Smoke dampers marked as a level 5 but described by the review team as a significant opportunity to improve the position. While this is an issue of fire safety enhancement rather than one of compliance it is the view of the review team that it should be completed. The timescales for such work, and impact on the hospital moves, was to be explored by NHS Lothian.
- Agreed that it would be important for the oversight board to know if enhancing fire safety with additional dampers would then have any unintended consequences on other parts of the overall ventilation system, e.g. air changes. Noted that this work would be part of the engineered solution.
- Noted that NHSL were closing off some actions in parallel to production of the report for example work around anti-ligature protection may be resolved before the report is finalised.
- Recognised that there was now a complete set of NSS Reports (HPS and HFS Part 1 and HFS Part 2). It was now for NHSL to respond to the issues outlined in the reports.
- NHSL Response has to be how to get patients needing DCN services into a functioning building that is safe and in the most efficient and effective way.
- NHSL Response to be prepared for ESG on Monday and to come back to the oversight board on 24/10/19.

SG

- Noted that Mott MacDonald had been asked to scenario plan around the enhancement of smoke dampers; options around this and the potential impact on timelines which would not include any required revalidation processes.
- Potential communication challenges around timelines recognised.
- Other than smoke dampers, there remains remedial work to be completed in relation to fire doors.
- Reference to “medical IT system” in report to be clarified to include an explanation that IT does not refer to Information Technology.

EMc/JM

- Agreed that the draft report could be shared with IHSL in confidence with the understanding that the report be embargoed until 28 October 2019.

MM

3. Senior Programme Director Update & Dashboards

- Noted that the milestone programme was still unavailable due to outstanding activities
- Replacement parts for taps still awaited
- Issue with shower hoses had now been resolved and solution to be rolled out across the facility.

4. Governance Structure, Roles and Responsibilities

- Noted that document mapped out key roles and responsibilities
- NHSL Project Board likely to be suspended on a temporary basis until there was a programme and recommissioning to oversee.

SG

- Document to also clarify roles and responsibilities of Executive Lead and to be kept under advisory.
- Agreed that the governance reporting lines on document should be further clarified and another reporting line from delivery group to project team to be added.

MM

5. Technical Reviews progress

5.1 Ventilation

Recommendation for Air Handling Units Remedial Works

- Report noted as an update to a previous paper, following several ventilation workshops.
- With the exception of HFS, who could not attend the technical workshop on 11/10/19a and HPS, who had not yet been asked for a formal assessment, consensus view had been reached with all interested parties, and SBAR prepared by Infection Prevention and Control Team (IPCT) colleagues.
- The oversight board agreed to the proposed recommendation to proceed with the principle of accepting the benchmark unit (option 3) subject to:
 1. Obtaining written confirmation of acceptance from HFS, IOM and the Board's Authorising Engineer (AE). To date, agreement has been received from HFS and the Board's AE.
 2. All IPCT recommendations in Appendix 1 are implemented
 3. All outstanding confirmations and information is provided by IHSL/MPX:
 - a) Suitable cleaning methodology
 - b) Details of anti-bacterial sealant.
 Specific IPCT queries have been passed to IHSL and we await a response.
- The oversight board also agreed that an overarching document now be produced using appendices outlining and pulling together all evidence and information around the air handling unit actions and discussions undertaken into one place, this should also incorporate the action log.

BC/TG

- Noted that no contractual mechanism would be issued for MPX to undertake the work but there would be reference to MPX undertaking the work in the overarching document. The document would also be submitted to the IHSL Steering Group.

SG

- Recognised that MPX were clear that they see themselves as compliant and that this would be being undertaken without prejudice and with no impact to warranties.

Other Ventilation Issues

- Noted that of the 7 initial key issues arising from the IOM log, there remained 3 issues to be addressed:
 - Theatre corridor extract – MPX had started work however there is a supply chain issue to be resolved
 - Scrub extract room – IOM particle tests witnessed by MPX – MPX supply chain to seek redress from designers as this was a non-compliance matter. Insurer monies should cover work. If not a board change would be instructed.
 - Anaesthetic rooms – IOM testing of clean air flow path witnessed by MPX. Remains a SHTM compliance issue, solution being sought. If not a board change would be instructed.
- Further update to come to next oversight board along with an illustrated non-technical document for clarification of issues.

BC

5.2 Water Quality

- Work ongoing - 57 replacement elements not started due to waiting on parts
- Maintenance and flushing regime remains ongoing

5.3 Fire, Electrical and Medical Gases - Covered under Item 2.4 above.

6. Commercial Progress

- Noted there was agreement in principle with IHSL and BYES to progress to the design stage for the two current board changes. Letter of intent being agreed and progress expected by end of this week/ start of next week.
- Four engagement review options being considered with IHSL and BYES, need for a clear audit trail and assessment of options in relation to commercial engagement.
- Noted that high value changes only impact on RHYCP and the spring 2020 timeline for DCN remains on track at this point.
- Formal position to come back to oversight board within the next 2 weeks

SG

7. Communications

7.1 Staff communications

- Letter from Cabinet Secretary issued last week as agreed.
- Information on current facilities issued to staff via email and intranet yesterday
- Next planned communication scheduled for 28 October in line with publication of the NSS Report on Fire, Electrical and Medical Gas reviews.

7.2 Requests for information

- No new requests to report.
- Media interviews with NHSL Chief Executive had taken place last week as planned – no follow up queries received.

8. Any Other Competent Business

- 8.1 Disabled Access Query – Noted that Mr Currie was pulling together the project information in relation to the query from partnership.

9. Date of Next Meeting

- 9.1 The next meeting of this group would take place at **8.00 am** on **Thursday 24 October 2019**, *Meeting Room 5, Waverley Gate*.



2.2

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 24 October 2019 in Meeting Room 6&7, Waverley Gate, Edinburgh.

Present: Professor F. McQueen, Chief Nursing Officer, Scottish Government (chair); Ms S. Goldsmith, Director of Finance, NHS Lothian; Ms T. Gillies, Medical Director, NHS Lothian; Professor A. McMahon, Nurse Director, NHS Lothian; Mr C. Sinclair, Chief Executive, NHS National Services Scotland; Mr P. Reekie, Chief Executive, Scottish Futures Trust and Mr G. Archibald, Joint Staff Side Representative.

Present by Telephone: Ms C. McLaughlin, Chief Finance Officer, Scottish Government.

In Attendance: Mr B. Currie, Project Director, NHS Lothian; Mr C. Henderson, Scottish Government; Ms J. Mackay, NHS Lothian Director of Communications; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Ms S. Hart, Communications, Scottish Government; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

In Attendance by Telephone: Mr G. James, Director of Facilities, Health Facilities Scotland; Mr J. Miller, Director, Procurement, Commissioning & Facilities, NHS National Services Scotland; Ms M. Morgan, Senior Programme Director; Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work and Mrs L. Imrie, Interim Lead Consultant for Healthcare Associated Infection, Antimicrobial Resistance and Infection Prevention and Control, Health Protection Scotland.

Apologies: Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side).

1. Minutes of previous meeting – for Approval

1.1 The minutes of the meeting held on 17 October 2019 were not accepted. The following amendments were required:

- **Paragraph 5.1, third bullet, item 1** – add that agreement had also been received from IOM.
- **Paragraph 2.4** – Entire section needs to be reframed using words on which the whole group can agree on and this would be undertaken out with the meeting.

GJ/JM

1.2 The revised 17 October minutes would come back to the 31 October meeting for approval.

SC

2. Matters Arising

2.1 None not already covered by the agenda.

3. Senior Programme Director Update & Dashboards

- The report, ventilation and water safety trackers were noted.
- Remains issues around high value changes and programme to address these
- Solution to resolve issue with external plant room doors underway
- Solution to resolve issue with anaesthetic room ventilation is subject of a later agenda item
- Actions in relation to tap and shower hose lengths progressing. All taps now replaced and retesting and disinfection work underway. Shower hose length solution as proposed by MPX underway, parts are awaited to complete the work in accordance with requirements.
- Results of testing should be available 16 days after the first test had taken place.

4. NSS Review of Fire Systems, Electrical Systems and Medical Gas Installations

4.1 Updated NSS Review of Fire Systems, Electrical Systems and Medical Gas Installations

- Noted that this was now the final version of the report, superseding all other working versions.
- Small changes made to reflect the wording identified from previous oversight board meetings and the request to clarify the statement around medical IT at 3.3. A footnote explaining IT around systems related to medical applications not information technology had been added.
- Discussion on section 3.2.2 in relation to Smoke Dampers. It was noted this area remained at level 5 priority as had previously been discussed in detail and the status of the report reflected the HPS/HFS technical team's independent observations that whilst not essential, there was an opportunity to significantly enhance fire safety prior to occupation of the hospital.
- There would be further discussion on Smoke Dampers at the upcoming technical/clinical workshop to be held on 25/10 and the output would be circulated.

AMcM

- Concerns expressed that there was no narrative in the report explaining that the 1-5 scoring was based on compliance – not what needs to be done or there may be the opportunity to do. This was also not clear from the Executive Summary.
- Noted that in terms of safety the building had received sign off from the appropriate authorities and been deemed safe in terms of fire safety.
- Noted that it was important to have consistent, clear, plain English responses prepared in relation to questions that may be asked following publication of the report in the next week.
- The oversight board accepted the HFS/HPS Part 2 report and attention would now move to taking forward actions using the appropriate risk assessment processes.

4.2 NHSL response to NSS Review of Fire Systems, Electrical Systems and Medical Gas Installations

- Noted that the NHSL response would be high level and factual as per the response to the Part 1 NSS Report.
- Noted that it currently was not within NHSL's gift to put timescales against actions, as these were dependent on work through IHSL.
- Timescales could be considered once the detailed action plan was received through engagement with IHSL
- Draft response to be amended to reflect changes within the marked up version of the Part 2 report

SC

5. Technical Reviews progress

5.1 Ventilation

- Noted that IHSL and MPX had started on the first of the 16 DCN Air Handling Units (AHUs) on 21/10.
- The commitment remains to complete the DCN AHUs work in 8 weeks and then to move on to the remaining AHUs work.
- Issue around theatre corridors to move ahead soon, there had been problems with supply chain but subcontractor was now being engaged.

Residual ventilation issues in theatres accommodation

- Scrub extract ventilation – Noted that the final test results from IOM showed air coming back into theatres. The solution would be to move the grilles closer to the floor. A response was awaited.
- Anaesthetic room grills ventilation – Noted that most testing criteria was now satisfied. Clean airflow path across patient bed remains outstanding. The solution would be to try a different grille type (not position) if this were successful then this would affect four other rooms.
- MPX would be approached to undertake as defect work otherwise board changes through IHSL and BYES would be required.
- Noted that the action around dirty utility rooms was now closed.

5.2 Water Quality

5.2.1 Covered under item 3 above.

5.3 Fire, Electrical and Medical Gases

5.3.1 In addition to items covered under Item 4 above:

- Isolation CAMHS Bedrooms circuitry – Noted that consideration of size of issue being discussed.

- Grouping of UPS – Noted that this remains a risk assessment issue with a similar approach to drainage being considered to look at trigger points for faults.
- Electricals in CAMHS - ligature points – Noted that clinical risk assessments had now been completed twice.

6. Commercial Progress

- Discussions with IHSL and BYES continues – concerns over validity of MPX warranties once BYES start any work
- NHSL to seek legal advice around BYES indemnity proposition that if something goes wrong which they cannot recover from MPX, then there would be a rapid assessment and NHSL would pick up costs.
- Noted that there was a clear position from IHSL and BYES that no design work would start until all commercials were resolved.
- Remains a clear commitment that delivery within the time line remains doable.
- Written report to come to the oversight board on 31/10, commercial in confidence.

SG

7. Communications

7.1 Staff communications

- Noted that the next staff communication was planned to go out in line with publication of the Part 2 NSS report
- NHSL response would be published with or shortly after the report's publication.
- NHSL response to follow a similar approach to the Part 1 response in that a factual stance to be maintained.
- Scottish Government to link in with Building Standards and SFRS to inform them of when the report is to be published so they can prepare for any information requests.

AM

7.2 Requests for information - It was noted that requests for information continued to be received by NHSL, SFT and Scottish Government. There had been an increase in requests for programme board papers and papers from the oversight board also.

7.2.1 It was agreed that a consistent approach to release of the same information would be helpful and that Mr Henderson would provide a timescale to NHSL and SFT for when the Scottish Government would be publishing Oversight Board records on the Scottish Parliament Information Centre (SPICe) so that this information could be referred to in responses.

CH

8. Any Other Competent Business

8.1 Healthcare Improvement Scotland visit to DCN and Royal Hospital for Sick Children - It was noted that HIS had been visiting the current sites this week and had spent a lot of time speaking to staff, patients and relatives. The scope of the visits had been around clean and safe. The visit report was expected later this afternoon (24/10).

8.2 Meeting with Lothian Area Partnership Forum – It was noted that a follow up meeting between Professor McQueen and Area Partnership Forum was to be arranged for Monday 28th October 2019. There would also be a follow up letter from the Cabinet Secretary to NHS Lothian staff coming out in the next week.

9. Date of Next Meeting

9.1 The next meeting of this group would take place at **8.00 am on Thursday 31 October 2019, Meeting Room 5, Waverley Gate.**



3.1.1



NSS Health Facilities Scotland & Health Protection Scotland

NHS Lothian - Royal Hospital for Children and Young People & Department of Clinical Neurosciences

Review of Fire Systems, Electrical Systems and Medical Gas Installations



October 2019

Version 1.0

Contents

1.	Executive Summary	3
1.1	Overview	3
1.2	Summary of findings.....	3
2.	Analysis of information provided	5
2.1	Information provided.....	5
3.	Findings	6
3.1	Management and assurance	6
3.2	Fire.....	7
3.3	Electrical.....	8
3.4	Medical gas installations.....	10

1. Executive Summary

1.1 Overview

This document is supplementary to the NSS report issued on 9th September 2019. The objectives of this part of the review were to focus on the provision of the fire, electrical services and medical gas systems at RHCYP & DCN and:

- To provide a report by October 2019 to Scottish Government on whether the relevant technical specifications and guidance applicable to the RHCYP & DCN are being followed and implemented.
- Where relevant technical specifications and guidance have not been followed, identify necessary remedial actions.

This part of the report deals mainly with engineering aspects and there is limited commentary on Healthcare Associated Infection (HAI) associated with these three disciplines as there is little or no impact on HAI from the services considered. The process involved site visits, sample inspections and a targeted review of available documentation.

The review commenced on the 12th of August 2019, with this supplementary report published for consideration by the established RHCYP & DCN Oversight Board.

1.2 Summary of findings

The findings have been collated based on information provided by NHS Lothian and on-site reviews of the RHCYP & DCN. Expert advice was sought within the key focus areas of Fire, Electrical and Medical Gas systems and their overarching management and assurance processes relating to these systems. The following table outlines the status of key findings:

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Management & Assurance	Omissions identified in key roles within the management structure, ease of access to information and possible lack of appropriately qualified personnel in safety critical roles.			2	2	
Fire systems	Action is recommended to include remotely resettable fire and smoke dampers within the ventilation system serving all sleeping accommodation areas where ducting leads to a corridor serving as an evacuation route. Identified fire doors should be upgraded.			2	1	1
Electrical Systems	Remedial action is required within both the high voltage (HV) and low voltage (LV) installations.		2		1	
Medical gas systems	The review of the medical gas installations confirmed that they have been designed installed and commissioned in accordance with the relevant standards.				1	2

The following definitions were used to categorise the findings:

Priority	Definition
1	Significant – Concerns requiring immediate attention, no adherence with guidance
2	Major – Absence of key controls, major deviations from guidance
3	Moderate – Not all control procedures working effectively, elements of non-compliance with guidance
4	Minor – Minor control procedures lacking or improvement identified based on emerging practice
5	Observation and improvement activity

Overall remedial action is required to be undertaken within the fire and electrical systems prior to occupation. Observations have been identified within medical gas installations and a further improvement activity within the fire system noted. Following acceptance of this report, the review team are ready to assist the NHS Lothian team in developing a programme of activity and remedial actions.

2. Analysis of information provided

2.1 Information provided

- 2.1.1 The support of the NHS Lothian project team in responding to questions and accessing data is gratefully acknowledged.
- 2.1.2 At the time of writing the majority of the information required had been received and whilst the timescale for the review means a selective targeted review of documentation was necessary, the main themes appear clear. However, some information remains outstanding, and NHS Lothian colleagues continue to pursue a response.
- 2.1.3 The Special Purpose Vehicle (SPV), Contractor, sub-contractors, Facilities Management Contractor and Independent Tester were not directly involved in the production of this report, nor were they requested to verify its contents and they may have additional information not considered here. It is acknowledged that some of the information provided by NHS Lothian came directly from these sources.

3. Findings

3.1 Management and assurance

Summary

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Management & Assurance	Omissions identified in key roles within the management structure, ease of access to information and possible lack of appropriately qualified personnel in safety critical roles.			2	2	

Main findings

Priority	Review	Action Assessment
4	Structures and processes are not fully in place to assure NHS Lothian that the facility is being operated in compliance with contract requirements. These should be in place from the point where the building services referred to in this report are put into use.	NHS Lothian and IHSL should adopt the management and reporting processes as described in SHTM 00 - Best Practice Guidance for Healthcare Engineering and the SHTMs for each critical engineering service.
4	Some of the records and documents necessary for the effective and safe operation of the hospital could not be found.	NHS Lothian should require IHSL to rectify the filing structure of the documentation and verify that the information contained is both complete and accurate as required by the Electricity at Work Act (1989) and the Construction (Design and Management) Regulations 2015.
3	There appeared to be a lack of qualified and experienced Authorised Persons and Competent Persons for both the HV and LV electrical installations.	The number of HV and LV Competent Persons should be reviewed. NHS Lothian should require IHSL satisfy themselves that adequate numbers are provided as required by the Electricity at Work Act (1989) and SHTM 00, SHTM 06-01 and SHTM 06-02.
3	There is no responsible person formally identified for the high voltage electrical installation.	NHS Lothian should require IHSL satisfy themselves that a suitable responsible person is appointed as required by the Electricity at Work Act (1989) and SHTM 00, SHTM 06-01 and SHTM 06-02.

Detailed Narrative

- 3.1.1 Healthcare organisations have a duty of care to patients, their workforce and the general public to ensure a safe and appropriate environment. This requirement is identified in a wide range of legislation. At the most senior level within an organisation, the appointed responsible person should have access to a robust

structure which delivers governance, assurance and compliance through a formal reporting mechanism.

- 3.1.2 The review identified that for both IHSL and NHS Lothian, there appeared to be omissions in the identification, appointment and definition of key roles in an effective management structure. Additionally, some records which are necessary to demonstrate compliance with appropriate specifications and guidance remain outstanding.

3.2 Fire

Summary

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Fire Systems	Action is recommended to include remotely resettable fire and smoke dampers within the ventilation system serving all sleeping accommodation areas where ducting leads to a corridor serving as an evacuation route Identified fire doors should be upgraded.			2	1	1

Main Findings

Priority	Review	Action Assessment
5	Fire and smoke dampers are installed at compartment and sub-compartment level. However, smoke dampers are not fitted to corridors serving sleeping accommodation.	Remotely resettable fire and smoke dampers should be fitted to prevent the travel of smoke between sleeping accommodation areas where ducting leads to a corridor serving as an evacuation route.
3	Based on sample inspection some doors within the escape routes from sleeping accommodation are not fire door sets.	NHS Lothian and IHSL should ensure the appropriate fire rated door sets are installed.
3	The half leaf "penny farthing" doors are not fitted with self-closing devices.	Half leaf doors should be fitted with the same self-closing device as on the main leaf.
4	A number of remedial snagging and housekeeping issues were identified; damage to fire doors, seals and workmanship; penetrations in compartment walls; delineation of rooftop escape.	A number of the items have already been identified and logged by NHS Lothian via the helpdesk process. NHS Lothian and ISHL should ensure all works are undertaken prior to occupation. Procedures should be adopted to ensure rooftop escape remains clear.

Detailed narrative

- 3.2.1 It was identified that in areas where rooms are regarded as being used as sleeping accommodation that these did not have smoke dampers, but were fitted with fire dampers. The risk consequence of this in the event of a fire could be that smoke

would travel through ventilation into adjoining rooms and the corridor which is the escape route before the fire dampers would be actuated.

- 3.2.2 There is an opportunity to improve the functionality of the design and use of the building prior to occupancy. The fitting of additional smoke dampers would be a positive enhancement to patient and public safety in the event of a fire which relied upon the corridor areas as an evacuation route. While identified as a priority 5 within the report it is recommended that this would afford a significant improvement for these areas.

3.3 Electrical

Summary

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Electrical installations	Remedial action is required within both the high voltage (HV) and low voltage (LV) installations.		2		1	

Main Findings

Priority	Review	Action Assessment
4	<p>All 3 Uninterruptable Power Supplies (UPS) are contained in the same room, thereby reducing resilience if a major localised failure should occur.</p> <p>The UPS and output switchboards are a significant distance from the point of load. From this point there is no alternative supply within the internal infrastructure thereby increasing the potential for a single point of failure contrary to clause 4.6 of SHTM 06-01.</p>	<p>NHS Lothian should require IHSL to demonstrate compliance with the technical intent of SHPN 00-07 Resilience planning for healthcare estates, providing mitigation measures to maximise resilience of co-located equipment.</p> <p>NHS Lothian should require IHSL to provide agreed mitigation strategies to meet SHPN 00-07 and SHTM 06-01 to avoid internal failure of the single electrical supply to the critical electrical services such as Medical IT cabinets serving life support and other critical systems.</p>
2	<p>Medical IT system¹ final circuit cabling exceeds manufacturer and SHTM recommended values. Final circuits are in excess of the 30 cable metre length of run set out in Clause 16.34 of SHTM 06-01 and Regulation 134.1.1 of BS 7671.</p>	<p>The designer should indicate their derogation of the manufacturer recommendations, BS 7671 and SHTM 06-01 requirements. The mitigations should also include consideration of the capacitive leakage current effects associated with multiple long runs of final circuits.</p>

¹ (IT electrical system fulfilling specific requirements for medical applications. This does not refer to Information Technology)

2	<p>Child and Adolescent Mental Health Service (CAMHS) Unit Electrical installation. It was observed that there may be the potential to defeat the ligature reduction measures. In addition, the power to the CAMHS unit rooms cannot be isolated outwith the room.</p>	<p>NHS Lothian and IHSL should check that the provision of access hatches in bedrooms and en-suites are consistent with the risk assessment approach to ligature reduction measures for the CAMHS. The luminaire type (particularly bedhead) should be checked against HBN 03-01 to confirm that they meet the requirements. Isolation arrangements for CAMHS room power supplies should be checked with clinical colleagues as this may require modification.</p>
---	--	--

Detailed narrative

- 3.3.1 The high voltage and low voltage electrical systems at RHCYP & DCN were considered in relation to legislation, guidance and the lessons learned from other recent similar projects which may have an impact on the patient group and staff.
- 3.3.2 The principal legislation which is relevant to the electrical systems is The Electricity at Work Act (1989).
- 3.3.3 The principal guidance which is relevant to the electrical systems are: Scottish Health Technical Memorandum (SHTM) 06-01: Electrical services supply and distribution; SHTM 06-02: Electrical safety guidance for low voltage systems; SHTM 06-03: Electrical Safety Guidance for High Voltage Systems and British Standard (BS) 7671 (also known as the wiring regulations).
- 3.3.4 During the site investigation works it was noted that the installation has potential for the ligature reduction measures intended for the CAMHS unit to be overcome. These include the provision of access hatches in these areas, the impact resistance and fixings of certain light fittings, excessive cable lengths and omission of security fixings. It is acknowledged that NHS Lothian have produced clinical risk assessments for the CAMHS area. If not already, it is recommended that NHS Lothian take into account all consequential construction issues and the points raised in this report into their ligature reduction risk assessment. In addition, the power to the CAMHS unit rooms cannot be isolated out with the room. This should be checked with clinical colleagues as this may require modification.
- 3.3.5 It was observed that there was no Responsible Person (RP) identified for the HV or LV systems and there are limited numbers of Authorised Persons and Competent persons available on the site. There was no HV mimic diagram displayed and there is no version in the document management system; this and other items should have been highlighted as part of an Authorising Engineer's audit.
- 3.3.6 The Medical IT (IT here refers to isolated power supply not Information Technology) system which serves the critical care areas (such as theatres, recovery, intensive care, etc.) should be reviewed. The cable lengths from the distribution board to the final outlets are in excess of those required by BS 7671. There is also the potential for single points of failure due to the length (and routing) of cables between these distribution boards and the uninterruptable power supply (UPS). The power supply to medical IT systems should be fire rated / protected and it is not clear if this has been

achieved. The medical IT protective conductors are not wired from the respective medical IT cabinet which is contrary to BS 7671 fig 710.2. Typical theatre layout.

3.3.7 It was observed that fire stopping was not present in some trunking above the ceiling as it traversed wall compartment penetrations.

3.3.8 A number of the wall mounted Earth Bonding Bars (EBB) are not installed correctly. This was directly observed, additionally, dirt and debris ingress material could be spread when the EBB are opened for the annual testing. This should be considered by the service provider as part of their maintenance plan.

3.4 Medical gas installations

Summary

Review	Summary Assessment	No. of Issues per priority				
		1 (H)	2	3	4	5 (L)
Medical gas installations	The review of the medical gas installations confirmed that they have been designed installed and commissioned in accordance with the relevant standards.				1	2

Main Findings

Priority	Review	Action Assessment
4	The provision of the outlets in the following areas are slightly different from the requirements of SHTM 02-01. <ul style="list-style-type: none"> Assisted bathrooms. In-patient bed spaces. Theatre anaesthetic rooms. 	NHS Lothian should check that the installed provision meets their contract and operational requirements.
5	There is duplication within the electronic document management system and some elements are omitted.	NHS Lothian and IHSL should ensure that duplicated documents are removed and ensure all missing documentation is provided.
5	As the system has been "idle" for some time it is recommended that the systems be re-commissioned and revalidated.	NHSL and IHSL to re-commission MGPS as and when operational elements of the building become live.

Detailed narrative

3.4.1 The review of the medical gas installations (including medical gas pipeline systems (MGPS), associated dental air and vacuum systems (DAVS) and pathology laboratory gas systems (PLGS)) confirmed that they have been designed installed and commissioned in accordance with the relevant standards.

3.4.2 The commissioning of the medical gas installations had been overseen by a qualified Chartered Engineer which provided a degree of independence in the process.

- 3.4.3 The gas quality checks and identity testing were performed by a registered Quality Controller (MGPS) who again provided a degree of independence.
- 3.4.4 The provision of terminal units is generally as indicated in the guidance given in SHTM 02-01. This provision is slightly different in the following areas, which may have occurred as a result of operational requirements: -
- Assisted bathrooms.
 - In-patient bed spaces.
 - Theatre anaesthetic rooms.
- 3.4.5 It is recommended that the gas quality and identity tests are carried out again when the hospital or its departments become operational, particularly in relation to those pendants where outlets are connected to the MGPS via flexible hoses.
- 3.4.6 It is also recommended that the information in the electronic document management system is reviewed to omit any duplication and the documentation noted above be included.

End of report



3.1.2



Royal Hospital for Children and Young People and Department of Clinical Neurosciences

NHS Lothian response to actions identified in the

NSS National Services Scotland Review of Fire Systems, Electrical Systems & Medical Gas Installations



Introduction

Following the decision to delay moving to the new Royal Hospital for Children and Young People & Department of Clinical Neurosciences in July 2019, NHS National Services Scotland (NSS) were commissioned by Scottish Government to undertake a series of checks to ensure that the relevant technical specifications and guidance applicable to the new hospital had been followed and were being implemented.

On behalf of NSS, Health Facilities Scotland (HFS) have provided their report to Scottish Government. The report provides an assessment of actions required where relevant technical specifications and guidance have not been met.

NHS Lothian engaged with HFS throughout the review and in addressing follow-up actions. Updates on each action identified in the NSS Review are provided in this response.

Glossary

HFS	Health Facilities Scotland
HV	High voltage
IHSL	IHS Lothian Limited
LV	Low voltage
NSS	National Services Scotland
SHPN	Scottish Health Planning Note
SHTM	Scottish Health Technical Memorandum
UPS	Uninterruptable power supply

Management and Assurance

NSS Review: Omissions identified in key roles within the management structure, ease of access to information and possible lack of appropriately qualified personnel in safety critical roles.

NHS Lothian response: Management roles within the structure will be identified and the responsibility matrix will be reviewed on a regular basis. Archiving of information will be revised in line with guidance and contract requirements

Issue	NSS Review	NSS Action Assessment	NHS Lothian response
Structures and processes	<i>Structures and processes are not fully in place to assure NHS Lothian that the facility is being operated in compliance with contract requirements. These should be in place from the point where the building services referred to in this report are put into use.</i>	<i>NHS Lothian and IHSL should adopt the management and reporting processes as described in SHTM 00 - Best Practice Guidance for Healthcare Engineering and the SHTMs for each critical engineering service.</i>	Contract management arrangements are now following SHTM 00.
Contract requirements	<i>Some of the records and documents necessary for the effective and safe operation of the hospital could not be found.</i>	<i>NHS Lothian should require IHSL to rectify the filing structure of the documentation and verify that the information contained is both complete and accurate as required by the Electricity at Work Act (1989) and the Construction (Design and Management) Regulations 2015.</i>	Additional information has been requested from IHSL. The building information and operational manual are currently being reviewed and quality assured by IHSL. The final suite of documents will be transferred on hard drive from MPX to IHSL/NHSL in Feb 2020 as agreed.
Responsible persons	<i>There appeared to be a lack of qualified and experienced Authorised Persons and Competent Persons for both the HV and LV electrical installations.</i>	<i>The number of HV and LV Competent Persons should be reviewed. NHS Lothian should require IHSL satisfy themselves that adequate numbers are provided as required by the Electricity at Work Act (1989) and SHTM 00, SHTM 06-01 and SHTM 06-02.</i>	The numbers and qualifications of the Competent Persons are agreed within NHSL. Those for IHSL will be provided.

Issue	<i>NSS Review</i>	<i>NSS Action Assessment</i>	NHS Lothian response
Responsible persons	<i>There is no responsible person formally identified for the high voltage electrical installation.</i>	<i>NHS Lothian should require IHSL satisfy themselves that a suitable responsible person is appointed as required by the Electricity at Work Act (1989) and SHTM 00, SHTM 06-01 and SHTM 06-02.</i>	The appointment and qualifications of the Competent Person will be sought from IHSL.

NHS Lothian response to NSS National Services Scotland Review of Fire Systems, Electrical Systems & Medical Gas Installations in RHCYP & DCN



Fire

NSS Review: Action is recommended to include remotely resettable smoke dampers within the ventilation system serving all sleeping accommodation areas where ducting leads to a corridor serving as an evacuation route Identified fire doors should be upgraded.

NHS Lothian response: The facility has received the necessary building warrant and completion certification to demonstrate fire safety and compliance with legislation. However, the opportunity to enhance the built environment is recognised. Risk assessment and prioritisation will be undertaken in relation to the fitting of smoke dampers. Fire doors identified as requiring modification will be upgraded.

Issue	NSS Review	NSS Action Assessment	NHS Lothian response
Fire and smoke dampers	<i>Fire and smoke dampers are installed at compartment and sub-compartment level. However, smoke dampers are not fitted to corridors serving sleeping accommodation.</i>	<i>Remotely resettable fire and smoke dampers should be fitted to prevent the travel of smoke between sleeping accommodation areas where ducting leads to a corridor serving as an evacuation route.</i>	Risk assessments will be undertaken to consider the level of enhancement this provides in different areas, the prioritisation of these reflecting other mitigating measures in place and the overall risk context.
Fire doors	<i>Based on sample inspection some doors within the escape routes from sleeping accommodation are not fire door sets.</i>	<i>NHS Lothian and IHSL should ensure the appropriate fire rated door sets are installed.</i>	Risk assessments will be undertaken to consider the level of enhancement this provides.
Fire doors	<i>The half leaf “penny farthing” doors are not fitted with self-closing devices.</i>	<i>Half leaf doors should be fitted with the same self-closing device as on the main leaf.</i>	Risk assessments will be undertaken to consider the level of enhancement this provides.
Snagging	<i>A number of remedial snagging and housekeeping issues were identified; damage to fire doors, seals and workmanship; penetrations in compartment walls; delineation of rooftop escape.</i>	<i>A number of the items have already been identified and logged by NHS Lothian via the helpdesk process. NHS Lothian and ISHL should ensure all works are undertaken prior to occupation. Procedures should be adopted to ensure rooftop escape remains clear.</i>	This work is in progress and will be completed and/or in place prior to occupation.

NHS Lothian response to NSS National Services Scotland Review of Fire Systems, Electrical Systems & Medical Gas Installations in RHCYP & DCN

Electrical

NSS Review: Remedial action is required within both the high voltage (HV) and low voltage (LV) installations.

NHS Lothian response: The actions required have been progressed as part of the contractual arrangements (Feb 2019) or simultaneously to the review report. The validation and verification evidence will be submitted for further review

Issue	NSS Review	NSS Action Assessment	NHS Lothian response
Resilience	<i>All 3 Uninterruptable Power Supplies (UPS) are contained in the same room, thereby reducing resilience if a major localised failure should occur.</i>	<i>NHS Lothian should require IHSL to demonstrate compliance with the technical intent of SHPN 00-07 Resilience planning for healthcare estates, providing mitigation measures to maximise resilience of co-located equipment.</i>	IHSL will be required to demonstrate compliance with the technical intent of SHPN 00-07.
Resilience	<i>The UPS and output switchboards are a significant distance from the point of load. From this point there is no alternative supply within the internal infrastructure thereby increasing the potential for a single point of failure contrary to clause 4.6 of SHTM 06-01.</i>	<i>NHS Lothian should require IHSL to provide agreed mitigation strategies to meet SHPN 00-07 and SHTM 06-01 to avoid internal failure of the single electrical supply to the critical electrical services such as Medical IT cabinets serving life support and other critical systems.</i>	IHSL will be required to provide the agreed mitigation strategies to meet SHPN 00-07 and SHTM 06-01.
Medical devices	<i>Medical IT system¹ final circuit cabling exceeds manufacturer and SHTM recommended values. Final circuits are in excess of the 30 cable metre length of run set out in Clause 16.34 of SHTM 06-01 and Regulation 134.1.1 of BS 7671.</i>	<i>The designer should indicate their derogation of the manufacturer recommendations, BS 7671 and SHTM 06-01 requirements. The mitigations should also include consideration of the capacitive leakage current effects associated with multiple long runs of final circuits.</i>	IHSL will be required to provide their derogation of the manufacturer recommendations, BS 7671 and SHTM 06-01, and any mitigations provided.
CAMHS	<i>Child and Adolescent Mental Health Service (CAMHS) Unit Electrical installation. It was observed that there may be the potential to defeat the ligature reduction measures.</i>	<i>NHS Lothian and IHSL should check that the provision of access hatches in bedrooms and en-suites are consistent with the risk assessment approach to ligature reduction measures for the CAMHS.</i>	Clinical risk assessments have been completed and include any appropriate mitigations. Supplier specification for the Luminaire has been evaluated. Final

¹ (IT electrical system fulfilling specific requirements for medical applications. This does not refer to Information Technology)

Issue	<i>NSS Review</i>	<i>NSS Action Assessment</i>	NHS Lothian response
	<i>In addition, the power to the CAMHS unit rooms cannot be isolated outwith the room.</i>	<i>The luminaire type (particularly bedhead) should be checked against HBN 03-01 to confirm that they meet the requirements. Isolation arrangements for CAMHS room power supplies should be checked with clinical colleagues as this may require modification.</i>	inspection prior to occupation will confirm that all access hatches and luminaires are consistent with the risk assessment. Adjustment to small power distribution to CAMHS bedrooms will be undertaken as necessary.

NHS Lothian response to NSS National Services Scotland Review of Fire Systems, Electrical Systems & Medical Gas Installations in RHCYP & DCN



Medical Gas Installations

NSS Review: The review of the medical gas installations confirmed that they have been designed installed and commissioned in accordance with the relevant standards.

NHS Lothian Response: The medical gas installations will be fully re-commissioned and validated prior to occupation

Issue	NSS Review	NSS Action Assessment	NHS Lothian response
Outlets	<p><i>The provision of the outlets in the following areas are slightly different from the requirements of SHTM 02-01.</i></p> <ul style="list-style-type: none"> • <i>Assisted bathrooms.</i> • <i>In-patient bed spaces.</i> • <i>Theatre anaesthetic rooms.</i> 	<p><i>NHS Lothian should check that the installed provision meets their contract and operational requirements.</i></p>	<p>This will be checked by 30th November.</p>
Documentation	<p><i>There is duplication within the electronic document management system and some elements are omitted.</i></p>	<p><i>NHS Lothian and IHSL should ensure that duplicated documents are removed and ensure all missing documentation is provided.</i></p>	<p>The building information and operational manual are currently being reviewed and quality assured by IHSL.</p>
Commissioning	<p><i>As the system has been "idle" for some time it is recommended that the systems be re-commissioned and revalidated.</i></p>	<p><i>NHSL and IHSL to re-commission MGPS as and when operational elements of the building become live.</i></p>	<p>This will be completed prior to occupation.</p>



4.

Project title	Royal Hospital for Children and Young People and Department of Clinical Neuroscience
Subject	NHSL Fire Review
Location	NHSL Project Office, Clinical Management Suite, RHCYP+DCN, Edinburgh
Date and time of meeting	25/10/2019 10:00
Recorded by:	KB
Circulation:	Via Email

Attendees

Name	Initials	Company/organisation
Alex McMahon	AMc	Nurse Director - Chair
Tracey Gillies	TG	Medical Director
Gwyneth Bruce	GB	CAMHS Head of Occupational Health
Margaret Monan	MM	REH Clinical Nurse Manager
Fiona Halcrow	FH	RHCYP and DCN Project Manager
Michael Pearson	MP	General Manager Surgical Services RIE
Fiona Mitchel	FM	Director Woman and Children's Services
George Curley	GC	Director of Facilities
Brian Douglas	BD	Head of Estates
Julia McLachlan	JM	Charge Nurse Ward 33 DCN
Carol Patterson	CP	Charge Nurse Ward 31 DCN
Hester Niven	HN	Clinical Nurse Manager DCN
Dorothy Hanley	DH	RHCYP Commissioning Lead NHS Lothian
Lindsay Guthrie	LG	Infection Control Lead Nurse
Eddie Doyle	ED	Associate Medical Director RHSC and Women Services
Ronnie Henderson	RH	Commissioning Manager, Hard FM, NHS Lothian
Brian Currie	BC	Project Director NHS Lothian
Marie Elen	ME	Clinical Nurse Manager – RHSC Surgery and Theatres

Apologies

Name	Initials	Company/organisation
Barrie Muirhead	BM	Clinical Services Manager

Item	Text	Action
1.	<p><u>Introduction</u></p> <p>TG and AMc introduced the context and purpose of the meeting. NSS are to provide a report to Scottish Government on whether relevant technical specifications and guidance applicable to the RHCYP + DCN Project are being followed and implemented. The focus of this report is the provision of fire, electrical and medical gas systems.</p> <p>We anticipate NSS will recommend an action to include remotely resettable fire and smoke dampers within the ventilation system serving all sleeping accommodation areas where ducting leads to a corridor serving as an evacuation route.</p> <p>It should be emphasised that the facility as constructed is safe and fully compliant with all current regulations and guidelines.</p> <p>It should be clear that there is a Building Warrant and Building Control, SFRS and NHSL Fire Officers are confident that this building is safe and this NSS recommendation is an enhancement and betterment.</p>	

	<p>All fire compartments and sub compartments are fitted with fire and smoke dampers. The enhancement involves adding fire and smoke dampers between each single room and escape corridor within each compartment. Adding fire and smoke dampers between each room is also mentioned by NSS as a mechanism to prevent smoke travelling between rooms.</p> <p>This meeting should be seen as a scoping exercise to determine how NHSL ultimately respond to this recommendation from NSS.</p>	
2.	<p><u>Discussion</u></p> <p>GC identified the difference between how the dampers are activated. Smoke and fire dampers are activated by the fire alarm system. The fire damper is activated by a fusible link which will break when a certain temperature is reached.</p> <p>TG elaborated on what is the anticipated beneficial effect on patients if the enhanced design, recommended by NSS, is adopted? Conversely, what is the risk, if any, to patients if this recommendation is not adopted?</p> <p>The NSS report will note a Level 5 categorisation (observation and improvement activity) and the supporting narrative will explain that additional fire and smoke dampers is considered an enhancement for patient and public safety. NHSL also need to consider the statement from NSS that there is an opportunity to improve the functionality of the design and use of the building prior to occupation.</p> <p>NHSL must balance the risk of continued occupation of the current buildings against this currently unquantified enhancement to the safety of the new building. An additional complication is that we cannot currently advise how much of a benefit it would be. i.e. what extra time for evacuation is gained and whether that is of practical benefit.</p> <p>Members need to determine what patient groups are particularly vulnerable or likely to be unsupervised for longer periods of time i.e. in critical care there will not be much unsupervised time in the department, where are fires more likely to start and what are the adjacent departments?</p> <p>NHSL will ultimately be accountable for actions taken and we need to consider, if the works are undertaken, will it be phased over time and if the changes are not being made there needs to be sufficient evidence why. Views needed from inhouse Fire and H&S teams to identify clinically lead priority areas. We need to identify if some departments need any agreed works done in advance of moving and what other areas can be phased during occupation.</p> <p>BC explained a sketch of the current fire compartment: A compartment has a 2hr fire resistance and patients are evacuated from one compartment to another. Occupants within rooms within the compartment move into an escape corridor. Fire dampers are located between rooms and escape corridor. NSS have recommended fitting fire and smoke dampers between corridor and rooms and also potentially between rooms. Effectively changing each individual bedroom into a compartment.</p> <p>Scenario: what happens in terms of spread of smoke for current design (1), f+s</p>	

	<p>dampers between room and corridor (2) and then between room and room (3). BC noted a fire engineer is best placed to explain this but in their absence GC responded:</p> <ol style="list-style-type: none"> 1. Smoke would transfer between the two adjacent bedrooms and transfer along the ventilation route into all rooms. Once filled, the smoke would then start moving into new ventilation route and corridor. 2. Smoke can't pass through F+S so would pass through bedrooms but not to corridor. 3. Smoke would be contained in bedroom. <p>Noted that irrespective of these scenarios, the existing fire alarm system would be activated with smoke triggering the alarm and starting evacuation and in areas with the highest risk there is already additional measures in place.</p> <p>Possible causes of fires might be::</p> <ol style="list-style-type: none"> 1. Deliberate fires (waste bin etc) – where is this a higher risk i.e. CAMHS 2. Personal Equipment – phone chargers, e-cig etc – this is a significant risk. [It would be useful to explore mitigation or reducing the risk. i.e. usb ports have provided by charity in some areas.] <p>It was agreed that colleagues should breakout into individual departments to understand the risks and determine queries that need input from the Fire Officers, look at 'what if' scenarios and who else needs to be consulted for the next stage of review.</p> <p>LG recommended setting up a patient risk profile and assessing each department against it as follows:</p> <ul style="list-style-type: none"> • Smoking • Cognitive impairment • Personal device use • Impaired mobility • Medical equipment use • Medical gas use • Behaviour risk/wilful fire raising 	
3.	<p><u>After Break</u></p> <p>The teams returned after 45 minute breakout.</p> <p>AMc noted the breakout generated lots of good conversation.</p> <p>In Summary:</p> <p>CAMHS:</p> <ul style="list-style-type: none"> • Discovered they may have smoke and fire dampers in the bedrooms – RH to check. – <i>Post meeting note – Fire Officer has confirmed fire dampers only.</i> • Still a need for workshop given the client group's high vulnerability, they are isolated on the ground floor at night. 	

	<ul style="list-style-type: none"> • The CAMHS workshop should include the members from the Clinical team and new service manager, H&S and Fire Officers. • There is a high potential for use of personal devices and SOP needed. <p>DCN</p> <ul style="list-style-type: none"> • Discussed areas where there may be increased risk of this type of fire • Not able to discern any patient groups or placement within 2nd floor CDN areas that should be prioritised • Based on discussion identified the following areas for prioritisation: <ul style="list-style-type: none"> ○ Isolation rooms (2) ○ Enhanced anti ligature fitting rooms (2) ○ Relatives overnight room(1) ○ Videotelemetry rooms (3) • Wondered whether the rooms adjacent to the fire doors within the wards should be prioritised (subject to ducting layout) <p>RHCYP</p> <ul style="list-style-type: none"> • It was deemed that highest priority departments are Critical Care and Haem/O due to additional effort required to remove patients from these areas. • Additionally, if fire and smoke dampers were to go in at a later date it would not be possible to move these patients into another area. [This was deemed to be the same for CAMHS.] • The size of compartment, number of sleeping areas and number of staff night and day were also consider to affect the level of risk. Each compartment needs to be reviewed with each department. • If works happen after moving, we need to understand the affect of AHU serving more than one area. • Future workshops should be split by department with the compartments, general arrangement and vent layouts overlaid. <p>Workshops to be undertaken by 08/11/19. JG needs to attend all three so three separate days need to be arranged.</p> <p>In preparation for the workshops the following needs to be completed:</p> <ul style="list-style-type: none"> • Need to consider the most effective medium for review – paper drawings/CAD or BIM on screen etc (Project Team) • RMCD to be discussed with RMCD/RHCYP/NHSL fire officers.(Project Team) • Need to know when technical advice is available and if any further NSS advice is being provided. (Project Team) • Very helpful to have a set number of questions to answer in the workshops (Project Team to prepare): <ul style="list-style-type: none"> • What are the circumstances when this is an enhancement to public and patient safety? • How material is the enhancement? • When is this risk likely to occur? In what sort of circumstances? • Or where? • Are there particular aspects of the fire strategy that would be strengthened by the addition of smoke dampers? 	
--	---	--

	<ul style="list-style-type: none">• What is the additional benefit of smoke dampers over smoke detection and alarm• Are there places where it makes very little difference• What is the additionality over the smoke dampers between isolation rooms (see AHUs)• Summary/narrative in plain english of existing fire strategy and the NSS enhancement by 8th Nov. (Project Team, Motts and Fire Officer)• Attendees for the workshops to include Fire Officers, Fire Engineer, H&S and Partnership (Commissioning Managers to arrange). <p>Following the workshops, members need to update the ESG and OSB.</p>	
--	---	--



5.

Oversight Board Commercial Sub-Group NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Draft Terms of Reference

Date Published: October 2019
Version: V1.0
Document Type: ToR
Review Date: N/A

DOCUMENT CONTROL SHEET



Key Information:

Title:	Terms of Reference
Date Published/Issued:	
Date Effective From:	
Version/Issue Number:	1.0
Document Type:	ToR
Document Status:	Draft
Author:	
Owner:	
Approver:	
Approved by and Date:	
Contact:	
File Name:	

Approvals: *This document requires the following signed approvals:*

Name	Title	Date	Version

Distribution:

This document has been distributed to:

Name:	Date of Issue:	Version:

1.	Name of the Board
	Oversight Board Commercial Sub-Group: NHS Lothian Royal Hospital for Sick Children, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services
2.	Background
	<p>Following the decision to halt the planned move to the new Hospital facilities on 9 July an Oversight Board was established to provide advice to ministers on the readiness of the facility to open and on the migration of services to the new facility.</p> <p>Work has been initiated to identify the solutions needed to enable migration of services to the new facility. In order to provide co-ordinated advice to ministers, an Oversight Board has been established to which will seek assurance from NHS Lothian that according to its due diligence and governance, the facility is ready to open; and from NHS NSS that its agreed diligence has been successfully completed.</p> <p>In order to enact these solutions, commercial arrangements may need to be entered into or put in place to achieve the desired outcomes that will require scrutiny and option assessment.</p>
3.	Scope of work
	<p>The Oversight Board Commercial Sub-Group will report to the Oversight Board and provide advice and recommendations in the following areas:</p> <ul style="list-style-type: none"> • To consider the short, medium and long-term legal and financial consequences of emerging solutions that may be employed to achieve the overall desired outcome and to develop and propose options for delivery of those solutions in the light of an assessment of risk and cost • To identify and consider the commercial implications of any legally binding agreements to be entered into by NHS Lothian, whether by way of amendment to the Project Agreement or as free-standing Settlement Agreements, letters of intent or other formal document to which NHS Lothian or other public sector party is a signatory • To identify and consider any circumstances under which, over the entire contract period, the risk profile of the project may be altered, public sector liability increased or obligations altered, and recommend any actions to be taken to mitigate or remove increased risk to the public sector.
4.	Membership

The Board membership will be:

Christine McLaughlin, Chief Finance Officer, Scottish Government
 Susan Goldsmith, Director of Finance, NHS Lothian
 Peter Reekie, Chief Executive, Scottish Futures Trust
 Colin Sinclair, Chief Executive, NHS National Services Scotland

Attending the Board to provide advice and assurance will be:

Iain Graham, Director of Capital Planning and Projects, NHS Lothian
 Michael Pryor, Business partner, NHS Lothian
 Donna Stevenson, Scottish Futures Trust
 Paul McKenna, NHS National Services Scotland
 Bruce Barron, Turner and Townsend
 Rod Munro, Macroberts LLP
 Jennifer McKay, Macroberts LLP
 Alan Martin, EY

5. Governance

The Board will provide advice to the Oversight Board.

6. Meetings

The Sub-Group will commence its work in October 2019 and will meet frequently for the first 3 months as appropriate and will agree a plan of work which will determine future meetings.

7. Outputs

The Board will provide advice to the Oversight Board on the decisions set out in the scope



Oversight Board: 31st October 2019

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Commercial Sub Group Update

The contractual mechanism to secure the Board changes required to rectify Critical Care ventilation, and make enhancements to Haematology/Oncology ventilation (referred to in this note as the “Additional Ventilation Works”) is through a High Value Board Change. The process for this is set out in the Project Agreement (“PA”) with IHSL. As the Project is in its operational phase, despite the hospital not being occupied, any Board Changes are passed onto Bouygues (“BYEs”) as IHSL’s FM provider. Despite the Board issuing the Changes on the 30 August, and 9 September and IHSL accepting that they have an obligation to deliver the Additional Ventilation Works via the Change Protocol in the PA, IHSL have not yet secured BYEs’ agreement to deliver the Additional Ventilation Works due to commercial considerations.

As a consequence 4 options have been considered by a sub group of the Oversight Board with NHS Lothian’s legal advisers to secure delivery of the Additional Ventilation Works: Formal change protocol, a Settlement Agreement, Termination of the Contract, and Buy out the SPV (sub debt).

With no known previous terminations of SPVs, or buying out of the SPV it was difficult to assess the timeline for delivery of these 2 options, particularly termination where Senior Funders (M&G and EIB) have “step in rights”. Even if those rights were not exercised (unlikely) the Board would still require to procure a contractor to undertake the works after the termination or buy out procedure was concluded.

For this reason the sub group supported NHS Lothian’s view that it should continue to use the Change Protocol as set out in the PA, but in parallel commence a dialogue with IHSL to ascertain whether a suitable compromise could be achieved which would secure delivery of the Additional Ventilation Works to a swifter timeframe than that achievable adopting the Change Protocol without the Board making unacceptable concessions. Another important part of the rationale for adopting this approach is that the Board anticipate that other additional works (such as smoke dampers) may also require to be addressed by IHSL and if an acceptable compromise can be achieved this is more likely to secure a swifter programme for delivery of these additional works. Finally, it should be noted that the Change Protocol itself recognises that in many instances it will be necessary to make changes to the project documents to reflect Changes. Accordingly, it is likely that a Supplemental Agreement will be required even if the Additional Ventilation Works are delivered under the Change Protocol so it is considered unlikely that the parallel discussions will be abortive.

The first priority of the Board is to ensure that BYEs are secured to undertake the Additional Ventilation Works. If this is not achieved the timeline will be compromised. With this objective

there have been 2 meetings recently with both IHSL and BYEs (and several meetings with IHSL since July)

These meetings established that there are 2 commercial issues which are hampering progress with BYEs agreeing to deliver the Additional Ventilation Works (on behalf of IHSL). Strictly speaking the Board should not be concerned about BYEs' commercial issues because the obligation rests with IHSL to deliver the Additional Ventilation Works. However in reality there is risk to the timeline of the Additional Ventilation Works if IHSL require to secure another contractor, as this is likely to extend their programme for delivery (albeit there are some controls in the Change Protocol which assist in limiting any extensions to the programme, such as self-delivery by the Board of the Changes in certain specified circumstances. These controls will continue to be monitored and utilised should that be considered necessary and / or appropriate).

Another significant risk to the timeline is the requirement for additional works (e.g. smoke dampers). As outlined above, the Board is seeking to mitigate any potential delays as a consequence of a requirement for additional works by progressing commercial discussions with IHSL. However, if additional works are required (the requirement and scope of any additional works is not yet clear) this may extend the programme

To expedite progress of the design while these commercial and technical issues are being discussed between the Board, IHSL and BYEs the Board issued a Letter of Intent in relation to the initial design phase for the Additional Ventilation Works (providing cover for the costs of this work) in an attempt to secure some progress. However, both IHSL and BYEs have resisted engaging in any constructive dialogue about the progress of the design (under the letter of intent or otherwise) until all the commercial issues have been resolved.

The 2 key commercial issues are the (1) operation of the current Payment Mechanism given that we are now in the operational phase, and (2) Indemnities being sought by sought by IHSL/BYEs against any risk that warranties for the Ventilation system (held by Multiplex) are compromised by the Additional Ventilation Works. In assessing both of these issues the Board requires to consider not only the current position but the likely impact on the effectiveness of the Project Agreement's payment mechanism for the remainder of the contract period – 23 years.

Current Payment Mechanism

Within the Payment Mechanism “commercials” there are 3 issues:

1. historic deductions (up until August £769k has been deducted);
2. a request from BYEs to certain elements of the payment mechanism being subject to an inspection approach to elements of the payment mechanism while the building is unoccupied and defect works are being undertaken including by MPX on Air handling Units; and
3. Agreeing that once the Board changes commence the project is deemed “in construction” and certain reliefs from the operation of the Payment Mechanism will be documented in return for unencumbered occupation of the hospital to undertake the

Additional Ventilation Works. This will also require to address partial occupation when DCN migrates over.

An initial workshop is planned for the 30 October to consider the first 2 areas. Clearly if any errors are identified in the historic deductions this will be rectified and repayment made. It is also hoped that a pragmatic way to approach the operation of the Payment Mechanism while the building is unoccupied will be agreed.

It is anticipated that the third issue will be addressed as part of the discussions regarding implementation of the changes.

Indemnity

The second commercial issue stems from the interface between the original ventilation works undertaken by MPX and the Additional Ventilation Works which will be undertaken by BYEs. BYEs have indicated that in undertaking the Additional Ventilation Works there is a risk that the warranties granted by the sub-contractors employed by MPX to deliver the original ventilation system might be invalidated and / or that MPX may seek to deny any future liability for the ventilation system on the basis that any future deficiencies in the system stem from the Additional Ventilation Works rather than the original works to the ventilation system undertaken by MPX. Whilst the Board recognise that there are interface issues which require to be addressed as a result of undertaking the Additional Ventilation Works this is not an unusual scenario in the context of a project of this nature and there are existing provisions that the Board considers should provide BYEs and MPX with adequate protection. Nonetheless, the Board recognises the need to try to unlock the impasse and seek to secure a programme which delivers the Additional Ventilation Works as quickly as reasonably practicable.

The extent of the indemnity being sought by IHSL is not clear. Initially, they made a request for an all encompassing indemnity in the event of any failure of the ventilation system. This involved a significant change to the existing risk profile for the project. In particular, the effect of such an indemnity would be to limit the Board's ability to apply deductions if there were any future failures of the ventilation system and also to have rectification works undertaken on the ventilation system. IHSL have now made a revised request for an indemnity against any losses if MPX dispute liability following a failure of the ventilation system and it is determined following a formal dispute resolution process that MPX is liable but MPX fail to meet that liability. IHSL have agreed to provide draft wording for an indemnity on that basis.

However, it remains unclear precisely what the proposed indemnity is intended to cover and we have sought further clarity from IHSL. In particular, from the Board's perspective we require to get certainty that IHSL / BYES will undertake any necessary repair work to the ventilation system should any performance failure or availability failure arise with the ventilation system in accordance with the relevant provisions in the project documents. That certainty has not been delivered in the draft proposal received from IHSL and the Board has followed up on this issue with IHSL. A response is awaited. Pending receipt of that response, the commercial sub-group, in conjunction with the Board's legal advisors, are giving consideration to the form of indemnity that the Board may be prepared to offer to IHSL in return for a commitment to undertake the Additional Ventilation Works to an expedited programme.

Next steps

Following the workshop on the payment mechanism the Board will agree reimbursement of any deductions where appropriate. The proposed framework for the payment mechanism will require to be endorsed by the commercial sub group.

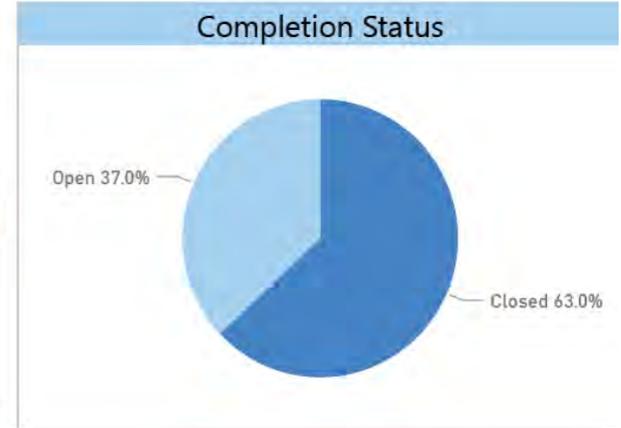
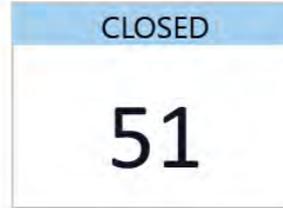
In terms of the Additional Ventilation Works the Board continues to adhere to the Change Protocol as set out in the PA. However it has indicated, without prejudice, to IHSL and BYEs that it is prepared to enter into a Settlement Agreement which provides some form of indemnity to IHSL/BYEs whilst the works are being undertaken and to agree an “in construction” approach to the payment mechanism during this phase. In return the Board will require programme certainty and assurance that the Board’s rights under the payment mechanism going forward are not diluted. Commercial discussions will continue with IHS / BYEs to ascertain whether a suitable compromise can be achieved on this basis.

Susan Goldsmith
NHS Lothian
30 October 2019

RHCYP+DCN - Venla on Acon Log Dashboard

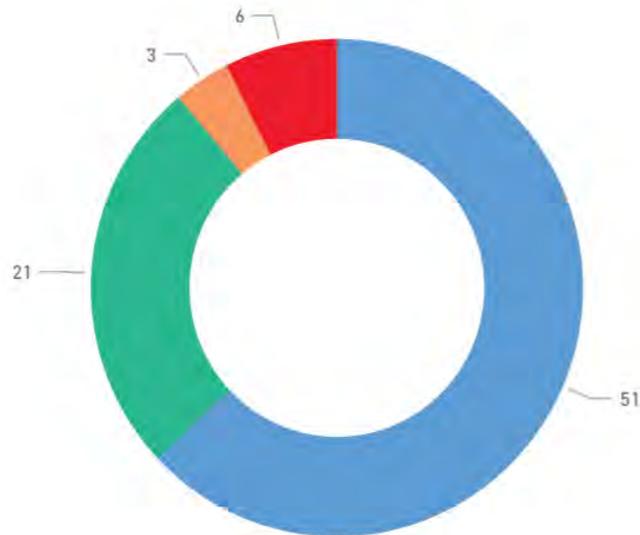
6.1

25/10/2019



Status against Target Date

- Due Status
- Closed
 - Acons on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP



RHCYP+DCN - Water Safety Acon Log Dashboard

6.2

25/10/2019

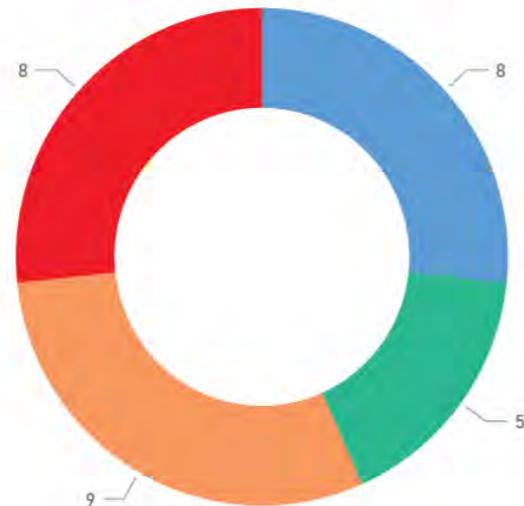
OPEN
22

CLOSED
8



Status against Target Date

- Due Status
- Closed
 - Acons on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN

OPEN
18

CLOSED
6



Priority for RHCYP

OPEN
19

CLOSED
6



From: [Graham, Chris](#)
Subject: RHCYP+DCN Oversight Board Papers - 13-11-19..
Date: 12 November 2019 12:00:45
Attachments: [image001.jpg](#)
[image002.png](#)
[image003.gif](#)
[191113 Oversight Board Papers.pdf](#)
Importance: High

Dear Colleagues

Please find attached the papers for tomorrow's oversight board meeting to be held at 8am in Meeting Room 5, Waverley Gate

For ease of navigation please note:

the PDF contains bookmarked items  as well as hyperlinks from the agenda to items in **blue**;
the **blue** item numbers take you back to the agenda and;
the **green** buttons at the end of items take you back to the start of that item.

Please note that the dial in details for the meeting remain the same:


Participant code – 

Kind regards
Chris

Chris Graham
Secretariat Manager


Achieving [deadlines](#) means you are respecting your colleagues and supporting effective decision-making.



The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>



Scottish Government
Riaghaltas na h-Alba
gov.scot



Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Wednesday 13th November 2019, 8:00 – 9:30am

Venue: Room 5, Waverley Gate, EH1 3EG

AGENDA

1.	Chair's Welcome and Introductions	FMc	V
	Apologies: Alex McMahon, Sorrel Cosens		
2.	Minutes of previous meeting for approval: 31 October 2019	FMc	*
3.	Matters Arising		
	3.1 Fire Safety and Buildings Science Research	CS	V
4.	Senior Programme Director's Report	MM	*
5.	Commercial Progress Update	SG	V
6.	Update from Fire Safety Improvement Workshops	BC	*
7.	Service Continuity on Existing RHSC & DCN Sites	TG	*
	STANDING AGENDA ITEMS		
8.	Technical Reviews progress		
	8.1 Ventilation	BC	V
	8.2 Water Quality & Sampling	TG/BC	V
	8.3 Fire	BC	V
	8.3.1 Enhancements to Fire Safety – Draft High Value Change Notice	BC/MM	*
	8.3.2 Fire Risk Assessment Matrix	BC/MM	*
	8.4 Electrical	BC	V
9.	Communications		
	9.1 Staff communications	JM	V
10.	Any Other Competent Business		
	10.1 Helpline	FMc	V
11.	Date of Next Meeting		
	Thursday 21 November 2019, 8am, Room 5, Waverley Gate		

* = paper attached

v = verbal report

p = presentation

= paper to follow

2.

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 31 October 2019 in Meeting Room 5, Waverley Gate, Edinburgh.

Present: Professor F. McQueen, Chief Nursing Officer, Scottish Government (chair); Ms S. Goldsmith, Director of Finance, NHS Lothian; Ms T. Gillies, Medical Director, NHS Lothian; Professor A. McMahon, Nurse Director, NHS Lothian; Mr P. Reekie, Chief Executive, Scottish Futures Trust and Ms C. McLaughlin, Chief Finance Officer, Scottish Government.

Present by Telephone: Mr C. Sinclair, Chief Executive, NHS National Services Scotland and Mr G. Archibald, Joint Staff Side Representative.

In Attendance: Mr B. Currie, Project Director, NHS Lothian; Mr C. Henderson, Scottish Government; Ms J. Mackay, NHS Lothian Director of Communications; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Ms L. Aitken, Communications, Scottish Government; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

In Attendance by Telephone: Mr G. James, Director of Facilities, Health Facilities Scotland; Mr J. Miller, Director, Procurement, Commissioning & Facilities, NHS National Services Scotland; Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government and Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian.

Apologies: Ms M. Morgan, Senior Programme Director and Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side).

1. Minutes of previous meetings – for Approval

1.1 The minutes of the meetings held on 17 October 2019 and 24 October were accepted.

2. Matters Arising

2.1 Review of Fire Systems, Electrical Systems and Medical Gas Installations

- Final report published and received (30/10)
- Noted that NHSL response had also been published (30/10).

3. Note of initial workshop on Risk Assessments for proposed Fire Safety Improvements

- Workshop had been held on 25/10 with senior management and clinicians from DCN, RHSC and CAMHS Team
- Further workshops scheduled for 05/11 & 06/11 and questions to consider at these are being developed. NSS to be invited to attend as part of the collegiate approach. To be discussed out with the meeting.

AMcM/CS

- Workshops to consider development of scheme of prioritisation and to consider unique characteristics and requirements of individual areas/units, e.g. CAMHS may have a higher risk, being isolated at night and given a greater use of devices/chargers.
- Consideration to be given to the possibility of smoke scenario demonstration on site or computer modelled, for sharing with the wider stakeholder group
- Noted that it was difficult to confirm a time line for the work as the output from the workshops was unknown
- Not known what any technical impact of enhancement work to smoke/fire dampers could be on the current ventilation system, the balance of risk in bringing work streams together had to be considered as did any impact on the overall opening time frame.
- Academic papers around building science to be investigated. NSS to take this forward through BRE and Glasgow Caledonian University.

CS

- There is a need to see the interdependencies between the three main risk areas set out – fire, ventilation and existing sites – and their impact on timescale. A matrix to be developed for this.

MM

4. Commercial Progress Update

- Commercial update noted and Commercial Sub Group terms of reference agreed subject to the addition of Mary Morgan to the membership.

SG

5. Technical Reviews progress

5.1 Ventilation dashboard report

- No movement from last week's position. Commitment from IHSL on progression of key outstanding issues is expected
- Ventilation works in critical care and oncology/haematology – potential opportunity to split number of Air Handling Units (AHU) serving isolation rooms to assist with ongoing maintenance
- AHU rectification works progressing and regular meetings happening. Authorised Engineer visit tomorrow (01/11)

5.2 Water quality dashboard report

- Effected 57 outlets now disinfected or replaced. Testing started on 28 October and first results would take 16 days to receive
- Enhanced flushing regimes continues

5.3 Fire, Electrical & Medical gases

Fire

- Covered above at item 3.

Electrical

- IHSL response on the 3 remaining issues still awaited (UPS grouping; IPS Cabling; Isolation Power Supply in CAMHS Bedrooms) – meeting scheduled for next week (5/11)
- Draft board changes prepared and ready to go forward if needed to implement works

Medical Gases

- Agreed to remove Medical Gases from future agendas as work now into 'business as usual'

6. Communications

6.1 Staff communications

- Noted that press coverage following the publication of the Part 2 report had been as expected and that follow up enquiries for the Sunday papers would probably be received
- Noted that the Part 2 NSS Report, NHSL Response and Cabinet Secretary letter to staff had been issued yesterday and there was potential to undertake walkabouts for staff
- Noted that the Chair had met with the APF this week and that this had been a positive meeting

6.2 Requests for information

- Noted that all requests to date (31/10) had now been cleared
- New requests were anticipated following the publication of the Part 2 report yesterday
- Noted that the Cabinet Secretary would be appearing before the Health and Sport Committee on 19 November so there was a need to prepare information ahead of that date.

7. Any Other Competent Business

7.1 Section 22 Presentation – It was noted that the presentation date of 12 December 2019 would most likely now change given the General Election announcement.

7.2 Formal thanks NSS and NHSL teams – The oversight board thanked the NSS team for their work on the production of the reports, which had now concluded. It was acknowledged that this was a position that most people had not been in before and had been difficult for everyone involved. The ongoing work of the NHSL team was also recognised.

8. Date of Next Meeting

8.1 As ongoing work was in progress, and in particular the two workshops on fire dampers were being held on 6 & 7 November it was agreed the next meeting of the group would be in the week commencing 11 November 2019. Date to be confirmed by Scottish Government colleagues.

CH

RHCYP & DCN - Senior Programme Director's Report

Report Date	12/11/2019	Programme RAG Status (now)	A
Submitted by	Mary Morgan	Programme RAG Status (previous Oversight Board)	A

General Update	Following publication of the final NSS report (Part 2), the detailed action plan has been received from HFS and is being collated into the NHSL action logs. It is not yet possible to determine the overall programme milestones and dependencies due to outstanding activities (Fire Safety Improvements). The Commercial sub group continues to meet. Several meetings with IHSL, MPX & BYES have taken place. IHSL have submitted a high level proposal for completion of HVC (Haem Onc & Critical Care) - a positive step forward. While the commercial detail has still to be worked through, technical teams are meeting on
-----------------------	--

Project Workstreams	RAG Status	Comments
Ventilation	A	2 high value Board Change Notices issued to IHSL: critical care and Lochranza Ward ventilation. IHSL have confirmed that the stage 1 proposals will be submitted 13th November 2019 and have provided indication of a delivery plan. Workstream Status to Amber due to a delivery proposal for High Value Changes. Other Ventilation issues (Theatres corridor, Scrub and Anaesthetic Rooms) are being progressed by MPX without the need for Board change submission - expected completion by end Dec 2019. Work commenced on the approved AHU solution 21st October 2019, 4/33 AHUs are completed (On programme).
Water Safety	R	Workstream escalated to Red due to high TVC counts post rectification works to address Pseudomonas findings (W10) - further actions in place. Shower Hose clips (W12) works underway. Timeline for Arjo bath disinfection to be confirmed.
Drainage	B	Workstream closed.
Fire Safety	A	Evaluation of the impact and consequences of retro-fitting smoke dampers and other fire improvement recommendations is underway with initial risk assessment workshops having taken place. Fire Safety improvements have been identified in conjunction with Clinical Teams and HFS. Amber status due to absence of a defined programme to address these improvements. Programme timeline (DCN) critical for Spring occupancy. Potential implications on the overall function of the ventilation system will need to be assessed at the time of design
Electrical	A	Actions to address the findings of the NSS report into Electrical Safety has commenced. There is much evidence to be gathered and the best way of demonstrating the outcome of this is being considered
Medical gases	G	The review of the medical gas installations confirmed that they have been designed installed and commissioned in accordance with the relevant standards. However, there are a couple of minor actions to confirm status. BYES have confirmed that all PPM (Purging etc) is in place and will continue. Recommissioning will take place prior to occupation

Key Achievements / Highlights since last Oversight Board

Ventilation - 4 actions closed

Next Period Key Activities / Challenges

Meeting with HFS/HPS to agree closure procedures for actions with BAU component

Commercial negotiations

Submission of Board change for Fire Improvements

6.

Project Title	Royal Hospital for Children and Young People and Department of Clinical Neuroscience
Subject	Fire Risk Assessment Workshop – RHSC Minutes
Location	NHSL Project Office, Clinical Management Suite, RHCYP & DCN, Edinburgh
Date and time of meeting	05/11/19 14:00
Recorded By	KB
Circulation	Via Email

Attendees		
Name	Initials	Company/Organisation
Fiona Mitchell	FM	Director of Women and Children's Services NHSL
Peter Campbell	PC	Associate Nurse Director NHSL
Marie Elen	ME	Clinical Nurse Manager NHSL
Julie McGill	JM	Clinical Nurse manager NHSL
Laura Reilly	LR	Clinical Nurse Manager NHSL
Jillian McFadzean	JM	Consultant Intensivist NHSL
Dorothy Hanley	DH	RHCYP Commissioning Lead NHSL
Ashley Hull	AH	RHCYP Commissioning Lead NHSL
Brian Currie	BC	RHCYP + DCN Project Director NHSL
Ronnie Henderson	RH	Commissioning Manager, Hard FM, NHSL
Eric Drennan	ED	Health and Safety NHSL
Jim Gardener	JG	Fire Safety Advisor NHSL
Clive Armstrong	CA	Head of Fire Safety NHSL
Geroge Curley	GC	Director of Facilities NHSL
Bill Connolly	BC	National Fire Safety Advisor HFS
Stuart Brown	SB	Assistant Director (Property and Capital Planning) HFS
Joe Zwarts	JZ	Fire Engineer MML
Kelly Bain	KB	Project Manager MML
Graeme Greer	GG	Project Manager MML

Apologies		

Item	Text	Action
1.	<p><u>Introduction</u></p> <p>Introductions were made by all in attendance.</p> <p>BC explained the purpose of the meeting included the following;</p> <ol style="list-style-type: none"> 1. Explain the NSS recommendations 2. Compare the recommendations to the current installation in the facility. 3. Assess whether enhancements are necessary within the departments. 	

	<p>JG summarised the NSS recommendations as follows:</p> <p>Main Findings</p> <table border="1"> <thead> <tr> <th>Priority</th> <th>Review</th> <th>Action Assessment</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>Fire and smoke dampers are installed at compartment and sub-compartment level. However, smoke dampers are not fitted to corridors serving sleeping accommodation.</td> <td>Remotely resettable fire and smoke dampers should be fitted to prevent the travel of smoke between sleeping accommodation areas where ducting leads to a corridor serving as an evacuation route.</td> </tr> <tr> <td>3</td> <td>Based on sample inspection some doors within the escape routes from sleeping accommodation are not fire door sets.</td> <td>NHS Lothian and IHSL should ensure the appropriate fire rated door sets are installed.</td> </tr> <tr> <td>3</td> <td>The half leaf "penny farthing" doors are not fitted with self-closing devices.</td> <td>Half leaf doors should be fitted with the same self-closing device as on the main leaf.</td> </tr> <tr> <td>4</td> <td>A number of remedial snagging and housekeeping issues were identified; damage to fire doors, seals and workmanship; penetrations in compartment walls; delineation of rooftop escape.</td> <td>A number of the items have already been identified and logged by NHS Lothian via the helpdesk process. NHS Lothian and IHSL should ensure all works are undertaken prior to occupation. Procedures should be adopted to ensure rooftop escape remains clear.</td> </tr> </tbody> </table>	Priority	Review	Action Assessment	5	Fire and smoke dampers are installed at compartment and sub-compartment level. However, smoke dampers are not fitted to corridors serving sleeping accommodation.	Remotely resettable fire and smoke dampers should be fitted to prevent the travel of smoke between sleeping accommodation areas where ducting leads to a corridor serving as an evacuation route.	3	Based on sample inspection some doors within the escape routes from sleeping accommodation are not fire door sets.	NHS Lothian and IHSL should ensure the appropriate fire rated door sets are installed.	3	The half leaf "penny farthing" doors are not fitted with self-closing devices.	Half leaf doors should be fitted with the same self-closing device as on the main leaf.	4	A number of remedial snagging and housekeeping issues were identified; damage to fire doors, seals and workmanship; penetrations in compartment walls; delineation of rooftop escape.	A number of the items have already been identified and logged by NHS Lothian via the helpdesk process. NHS Lothian and IHSL should ensure all works are undertaken prior to occupation. Procedures should be adopted to ensure rooftop escape remains clear.	
Priority	Review	Action Assessment															
5	Fire and smoke dampers are installed at compartment and sub-compartment level. However, smoke dampers are not fitted to corridors serving sleeping accommodation.	Remotely resettable fire and smoke dampers should be fitted to prevent the travel of smoke between sleeping accommodation areas where ducting leads to a corridor serving as an evacuation route.															
3	Based on sample inspection some doors within the escape routes from sleeping accommodation are not fire door sets.	NHS Lothian and IHSL should ensure the appropriate fire rated door sets are installed.															
3	The half leaf "penny farthing" doors are not fitted with self-closing devices.	Half leaf doors should be fitted with the same self-closing device as on the main leaf.															
4	A number of remedial snagging and housekeeping issues were identified; damage to fire doors, seals and workmanship; penetrations in compartment walls; delineation of rooftop escape.	A number of the items have already been identified and logged by NHS Lothian via the helpdesk process. NHS Lothian and IHSL should ensure all works are undertaken prior to occupation. Procedures should be adopted to ensure rooftop escape remains clear.															
2.	<p><u>Outcome of discussions</u></p> <p><u>Corridor Enhancement</u></p> <p>The enhancement to corridor grilles with Combined Smoke and Fire dampers (CSFD) was deemed an acceptable solution to protect corridors from smoke. This option is noted below as 'Corridor Enhancement'.</p> <p><u>Enhanced Bedroom Protection</u></p> <p>The RHSC departments were then reviewed, and where sub compartments contained a larger number of rooms, consideration was given to adding an additional CSFD into part of the ventilation ductwork to restrict the potential smoke spread between bedrooms. This review included considering the available evacuation time based on the number of trained staff available to each ward area.</p> <p>This option is noted below as 'Enhanced Bedroom Protection' and the proposed location of the enhancement can be viewed in the figures noted below.</p> <p><u>Summary by Department</u></p> <p>The above provisions were assessed for the following departments:</p> <p>Hospital Wide Strategy:</p> <ol style="list-style-type: none"> 1. Isolation Rooms Enhanced Bedroom Protection 																

	<ol style="list-style-type: none"> 2. On Call Rooms Corridor Enhancements 3. Door Closers Self closers and door selectors. <p>Ground Floor:</p> <ol style="list-style-type: none"> 1. Emergency Department (Majors and Minors) Corridor Enhancement 2. Castle Mey Corridor Enhancement and Enhanced Bedroom Protection <p>First Floor:</p> <ol style="list-style-type: none"> 1. Critical Care Whilst Corridor Enhancement was noted, the full extent of the Critical Care enhancement will be incorporated into the scope of works for the existing Critical Care HVC. 2. Crichton No enhancements required. 3. Children's Clinical Research Facility Corridor Enhancement <p>Third Floor:</p> <ol style="list-style-type: none"> 1. Lochranza <ol style="list-style-type: none"> a. Corridor Enhancement and Enhanced Bedroom Protection b. Daycare – Corridor Enhancement <p>Whilst the above enhancements were noted, the full extent of the Lochranza enhancement will be incorporated into the scope of works for the existing H&O HVC.</p> 2. Direlton Corridor Enhancement 3. Dalhousie Corridor Enhancement 4. Tantallon Corridor Enhancement and Enhanced Bedroom Protection 5. Dunvegan Corridor Enhancement and Enhanced Bedroom Protection 6. Borthwick Corridor Enhancement and Enhanced Bedroom Protection 	
--	---	--

	<p>7. Ronald McDonald House Corridor Enhancement</p> <p>8. Sleep Lab Corridor Enhancement</p> <p>9. Plastics Dressing Clinic No Enhancement</p> <p><u>Penny farthing doors</u></p> <p>It was agreed that self-closers on the half leaf “penny farthing” should be installed.</p>	
3.	<p><u>Next Actions</u></p> <p>Based on the above enhancements the number of CSFD to be installed needs to be assessed to determine the impact of the works and to advise the ESG.</p> <p>Following this assessment, the service will be consulted to determine priority for any works.</p>	

Appendix 1 – Mark up of Fire Strategy drawings to identify location of potential CSFD in ventilation ducts.

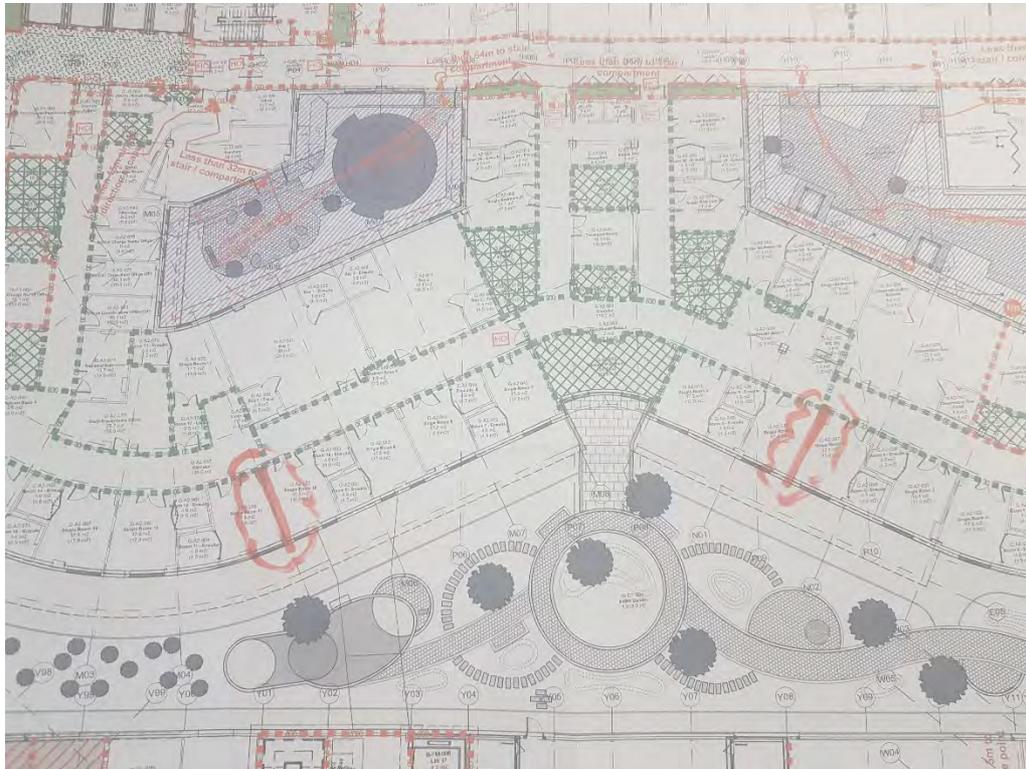


Figure 1 PARU Potential Location of CSFD

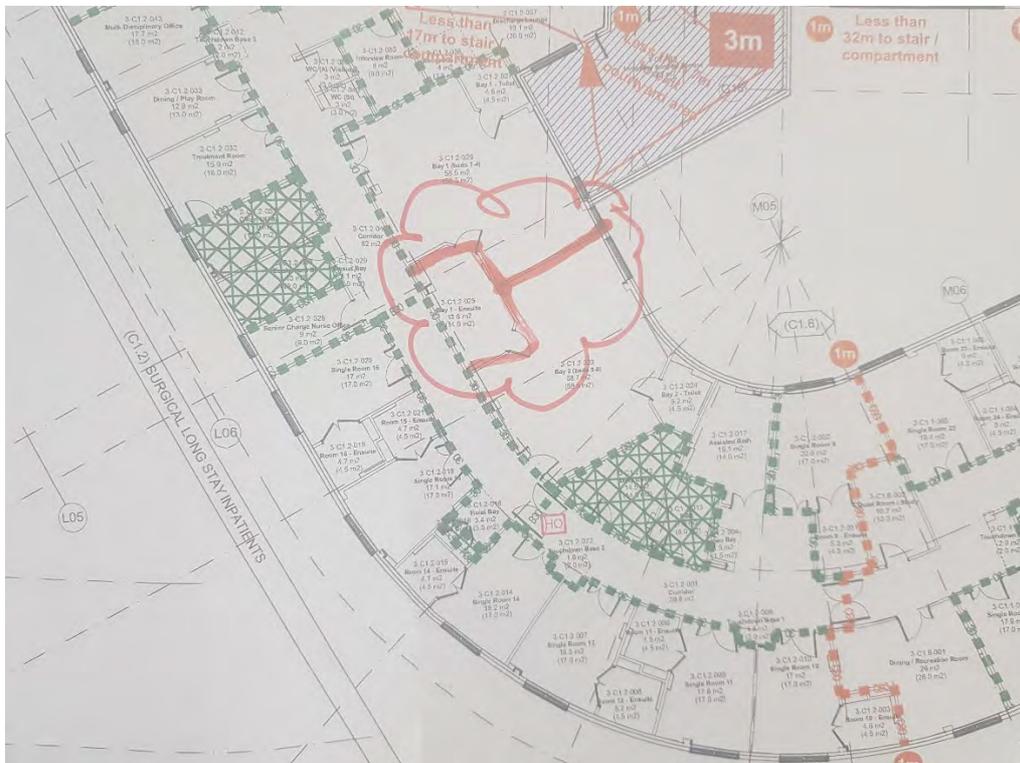


Figure 2 Tantallon Potential Location of CSFD

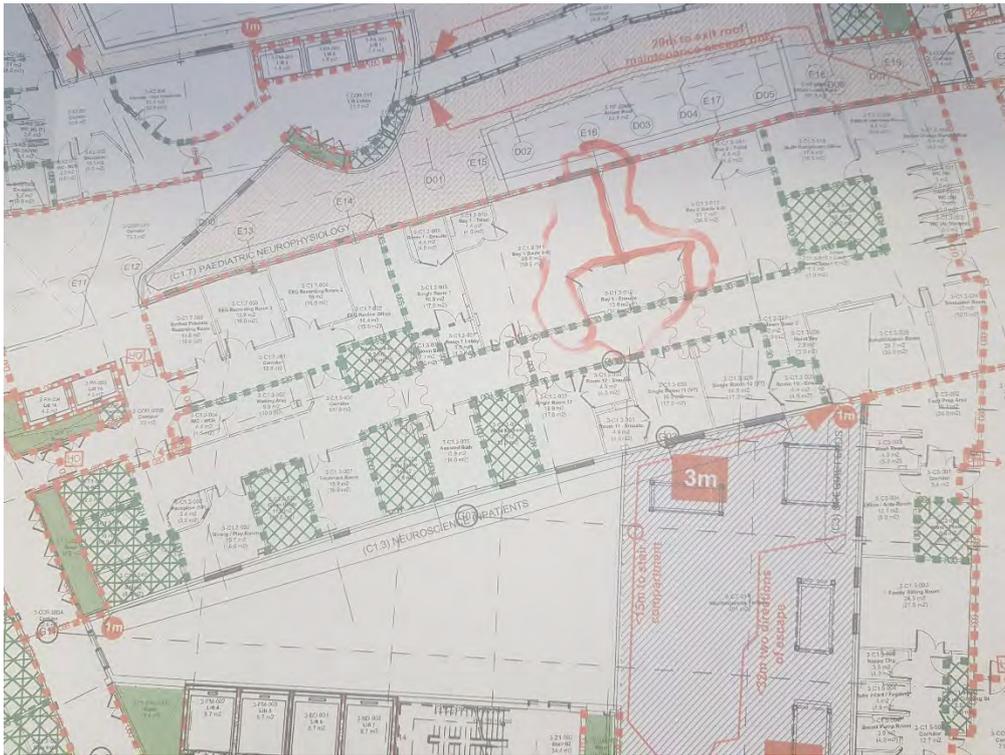


Figure 3 Borthwick Potential Location of CSFD

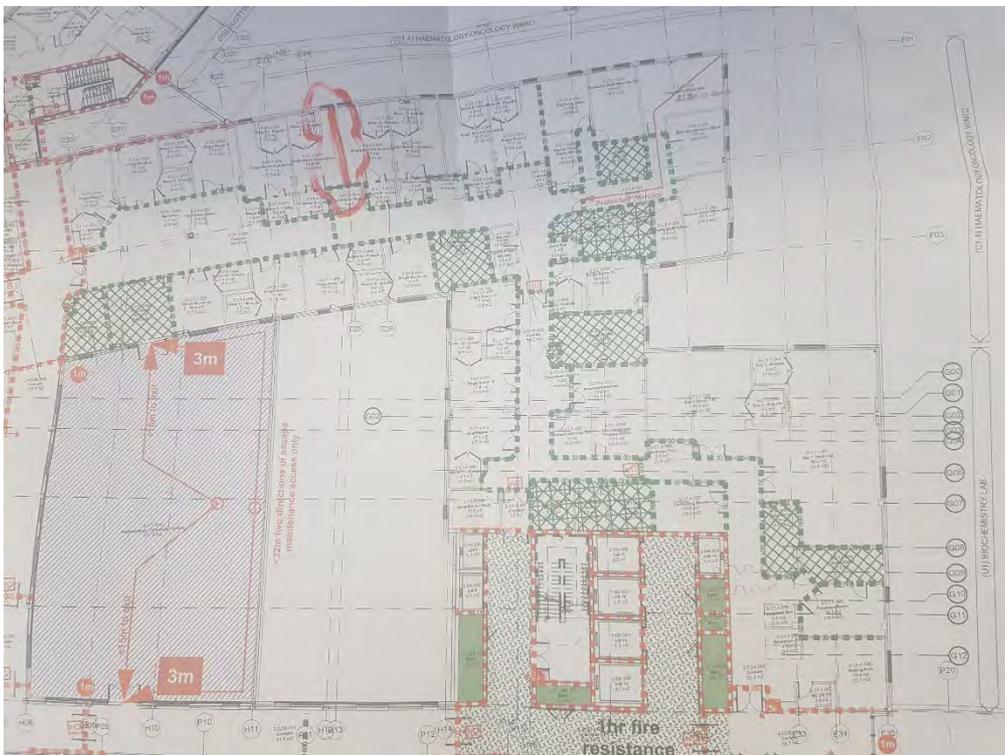


Figure 4 Lochranza Potential Location of CSFD



Figure 5 Dunvegan Potential Location of CSFD

Project Title	Royal Hospital for Children and Young People and Department of Clinical Neuroscience
Subject	Fire Risk Assessment Workshop – DCN Minutes
Location	NHSL Project Office, Clinical Management Suite, RHCYP & DCN, Edinburgh
Date and time of meeting	06/11/19 09:00
Recorded By	KB
Circulation	Via Email

Attendees		
Name	Initials	Company/Organisation
Fiona Halcrow	FH	DCN Commissioning Lead NHSL
Julie McLachlan	JM	Senior Charge Nurse NHSL
Michael Pearson	MP	General Manager Surgical Services NHSL
Brian Currie	BC	RHCYP + DCN Project Director NHSL
Eric Drennan	ED	Health and Safety NHSL
Jim Gardener	JG	Fire Safety Advisor NHSL
Ronnie Henderson	RH	Commissioning Manager, Hard FM, NHSL
Geroge Curley	GC	Director of Facilities NHSL
Joe Zwarts	JZ	Fire Engineer MML
Kelly Bain	KB	Project Manager MML

Apologies		

Item	Text	Action
1.	<p><u>Introduction</u></p> <p>BC explained the purpose of the meeting included the following;</p> <ol style="list-style-type: none"> 1. Explain the NSS recommendations 2. Compare the recommendations to the current installation in the facility. 3. Assess whether enhancements are necessary within the departments. <p>JG summarised the NSS recommendations as follows:</p>	

Main Findings		
Priority	Review	Action Assessment
5	Fire and smoke dampers are installed at compartment and sub-compartment level. However, smoke dampers are not fitted to corridors serving sleeping accommodation.	Remotely resettable fire and smoke dampers should be fitted to prevent the travel of smoke between sleeping accommodation areas where ducting leads to a corridor serving as an evacuation route.
3	Based on sample inspection some doors within the escape routes from sleeping accommodation are not fire door sets.	NHS Lothian and IHSL should ensure the appropriate fire rated door sets are installed.
3	The half leaf "penny farthing" doors are not fitted with self-closing devices.	Half leaf doors should be fitted with the same self-closing device as on the main leaf.
4	A number of remedial snagging and housekeeping issues were identified; damage to fire doors, seals and workmanship; penetrations in compartment walls; delineation of rooftop escape.	A number of the items have already been identified and logged by NHS Lothian via the helpdesk process. NHS Lothian and IHSL should ensure all works are undertaken prior to occupation. Procedures should be adopted to ensure rooftop escape remains clear.

2.	<p><u>Outcome of discussions</u></p> <p><u>Corridor Enhancement</u></p> <p>The enhancement to corridor grilles with Combined Smoke and Fire dampers (CSFD) was deemed an acceptable solution to protect corridors from smoke. This option is noted below as 'Corridor Enhancement'.</p> <p><u>Enhanced Bedroom Protection</u></p> <p>The DCN departments were then reviewed, and where sub compartments contained a larger number of rooms, consideration was given to adding an additional CSFD into part of the ventilation ductwork to restrict the potential smoke spread between bedrooms. This review considered the available evacuation time based on the number of trained staff available to each ward area.</p> <p>This option is noted as 'Enhanced Bedroom Protection' and the proposed location of the enhancement can be viewed in the figures noted below.</p> <p><u>Summary by Department</u></p> <p>These principles were assessed for the following departments:</p> <p>Hospital Wide Strategy:</p> <ol style="list-style-type: none"> 1. Isolation Rooms Enhanced Bedroom Protection 2. On Call Rooms Corridor Enhancements 3. Door Closers
-----------	--

	<p>Self closers and door selectors.</p> <p>Ground Floor:</p> <ol style="list-style-type: none"> 1. Imaging No enhancement 2. OPD 7 No enhancement <p>First Floor:</p> <ol style="list-style-type: none"> 1. Ward 130 Corridor Enhancement and Enhanced Bedroom Protection 2. Theatres Corridor Enhancement only if CSFD are not already installed – JG/RH to confirm. <p>Second Floor:</p> <ol style="list-style-type: none"> 1. Ward 231 <ol style="list-style-type: none"> a. Corridor Enhancement b. There was a discussion in adding CSFD to anti ligature rooms but it was concluded that additional dampers would not be required at present as any high risk patients will have one to one care. 2. Ward 230 Corridor Enhancement and Enhanced Bedroom Protection <p><u>Penny farthing doors</u></p> <p>It was agreed that self-closers on the half leaf “penny farthing” should be installed.</p>	
3.	<p><u>Next Actions</u></p> <p>Based on the above enhancements the number of CSFD to be installed needs to be assessed to determine the impact of the works and to advise the ESG.</p> <p>Following this assessment, the service will be consulted to determine priority for any works.</p>	



Figure 2 Ward 230 Potential Location of CSFD

Project Title	Royal Hospital for Children and Young People and Department of Clinical Neuroscience
Subject	Fire Risk Assessment Workshop – CAMHS Minutes
Location	NHSL Project Office, Clinical Management Suite, RHCYP & DCN, Edinburgh
Date and time of meeting	06/11/19 14:00
Recorded By	KB
Circulation	Via Email

Attendees		
Name	Initials	Company/Organisation
Fiona Halcrow	FH	DCN Commissioning Lead NHSL
Barry Muirhead	CM	CAMHS Clinical Service Manager
Gwyneth Bruce	GB	CAMHS Hean of Occupational Health
Margaret Monan	MM	REH Clinical Nurse Manager
Brian Currie	BC	RHCYP + DCN Project Director NHSL
Ronnie Henderson	RH	Commissioning Manager, Hard FM, NHSL
Eric Drennan	ED	Health and Safety NHSL
Jim Gardener	JG	Fire Safety Advisor NHSL
Geroge Curley	GC	Director of Facilities NHSL
Joe Zwarts	JZ	Fire Engineer MML
Kelly Bain	KB	Project Manager MML

Apologies		

Item	Text	Action
1.	<p><u>Introduction</u></p> <p>Introductions were made by all in attendance.</p> <p>BC explained the purpose of the meeting included the following;</p> <ol style="list-style-type: none"> 1. Explain the NSS recommendations 2. Compare the recommendations to the current installation in the facility. 3. Assess whether enhancements are necessary within the departments. <p>It is noted within the CHAMS department all bedroom walls are firewalls with FD (Fire Dampers) installed.</p> <p>JG summarised the NSS recommendations as follows:</p>	

Main Findings		
Priority	Review	Action Assessment
5	Fire and smoke dampers are installed at compartment and sub-compartment level. However, smoke dampers are not fitted to corridors serving sleeping accommodation.	Remotely resettable fire and smoke dampers should be fitted to prevent the travel of smoke between sleeping accommodation areas where ducting leads to a corridor serving as an evacuation route.
3	Based on sample inspection some doors within the escape routes from sleeping accommodation are not fire door sets.	NHS Lothian and IHSL should ensure the appropriate fire rated door sets are installed.
3	The half leaf "penny farthing" doors are not fitted with self-closing devices.	Half leaf doors should be fitted with the same self-closing device as on the main leaf.
4	A number of remedial snagging and housekeeping issues were identified; damage to fire doors, seals and workmanship; penetrations in compartment walls; delineation of rooftop escape.	A number of the items have already been identified and logged by NHS Lothian via the helpdesk process. NHS Lothian and IHSL should ensure all works are undertaken prior to occupation. Procedures should be adopted to ensure rooftop escape remains clear.

2.	<p><u>Outcome of discussions</u></p> <p><u>Corridor Enhancement</u></p> <p>The enhancement to corridor grilles with Combined Smoke and Fire dampers (CSFD) was deemed an acceptable solution to protect corridors from smoke. This option is noted below as 'Corridor Enhancement'.</p> <p><u>Enhanced Bedroom Protection</u></p> <p>Further to the risk assessment and risk profile for CAMHS and identified difficulties in evacuating this patient group with acute mental health presentation, the service representatives present felt it would be desirable to have combined smoke and fire dampers (CSFD) between all bedrooms. Although unquantifiable, it was felt that any extended period of evacuation from bedrooms free of smoke was to be welcomed to ensure the safe management of any patient who requires additional support.</p> <p>This patient group can be unpredictable and therefore it is unknown how they react to a fire alarm/evacuation process.</p> <p>Those present identified that any patient requiring additional support to evacuate may be at an increased risk of smoke transfer from an adjoining room given potential difficulties in executing the evacuation, noting the following;</p> <ul style="list-style-type: none"> • The CAMHS In-Patient Ward at night is standalone psychiatry unit in the new building. • There is no additional psychiatry support on site at night. • General support can be provided from the site co-ordinator and security staff.
-----------	--

	<p>The doors in CAMHS are currently being updated so the new door specifications need to be reviewed. There is a manufacturers visit at the end of November.</p> <p>The door to the intensive nursing suite needs to be reviewed.</p>	
<p>3.</p>	<p><u>Next Actions</u></p> <p>Based on the above enhancements the number of CSFD to be installed needs to be assessed to determine the impact of the works and to advise the ESG.</p>	

NHS Lothian
RHCYP + DCN
Fire Risk Assessment Matrix
18/11/2019

Area	Department Name	Department Friendly Name	Service	Level	Corridor Enhancement	Isolation Room*	Enhanced Bedroom Protection	Full bedroom CSFD Installation	Door Closers	Comments
A1	Emergency Department (Minor and Major)	Emergency Department	RHCYP	Ground	x	-	-			Not sleeping area but high dependency
A2	Pediatric Acute Receiving Unit	Castle Mey	RHCYP	Ground	x	x	x			
ALL	All departments/multiple locations		ALL	Various					x	
B1	PICU and HDU's	Critical Care	RHCYP	First	x	x	-			The full extent of the enhancement will be incorporated into the scope of works for the existing HVC.
C1.1	Medical Inpatients	Dalhousie	RHCYP	Third	x	x	-			
C1.2	Surgical Long Stay Inpatients	Tantallon	RHCYP	Third	x		x			
C1.3	Neuroscience Inpatients	Borthwick	RHCYP	Third	x	x	x			
C1.4	Haematology / Oncology Inpatients	Lochranza	RHCYP	Third	x	x	x			The full extent of the enhancement will be incorporated into the scope of works for the existing HVC.
C1.4	Haematology / Oncology Daycases	Lochranza	RHCYP	Third	x	-	-			The full extent of the enhancement will be incorporated into the scope of works for the existing HVC.
C1.6	Adolescent Shared Accommodation	Dalhousie	RHCYP	Third	x	-	-			
C1.8	Surgical Short Stay Inpatients	Dunvegan	RHCYP	Third	x	-	x			
C4	Sleep Lab	Sleep Lab	RHCYP	Third	x	-	-			
D7	Plastics Dressings Clinic	OPD 12	RHCYP	First	-	-	-			
D9	Medical Day Care Unit	Direlton	RHCYP	Third	x	-	-			
F1	Child & Adolescent Mental Health Services	Melville	CAMHS	Ground	-	-	-	x		Further to the risk assessment and risk profile for CAMHS, it has been determined that due to the identified difficulties in evacuating this patient group with acute mental health presentation it will be necessary to ensure that each room has smoke dampers to ensure the safe management of any patient who requires additional support to evacuate.
G3	On-Call Suite	On-Call Rooms	RHCYP	First	x	-	-			
H2	Clinical Research Facility	Clinical Research Facility	RHCYP	First	x	x	-			
K2	Ronald McDonald House	Ronald McDonald House	RHCYP	Third	x	-	-			
L1	DCN Acute Care	Ward 130	DCN	First	x	x	x			
L2	DCN Inpatients (Neurosurgery)	Ward 230	DCN	Second	x	x	x			
L2	DCN Inpatients (Neurology)	Ward 231	DCN	Second	x	x	-			
M1	DCN Outpatients	OPD 7	DCN	Ground	-	-	-			
P1	Operating Theatres & RHSC Surgical Day Case Unit	Crichton	RHCYP	First	-	-	-			
P1	Operating Theatres & RHSC Surgical Day Case Unit	DCN Theatre Suite	DCN	First	x	-	-			Only required if CSFD not already installed. Need to check
Q1	Radiology	Imaging	DCN	Ground	-	-	-			

* RH to confirm if HEPA Filters already act as CSFD.

Activity description and quantities

Item	Description	Total	RHCYP	CAMHS	DCN
1	Install Combined Smoke and Fire Damper (CSFD) at vent in corridor. To include all downtakings, reinstatements and a BS approved installation method for damper.	49	14	4	31
2	Install CSFD in ductwork traversing room to room boundaries. To include all downtakings and a BS approved installation method for damper.	51	10	37	4
3	Upgrade of doors to applicable fire standard including installation of intumescent and cold smoke seals and full certification by an approved installer.	16	11	0	5
4	Install mechanical self closing device to doors and half leaf doors to corridor within sleeping accommodation areas.	199	100	4	95
5	Install electro mechanical, free swing and linked to fire alarm system, self closing device to doors and half leaf doors to corridor within sleeping accommodation.	25	14	0	11
6	Upgrade existing wall between room and corridor in sleeping accommodation areas to minimum 30 min fire rating	13	11	0	2

For item 1 duct sizes vary, would assume 20@250mm dia, 20@350x350, & 9@500x500

For item 2 assume 200mm dia

For item 6 assume an average of 5m x 4m and 2 electrical outlets per wall



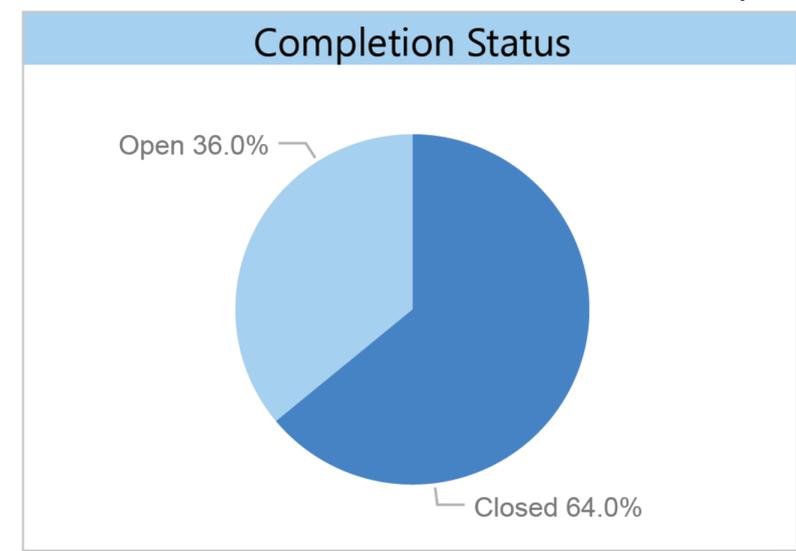
RHCYP+DCN - Continuity of Services on Existing Sites Action Log Dashboard

11/11/2019

7.

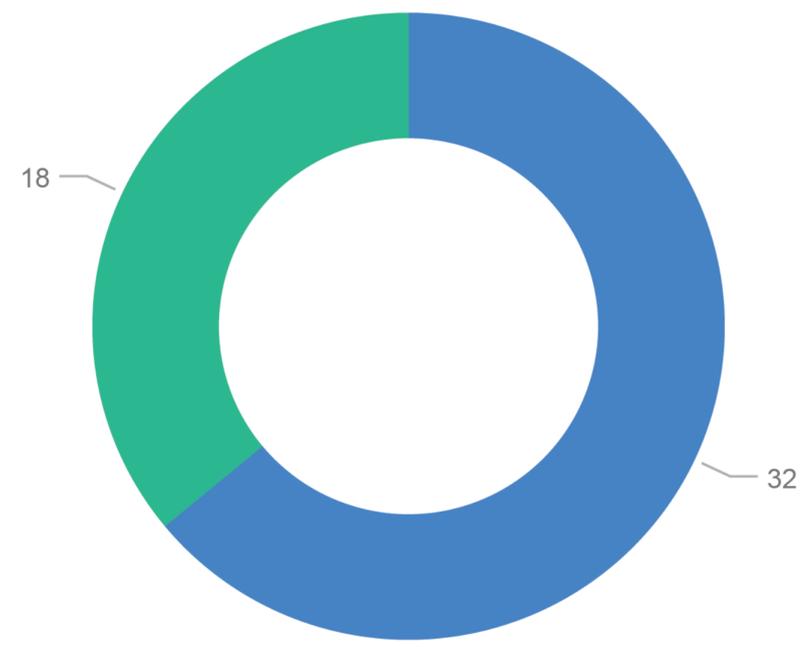
OPEN
18

CLOSED
32



Status against Target Date

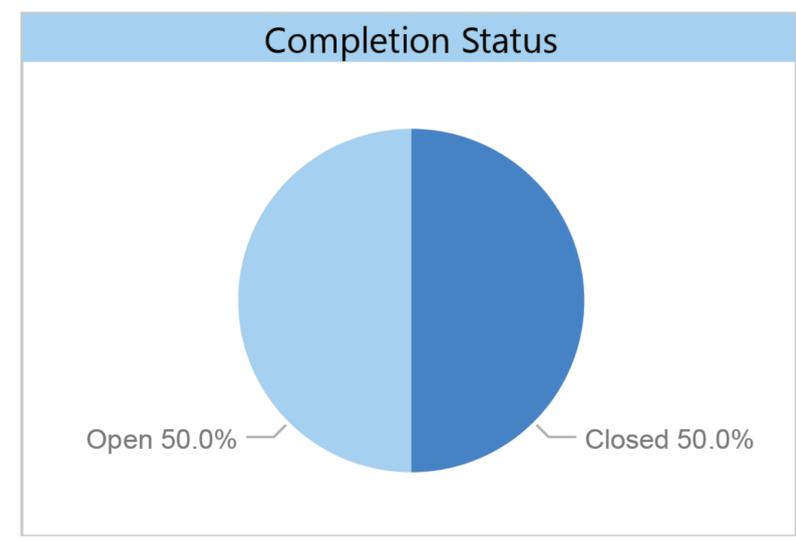
- Due Status
- Closed
 - Actions on Target
 - Over 2 Weeks Beyond Target Date
 - Up to 2 Weeks Beyond Target Date



Actions for DCN at WGH site

OPEN
10

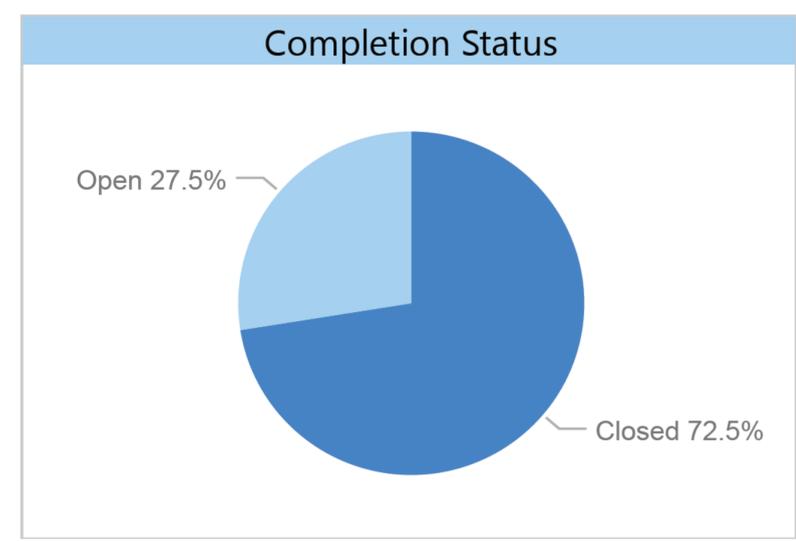
CLOSED
10



Actions for RHSC Sciennes site

OPEN
11

CLOSED
29



RHCYP + DCN

Continuity of service provision on current DCN and RHSC sites

Revision Date: 11/11/2019

Current date for tracking: 11/11/2019

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/ Closed	DCN	RHSC
Capacity										
1	Winter planning	1.1	RHSC: Increase in ED capacity to maintain flow	F Mitchell	05/07/2019	30/11/2019	Give ED some of the OPD area to expand into. Relocation of OPD to 3 RBT has been costed and work are now underway. Computers for the additional 8 rooms will be brought from the new hospital. ED trolleys have also been moved from the new hospital to ED at RHSC (10 in total) to replace existing trolleys that have gone out of maintenance contract.	OPEN	No	Yes
		1.2	RHSC: increase medical beds and cubicles	F Mitchell	05/07/2019	30/11/2019	Ward 4 and PIU have now relocated. 2 shower trolleys moved to RHSC from RHCYP.	CLOSED	No	Yes
		1.3	RHSC: Additional 15 winter B5 posts advertised and shortlisted, to supplement medical nurse staffing. 6 additional B2 posts will be sought from the staff bank on a guaranteed shift basis for night duty staffing on ward 4 (medical). Additional nursing posts approved in June 2019 for an increase in year-round nurse staffing levels in the ED, particularly to support evening and night activity pressures. Most posts now recruited to for Phase 1 of this expansion, including an Advanced Nurse Practitioner for the ED team.	F Mitchell	05/07/2019	30/11/2019	B5 Winter posts - first round of interviews held 2 October. Closing date for second round 18th October; 1 applicant shortlisted. Advertised again closing 15th November 2019. Band 2 Winter Posts - Bank Requests from November onwards. Additional permanent ED posts - ENP job descriptions being finalised for recruitment end Oct. onwards.	OPEN	No	Yes
		1.4	RHSC: Increase haem/onc day care beds by 3	F Mitchell	05/07/2019	30/11/2019	Part of ward moves already agreed above.	OPEN	No	Yes
		1.5	Sleep service expanded staffing for new hospital but there is no extra capacity in old RHSC and winter pressures can lead to sleep studies being cancelled. Look at potential for services at home being expanded to address waiting list?	F Mitchell	05/07/2019	07/10/2019	Home sleep studies have now started.	CLOSED	No	Yes
		1.6	Winter Planning adult acute services	M Pearson	05/07/2019		Due to ongoing bed closures and pseudomonas in water, DCN is currently not accessed by the WGH site for boarding. Bed pressures in down stream facilities may affect DCN; managed through operational site and capacity management. CLOSED in relation to cancelled DCN moves.	CLOSED	Yes	No

2	Paediatrics at St John's	2.1	Consideration of increasing Services at SJH to reduce pressure of RHSC and enhance care closer to home for West Lothian children.	F Mitchell	05/07/2019	TBC	The SJH Children's Ward is now open again for 4 nights/week, which will reduce the pressure on both the RHSC ED and the pressure on inpatient beds at RHSC. The patient pathway for West Lothian children who are admitted to RHSC includes repatriation to the SJH Children's Ward, where clinically appropriate, to complete their inpatient care. In addition, West Lothian children admitted to RHSC who require follow up Planned Investigations or outpatient appointments are referred back to SJH for this, so they can receive care closer to home and to reduce pressure on RHSC services. Current staffing levels in other specialist teams mean that further Outreach at SJH is not currently possible however Paediatric Programme Board will be reviewing this further on 29 October 2019. CLOSED in relation to cancelled RHSC moves. The Royal College of Paediatrics and Child Health (RCPCH) have been approached to do a follow up review, including a review of activity which could be moved to SJH to support services there. Feedback expected w/c 18 /11/19 from the College about whether they could undertake this and when.	OPEN	No	Yes
3	Medical equipment	3.1	Interventional Neuroradiology provision: increased demand (due to service delivery issues in Glasgow) for ageing and increasingly unreliable interventional neuroradiology equipment at DCN.	M Carr	09/07/2019	15/11/2019	Work is ongoing to confirm cost and programme certainty for options. Indicative cost for replacement option is £900k. Recommendation is option to replace existing equipment, supported by Oversight Board 17/10/19. Confirmation was received on 29/10/19 that the Cabinet Secretary was content the Board proceeds with the recommendation to purchase the additional equipment for DCN. A plan is currently being worked up to include actions to mitigate impact prior to downtime, total cost and confirm the timelines for purchase and installation. On track.	OPEN	Yes	No
		3.2	Theatre lights in four of the operating theatres at RHSC Sciennes are old and unreliable, with no replacement parts available. New lights required.	F Mitchell	09/07/2019	15/02/2020	Quotes received, delivery and installation dates being confirmed with the 2 suppliers as well as confirmation of any enabling works they require pre-installation. Will then require a theatre shutdown timetable to be agreed with clinical teams, to minimise impact on patient service, for removal of old lights and installation of new. Timetable for whole programme expected to be available in next 4-6 weeks. Meeting week beginning 28 October to discuss co-ordinating the planning for installation and theatre down time. Working group planning the theatre light replacement programme met again last week and outline plan expected by 11/11/19. Decision now made to replace lighting in 4 theatres, timetabled for February school half term holiday to minimise down time. Order being placed with Maquet so site survey can be undertaken and any enabling works identified. Maquet is the standard theatre light provider in NHSL, so these lights can be recycled to other sites after the RHSC move.	OPEN	No	Yes
		3.3	General x-ray equipment that had been installed in RHCYP required again at RHSC	F Mitchell/M Carr	09/07/2019	08/11/2019	New equipment arrived on site 14/10/19 and installation underway. This equipment will be moved elsewhere on closure of RHSC. On schedule to go live on target date of 8/11/19. Room is finished and is now back in full clinical use.	CLOSED	No	Yes
		3.4	Extension of maintenance contracts for elderly equipment at Sciennes and DCN.	F Mitchell/M Carr	09/07/2019	19/09/2019	Contracts and maintenance plans now in place. Will be updated on a quarterly basis.	CLOSED	Yes	Yes
		3.5	Additional scope storage is required for theatres at RHSC Sciennes as two cabinets were moved to RHCYP. Currently one is on loan, with rental charges due from October 2019.	F Mitchell/M Carr	09/07/2019	30/11/2019	Cabinets moving back to be reinstalled in Sciennes on 11/10/19. Validation process started on 17/10/19 and successfully completed. Expected to be operational from 07/11/19 onwards. The validation process will not be signed off as complete until next week, but the interim storage system currently on hire is due to remain in place until 30/11/19 so no issues.	OPEN	No	Yes
		3.6	Replacement tube for CT scanner at RHSC	F Mitchell/M Carr	09/07/2019	31/07/2019	Tube replaced - COMPLETE	CLOSED	No	Yes

		3.7	Videotelemetry: access to VTEM beds has been reduced in DCN since April 2019 with the reconfiguration of wards and restrictions on admissions due to positive testing for pseudomonas aeruginosa. Delaying moves to Spring 2020 extends the limited capacity and impact on waiting times. Use of portable equipment at one bed has enabled some VTEM admissions since August, but a hardwired bed with full VTEM capability and monitoring is required.	M Pearson	01/08/2019	12/11/2019	Install hardwired VTEM into ward 33. Utilise portable equipment for appropriate waiting list patients at home. Remedial electrics works required prior to moving the equipment. An external contractor has been on site to look at the work - Estates to confirm date and cost. Optima will come after the electric works, £7k signed off. Preparation work started. VTEM installation booked 11/12 Nov. Then Ward 33 will open up to 16 beds.	OPEN	Yes	No
Clinical Support Services										
4	Pharmacy	4.1	Inadequate staffing to maintain opening hours for dispensary on 2 sites since in organisational change 1 dispensary manager was redeployed to another core service effective July 2019 when integration was meant to occur	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 7 dispensary manager resource required to allow provision of medicines on RIE and RHSC sites to prevent impact upon patient experience while RHSC remains open; and minimise impact of stress on staff health and wellbeing. 1.0wte band 7 Pharmacy Technician = £43,500	CLOSED	No	Yes
		4.2	Inadequate pharmacy support workers (PSW) staffing to deliver an integrated medicines distribution hub for RYCYP/RIE with required staff still working on RHSC site to maintain dispensary service	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 2 and 3 PSW resource required to prevent impact upon availability of medicines on RHSC site; and minimise impact of stress on staff health and wellbeing. 1.0wte band 2 PSW plus 2 0wte band 3 PSW = £77,192	CLOSED	No	Yes
		4.3	Pump-prime funding for staff resource to deliver the One Stop model has ceased, which is the backbone of medicines supply to patients to underpin management of capacity and flow at the new hospital site	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Funding for pharmacy technician resource must be reinstated to continue this model to be delivered. To address 3.4 and 3 5: 1.0wte band 4 Pharmacy Technician = £29,985	CLOSED	No	Yes
		4.4	Extended opening hours and weekend working rotas of the integrated pharmacy department at RIE was implemented in June 2019 in readiness for move of the RHSC in July 2019. To avoid lone staff working the full staff complement was needed on one site to full fill this rota. With pharmacy staff members remaining on RHSC the late evening	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 4 pharmacy technician resource needed to ensure extended pharmacy opening hours at RIE not put at risk, which would affect capacity and flow on RIE site See 5.3 above	CLOSED	No	Yes
		4.5	One Site Lead Pharmacist redeployed to another post during organisational change to integrate the 2 pharmacy departments leaving 1 Site Lead Pharmacist to manage teams across 2 sites without a deputy to support operational day-to-day management or change management of the teams	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Deputy pharmacist (Band 8a) required to support site lead pharmacist for RIE/RHSC until integration of the 2 departments is complete, which will help minimise impact of stress on site lead pharmacist health and wellbeing 1.0wte Band 8a Pharmacist = £65,625	CLOSED	No	Yes
		4.6	Cross site transport of medicines 7 days a week is needed but the ad hoc arrangements currently in place (e.g. Blood bikes, taxi runs) is not suitable for the extended duration that off-site daily delivery of medicines will be needed until RHSC move. This is especially an issue for delivery of intrathecal chemotherapy agents that have unique transport requirements under CEL30 (i.e. anyone transporting these medicines must be trained and named on the intrathecal register as competent to undertake the task allocated to them including transport)	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Funding to NHS transport and portering services for 1.0wte dedicated driver(s) (to be trained in CEL 30 requirements) to transport medicines between 09:00 to 17:30 Monday to Friday and 10 00 to 14:00 Saturday. 1.0wte Band 2 = £24,370	CLOSED	No	Yes
5	Laboratories	5.1	Minor changes were made to on-site Blood Science laboratory hours with the announcement of the delay in July 2019, with agreement that provision would remain under constant monitoring/ review.	M Grey	09/07/2019	31/07/2019	The NHSL Blood Science laboratory service at RHSC will continue with no alteration to service but service delivery/ performance will be monitored/ kept under continuous review in order to ensure that a robust and sustainable service continues to be provided to RHSC users and their patients.	CLOSED	No	Yes
Facilities Management										
6	Catering	6.1	Extend canteen opening times and preparation of meals on RHSC site - for better utilisation of staffing and reduction in waste.	G Curley	23/09/2019	14/10/2019	Chef now on site. Collation of menus and standard ordering.	CLOSED	No	Yes
		6.2	Procurement of two fridges for RHSC facility.		23/09/2019	14/10/2019	Order placed	CLOSED	No	Yes
		6.3	Communication with catering staff about sites and rosters.		23/09/2019	08/10/2019	Chef now on site; communication with catering staff underway.	CLOSED	No	Yes
		6.4	Improved signage and marketing for RHSC service		23/09/2019	14/10/2019	Communication in place on site	CLOSED	No	Yes
		6.5	HACCP		23/09/2019	08/10/2019	Chef now on site: completion of HACCP	CLOSED	No	Yes
		6.6	Explore options for third party support for catering		23/09/2019	18/11/2019	Discuss with Edinburgh Childrens Hospital Charity - Waiting for feedback from patients and visitors (4 week trial)	OPEN	No	Yes
		6.7	Replace dining room furniture		21/10/2019	31/10/2019	Ordered for delivery w/c 28/10/19 - DELIVERED	CLOSED	No	Yes
7	Parent accommodation	7.1	Improve environment of parents accommodation	G Curley	23/09/2019	02/10/2019	Thorough clean of parents accommodation, and enhanced cleaning within domestic services schedule.	CLOSED	No	Yes
		7.2			23/09/2019	31/10/2019	Parent accommodation reviewed. Refurbishment and new furniture requirements identified.	CLOSED	No	Yes
		7.3			23/09/2019	30/09/2019	Improve communication between FM team and Family Support re use of and care for parent accommodation. Protocol agreed	CLOSED	No	Yes
8	Domestics	8.1	Domestic services, including increased pressure on staff to make existing environment as good as it can be.	G Curley	23/09/2019	30/09/2019	Review current provision with a view to providing enhanced service to compensate for condition of the environment.	CLOSED	YES	Yes
		8.2			23/09/2019	10/10/2019	Ensure all staff only areas are in receipt of full staffing levels.	CLOSED	YES	Yes
		8.3			23/09/2019	30/09/2019	Complete analysis of Facilities Monitoring Tool.	CLOSED	YES	Yes
					23/09/2019	30/09/2019	Transfer of new equipment from RHCYP to RHSC /DCN	CLOSED	YES	Yes
		8.4			21/10/2019	01/12/2019	Move to disposable mops to avoid double dipping. Laundry of mops does not remove C Dif	OPEN	YES	Yes

9	Logistics	9.1	Logistics services	G Curley	23/09/2019	06/01/2020	Utilisation of staff in post to provide security at RHSC: give notice to current Security Contractor. Notice given. Security will become NHS responsibility in the new year, bringing substantial savings.	OPEN	No	Yes
		9.2			23/09/2019	30/09/2019	Secondment opportunity for supervisor vacancy now being progressed.	CLOSED	No	Yes
10	General estate	10.1	DCN - General state of facilities; walkround and identification of works	G Curley	23/09/2019	05/10/2019	Ward 31 additional shelving	CLOSED	Yes	No
					23/09/2019	30/11/2019	Work in bathroom/wet rooms in Ward 31 and 33 should be completed by 1/11/19. Ward 32 - patient rooms painting completed 29/10/19. Waiting List office carpet will be replaced 9/11/19. The corridors in the 3 wards will be painted once the patient rooms are completed (end Nov).	OPEN	Yes	No
					23/09/2019	16/11/2019	Ward 32 completed 28/10/19. Ward 33 painting commenced in patient rooms 29/10/19 - will take approx 2 weeks.	OPEN	Yes	No
					23/09/2019	11/11/2019	Neurophysiology - Consultant office painted. Senior physiologist office to be painted w/b 4/11/19. Carpet due to be replaced on 9/11/19. DCN Admin corridor and Directorate Asst office carpet to be replaced 9/11/19.	CLOSED	Yes	No
					21/10/2019	25/11/2019	Ward 31 conversion of room D back into patient bay continues. Painting will commence in Ward 31 approx 11/11/19 for around two weeks. Ward 31 awaiting 3 HDU chart holders to arrive (they were additional order due to length of time till the move).	OPEN	Yes	No
					23/09/2019	31/10/2019	Review existing accommodation - plans for refurb and improvements in place.	CLOSED	No	Yes
				Equipment transferred from new RHCYP to existing site to benefit patient care/experience.	P Campbell	01/10/2019	31/12/2019	Equipment transferred included patient easy chairs, Mon900, Dia900, trolleys, fridge, freezers, shower trolleys, wheelchairs, bracket table and sedation tubing. Lot of work around transferring back top up items and various high tariff/specialist order sundries.	OPEN	Yes
		Unannounced HEI Inspection of RHSC and DCN took place 22/10/19-24/10/19.	A McMahon	22/10/2019	15/01/2020	Draft report will be emailed on 4/12/19 to check for factual accuracy. Sign-off of the report and return to HIS by 18/12/19. The final report will be published on 15/1/20. Verbal feedback from inspectors at the end was positive.	OPEN	Yes	Yes	
Staff										
11	Communication with staff	11.1	General staff communications, including annual leave, pay, expenses, car parking, delaying retirement	J Butler	23/09/2019	10/07/2019	Frequently asked questions updated and published on intranet 10/07/19	CLOSED	Yes	Yes
12	Staff wellbeing	12.1	Supporting staff wellbeing	J Butler	23/09/2019	18/11/2019	Regular Exec Team/Senior Team Walkarounds. Next Exec Team visits are at DCN on 24 October and RHSC on 29 October. Chief Nursing Officer visited DCN w/c 7 October. Ongoing involvement of Partnership. RHSC Healthy Working Lives Programme ongoing. DCN Healthy Working Lives programme in development. Joint meeting between RIE and WGH Healthy Working Lives leads has been set up for when Hester Niven returns from leave (w/b 18/11) in order to effect input for DCN staff.	OPEN	Yes	Yes
13	Retention/ Recruitment of DCN nursing staff	13.1	In light of staff leaving DCN in anticipation of the move to RIE, the nursing workforce has been reduced. There is a need to ensure we retain current staff, and quickly fill vacancies.	G McAuley / M Pearson	07/10/2019	31/03/2020	On going action. Over 50% of vacancies in nursing (band 5 and 2) and administration have been filled - offers made and start dates confirmed. There are 9 x B5 vacancies and mat leave.	OPEN	Yes	No

High Value Change Notice – **DRAFT ONLY**

Project:	RHCYP & DCN
-----------------	------------------------

1 – Issue of Change Notice to Project Co

Title:	Enhancements to Fire Safety		
Reference No: 102	Date: 12 th November 2019		
Target Cost Capital: £1.2m exc VAT	Target Cost Revenue:	TBA	

High Value Change Requirements (Schedule Part 16, Section 4, Clause 2.1.3)

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, the items shown in the table below:

Activity description and approximate quantities*

Item	Description	Total	RHCYP	CAMHS	DCN
1	Install Combined Smoke and Fire Damper (CSFD) at existing vent terminal in corridors. To include all downtakings, reinstatements and a BS approved installation method for damper.	49	14	4	31
2	Install CSFD in ductwork traversing room to room boundaries. To include all downtakings and a BS approved installation method for damper.	51	10	37	4
3	Upgrade of doors to applicable fire standard including installation of intumescent and cold smoke seals and full certification by an approved installer.	16	11	0	5
4	Install mechanical self closing device to doors and half leaf doors to corridor within sleeping accommodation areas.	199	100	4	95
5	Install electro mechanical, free swing and linked to fire alarm system, self closing device to doors and half leaf doors to corridor within sleeping accommodation.	25	14	0	11
6	Upgrade existing wall between room and corridor in sleeping accommodation areas to minimum 30 min fire rating	13	11	0	2

* Please note: Quantities are approximate only for guidance only.

All environmental requirements for all spaces in the Facilities served by or affected by the Works and Services systems shall be met and maintained – including but not limited to, temperature and control, lighting levels, noise, and humidity. These should be consistent to the agreed parameters throughout the Facilities to meet the specific clinical and operational needs for each space in the Facilities.

All works associated with the above will be contained within the scope, including but not limited to, protection and segregation of work area, downtakings, service isolations, service removals, maintaining system performance of services, service reinstatements, builders work reinstatements, decoration, and final builders clean

HVCN



The Works and Services shall fully comply with the requirements of all relevant guidance which includes, without limitation, implementation of the Works and Services so that the installation, finishes and maintenance regime shall be in accordance with the requirements of all relevant guidance, together with the clinical and operational constraints identified below:

1. **DCN work activities and implementation to be prioritised ahead of others.**
2. Delapidation survey to be carried out in all areas prior to work starting with photographic evidence to document current condition
3. All Works and Services shall be carried out and monitored after, and with reference to, a collaborative full Stage 3 HAI SCRIBE assessment being approved by the Board.
4. The fire strategy and systems agreed for the Facilities will be maintained throughout the Works and Services and the Operational Term and such that where required the newly installed items, systems, and services will integrate with the fire strategy and systems and all other building management systems comprised in the Facilities.
5. The location of the installation within the rooms, external areas, route across such spaces and the segregation of work areas, etc, will enable the current operational functionality and safety policies and procedures to be maintained.
6. The design, layouts, finishes and other details etc for the Works and Services, at all stages (including during the design development stages), will require to be agreed with the Board's Representative, the Board's Fire Officer (and in turn the clinical service and related stakeholders). Project Co should recognise that in order to achieve agreement from the Board's Representative's the Board's Representative will seek input from the Board and all appropriate stakeholders.
7. A post completion walk round with relevant stakeholders will take place after completion of work in a specific area following all necessary inspections, validations and verification by the Board or its authorised agents.

Value for Money Assessment (Schedule Part 16, Section 4, Clause 2.1.4)

The Board will, in consultation with Project Co, continue to review costs as the design develops and at other stages. In order for the Board to assess whether the High Value Change Stage 2 Submission offers it value for money the submission shall include as a minimum the following information:

- A detailed and fully quantified pricing schedule for the construction works
- A detailed breakdown of all Preliminaries and general cost items
- Construction issue drawings and specification
- Proposed, construction and commissioning/testing programme
- Construction phase method statement

Date by which parties are required to meet to review the High Value Change Notice and agree the content for the High Value Change Proposal (Schedule Part 16, Section 4, Clause 2.3.1)

To: **IHS Lothian**

We require the Change described above.
Please advise when Project Co will submit a High Value Change Proposal for the above.

Signed on behalf of NHS Lothian:

Name of Signatory (type or print):

Date:



8.3.2

NHS Lothian
RHCYP + DCN
Fire Risk Assessment Matrix
08-Nov-19

Area	Department Name	Department Friendly Name	Service	Level	Corridor Enhancement	Isolation Room*	Enhanced Bedroom Protection	Full bedroom CSFD instalation	Door Closers	Comments
A1	Emergency Department (Minor and Major)	Emergency Department	RHCYP	Ground	x	-	-			Not sleeping area but high dependency
A2	Pediatric Acute Receiving Unit	Castle Mey	RHCYP	Ground	x	x	x			
ALL	All departments/multiple locations		ALL	Various					x	
B1	PICU and HDU's	Critical Care	RHCYP	First	x	x	-			The full extent of the enhancement will be incorporated into the scope of works for the existing HVC.
C1.1	Medical Inpatients	Dalhousie	RHCYP	Third	x	x	-			
C1.2	Surgical Long Stay Inpatients	Tantallon	RHCYP	Third	x	-	x			
C1.3	Neuroscience Inpatients	Borthwick	RHCYP	Third	x	x	x			
C1.4	Heamatology / Oncology Inpatients	Lochranza	RHCYP	Third	x	x	x			The full extent of the enhancement will be incorporated into the scope of works for the existing HVC.
C1.4	Heamatology / Oncology Daycases	Lochranza	RHCYP	Third	x	-	-			The full extent of the enhancement will be incorporated into the scope of works for the existing HVC.
C1.6	Adolescent Shared Accommodation	Dalhousie	RHCYP	Third	x	-	-			
C1.8	Surgical Short Stay Inpatients	Dunvegan	RHCYP	Third	x	-	x			
C4	Sleep Lab	Sleep Lab	RHCYP	Third	x	-	-			
D7	Plastics Dressings Clinic	OPD 12	RHCYP	First	-	-	-			
D9	Medical Day Care Unit	Direlton	RHCYP	Third	x	-	-			
F1	Child & Adolescent Mental Health Services	Melville	CAMHS	Ground	-	-	-	x		Further to the risk assessment and risk profile for CAMHS, it has been determined that due to the identified difficulties in evacuating this patient group with acute mental health presentation it will be necessary to ensure that each room has smoke dampers to ensure the safe management of any patient who requires additional support to evacuate.
G3	On-Call Suite	On-Call Rooms	RHCYP	First	x	-	-			
H2	Clinical Research Facility	Clinical Research Facility	RHCYP	First	x	x	-			
K2	Ronald McDonald House	Ronald McDonald House	RHCYP	Third	x	-	-			
L1	DCN Acute Care	Ward 130	DCN	First	x	x	x			
L2	DCN Inpatients (Neurosurgery)	Ward 230	DCN	Second	x	x	x			
L2	DCN Inpatients (Neurology)	Ward 231	DCN	Second	x	x	-			
M1	DCN Outpatients	OPD 7	DCN	Ground	-	-	-			
P1	Operating Theatres & RHSC Surgical Day Case Unit	Crichton	RHCYP	First	-	-	-			
P1	Operating Theatres & RHSC Surgical Day Case Unit	DCN Theatre Suite	DCN	First	x	-	-			Only required if CSFD not already installed. Need to check
Q1	Radiology	Imaging	DCN	Ground	-	-	-			

* RH to confirm if HEPA Filters already act as CSFD.

Activity description and quantities

Item	Description	Total	RHCYP	CAMHS	DCN
1	Install Combined Smoke and Fire Damper (CSFD) at vent in corridor. To include all downtakings, reinstatements and a BS approved installation method for damper.	49	14	4	31
2	Install CSFD in ductwork traversing room to room boundaries. To include all downtakings and a BS approved installation method for damper.	51	10	37	4
3	Upgrade of doors to applicable fire standard including installation of intumescent and cold smoke seals and full certification by an approved installer.	16	11	0	5
4	Install mechanical self closing device to doors and half leaf doors to corridor within sleeping accommodation areas.	199	100	4	95
5	Install electro mechanical, free swing and linked to fire alarm system, self closing device to doors and half leaf doors to corridor within sleeping accommodation.	25	14	0	11
6	Upgrade existing wall between room and corridor in sleeping accommodation areas to minimum 30 min fire rating	13	11	0	2

For item 1 duct sizes vary, would assume 20@250mm dia, 20@350x350, & 9@500x500

For item 2 assume 200mm dia

For item 6 assume an average of 5m x 4m and 2 electrical outlets per wall

From: [Graham, Chris](#)
Subject: RHCYP+DCN Oversight Board Papers - 28-11-19..
Date: 27 November 2019 08:26:26
Attachments: [image001.jpg](#)
[image002.png](#)
[RHCYP+DCN Oversight Board Papers 28-11-19.pdf](#)
Importance: High

Dear Colleagues

Please find attached the papers for tomorrow's oversight board meeting to be held at 8am in Meeting Room 5, Waverley Gate

For ease of navigation please note:

the PDF contains bookmarked items  as well as hyperlinks from the agenda to items in **blue**;
the **blue** item numbers take you back to the agenda and;
the **green** buttons at the end of items take you back to the start of that item.

Please note that the dial in details for the meeting remain the same:


Participant code - 

Kind regards
Chris

Chris Graham
Secretariat Manager


Achieving [deadlines](#) means you are respecting your colleagues and supporting effective decision-making.

fonline3.png



The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 28th November 2019, 8:00 – 9:30am

Venue: Room 5, Waverley Gate, EH1 3EG

AGENDA

1.	Chair's Welcome and Introductions	FMc	V
	Apologies:		
2.	Minutes of previous meeting for approval: 13 November 2019	FMc	*
3.	Matters Arising		
	3.1 Helpline provision	TG	V
	3.2 Partnership engagement in fire reviews process	GA	V
4.	Senior Programme Director's Report	MM	*
5.	Commercial Progress Update		
	Report to NHS Lothian Finance and Resources Committee, 27 November 2019	SG	*
6.	Sign-off process for design and construction	BC	*
	STANDING AGENDA ITEMS		
7.	Technical Reviews progress		
	7.1 Ventilation	BC	V
	7.2 Water Quality	BC	V
	7.3 Fire Safety	BC	V
	7.4 Electrical Safety	BC	V
8.	Service Continuity on Existing RHSC & DCN Sites	TG	*
9.	Communications		
	9.1 Staff communications	JM	V
	9.2 Requests for information	SC	V
10.	Any Other Competent Business		
	10.1 Fire Safety Audit at RHSC, Sciennes	SG	V
11.	Date of Next Meeting		
	Thursday 5 th December 2019, 8am, Room 5, Waverley Gate		

2.

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Wednesday 13 November 2019 in Meeting Room 5, Waverley Gate, Edinburgh.

Present: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Dr C. Calderwood, Chief Medical Officer, Scottish Government; Ms S. Goldsmith, Director of Finance, NHS Lothian; Ms T. Gillies, Medical Director, NHS Lothian and Mr G. Archibald, Joint Staff Side Representative.

Present by Telephone: Mr C. Sinclair, Chief Executive, NHS National Services Scotland

In Attendance: Ms M. Morgan, Senior Programme Director; Mr B. Currie, Project Director, NHS Lothian; Mr C. Henderson, Scottish Government; Ms J. Mackay, NHS Lothian Director of Communications; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Ms L. Aitken, Communications, Scottish Government and Mr C. Graham, Corporate Governance Team (minutes).

In Attendance by Telephone: Mr G. James, Director of Facilities, Health Facilities Scotland; Mr J. Miller, Director, Procurement, Commissioning & Facilities, NHS National Services Scotland and Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work.

Apologies: Ms C. McLaughlin, Chief Finance Officer, Scottish Government; Professor A. McMahon, Nurse Director NHS Lothian, Mr P. Reekie, Chief Executive, Scottish Futures Trust; Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side) and Ms S. Cosens, Capital Programme Business Manager, NHS Lothian.

1. Minutes of previous meeting – 31 October 2019

1.1 The minutes of the meeting held on 31 October 2019 were accepted.

2. Matters Arising

2.1 Fire Safety and Buildings Science Research

- Recognised that the whole fire and smoke dampers discussion had moved on in the last 2 weeks to the point where this background work may no longer be required
- Noted that no definitive evidence had yet been found and work would continue to try pull this together.
- Noted that any solution to this to could be part of a slower stream piece of work with no impact on any opening timescale for the building.

3. Senior Programme Director's Report

3.1 The significant progress as detailed in the report was noted:

Ventilation

- IHSL high level proposal for delivery of changes around ventilation to be received later today
- Technical teams met yesterday and there was introduction to the company who would be delivering the changes and the new management company, George Street, who had been appointed by IHSL.
- Updated project workstreams status was noted
- Noted that MPX would be taking forward other ventilation solutions in relation to Theatre corridor extract; Scrub extract room and Anaesthetic rooms with a process in place to have this work completed by end of December 2019.
- Work on improved Air Handling Unit solutions was underway with 4 of 33 completed so far and completion of these works hoped for by August 2020 subject to other commission work that still needs to happen.

Water Safety Workstream

- Noted that works on taps (stripping and replacing) to address Pseudomonas findings had been undertaken but subsequent water testing had shown high TVCs post rectification – further actions in place.
- Shower hose works underway
- ARJO baths disconnected and timeline underway
- Noted that a ventilation and water safety workshop with HFS/HPS colleagues would be happening shortly to look at closing off some 'business as usual' type actions.
- Noted that a NHSL Health and Safety; Infection Control; Facilities group had been established to develop a clear protocol around water safety; sampling; monitoring and reporting. This was due to report at the end of March 2020. A NHSL internal audit would also be undertaken as part of this work and HPS had been involved in the discussions and were content with progress and the next steps.

Fire Safety

- Covered until substantive item 5 below.

Electrical

- Noted that actions to address the findings of the NSS report into Electrical Safety had commenced. There is much evidence to be gathered and the best way of demonstrating the outcome of this is being considered
- Action plan being put into the action tracker.

Medical Gases

- Noted that the review of the medical gas installations confirmed that they have been designed installed and commissioned in accordance with the relevant standards. Remains a couple of minor actions to confirm status.
- Noted that BYES have confirmed that all PPM (Purging etc) is in place and will continue. Recommissioning will take place prior to occupation in line with normal practice.

4. Commercial Progress Update

- Noted that the written detail on the commercial conditions of works progressing were awaited
- The matter of indemnity continues to be negotiated
- Noted that there remains full engagement from funders.
- Testing process that is acceptable to NHSL, funders and IHSL in development to ensure one system of testing that technical people would be content to sign up to, to avoid multiple testing.

BC/IG

- Principles of commercials to be taken to the November NHSL Finance and Resources Committee meeting
- Noted that there remains uncertainty on price, but will be based on a 'cost plus' model and likely to be at the higher end. Appropriate due diligence around cost would be carried out.

5. Update from Fire Safety Improvement Workshops

- Noted that workshops had been held with Clinical staff from Paediatrics, DCN and CAMHS. Workshops had covered principles to be applied; testing and testing and risk assessing of patient groups; current evacuation plans and the material gain in enhancing arrangements for the limitation of smoke spread and evidence around this.
- Recognised that currently it was not possible to predict the required number of dampers within Critical Care and Haematology/Oncology as this was subject to ventilation design.
- Noted that it had been agreed with IHSL that there would be a need to know the impact of dampers in these areas.
- Noted that the output from the workshops had now been transposed into a draft High Value Change that had been shared with IHSL, proposing the use of combined smoke and fire dampers located at vents that feed corridors. This engineering proposal had been discussed at agreed with the National Fire Adviser and HFS. This proposal would mean around 100 combined dampers for the building, **excluding critical care and haematology/oncology**, and would mean less disturbance as the changes would be within the corridors.
- Noted that it would be important for the logic path with this proposed engineering solution to be appropriately detailed within the output and narrative from the workshop along with the decision taken to undertake this approach within this building.
- Noted that the proposal had also been supported by the Executive Steering Group.
- Partnership engagement arrangements around this work to be confirmed.

TG/AJ/GA

- Noted that full SHTM compliance remained the expectation for the appropriate Isolation Rooms.
- Noted that the 35 dampers associated with DCN would be prioritised first along with other fire enhancements.
- Recognised that CAMHS requires a lot of work given the nature of the patients group and consideration to be given to CAMHS having its own High Value Change given the amount of distinct work required for that area.
- The Oversight Board was content with progress being made and it was agreed that the High Value Change could now be released and shared.

- Whilst the timescale for the work was unknown, going by the usual High Value Change process, a timeline should be known in 3 to 4 weeks subject to any additional impact around ventilation.

6. Service Continuity on Existing RHSC & DCN Sites

- The Dashboard was noted and work remains ongoing.
- 1 outlet in the current Royal Hospital for Sick Children had tested positive for Pseudomonas. A look back exercise had been undertaken and no cases had been linked to this outlet over the last 6 months. This was part of normal hospital life and steps had been taken to address this.

7. Technical Reviews progress

7.1 Ventilation

7.1.1 Nothing further added.

7.2 Water Quality & Sampling

7.2.1 Already covered above.

7.3 Fire

7.3.1 Enhancements to Fire Safety – Draft High Value Change Notice – Agreed as 5 above. The Change Notice would now be released and shared.

MM/BC

7.3.2 Fire Risk Assessment Matrix – Covered above.

7.4 Electrical

7.4.1 Nothing further added.

8. Communications

8.1 Staff communications

- Last staff communication issued 10 days ago – nothing new planned at this time.
- NHSL and SG Communications to keep in touch ahead of the Cabinet Secretary's attendance at Health and Sport Committee on 19/11, in case of any media requirements.

9. Any Other Competent Business

9.1 Helpline

- Discussion on whether continuing with the helpline was the best use of NHS24 Resources given that no calls had been received in the last few months which had been appropriate to the reason it had been initially established.
- Agreed that the information on contacts and appropriateness would be presented to the Cabinet Secretary so that a decision could be made on the best use of NHS24 resources.

TG

9.2 Emailed Queries from Mr Reekie – It was agreed that the Oversight Board had covered all the queries raised within the correspondence.

9.3 Cabinet Secretary – Health and Sport Committee 19/11/19 - The oversight board noted that the Cabinet Secretary would appear before the Health and Sport Committee next week.

10. Date of Next Meeting

10.1 The meeting scheduled for Thursday 21 November 2019 to be cancelled. The next meeting would be on **Thursday 28 November 2019, 8am, Room 5, Waverley Gate.**



4.

RHCYP & DCN - Senior Programme Director's Report

Report Date	26/11/2019	Programme RAG Status (now)	A
Submitted by	Mary Morgan	Programme RAG Status (previous Oversight Board)	A

General Update		<p>It is not yet possible to determine the overall programme milestones and dependencies due to outstanding activities (High Value Changes).</p> <p>A multi agency (NHSL, IHSL, MPX, BYES, HFS) meeting held on Friday 22/11/19 rephased workstream action plans to reflect expected closure of works underway (Including revalidation and commissioning), closed a number of actions and agreed processes required to evidence completion for other actions.</p> <p>The Commercial sub group continues to meet. Several meetings with IHSL, MPX & BYES have taken place and written communications have been exchanged.</p> <p>While the commercial detail has still to be worked through, work to progress the design of ventilation solutions is not progressing. Fire Enhancements high value change has been submitted and is being considered by IHSL.</p>
-----------------------	--	--

Project Workstreams	RAG Status	Comments
Ventilation	A	Workstream Status to Amber due to absence of a delivery programme for High Value Changes. Other Ventilation issues (Theatres corridor, Scrub and Anaesthetic Rooms) are being progressed by MPX without the need for Board change submission - expected completion by end Dec 2019. Work commenced on the approved AHU solution 21st October 2019, and continues within programme (expected completion April 2020)
Water Safety	R	Workstream escalated to Red due to high TVC counts post rectification works to address Pseudomonas findings (W10) Shower Hose clips (W12) have been installed but the solution restricts operation - requires additional consideration. Scottish Water officer attending this week to review
Drainage	B	Workstream closed.
Fire Safety	A	Evaluation of the impact and consequences of retro-fitting smoke dampers and other fire improvement requirements is completed and a high value change has been submitted to IHSL. Amber status due to absence of a defined programme to deliver against these requirements.
Electrical	G	Actions to address the findings of the NSS report into Electrical Safety has commenced. A multi agency workshop to demonstrate evidence required to close actions is to be held on 3rd Dec 2019. It is expected that some works for CAMHS will be required.
Medical gases	G	The review of the medical gas installations confirmed that they have been designed installed and commissioned in accordance with the relevant standards. There were 3 actions to be progressed: NHSL have confirmed by agreement with clinical services outlet positions meet clinical requirements; BYES have confirmed that all PPM (Purging etc) is in place and will continue - Sample testing will take place prior to occupation; The building information and operational manual are currently being reviewed and quality assured by IHSL (Link to action MA 2). The multi agency meeting 22/11/2019 recommends that this workstream be closed. Approval is requested from OsB

Key Achievements / Highlights since last Oversight Board

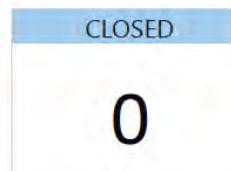
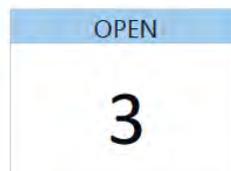
Re alignment of action plans for each workstream (22/11/2019)
Identification of fire enhancement solutions and high value change submission

Next Period Key Activities / Challenges

Commercial negotiations
Electrical workstream workshop 3rd Dec 2019

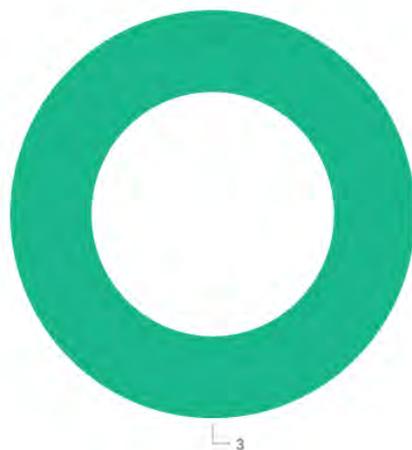
RHCYP+DCN - Management Action Log Dashboard

22/11/2019

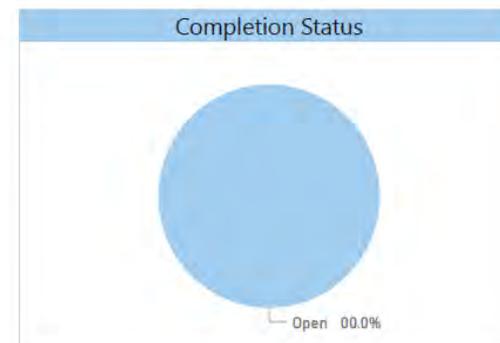


Status against Target Date

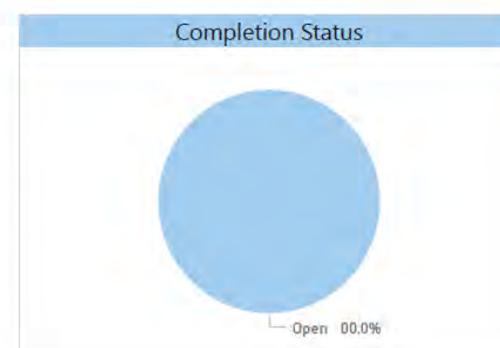
- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN

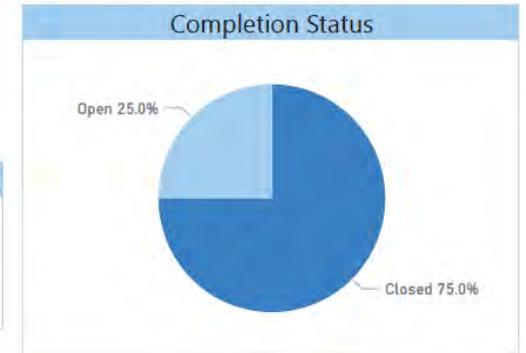


Priority for RHCYP



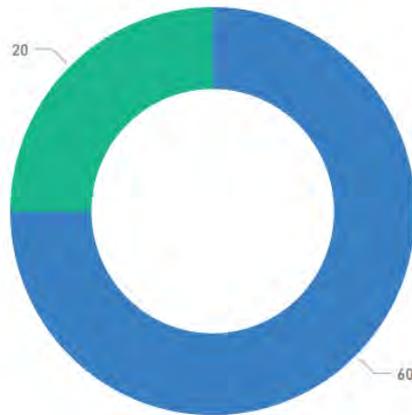
RHCYP+DCN - Ventilation Action Log Dashboard

22/11/2019



Status against Target Date

- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP



RHCYP+DCN - Water Safety Action Log Dashboard

22/11/2019

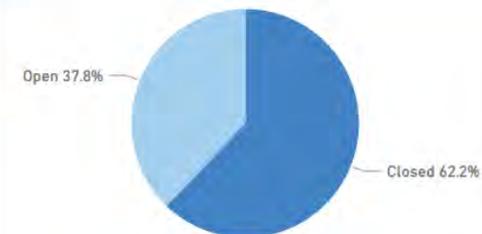
OPEN

14

CLOSED

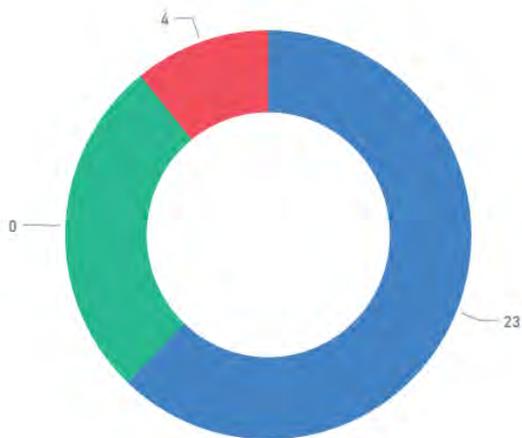
23

Completion Status



Status against Target Date

- Closed
- Actions on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



Priority for DCN

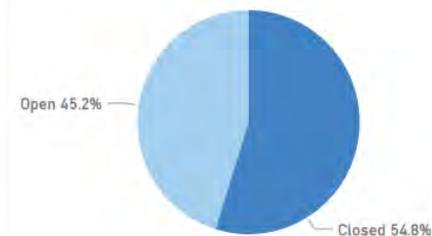
OPEN

14

CLOSED

17

Completion Status



Priority for RHCYP

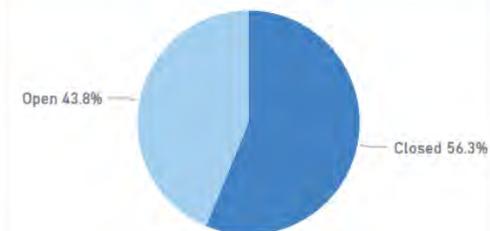
OPEN

14

CLOSED

18

Completion Status



RHCYP + DCN

Water Safety Action Log

Revised Date: 22/11/2019

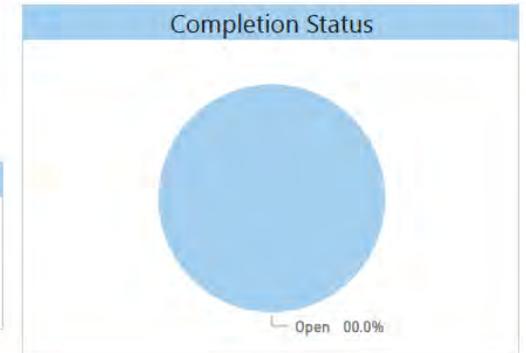
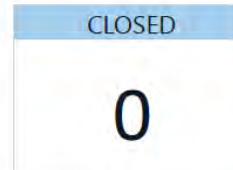
Current Date for tracking: 22/11/2019

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/Closed	Priority to RHCYP	Priority to DCN
W10	Positive Pseudomonas results	1	<p>Pseudomonas found in taps in Paediatric Medical Inpatients and DCN Inpatients . (SHTM 04-01 Part A published in July 2014) All taps (not just TMT/TMV4) to be disinfected and retested. Tee following needs to be undertaken:</p> <ul style="list-style-type: none"> - Inspect and replace as appropriate taps tap components and pipework. - Replace tap strainers and cartridges in affected TMT taps. - Remove all TMT and TMV cartridges and replace with new ones. - Remove and replace all TMT strainers (carried out at the same time as item 3). - Taps to be removed and disinfected - Once pipe work has been disinfected and taps disinfected retest the system (Augmented care areas 100% taps for TVC fungi and pseudomonas aeruginosa. Rest of a representative sample from the rest of the hospital for TVC and legionella.) <p>Note: Testing should be in accordance with SHTM 04-01 and in accordance with BS 8580-1 L8 and HSG 274 and HPS guidance September 2014: "Pseudomonas aeruginosa routine water sampling in augmented care areas for NHS SCOTLAND".</p>	BYES	29/07/2019	30/09/2019	<p>NHSL issued Change 092 to disinfect 57 outlets known to be positive for Pseudomonas. The works included within the scope of the change were completed however re-testing proved that there were still positive results returned for 23 of 48 outlets.</p> <p>It was agreed that BYES will re-test for pseudomonas and TVC for 4 no. locations (agreed in the meeting) without any additional disinfection to verify the results and the disconnected outlets for all 9 ARJO baths both at Taps and outlet.</p> <p>Westfield Caledonian to be re-used to test. John Bryson to undertake the sampling.</p> <p>Hopefully indicative results on Monday (25/11/19) and meeting to be planned on Monday to discuss the findings.</p> <p>BYES to reissue the results with ward locations.</p> <p>Orders have been placed for the 6 monthly maintenance plan.</p> <p>It is proposed that to close this item we need to demonstrate control of the immediate issue, and then move this to the Local Water Safety Group to manage under business as usual.</p> <p>The date for addressing the immediate issue is to be agreed on Monday (25/11/19).</p>	OPEN	Yes	Yes
		3	<p>Testing has found some fungal / mould contamination and high total viable counts. Given a number of indicators the water system should be disinfected and re-tested. BYES required to seek advice from the manufacturer of the valves on the strongest medium that would ensure a high level of disinfection of the whole system including the removal of bio film if present.</p>	BYES	11/09/2019	31/10/2019	<p>The water system will be disinfected and tested prior to occupation by DCN.</p> <p>•LVC086 has been issued. BYES to respond by 08/11/19.</p> <p>Full system disinfection to address TVC:</p> <p>• BYES contacting manufacturers to confirm potential disinfection mediums. Medium to be confirmed and the statement from manufacturers to be provided for consideration. - BYES draft has been issued.</p> <p>• Time line for works required for disinfection considering the best case and worst case scenario. BYES to produce this for tabling at meeting on Monday 25/11/19</p> <p>Full System disinfection to address fungal/mould:</p> <p>Paper in draft, this will be taken to ESG & OB w/c 25/11/19. Acceptance of the paper will allow this part of the action to be closed.</p>	OPEN	Yes	Yes
W12	Shower hose lengths do not comply	1	<p>Shower hose lengths do not comply with Scottish Water by-laws and guidance in SHTM 04-01 Water safety for healthcare premises. Shorten hose length or add retaining ring to ensure that shower head cannot reach WC or drain. Disinfect showers hose and drain after rectification.</p>	NHSL	11/09/2019	30/09/2019	<p>The position of some fixed retainers do not allow the hose to function clinically. SW to be contacted to review and discuss on site.</p> <p>HSF to investigate how other facilities are managing the issues.</p> <p>BYES to confirm issue date for Standard Operating Procedure for Maintenance of hoses and clamps.</p>	OPEN	Yes	Yes

W14	Instant Boil Taps and Rise and Fall Baths were found to be contaminated	1	Representatives from ZIP and ARJO to attend the site to provide specific maintenance and decontamination guidance for these products. It was proposed subject to further discussion with the AE (Water) for Lothian and HFS that the ARJO baths in Paediatric Oncology and Burns dressing clinic/ward care areas are removed and replaced with a suitable alternative. All other baths are to be reviewed maintained and tested in line with the manufacturer's guidance. to demonstrate safe water delivery as per SHTM 04-01 Water safety for healthcare premises.	IHSL	29/07/2019	22/10/2019	<p>• Zip tap dealt with above in W4.2 – still need cleaning and maintenance to be developed. ZIP to demonstrate. - ZIP manufacturer information to be provide by BYES.</p> <p>• ARJO came to site Date TBC recommendations are: - to address positive baths - ARJO to disconnect bath and decontaminate on site then provide a certificate of assurance. (This is a change from previous position reported to ESG and OB.) IHSL to confirm date (ARJO programme is 4 weeks) - The works to be planned in line with the full disinfection of the site as baths need to be connected immediately to avoid voiding the certificate of assurance. - potential future positives - ARJO decontaminate on site rather than BYES. - BYES to chase up outstanding ARJO clarification on instructions for use and cleaning</p> <p>Date TBC Monday 25/11/19</p>	OPEN	Yes	Yes
-----	---	---	--	------	------------	------------	--	------	-----	-----

RHCYP+DCN - Fire Action Log Dashboard

22/11/2019



Status against Target Date

- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP

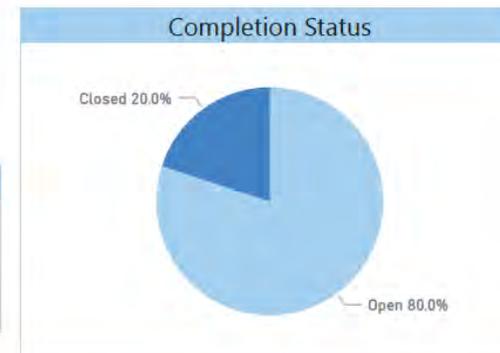


RHCYP+DCN - Electrical Action Log Dashboard

22/11/2019

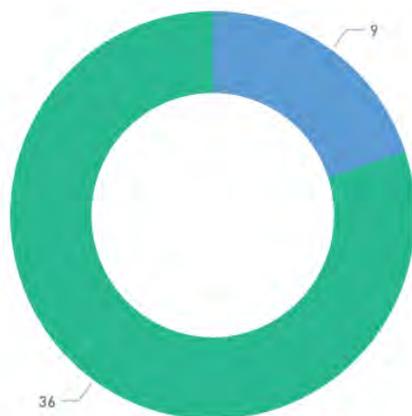
OPEN
36

CLOSED
9



Status against Target Date

- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN

OPEN
24

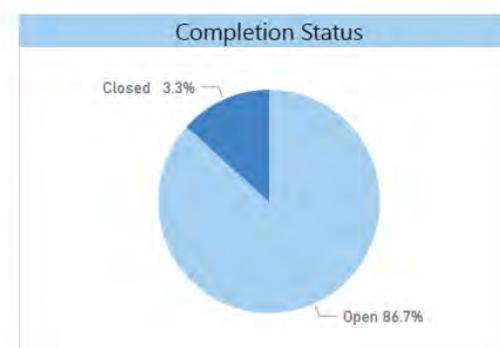
CLOSED
4



Priority for RHCYP

OPEN
26

CLOSED
4



COMMERCIAL – IN CONFIDENCE
NOT DISCLOSABLE UNDER THE FREEDOM OF INFORMATION (SCOTLAND) ACT 2002

NHS Lothian**5.**

Finance and Resources Committee
27 November 2019

Director of Finance

Update on Royal Hospital for Children and Young People, the Department of Clinical Neurosciences and Child and Adolescent Mental Health Services**1 Purpose of the Report**

- 1.1 The purpose of this report is to update members on governance arrangements surrounding the project and to seek members support for a set of recommendations relating to commercial decisions required to facilitate progress towards the opening of the Royal Hospital for Children and Young People, the Department of Clinical Neurosciences, and Child and Adolescent Mental Health Services at Edinburgh bioQuarter ('the Facility'). Such decisions affect NHS Lothian's position in terms of risk, cost and liability.

2 Recommendations

- 2.1 Members are asked to review the recommendations set out in the table below and recommend to NHS Lothian Board that these should be supported.

3 Discussion of Key Issues

- 3.1 Members will be aware that an Oversight Board has been established to support NHS Lothian in delivering the new facility, and that a Senior Programme Director has been appointed to lead this work, reporting to Scottish Government. The action taken is commensurate with the Board's escalation to Level 4 of the NHS Board Performance Framework.
- 3.2 Both the Oversight Board and the appointment of the Senior Programme Director are in support of NHS Lothian during the work to complete the new facilities and are not intended as a replacement for any governance or management processes that apply for NHS Lothian.
- 3.3 The Oversight Board will, in turn, co-ordinate advice and provide assurance to Scottish Ministers on the work and the readiness of the new facilities to open, essentially providing an additional layer of assurance. The Senior Programme Director, while reporting direct to Scottish Government will also act as an important link between NHS Lothian and Oversight Board, with the key role of ensuring that the new facility is fit for occupation. All other actions relating to the existing site and to the migration of services to the new facility will remain the responsibility of NHS Lothian.
- 3.4 As signatory to the contract, NHS Lothian continues to play a full part in this process and will continue to have overall accountability, with governance arrangements operating in the normal way. It will achieve this through membership the Oversight Board, which includes NHS Lothian's Director of Finance, Executive Medical Director and Nurse

Director, and in providing assurance around the significant and complex remedial work that must now take place to meet the required standards set for the Facility, as well as escalation of key issues to the Finance and Resources Committee or the Health Board as appropriate.

- 3.5 Under the auspices of the Oversight Board, a Commercial Sub-Group has been formed, chaired by Susan Goldsmith, which is responsible for considering the commercial issues and decisions required to make progress towards hospital opening. The Sub-Group makes recommendations to the Oversight Group. Recommendations will also be made direct to NHS Lothian where such decisions have a material or contractual impact on NHS Lothian, which will then be taken through the appropriate governance route as determined by the Director of Finance.
- 3.6 The critical path to the opening of the facility involves the following key actions, both of which require underpinning commercial decisions to be made:
- enact the processes that will allow the ventilation issues to be addressed and enactment of a further Board Change to enhance fire safety in the facility (together referred to as the 'Works'); and
 - ensure the readiness of the FM provider, Bouygues, to deliver their contractual obligations once the facility is open and occupied by staff and patients.
- 3.7 Given that the above actions and underpinning commercial decisions will have an impact on the level of risk being borne by NHS Lothian, the costs it will carry and on clinical and operational services once the Facility is open, such decisions require the support, and formal approval of NHS Lothian. The initial consideration of these actions and decisions rests with the Finance and Resources Committee before they can be taken forward.
- 3.8 IHSL have indicated that they are prepared to appoint a contractor team to deliver the Works, led by Imtech, with support from Hoare Lee and Vipond, who will design and implement the Works on IHSL's behalf. This differs from the previously assumed approach whereby Bouygues would carry out the Works. After detailed discussion, IHSL and NHS Lothian have concluded that it would be preferable for Bouygues to focus on operational readiness and for the Works to be delivered by a different entity, a contractor with a strong reputation known to NHS Lothian.
- 3.9 The Works have been progressed initially as Board Changes under the processes set out in the Project Agreement. However, the complexity of the arrangements, the scale and nature of the works and timescales within which they must be delivered mean that the normal Change process will need to be adapted to allow progress to be made.
- 3.10 Accordingly, NHS Lothian has received two documents from IHSL:
- a draft Letter of Engagement dated 15 November 2019, to facilitate commencement of the design work for the additional Works; and
 - a waiver letter dated 13 November 2019 setting out additional conditions that NHS Lothian requires to agree to progress the additional Works in order to meet a proposed completion date of Spring 2020 (DCN) and Autumn 2020 (Children and Young People).
- 3.11 The letters, once agreed and signed on behalf of the Board, will form the basis of elements of a Supplemental Agreement (SA), to be entered into in early 2020, that will expand on and contractually enact the measures required.

- 3.12 The table below sets out the key commercial issues, which will require to be dealt with in the letters and subsequent SA, and the recommended course of action to be taken. There are other issues that require finalisation, but these do not have a material impact on NHS Lothian's risk profile. Once NHS Lothian's position is agreed through governance, engagement will take place with IHSL to agree the commercial principles, which can then be accommodated in revised letters and the SA.

Issue	Recommendation
<p><u>£400k Deduction Mitigation</u></p> <p>Since the facility was handed over to NHS Lothian, IHSL have incurred over £1 million of deductions in relation to performance failures. These deductions are passed in full by IHSL to Bouygues, the FM operator. Analysis of these deductions shows up a range of errors on the part of Bouygues, who are operating the facility helpdesk and performance regime, in the way that failures are recorded and deductions generated. Alongside this, many failures are attributable to Multiplex rather than Bouygues.</p> <p>It has been agreed that the deductions will be mitigated by a sum of £400,000, this being an ex-gratia payment.</p>	<p>It is recommended that reimbursement of £280k is made to IHSL by NHS Lothian on signature of the Letter of Engagement and the balance is payable on entering into the SA in order to incentivise IHSL and Bouygues.</p> <p>Other conditions proposed are that should Bouygues receive recovery of any of these sums from Multiplex in due course these sums should be returned to NHS Lothian to avoid double-counting, and that payment would be made to IHSL for onward transmission to Bouygues.</p>
<p><u>Indemnity</u></p> <p>IHSL are seeking an indemnity to protect them from certain liabilities arising from the works. The need for such an indemnity is accepted by NHS Lothian given the highly unusual nature of the works and the complexity of interface arrangements. However, IHSL's initial proposals for the indemnity are extremely wide-ranging and NHS Lothian has been seeking to limit its scope to avoid becoming, in effect, the guarantor for Multiplex's shortcomings and taking on performance risks that should be managed by IHSL in the normal way through the Project Agreement.</p> <p>These arrangements will be in addition to the Excusing Cause (which provides deduction relief subject to protections set out in the Project Agreement) available to IHSL in the areas affected while the works are being implemented.</p>	<p>It is recommended that an indemnity should be provided but that it should:</p> <ol style="list-style-type: none"> 1. be applicable to the areas of the Facility directly affected by the Works only; 2. indemnify IHSL for Direct Losses suffered as a result of any issues for which Multiplex or Imtech would have been liable but for the Works; 3. ensure that IHSL continue to provide all of the services required of them at all times in all other respects; 4. provide other protections to NHS Lothian that allow its risk profile to be maintained.
<p><u>Operation of the Payment Mechanism</u></p> <p>The current situation is highly unusual in that while the project is now in its operational</p>	<p>A series of workshops will be run with Bouygues to establish how the payment mechanism will operate during the interim period, this being a short-term arrangement that will fall away, reverting to the</p>

Issue	Recommendation
<p>period, with the annual service payment being made in full, the facility will carry many attributes of a construction site while works are carried out.</p> <p>As indicated above, it is apparent that Bouygues still have much work to do to bring their helpdesk and performance management processes up to full operational speed.</p> <p>It has been agreed in principle that NHS Lothian will agree an approach to the operation of the payment mechanism that will incentivise Bouygues to focus on achieving operational readiness without the threat of high deduction levels for a facility with almost no staff or patients in it.</p>	<p>Project Agreement norm, once the DCN element of the facility is available.</p> <p>While it is NHS Lothian's intention to engage with Bouygues to agree the measures that will be taken, the Board team's preference is to enter these discussions with a view to eliciting from Bouygues their views on measures that they wish to be taken, rather than pre-empting this by offering concessions from the outset. However, the NHS Lothian team wish to secure the support of committee members to pursue agreement of measures that would relax the payment mechanism. The implication of this is that, during this period, NHS Lothian will not be able to recover deductions to the same level that would be the case if the payment mechanism were to apply in the normal way, although this sum cannot be quantified at present.</p>
<p><u>Termination Rights</u></p> <p>IHSL are currently potentially in default under the Project Agreement, having been served two Warning Notices, and with the potential for three more to be issued for the period up until end September. They have also sustained deductions at a level that triggers default.</p> <p>However, NHS Lothian does not wish to terminate IHSL, as working with them continues to represent the best way of delivering the facility. Therefore, NHS Lothian is willing to compromise in this area.</p> <p>IHSL are requesting that NHS Lothian should waive all of its termination rights under the Project Agreement while the works are taking place, on the basis that the threat of termination is a perverse incentive on IHSL and a major concern for funders. This is clearly unacceptable, although NHS Lothian is willing to agree a compromise position.</p>	<p>Members are asked to support the following approach:</p> <ol style="list-style-type: none"> 1. NHS Lothian should in principle waive historic termination rights as a gesture of goodwill, but to do this only once the SA is entered into in order to retain an incentive on IHSL to reach agreement on the commercial package that the SA will contain; 2. Once the SA is entered into, there will be a firm commitment by IHSL to undertake the Works. Whilst the Works are being executed, no termination rights will be exercised as a result of any events that are caused or materially contributed to by the undertaking of the Works; 3. Post-completion of the Works, the project will move to a steady state with the payment mechanism and the termination rights applying in the normal way.
<p><u>Self-Help</u></p> <p>The Project Agreement provides a mechanism for the Board to undertake the Works associated with the Changes themselves if IHSL fail to undertake them subject to certain conditions. IHSL have asked the Board to waive that right. NHS</p>	<p>Members are asked to support the following approach:</p> <ol style="list-style-type: none"> 1. The right to self-help is retained if the SA is not executed by a date to be agreed. 2. Once the SA is entered into, self-help is permitted only if IHSL fail to proceed

Issue	Recommendation
Lothian cannot accept that compromise, but is prepared to dilute the self-help rights on a limited basis.	<p>regularly and diligently/ fail to meet the completion date (as that may be extended).</p> <p>This broadly aligns with the self-help rights that NHS Lothian would have available under the Change Protocol.</p>

4 Key Risks

- 4.1 There is a risk that IHSL will find the position set out above unacceptable and will seek further concession from NHS Lothian, which may introduce further delay while this is resolved.
- 4.2 There is a risk that, despite the agreement of the measures to be taken relating to the payment mechanism, Bouygues will still not deliver the level of performance sought.
- 4.3 There is a risk that if the commercial package is not considered and agreed in the round, NHS Lothian may make concessions to IHSL that are not offset by appropriate reciprocation.

5 Risk Register

- 5.1 The delay to the Project has been added to the NHS Lothian risk register. The content of this update does not affect the risks already noted.

6 Impact on Inequality, Including Health Inequalities

- 6.1 No additional impacts arise from this update.

7 Duty to Inform, Engage and Consult People who use our Services

- 7.1 Arrangements are in place to update stakeholders on progress, including updates issued by Scottish Government and Ministers.

8 Resource Implications

- 8.1 There will be capital and revenue implications associated with works to be undertaken. The quantification of these implications is currently being assessed and will be reported to the Finance & Resources Committee for approval as soon as these are known. The indicative capital value of the combined Works, including design costs, is in the region of £6.7 million, which will be payable by NHS Lothian, although Scottish Government support will be available to finance this.

Susan Goldsmith
 Director of Finance
 November 2019

RHCYP / DCN – Oversight Board

25 November 2019.

6.

Proposed sign off process for design and construction

Situation

A new process is required to reflect lessons learnt and concerns that all relevant parties should be assured of compliance and safety at key stages. References:

ESG on 11/11/19

TD referred to previous criticisms by KPMG about sign-off arrangements for the air handling units and stressed the need for future arrangements and paperwork to be subjected to a triple lock check process. IG would progress an appropriate process of sign-off. Part of this would include the need to be clear about what NHS Lothian was asking for and that this was correct. Any disagreements would need to move to an agreed position at the outset of the process. Facilities would be part of the sign-off process. The composite of the scope of future works would be important.

OB on 13/11/18 under Commercial Progress Update

Testing process that is acceptable to NHSL, funders and IHSL in development to ensure one system of testing that technical people would be content to sign up to, to avoid multiple testing.

Background

The complexity of the acute healthcare estate is such that multiple parties are engaged in both design development stages and completion. Completion involves a “contract commissioning” element to ensure that systems are installed and working according to specification (“contract compliance”) and a NHS lead approval and commissioning stage, previously covered by HAI SCRIBE development stage 4 audit, pre-handover. The focus of that is Infection Control, but should involve all relevant stakeholders. Reference: <http://www.hfs.scot.nhs.uk/publications-/guidance-publications/?keywords=HAI>

During the development of a new build or refurbishment a large number of highly technical decisions require to be made and these are normally articulated through meetings and minutes or exchanges of correspondence. Frequently the implications of such decision points are missed by participants; lack of participation, or only part of the picture is discussed or understood. The accountability lies with the project management who are also assessing the risk to programme, cost and quality.

The issue of the Board’s requirements which would be signed off at project board level – or above? – commences the process. Initial design development by the contractor and their design team (assumes a design and build contractor) follows gradually over the project lifespan and would be articulated through “signed off” Room Data Sheets, 1:200 and 1:50 drawing sets, etc. and related / incorporated technical and

environmental schedules. Each production or change requires sign off – a delay in processing will be costly to the programme. Therefore projects require to be resourced to cope with the workload.

Assessment

The gap in process relates to ensuring that the relevant questions are asked and all relevant parties provide comment and are able to provide assurance that all is in order to proceed to the next stage (which will ultimately be clinical and services commencement).

An assessment will require to be made by the project director / project manager whether a decision point requires higher levels of assurance sign off. After the initial design sign offs, such points would be where a departure from guidance as understood (derogation), changes in risk profile are identified (healthcare provision – use of the space, safety, or programme, cost and quality).

Making such a preliminary assessment will require expert advice. Such advice will be from external Technical Advisors, or internal advisory functions, such as Infection Control, Facilities / Estates, Fire, etc.

Recommendation

That the following process is tested and then followed with completed templates attached to relevant decision documents. These could range from individual design sheets, risk assessments, meeting minutes, design reports, change orders, etc. A summary should be reported to the relevant project steering board(s).

Iain F Graham

Director of Capital Planning and Projects, NHS Lothian

22 November 2019

V1.0

Design Development Assurance Process – RHCYP / DCN

Decision Point:	1. Project initiation	2. Design development	3. Construction change	4. Commissioning
PROJECT REFERENCE:				
Description of the decision:				
Initiated by:		Responsible Group:		
Role:		Responsible Director:		

NHS Lothian internal sign off process:

Agreed by:	Date:	Department / Group:	Comment / issues for action:	RAG¹	Follow up closed (by / date):
		Project Manager	<i>Validity of the change – any issues arising</i>		
		Project Technical Adviser	<i>Specialist validation of the change</i>		
		Service lead	<i>Clinical operational acceptance and SOP implications</i>		
		Infection Control	<i>Clinical infection risk assessment for conformance</i>		
		Facilities	<i>Hard FM / Engineering assessment for conformance and operational issues (Lifecycle, SOP implications, etc)</i>		
		Facilities	<i>Soft FM assessment –for conformance and operations including cleaning standards</i>		
		Health & Safety	<i>Specialist validation of the change</i>		
		eHealth	<i>Specialist validation of the change</i>		
		External / Third Party authorised engineer	<i>Engineering assessment for conformance and operational issues</i>		
		Project Director			
		Director of Capital Planning & Projects	If identified as part of an escalation / decision of importance		
		Director of Facilities			

¹ RAG – 1. OK; 2 – ok with advisory comments; 3 – Further information required (detailed in comments); 4 – Not Agreed (escalation required)

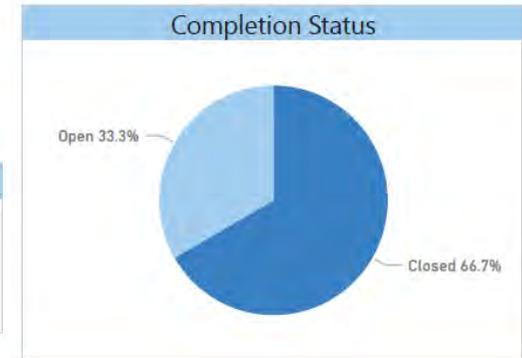
		Executive Director			
--	--	--------------------	--	--	--



8.

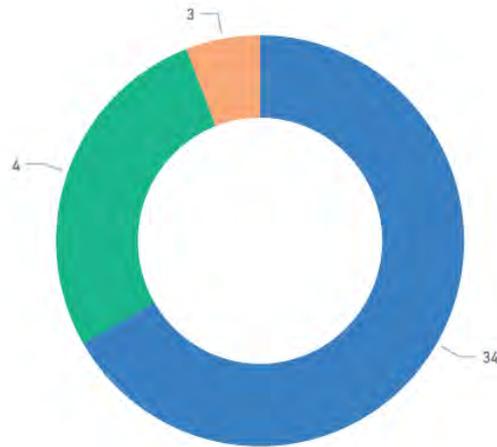
RHCYP+DCN - Continuity of Services on Existing Sites Action Log Dashboard

25/11/2019

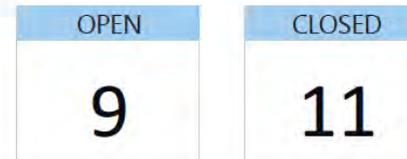


Status against Target Date

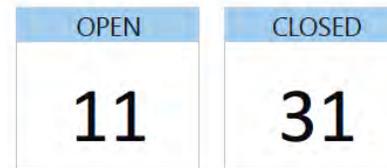
- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Actions for DCN at WGH site



Actions for RHSC Sciennes site



RHCYP + DCN

Continuity of service provision on current DCN and RHSC sites

Revision Date: 25/11/2019

Current date for trackin 25/11/2019

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/ Closed	DCN	RHSC
Capacity										
1	Winter planning	1.1	RHSC: Increase in ED capacity to maintain flow	F Mitchell	05/07/2019	30/11/2019	Give ED some of the OPD area to expand into. Relocation of OPD to 3 RBT has been costed and work are now underway. Computers for the additional 8 rooms will be brought from the new hospital. ED trolleys have also been moved from the new hospital to ED at RHSC (10 in total) to replace existing trolleys that have gone out of maintenance contract.	OPEN	No	Yes
		1.2	RHSC: increase medical beds and cubicles	F Mitchell	05/07/2019	30/11/2019	Ward 4 and PIU have now relocated. 2 shower trolleys moved to RHSC from RHCYP.	CLOSED	No	Yes
		1.3	RHSC: Additional 15 winter B5 posts advertised and shortlisted, to supplement medical nurse staffing. 6 additional B2 posts will be sought from the staff bank on a guaranteed shift basis for night duty staffing on ward 4 (medical). Additional nursing posts approved in June 2019 for an increase in year-round nurse staffing levels in the ED, particularly to support evening and night activity pressures. Most posts now recruited to for Phase 1 of this expansion, including an Advanced Nurse Practitioner for the ED team.	F Mitchell	05/07/2019	30/11/2019	B5 Winter posts - first round of interviews held 2 October. Closing date for second round 18th October; 1 applicant shortlisted. Advertiser again closing 15th November 2019. Second round of Winter staff recruitment disappointing- going back out to recruitment again. Extra winter beds being staffed mainly by core ward staffing. Band 2 Winter Posts - Bank Requests from November onwards. Additional permanent ED posts - ENP job descriptions being finalised for recruitment end Oct onwards	OPEN	No	Yes
		1.4	RHSC: Increase haem/onc day care beds by 3	F Mitchell	05/07/2019	30/11/2019	Part of ward moves already agreed above.	OPEN	No	Yes
		1.5	Sleep service expanded staffing for new hospital but there is no extra capacity in old RHSC and winter pressures can lead to sleep studies being cancelled. Look at potential for services at home being expanded to address waiting list?	F Mitchell	05/07/2019	07/10/2019	Home sleep studies have now started.	CLOSED	No	Yes
		1.6	Winter Planning adult acute services	M Pearson	05/07/2019		Due to ongoing bed closures and pseudomonas in water, DCN is currently not accessed by the WGH site for boarding. Bed pressures in down stream facilities may affect DCN; managed through operational site and capacity management. CLOSED in relation to cancelled DCN moves.	CLOSED	Yes	No
2	Paediatrics at St John's	2.1	Consideration of increasing Services at SJH to reduce pressure of RHSC and enhance care closer to home for West Lothian children.	F Mitchell	05/07/2019	TBC	The SJH Children's Ward is now open again for 4 nights/week, which will reduce the pressure on both the RHSC ED and the pressure on inpatient beds at RHSC. The patient pathway for West Lothian children who are admitted to RHSC includes repatriation to the SJH Children's Ward, where clinically appropriate, to complete their inpatient care. In addition, West Lothian children admitted to RHSC who require follow up Planned Investigations or outpatient appointments are referred back to SJH for this, so they can receive care closer to home and to reduce pressure on RHSC services. Current staffing levels in other specialist teams mean that further Outreach at SJH is not currently possible however Paediatric Programme Board will be reviewing this further on 29 October 2019. CLOSED in relation to cancelled RHSC moves. The Royal College of Paediatrics and Child Health (RCPCH) have been approached to do a follow up review, including a review of activity which could be moved to SJH to support services there. Feedback expected w/c 18 /11/19 from the College about whether they could undertake this and when. Response from the RCPCH still awaited. Chased up on 22/11/19.	OPEN	No	Yes

3	Medical equipment	3.1	Interventional Neuroradiology provision: increased demand (due to service delivery issues in Glasgow) for ageing and increasingly unreliable interventional neuroradiology equipment at DCN.	M Carr	09/07/2019	15/11/2019	Work is ongoing to confirm cost and programme certainty for options. Indicative cost for replacement option is £900k. Recommendation is option to replace existing equipment, supported by Oversight Board 17/10/19. Confirmation was received on 29/10/19 that the Cabinet Secretary was content the Board proceeds with the recommendation to purchase the additional equipment for DCN. Timelines for purchase and installation to be confirmed. Costs confirmed and a PO number issued. Contingency plan being developed with consideration to GG&C INR services and capability of support services including DCN, HDU and Anaesthetics. The times for the start of the project will be confirmed at the initial planning meeting scheduled for 4th Dec.	OPEN	Yes	No
		3.2	Theatre lights in four of the operating theatres at RHSC Sciennes are old and unreliable, with no replacement parts available. New lights required.	F Mitchell	09/07/2019	15/02/2020	Quotes received, delivery and installation dates being confirmed with the 2 suppliers as well as confirmation of any enabling works they require pre-installation. Will then require a theatre shutdown timetable to be agreed with clinical teams, to minimise impact on patient service, for removal of old lights and installation of new. Timetable for whole programme expected to be available in next 4-6 weeks. Meeting week beginning 28 October to discuss co-ordinating the planning for installation and theatre down time. Working group planning the theatre light replacement programme met again last week and outline plan expected by 11/11/19. Decision now made to replace lighting in 4 theatres, timetabled for February school half term holiday to minimise down time. Order being placed with Maquet so site survey can be undertaken and any enabling works identified. Maquet is the standard theatre light provider in NHSL, so these lights can be re-cycled to other sites after the RHSC move.	OPEN	No	Yes
		3.3	General x-ray equipment that had been installed in RHCYP required again at RHSC	F Mitchell/M Carr	09/07/2019	08/11/2019	New equipment arrived on site 14/10/19 and installation underway. This equipment will be moved elsewhere on closure of RHSC. On schedule to go live on target date of 8/11/19. Room is finished and is now back in full clinical use.	CLOSED	No	Yes
		3.4	Extension of maintenance contracts for elderly equipment at Sciennes and DCN.	F Mitchell/M Carr	09/07/2019	19/09/2019	Contracts and maintenance plans now in place. Will be updated on a quarterly basis.	CLOSED	Yes	Yes
		3.5	Additional scope storage is required for theatres at RHSC Sciennes as two cabinets were moved to RHCYP. Currently one is on loan, with rental charges due from October 2019.	F Mitchell/M Carr	09/07/2019	30/11/2019	Cabinets moving back to be reinstalled in Sciennes on 11/10/19. Validation process started on 17/10/19 and successfully completed. Expected to be operational from 07/11/19 onwards. The validation process will not be signed off as complete until next week, but the interim storage system currently on hire is due to remain in place until 30/11/19 so no issues.	OPEN	No	Yes
		3.6	Replacement tube for CT scanner at RHSC	F Mitchell/M Carr	09/07/2019	31/07/2019	Tube replaced - COMPLETE	CLOSED	No	Yes
		3.7	Videotelemetry: access to VTEM beds has been reduced in DCN since April 2019 with the reconfiguration of wards and restrictions on admissions due to positive testing for pseudomonas aeruginosa. Delaying moves to Spring 2020 extends the limited capacity and impact on waiting times. Use of portable equipment at one bed has enabled some VTEM admissions since August, but a hardwired bed with full VTEM capability and monitoring is required.	M Pearson	01/08/2019	12/11/2019	Install hardwired VTEM into ward 33. Utilise portable equipment for appropriate waiting list patients at home. Remedial electrics works required prior to moving the equipment. An external contractor has been on site to look at the work - Estates to confirm date and cost. Optima will come after the electric works, £7k signed off. Complete from Estates side they just require some IT connection. Then Ward 33 will open up to 16 beds.	OPEN	Yes	No
Clinical Support Services										
4	Pharmacy	4.1	Inadequate staffing to maintain opening hours for dispensary on 2 sites since in organisational change 1 dispensary manager was redeployed to another core service effective July 2019 when integration was meant to occur	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 7 dispensary manager resource required to allow provision of medicines on RIE and RHSC sites to prevent impact upon patient experience while RHSC remains open; and minimise impact of stress on staff health and wellbeing. 1.0wte band 7 Pharmacy Technician = £43,500	CLOSED	No	Yes
		4.2	Inadequate pharmacy support workers (PSW) staffing to deliver an integrated medicines distribution hub for RYCYP/RIE with required staff still working on RHSC site to maintain dispensary service	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 2 and 3 PSW resource required to prevent impact upon availability of medicines on RHSC site; and minimise impact of stress on staff health and wellbeing. 1.0wte band 2 PSW plus 2 0wte band 3 PSW = £77,192	CLOSED	No	Yes
		4.3	Pump-prime funding for staff resource to deliver the One Stop model has ceased, which is the backbone of medicines supply to patients to underpin management of capacity and flow at the new hospital site	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Funding for pharmacy technician resource must be reinstated to continue this model to be delivered. To address 3.4 and 3 5: 1 0wte band 4 Pharmacy Technician = £29,985	CLOSED	No	Yes
		4.4	Extended opening hours and weekend working rotas of the integrated pharmacy department at RIE was implemented in June 2019 in readiness for move of the RHSC in July 2019. To avoid lone staff working the full staff complement was needed on one site to full fill this rota. With pharmacy staff members remaining on RHSC the	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 4 pharmacy technician resource needed to ensure extended pharmacy opening hours at RIE not put at risk, which would affect capacity and flow on RIE site See 5.3 above	CLOSED	No	Yes

		4.5	One Site Lead Pharmacist redeployed to another post during organisational change to integrate the 2 pharmacy departments leaving 1 Site Lead Pharmacist to manage teams across 2 sites without a deputy to support operational day-to-day management or change management of the teams	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Deputy pharmacist (Band 8a) required to support site lead pharmacist for RIE/RHSC until integration of the 2 departments is complete, which will help minimise impact of stress on site lead pharmacist health and wellbeing 1.0wte Band 8a Pharmacist = £65,625	CLOSED	No	Yes
		4.6	Cross site transport of medicines 7 days a week is needed but the ad hoc arrangements currently in place (e.g. Blood bikes, taxi runs) is not suitable for the extended duration that off-site daily delivery of medicines will be needed until RHSC move. This is especially an issue for delivery of intrathecal chemotherapy agents that have unique transport requirements under CEL30 (i.e. anyone transporting these medicines must be trained and named on the intrathecal register as competent to undertake the task allocated to them including transport)	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Funding to NHS transport and portering services for 1.0wte dedicated driver(s) (to be trained in CEL 30 requirements) to transport medicines between 09:00 to 17:30 Monday to Friday and 10:00 to 14:00 Saturday. 1.0wte Band 2 = £24,370	CLOSED	No	Yes
5	Laboratories	5.1	Minor changes were made to on-site Blood Science laboratory hours with the announcement of the delay in July 2019, with agreement that provision would remain under constant monitoring/ review.	M Grey	09/07/2019	31/07/2019	The NHSL Blood Science laboratory service at RHSC will continue with no alteration to service but service delivery/ performance will be monitored/ kept under continuous review in order to ensure that a robust and sustainable service continues to be provided to RHSC users and their patients.	CLOSED	No	Yes
Facilities Management										
6	Catering	6.1	Extend canteen opening times and preparation of meals on RHSC site - for better utilisation of staffing and reduction in waste.	G Curley	23/09/2019	14/10/2019	Chef now on site. Collation of menus and standard ordering.	CLOSED	No	Yes
		6.2	Procurement of two fridges for RHSC facility.		23/09/2019	14/10/2019	Order placed	CLOSED	No	Yes
		6.3	Communication with catering staff about sites and rosters.		23/09/2019	08/10/2019	Chef now on site; communication with catering staff underway.	CLOSED	No	Yes
		6.4	Improved signage and marketing for RHSC service		23/09/2019	14/10/2019	Communication in place on site	CLOSED	No	Yes
		6.5	HACCP		23/09/2019	08/10/2019	Chef now on site: completion of HACCP	CLOSED	No	Yes
		6.6	Explore options for third party support for catering		23/09/2019	18/11/2019	Discuss with Edinburgh Childrens Hospital Charity - Waiting for feedback from patients and visitors (4 week trial). Explored with charities, no takers.	CLOSED	No	Yes
		6.7	Replace dining room furniture		21/10/2019	31/10/2019	Ordered for delivery w/c 28/10/19 - DELIVERED	CLOSED	No	Yes
7	Parent accommodation	7.1	Improve environment of parents accommodation	G Curley	23/09/2019	02/10/2019	Thorough clean of parents accommodation, and enhanced cleaning within domestic services schedule.	CLOSED	No	Yes
		7.2			23/09/2019	31/10/2019	Parent accommodation reviewed. Refurbishment and new furniture requirements identified.	CLOSED	No	Yes
		7.3			23/09/2019	30/09/2019	Improve communication between FM team and Family Support re use of and care for parent accommodation. Protocol agreed	CLOSED	No	Yes
8	Domestics	8.1	Domestic services, including increased pressure on staff to make existing environment as good as it can be.	G Curley	23/09/2019	30/09/2019	Review current provision with a view to providing enhanced service to compensate for condition of the environment.	CLOSED	YES	Yes
		8.2			23/09/2019	10/10/2019	Ensure all staff only areas are in receipt of full staffing levels.	CLOSED	YES	Yes
		8.3			23/09/2019	30/09/2019	Complete analysis of Facilities Monitoring Tool.	CLOSED	YES	Yes
					23/09/2019	30/09/2019	Transfer of new equipment from RHCYP to RHSC /DCN	CLOSED	YES	Yes
		8.4			21/10/2019	01/12/2019	Move to disposable mops to avoid double dipping. Laundry of mops does not remove C Dif	OPEN	YES	Yes
9	Logistics	9.1	Logistics services	G Curley	23/09/2019	06/01/2020	Utilisation of staff in post to provide security at RHSC: give notice to current Security Contractor. Notice given. Security will become NHSL responsibility in the new year, bringing substantial savings.	OPEN	No	Yes
		9.2			23/09/2019	30/09/2019	Secondment opportunity for supervisor vacancy now being progressed.	CLOSED	No	Yes
10	General estate	10.1	DCN - General state of facilities; walkround and identification of works	G Curley	23/09/2019	05/10/2019	Ward 31 additional shelving	CLOSED	Yes	No
					23/09/2019	30/11/2019	Ward 33 – Painting completed. Wet room complete. Flooring patches to be confirmed.	OPEN	Yes	No
					23/09/2019	30/11/2019	Ward 32- Painting completed. Flooring patches to be confirmed.	OPEN	Yes	No
					23/09/2019	11/11/2019	Neurophysiology - Consultant office painted. Senior physiologist office to be painted w/b 4/11/19. Carpet due to be replaced on 9/11/19. DCN Admin corridor and Directorate Asst office carpet to be replaced 9/11/19.	CLOSED	Yes	No
					25/10/2019	06/01/2020	DCN FIRE ALARM AND DETECTION UPGRADE	OPEN	YES	
					23/09/2019	30/11/2019	Ward 31 Painting has commenced, however Room D is still not completed, so this means there is no-where to decant patients to allow the patient bays to be painted. The ward corridor/bathrooms etc have been painted. Neurophysiology reporting room- flooring to be re-placed 30 Nov	OPEN	Yes	No
				23/09/2019	31/10/2019		CLOSED	No	Yes	
			RHSC - General state of facilities; walkround and identification of works Equipment transferred from new RHCYP to existing site to benefit patient care/experience.	P Campbell	01/10/2019	31/12/2019	Equipment transferred included patient easy chairs, Mon900, Dia900, trollies, fridge, freezers, shower trollies, wheelchairs, bracket table and sedation tubing. Lot of work around transferring back top up items and various high tariff/specialist order sundries.	OPEN	Yes	No

			Unannounced HEI inspection of RHSC and DCN took place 22/10/19-24/10/19.	A McMahon	22/10/2019	15/01/2020	Draft report will be emailed on 4/12/19 to check for factual accuracy. Sign-off of the report and return to HIS by 18/12/19. The final report will be published on 15/1/20. Verbal feedback from inspectors at the end was positive.	OPEN	Yes	Yes
		10.2	Fire and Rescue Service (F&RS) Audit of RHSC Sciennes premises	F Mitchell	20/11/2019	18/12/2019	Fire and Rescue Service (F&RS) Audit of RHSC – Revised letter from the F &RS received on 20 November, following their audit visit on 28/10/19. Action plan required to be submitted to F&RS by 18 December to address a number of fire safety arrangements which they consider are ‘not appropriate’, including improvements to the Basement corridor area. Draft Action plan being developed following meeting held on site on 20 November and immediate actions are in hand.	OPEN	No	Yes
Staff										
11	Communication with staff	11.1	General staff communications, including annual leave, pay, expenses, car parking, delaying retirement	J Butler	23/09/2019	10/07/2019	Frequently asked questions updated and published on intranet 10/07/19	CLOSED	Yes	Yes
12	Staff wellbeing	12.1	Supporting staff wellbeing	J Butler	23/09/2019	18/11/2019	Regular Exec Team/Senior Team Walkarounds. Next Exec Team visits are at DCN on 24 October and RHSC on 29 October. Chief Nursing Offer visited DCN w/c 7 October. Improvements to facilities and the staff dining room at RHSC have been warmly welcomed by staff. The local staff health and wellbeing programmes continue on both sites as well as access to the wider corporate staff wellbeing programmes. There is also good Partnership support from the trades unions.	OPEN	Yes	Yes
13	DCN staffing	13.1	In light of nursing staff leaving DCN in anticipation of the move to RIE, the workforce has been reduced. There is a need to ensure we retain current staff, and quickly fill vacancies.	G McAuley / M Pearson	07/10/2019	31/03/2020	On going action. Over 50% of vacancies in nursing (band 5 and 2) and administration have been filled - offers made and start dates confirmed. There are 9 x B5 vacancies and mat leave.	OPEN	Yes	No
		13.2	Anaesthetic out of hours rota cover for DCN. Provision of robust out of hours anaesthetic rotas for the ~6-9month period between DCN team moving and Paediatric team moving to the RIE site. Originally plan was for paediatric and neuro trainee rota to combine.	M Carr	25/11/2019	01/04/2020	Appoint 4 fixed term one year specialty drs to provide sustainable rota and avoid requirement for consultants to cover a junior rota	OPEN	Yes	No
Patients and public										
14	Patient appointments and communications	14.1	Inform patients of any changes to appointments	J Campbell	09/07/2019	31/07/2019	All patients with appointment in July and August were contact by phone to reschedule to the old sites. All further appointments have been notified by letter.	CLOSED	Yes	Yes

From: [Marinitsi, Katerina](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Chief Medical Officer](#); [Henderson C \(Calum\)](#); [McLaughlin C \(Christine\)](#); [Colin Sinclair](#); [Cosens, Sorrel](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); [Gordon James](#); [Graham, Chris](#); [Jacqui Reilly](#); [Jim Miller](#); [Joyce, Alex](#); [Judith Mackay](#); [Little, Kerryann](#); [McMahon, Alex](#); [Morgan, Mary](#); [Murray, Fiona](#); [Nicol, Nadine](#); [Peter Reekie](#); [Roxanne Gallacher \(Jim Miller PA\)](#); [Trotter, Audrey](#); [Walker, Anna](#)
Subject: RHSC, DCN & CAMHS Oversight Board meeting - 05-12-19 - Papers
Date: 04 December 2019 08:52:30
Attachments: [RHSC_DCN_CAMHS_OB_05-12-19_papers.pdf](#)

Dear All,

Please find attached Agenda and papers for the next RHSC, DCN & CAMHS Oversight Board meeting to be held at 08.00am on Thursday 5th December 2019 in Meeting Room 5, Waverley Gate.

Please note the dial in details will be the same as usual:

[REDACTED]
Participant Passcode is [REDACTED]

Kind Regards,
Katerina

Katerina Marinitsi | Support Officer | NHS Lothian Corporate Governance Team | Waverley Gate | 2-4 Waterloo Place | Edinburgh, EH1 3EG | [REDACTED]

Achieving [deadlines](#) means you are respecting your colleagues and supporting effective decision-making

The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service. For more information please visit <http://www.symanteccloud.com>



Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 5 December 2019, 8:00 – 9:30am

Venue: Room 5, Waverley Gate, EH1 3EG

AGENDA

1.	Chair's Welcome and Introductions	FMc	V
	Apologies: Susan Goldsmith,		
2.	Minutes of previous meeting for approval: 28 November 2019	FMc	*
3.	Matters Arising		
	3.1 Helpline provision	TG	V
4.	Senior Programme Director's Report	MM	*
5.	Commercial Arrangements paper to NHS Lothian Private Board 4 December 2019	SG	*
6.	High Value Change 107 - Ventilation Works to Paediatric Critical Care and Haematology / Oncology	BC	*
7.	Shower hose length – summary of issues	TG	*
8.	Financial Position	SG	*
	STANDING AGENDA ITEMS		
9.	Technical Reviews progress		
	9.1 Ventilation	BC	V
	9.2 Water Quality	BC	V
	9.3 Fire Safety	BC	V
	9.4 Electrical Safety	BC	V
10.	Service Continuity on Existing RHSC & DCN Sites	TG	*
11.	Communications		
	11.1 Staff communications	JM	V
	11.2 Patient/public communications: <i>Ward 2 RHSC briefing for info</i>	JM	*
	11.3 Requests for information	SC	V
12.	Any Other Competent Business		
13.	Date of Next Meeting		
	Thursday 19 th December 2019, 8am, Room 5, Waverley Gate		

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Wednesday 28 November 2019 in Meeting Room 5, Waverley Gate, Edinburgh.

Present: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Ms C. McLaughlin, Chief Finance Officer, Scottish Government; Ms S. Goldsmith, Director of Finance, NHS Lothian; Ms T. Gillies, Medical Director, NHS Lothian; Professor A. McMahon, Nurse Director NHS Lothian and Mr P. Reekie, Chief Executive, Scottish Futures Trust;

Present by Telephone: Mr G. Archibald, Joint Staff Side Representative and Mr C. Sinclair, Chief Executive, NHS National Services Scotland

In Attendance: Ms M. Morgan, Senior Programme Director; Mr B. Currie, Project Director, NHS Lothian; Mr C. Henderson, Scottish Government; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

In Attendance by Telephone: Mr G. James, Director of Facilities, Health Facilities Scotland; Mr E. McLaughlan, Assistant Director, Engineering, Environment and Decontamination, Health Facilities Scotland; Ms J. Mackay, NHS Lothian Director of Communications and Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work.

Apologies: Mr J. Miller, Director, Procurement, Commissioning & Facilities, NHS National Services Scotland and Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side)

1. Minutes of previous meeting – 13 November 2019

1.1 The minutes of the meeting held on 13 November 2019 were accepted.

2. Matters Arising

2.1 Helpline Provision

- Formal proposal around continuation of the helpline to be prepared for inclusion with briefing information to Cabinet Secretary.

TG

2.2 Partnership Engagement in Fire Review Process

- Noted that a meeting with partnership is currently being arranged.

3. Senior Programme Director's Report

3.1 The significant progress as detailed in the report was noted:

- Noted that Programme for Delivery still could not be presented due to issues around outstanding High Value Changes (HVC)
- The improved engagement with IHSL was noted following the move to the new management company – George Street Asset Management
- Commercial discussions continue and until indemnities can be agreed, works signed off for the design would not be progressed. The priority remains to get indemnities signed off
- Noted that DCN programme remains dependent on securing control of the water system and fire safety enhancements
- A recent Multiagency meeting had been held with HFS and others where a number of actions had been closed off and dates, processes and evidence requirement had been agreed

Ventilation

- Timelines for ventilation solutions in relation to Theatre corridor extract, Scrub extract room and Anaesthetic rooms had been reviewed and reframed to give improved accuracy with action plans in place
- Air Handling Units (AHUs) work progressing well. DCN AHUs work to be completed by the end of December 2019 and the AHUs in Children's areas to be completed April 2020

Water Safety Workstream

- Pseudomonas works ongoing
- Shower hose clips being inspected by Scottish Water this Friday for compliance
- Timeline now in place for disinfection of all ARJO baths on site with an allowance built in should any baths need to be transported back to Poland for any further work needed.

Fire Safety

- Ongoing discussion with IHSL around the detail and scope of the high value change for fire rectification works

Electrical

- Noted that of the 45 or so workstream actions, 9 are closed and 36 remain outstanding
- Many actions involved demonstrating and evidencing solutions that were already in place
- In relation to CAMHS work, IHSL had been asked to evidence compliance further
- An Electrical Workshop to be held next week - 03 December 2019.

Medical Gases

- Oversight Board content to now close off Medical Gases actions.

General

- Oversight Board noted the extent of work and progress being made
- Discussion on ensuring that technical issues from the Queen Elizabeth HFS/HPS reviews had been taken account of and reviewed in relation to RHCYP site
- NHSL paper outlining actions to NSS in relation to water to come back to the Oversight Board following internal discussion. This would include explicit learning points from the Queen Elizabeth HFS/HPS reviews around infection control.

TG

4. Commercial Progress Update

- Noted that work around the signed letter of engagement with IHSL to commission design and indemnities involved remains ongoing
- Letter of engagement to be prepared for presentation at the private NHSL Board Session on 4 December. The Board paper would need to be agreed with Cabinet Secretary prior to submission

SG

- Letter of engagement had been discussed at the NHSL Finance and Resources Committee meeting on 27 November 2019, where it had been suggested that a section in the letter around securing when an initial design would be received, would be helpful in mitigation of the risk that NHSL would be agreeing to carry
- A paper would need to go to a future Public NHSL Board meeting to provide narrative and transparency
- It was recognised that principles had been broadly accepted by parties involved and time was now being spent focussing on the detail of wording.
- The oversight board were reminded that there was also the option to escalate this further through Scottish Government if required to achieve a resolution by 4 December 2019. **SG to pick this up with CM out with the meeting**
- The option of a Special Board meeting in December if required was also noted.

5. Sign-off process for design and construction

- The paper setting out the current internal processes and sign off undertaken was noted and would be taken away and developed further
- The current processes did not include reference to external sign offs that may be necessary
- It was noted that there was a Capital and Facilities workshop scheduled for January 2020 which could develop the process further and test gaps
- It was recognised that there would be HFS/HPS formal sign off at designated points moving forward as the new national approach was progressed

6. Technical Reviews progress

6.1 Ventilation

6.2 Water Quality & Sampling

6.3 Fire

6.4 Electrical

- Already covered under item 3 above.

7. Service Continuity on Existing RHSC & DCN Sites

- The action log and dashboard were noted.
- There was discussion on the ongoing work around INR equipment replacement in DCN and the need for careful timing and liaison with the Glasgow service who would be providing locum cover for the time the NHSL equipment was being replaced. It was also noted that NHSL was supporting the whole of Scotland at the moment. **TG to provide detail to CM for the Cabinet Secretary briefing.**
- It was noted that as part of routine testing in augmented care areas of the current Sick Children's hospital two outlets had tested positive for Pseudomonas. These were being managed in the normal way and a look back to January 2019 had identified no related cases.
- Internal discussion was ongoing about how to report this to parents on ward, in such a way as to not give significant or additional alarm but at the same time remaining mindful of current events and to provide transparency.
- The existing work, control measure and communication were noted and FM would discuss this further with out with the meeting.

FM/TG

9. Communications

9.1 Staff communications

- Staff update communication to be prepared for circulation after the 4 December 2019 NHSL Board meeting. To be reviewed by the oversight board on 5 December prior to distribution.

JM

9.2 Requests for Information

- It was noted that response to a Parliamentary Question around equipment was currently being compiled

10. Any Other Competent Business

10.1 Fire Safety Audit at RHSC, Sciennes

- Fire improvement notice received relating to basement and storage issues. This follows a recent visit a few weeks ago.
- Information around this to also be included in information to be provided for the Cabinet Secretary briefing.

TG

10.2 NHSL Internal Audit Report on RHCYP, DCN & CAMHS

- Noted that the report was due to go to NHSL Audit and Risk Committee on 13 January 2020
- Scottish Government would welcome an early sight of the draft report

SG

11. Date of Next Meeting

11.1 The next meeting is scheduled for **Thursday 5 December 2019, 8am, Room 5, Waverley Gate.**



RHCYP & DCN - Senior Programme Director's Report

Report Date	02/12/2019	Programme RAG Status (now)	A
Submitted by	Mary Morgan	Programme RAG Status (previous Oversight Board)	A

General Update		It is not yet possible to determine the overall programme milestones and dependencies due to outstanding activities (High Value Changes). The Commercial sub group continues to meet. Several meetings with IHSL have taken place and written communications have been exchanged. While the commercial detail has still to be worked through, work to progress the design of ventilation solutions is not progressing.
----------------	--	---

Project Workstreams	RAG Status	Comments
Ventilation	A	Workstream Status to Amber due to absence of a delivery programme for High Value Changes. Other Ventilation issues (Theatres corridor, Scrub and Anaesthetic Rooms) are being progressed by MPX without the need for Board change submission - expected completion by end Dec 2019. Work commenced on the approved AHU solution 21st October 2019, and continues within programme (expected completion April 2020)
Water Safety	R	Workstream escalated to Red due to high TVC counts post rectification works to address Pseudomonas findings (W10). However, additional works to strip back the associated pipework at 13 of these outlets has resulted in satisfactory water testing results. The outlets are being autoclaved and, when confirmed successful, this method will be applied to all other affected outlets. It is expected that this work will be complete by end Dec Shower Hose clips (W12) have been installed but the Scottish Water officer did not approve the solution at inspection on 29th November due to the potential to bypass the restrictor. Alternative solutions are being explored.
Drainage	B	Workstream closed.
Fire Safety	A	Amber status due to absence of a defined programme to deliver against these requirements. A revised high value change (109) has been drafted in line with IHSL request.
Electrical	G	Actions to address the findings of the NSS report into Electrical Safety has commenced. A multi agency workshop to demonstrate evidence required to close actions will now be held on 11th Dec 2019. It is expected that some works for CAMHS will be required.
Medical gases	B	Workstream closed (Oversight Board 27th November 2019)

Key Achievements / Highlights since last Oversight Board

Next Period Key Activities / Challenges

Commercial negotiations. NHSL Board meeting 3rd December 2019

RHCYP+DCN - Management Action Log Dashboard

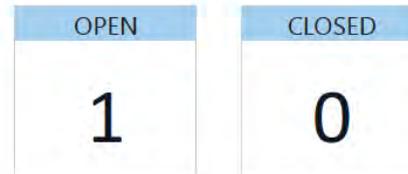
29/11/2019

Status against Target Date

- Closed
- Actions on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP

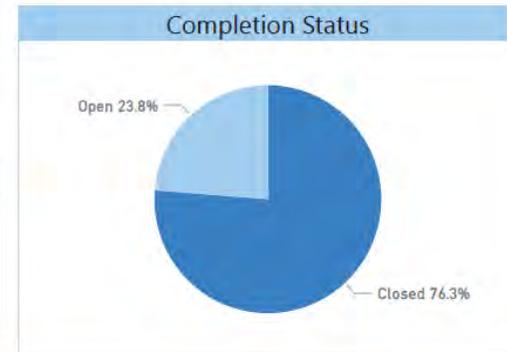


RHCYP+DCN - Ventilation Action Log Dashboard

29/11/2019

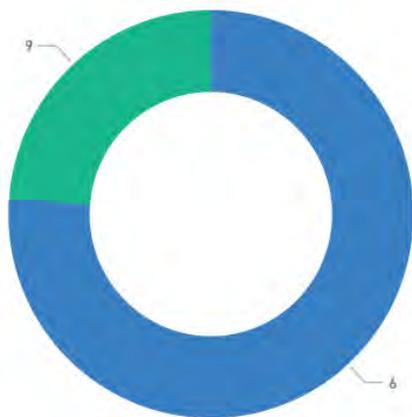
OPEN
19

CLOSED
61



Status against Target Date

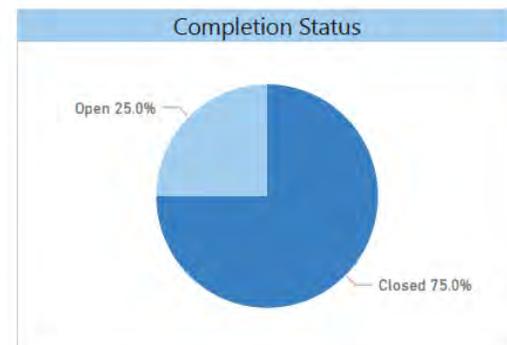
- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN

OPEN
18

CLOSED
54



Priority for RHCYP

OPEN
19

CLOSED
61

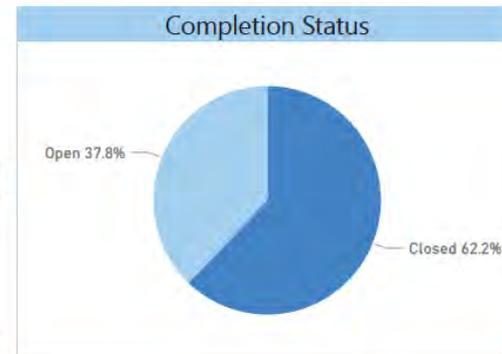


RHCYP+DCN - Water Safety Action Log Dashboard

29/11/2019

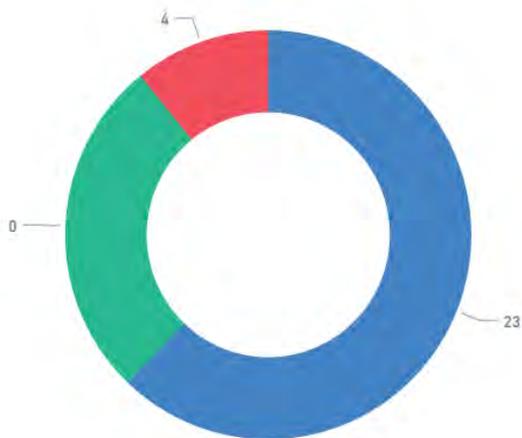
OPEN
14

CLOSED
23



Status against Target Date

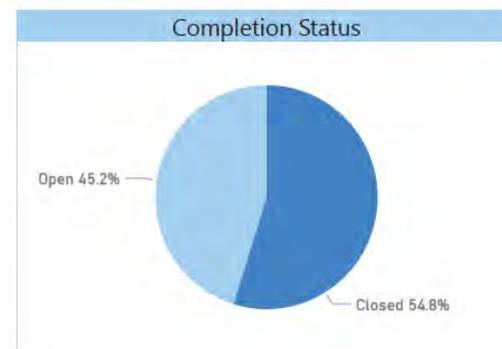
- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN

OPEN
14

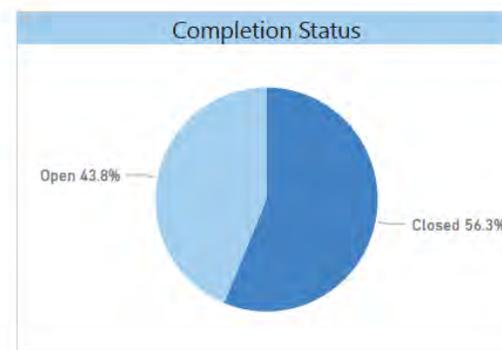
CLOSED
17



Priority for RHCYP

OPEN
14

CLOSED
18



RHCYP + DCN

Water Safety Action Log

Revised Date: 27/11/2019

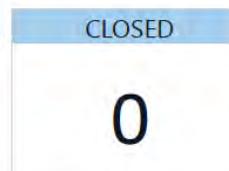
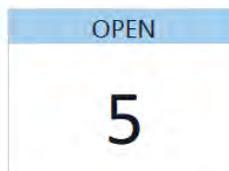
Current Date for tracking: 29/11/2019

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/Closed	Priority to RHCYP	Priority to DCN
W10	Positive Pseudomonas results	1	<p>Pseudomonas found in taps in Paediatric Medical Inpatients and DCN Inpatients. (SHTM 04-01 Part A published in July 2014)</p> <p>All taps (not just TMT/TMV4) to be disinfected and retested. Tee following needs to be undertaken:</p> <ul style="list-style-type: none"> - Inspect and replace as appropriate taps tap components and pipework. - Replace tap strainers and cartridges in affected TMT taps. - Remove all TMT and TMV cartridges and replace with new ones. - Remove and replace all TMT strainers (carried out at the same time as item 3). - Taps to be removed and disinfected - Once pipe work has been disinfected and taps disinfected retest the system (Augmented care areas 100% taps for TVC fungi and pseudomonas aeruginosa. Rest of a representative sample from the rest of the hospital for TVC and legionella.) <p>Note: Testing should be in accordance with SHTM 04-01 and in accordance with BS 8580-1 L8 and HSG 274 and HPS guidance September 2014: "Pseudomonas aeruginosa routine water sampling in augmented care areas for NHS SCOTLAND".</p>	BYES	29/07/2019	30/09/2019	<p>NHSL issued Change 092 to disinfect 57 outlets known to be positive for Pseudomonas. The works included within the scope of the change were completed however re-testing proved that there were still positive results returned for 23 of 48 outlets.</p> <p>BYES re-tested 4.no taps for pseudomonas and TVC without any additional disinfection to verify the results - results showed sample taken from the taps were positive but samples taken directly from the outlet were clear. Therefore it was suggested that for these outlets the contamination was local to the tap and these taps have been sent offsite to be autoclaved. Depending on the success of the autoclave a plan will be proposed by BYES on how to deal with the other 53 outlets.</p> <p>The disconnected outlets for all 9 ARJO baths both at Taps and outlet have been tested. The results for the outlets have come back clear. However the Baths (taps/shower heads etc) were positive and will be included in the ARJO on site disinfection. The baths are currently disconnected.</p> <p>BYES to reissue the results with ward locations.</p> <p>Orders have been placed for the 6 monthly maintenance plan.</p> <p>It is proposed that to close this item we need to demonstrate control of the immediate issue, and then move this to the Local Water Safety Group to manage under business as usual.</p>	OPEN	Yes	Yes
		3	<p>Testing has found some fungal / mould contamination and high total viable counts. Given a number of indicators the water system should be disinfected and re-tested. BYES required to seek advice from the manufacturer of the valves on the strongest medium that would ensure a high level of disinfection of the whole system including the removal of bio film if present.</p>	BYES	11/09/2019	31/10/2019	<p>The water system will be disinfected and tested prior to occupation by DCN.</p> <p>•LVC086 has been issued. BYES to respond by 08/11/19.</p> <p>Full system disinfection to address TVC:</p> <p>• BYES contacting manufacturers to confirm potential disinfection mediums. Medium to be confirmed and the statement from manufacturers to be provided for consideration. - BYES draft has been issued.</p> <p>• Time line for works required for disinfection considering the best case and worst case scenario. BYES to produce this for tabling at meeting on Monday 25/11/19</p> <p>Full System disinfection to address fungal/mould:</p> <p>Paper in draft, this will be taken to ESG & OB w/c 25/11/19. Acceptance of the paper will allow this part of the action to be closed.</p>	OPEN	Yes	Yes
W12	Shower hose lengths do not comply	1	<p>Shower hose lengths do not comply with Scottish Water by-laws and guidance in SHTM 04-01 Water safety for healthcare premises.</p> <p>Shorten hose length or add retaining ring to ensure that shower head cannot reach WC or drain.</p> <p>Disinfect showers hose and drain after rectification.</p>	NHSL	11/09/2019	30/09/2019	<p>The position of some fixed retainers do not allow the hose to function clinically. SW to be contacted to review and discuss on site.</p> <p>HSF to investigate how other facilities are managing the issues.</p> <p>BYES to confirm issue date for Standard Operating Procedure for Maintenance of hoses and clamps.</p>	OPEN	Yes	Yes

W14	Instant Boil Taps and Rise and Fall Baths were found to be contaminated	1	Representatives from ZIP and ARJO to attend the site to provide specific maintenance and decontamination guidance for these products. It was proposed subject to further discussion with the AE (Water) for Lothian and HFS that the ARJO baths in Paediatric Oncology and Burns dressing clinic/ward care areas are removed and replaced with a suitable alternative. All other baths are to be reviewed maintained and tested in line with the manufacturer's guidance. to demonstrate safe water delivery as per SHTM 04-01 Water safety for healthcare premises.	IHSL	29/07/2019	22/10/2019	<p>• Zip tap dealt with above in W4.2 – still need cleaning and maintenance to be developed. ZIP to demonstrate. - ZIP manufacturer information to be provide by BYES.</p> <p>• ARJO came to site Date TBC recommendations are: - to address positive baths - ARJO to disconnect bath and decontaminate on site then provide a certificate of assurance. (This is a change from previous position reported to ESG and OB.) IHSL to confirm date (ARJO programme is 4 weeks) - The works to be planned in line with the full disinfection of the site as baths need to be reconnected immediately to avoid voiding the certificate of assurance. - potential future positives - ARJO decontaminate on site rather than BYES. - BYES to chase up outstanding ARJO clarification on instructions for use and cleaning</p> <p>BYES were unable to confirm date 25/11/19 - programme TBC RH has requested BYES plan for ARJO to be on site W/C 06/01/20.</p>	OPEN	Yes	Yes
-----	---	---	--	------	------------	------------	---	------	-----	-----

RHCYP+DCN - Fire Action Log Dashboard

29/11/2019

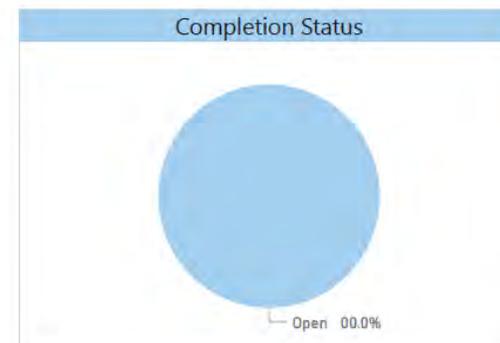
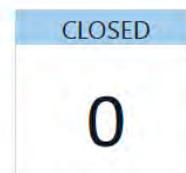


Status against Target Date

- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP



RHCYP+DCN - Electrical Action Log Dashboard

29/11/2019

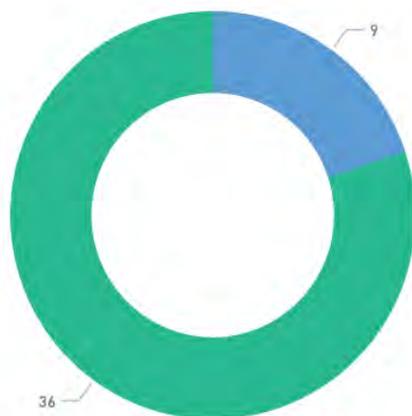
OPEN
36

CLOSED
9



Status against Target Date

- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN

OPEN
24

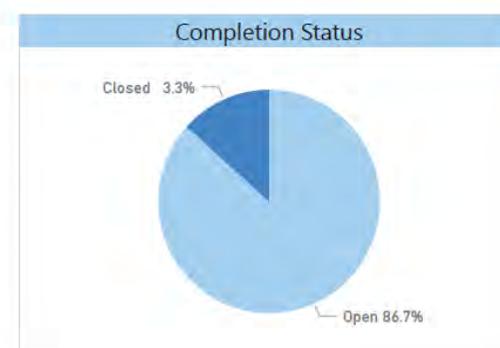
CLOSED
4



Priority for RHCYP

OPEN
26

CLOSED
4



COMMERCIAL – IN CONFIDENCE
NOT DISCLOSABLE UNDER THE FREEDOM OF INFORMATION (SCOTLAND) ACT 2002

NHS Lothian

Private Board Meeting

4 December 2019

Director of Finance

Royal Hospital for Children and Young People, the Department of Clinical Neurosciences and Child and Adolescent Mental Health Services (“the Hospital”) – Commercial Arrangements**1 Purpose of the Report**

- 1.1 The purpose of this report is to invite the Board to approve its approach to taking forward the commercial arrangements required to facilitate progress towards the opening of the Hospital. The Board’s approach will impact on the Board’s exposure to risk, cost and liability.

2 Recommendations

- 2.1 The Board approves the preferred way forward, which the Commercial Sub-Group of the Oversight Board has endorsed in principle, of negotiating a Supplemental Agreement with IHSL to facilitate the work required to open the Hospital to patients.
- 2.2 The Board delegates authority to the Director of Finance and the Chief Executive, so that either of those individuals may agree and sign the required legal documentation as described in this report on behalf of NHS Lothian.
- 2.3 The Board approves the “legal minute” at Appendix 2 in order to support the legal processes associated with these agreements.

3 Discussion of Key Issues

- 3.1 The critical path to the opening of the facility involves the following key actions, both of which require underpinning commercial decisions to be made:
- enact the processes that will allow the required ventilation works and fire system enhancements to be addressed (together referred to as the ‘Works’); and
 - ensure the readiness of the FM provider, Bouygues, to deliver their contractual obligations once the Hospital is open and occupied by staff and patients.
- 3.2 The Board has to make the above decisions as they directly affect the Board’s exposure to risk once the Hospital is opened, and there are additional costs.
- 3.3 Consideration has been given to the most effective way in which the critical path to the opening of the Hospital can be followed. The Commercial Sub-Group considered three options in terms of commercial strategy:
- Option 1: termination of the contract with IHSL;

- Option 2: enact the processes required by strict application of the contract terms available; and
 - Option 3: enact the processes required via a commercial agreement that will be captured in a Supplemental Agreement (SA) to the Project Agreement. This instructs the works, the facilities management consequences, and will oblige NHS Lothian to bear more risk in order to expedite progress.
- 3.4 Appendix 1 sets out the key issues associated with each option and its potential risk, cost and benefit.
- 3.5 The Commercial Sub-Group agreed Option 3 should be explored further. The Director of Finance with the support of the Commercial Sub-Group has therefore been pursuing this route in conjunction with IHSL over recent weeks in order to develop proposals for the commercial arrangements. The aim was to arrive at a Supplemental Agreement with IHSL. However, both other options remain open to NHS Lothian should the preferred option prove not to be deliverable.
- 3.6 The Finance and Resources Committee discussed Option 3 on 27 November and agreed this was the preferred option and supported it being recommended to the Board. This was based on the Committee's conclusion that Option 3 offers the route most likely to allow the Hospital to accept patients as quickly as possible and at a cost that compares favourably to the alternatives.
- 3.7 Further, NHS Lothian is currently paying £1.4 million per month for a Hospital that is currently not able to occupy, a cost to the public sector that requires urgent mitigation by bringing the Hospital into use for patients as soon as possible.

Technical Brief

- 3.8 Development of the outline specification of the Works has been highly complex, and has depended on the conclusion of both phases of the NSS review, and IHSL securing a contractual partner to undertake the works. This has only concluded recently, resulting in the Board and IHSL being in a position to agree how the design, leading to the works, is to be instructed.
- 3.9 IHSL has selected an alternative contractor, Imtech. Imtech will sub-contract the design work to Hoare Lee. Both Imtech and Hoare Lee are known to NHS Lothian and other project stakeholders and have a proven track record for delivery of complex health care projects.
- 3.10 The contract with IHSL has provisions for 'High Value Change' and 'Low Value Change' notices. A High Value Change notice sets out the high-level specification of the ventilation element of the Works. This includes the rectification of critical care, and enhancements to Haematology/Oncology now including upgrades to Air Handling Units for isolation rooms. Management are currently finalising the High Value Change Notice, with the intent to present it to the Oversight Board for its agreement on 5 December.
- 3.11 A Low Value Change has also been issued that allows NHS Lothian and IHSL to agree the scope of work needed to put in place the required enhancements to the fire systems. This should be completed by the end of January. Once it is clear how the enhancements are to be implemented, IHSL can complete the design of the ventilation systems.

- 3.12 The Oversight Board will have to agree a further High Value Change which will allow the design, installation and testing stage as a single programme for all Works. Following this the NHS Board will be asked to approve a Supplemental Agreement to the contract with IHSL, which reflects all of the changes.

Next Immediate Steps

- 3.13 In order to meet the desired timescales, it is necessary for Imtech to undertake advance design works for the ventilation element of the Works as soon as possible. Arrangements for this are set out in a Letter of Engagement.
- 3.14 Before IHSL will commission a design, they require a letter of engagement as a preliminary commitment from the NHS Board. The details of this letter are set out below.

Letter of Engagement (LOE)

- 3.15 The LOE is almost in agreed form and contains the following key elements:
- IHSL will commence design for the ventilation works in accordance with an agreed programme;
 - the parties will use reasonable endeavours to enter into the SA before the end of January 2020;
 - if the SA is not entered into by the end of February, NHS Lothian will retain the right to step in and deliver the Works itself;
 - if the maximum design cost is exceeded or the SA is not entered into by the agreed date, the LOE will terminate.
- 3.16 The indemnity to be contained within the LOE has the following key elements:
- it will be time limited to 5 years;
 - it provides a full indemnity for all direct losses sustained by IHSL arising from interface issues created by the Works, as well as for any liabilities borne by IHSL that are not accepted by Imtech under their contract, and for any insolvency risk applicable to Imtech;
 - it provides IHSL with relief from the application of deductions and rectification costs in relation to any dispute between the parties over responsibility for any failures that are attributed to the Works;
 - IHSL must try to mitigate their losses and seek recourse for any losses wherever possible from the other parties, and it cannot claim relief for its own negligence or omission;

It is subject to IHSL complying at all times with their obligations to deliver the Services. This includes provision that allows IHSL to make temporary repairs if possible and effect permanent repairs to the ventilation system as quickly as possible if any issue arises with service delivery of the ventilation system following completion of the Works.

Separate Complementary Letter to IHSL

- 3.17 There are two further commercial issues which will be addressed in a separate letter to IHSL.

- 3.18 The first is that NHS Lothian will pay IHSL an amount, as an incentive to progress the work needed to render the Hospital ready for patients. This amount reflects an agreed reduction of deductions applied under the payment mechanism to date. NHS Lothian will pay IHSL £280,000 on signature of the LOE and £120,000 on signature of the SA.
- 3.19 The second issue relates to the NHS Board waiving its termination rights. The current position is that NHS Lothian could terminate IHSL for poor performance to date. That right would be lost in relation to past performance, but retained for poor performance in future after the SA is in place.
- 3.20 As part of the PPP structure, and in order to satisfy IHSL's legal advisers, a "legal minute" is required in advance of the formal adoption of this meeting's Minute. A draft legal Minute is at Appendix 2, and if approved, will be signed by the Business Manager and made available to the respective legal advisers.

4 Key Risks

- 4.1 The specific risks associated with the commercial terms proposed are set out in the table below:

Issue	Description	Risk/Cost
Letter of Engagement		
Imtech risk profile	As Imtech has not been involved in the Project to date, they are unwilling to take on the usual project risk profile. This will lead to IHSL being unable to pass on some of the risks associated with undertaking the Works to Imtech or IHSL's Service Provider (Bouygues).	This will have an impact on the Board's liability, as embodied in the indemnity described above and considered in more detail below. This liability will increase, although this cannot be quantified at this stage.
Design copyright	To facilitate any self-delivery, IHSL will use reasonable endeavours to provide NHS Lothian with the copyright in the design. That copyright is not supported by a direct contract between NHS Lothian and the designer.	The absence of a direct contract renders the design of limited use. However, given that any designer directly appointed by NHS Lothian will be required to undertake their own diligence, this is considered, on balance, a concession the Board is willing to make.
Liability for reasonable costs	NHS Lothian has a liability to pay IHSL's reasonable costs for design work only within 5 Business Days of receipt of an invoice from IHSL.	The design cost liability is for up to a maximum of £350,000, with diligence over this value currently in progress.
Design quality	NHS Lothian is seeking assurances that the design will be undertaken in accordance with recognised standards such as Good Industry Practice, with wording yet to be agreed on this matter.	IHSL have now agreed the inclusion of such wording that provides assurance for NHS Lothian.
Indemnity		
Overall approach	Procuring and undertaking the Works in the manner proposed will alter IHSL's risk profile. In order to secure delivery of a compliant Hospital in	By agreeing an indemnity, NHS Lothian will be taking on an unquantifiable and

Issue	Description	Risk/Cost
	the desired timescales (Spring for DCN and Autumn for RHCYP) it is recognised that NHS Lothian require to offer IHSL an indemnity to reflect any altered risk profile.	uncertain additional risk. NHS Lothian has engaged in discussions with IHSL to narrow the scope and extent of that indemnity and to guarantee appropriate service provision. The extent of the indemnity has been agreed with advice from the Board's legal advisers and the Commercial subgroup of the Oversight Board
IHSL Costs in pursuing or defending any interface-related disputes	IHSL are seeking that NHS Lothian should cover these costs. Such a provision is highly unusual, potentially disincentivising IHSL from properly addressing disputes.	The extent of this provision has been limited by obliging IHSL to consult and seek approval from the Board of their strategy at all key stages of any dispute."
SA signature / Programme Certainty	The SA is in the process of being discussed with IHSL and there remain some commercial issues to resolve. The key issue is that until the SA is signed, there is no firm obligation on the part of IHSL to deliver the Works.	A risk is created in that if the SA cannot be agreed and isn't signed, NHS Lothian will be no further forward in the process of delivering the Works and alternative options will then have to be pursued, which would extend the timescale significantly. The Board has included a long stop date for conclusion of the design in the Letter of Engagement, and thereafter could step in.
Standard of works	The standards are still to be agreed with IHSL, although it is likely that NHS Lothian will need to accept a greater design risk than would ordinarily be the case under the project risk profile.	This will be mitigated via: <ul style="list-style-type: none"> • inclusion of an obligation that IHSL will employ best industry practice; and • agreement of internal governance for sign off of the design and construction by NHS Lothian and NSS, and via verification that the construction has been undertaken in accordance with the design by an independent certifier appointed jointly by IHSL and NHS Lothian.

5 Risk Register

- 5.1 The delay to the Project has been added to the NHS Lothian risk register. This will be amended to account for additional risk taken on by NHS Lothian because of the agreement of the Letter of Engagement and Supplemental Agreement.

6 Impact on Inequality, Including Health Inequalities

- 6.1 No additional impacts arise from this update.

7 Duty to Inform, Engage and Consult People who use our Services

- 7.1 Arrangements are in place to update stakeholders on progress, including updates issued by Scottish Government and Ministers.

8 Resource Implications

- 8.1 The table above and Appendix 1 indicates the potential costs, where known, that will or may fall to NHS Lothian in pursuing the preferred option.

Susan Goldsmith
Director of Finance
3rd December 2019

Appendix 1 – Commercial Options

Appendix 2 - DRAFT PROPOSED MINUTE AS AT 3 DECEMBER 2019

APPENDIX 1 – OPTIONS ASSESSMENT

	1. Termination	2. Change Protocol / other contractual remedies	3. Settlement Agreement
Description	<p>There are two possible grounds for terminating the Project:</p> <ol style="list-style-type: none"> 1. Project Co Default; or 2. Voluntary termination. <p>The issue of Warning Notices can lead to termination for ProjectCo default, as can Deductions. NHS Lothian can choose to terminate voluntarily if it wishes.</p>	<p>Delivery of required works by implementation of Board Change notices served by NHS Lothian by IHSL.</p> <p>Payment mechanism would apply in in the normal way.</p>	<p>Agree terms of Settlement Agreement with IHSL as set out in the main body of text in this report.</p>
Programme/ Timescales	<p>Two Warning Notices have been served, with the potential to serve three more, which would trigger an IHSL event of default.</p> <p>Deduction have also been at a sustained level high enough to also trigger a default by IHSL.</p> <p>Procedurally, termination would engage the Senior Funders who have “step-in rights” under the Funders Direct Agreement – rights that could delay or prevent termination depending on the attitude of the Senior Funders to the prospects of “fixing” the issues that entitled NHS Lothian to issue a Termination Notice.</p>	<p>Detailed design would progress in accordance with Change Protocol that might involve self-delivery by NHSL if IHSL continued to delay.</p>	<p>No firm commitment to meet desired timescales (Spring for DCN and Autumn for RHCYP) until SA entered into, but longstop of February 2020 (for entry into the SA) and a further right for NHSL to step-in at a longstop date in the event that delivery of the Works is not completed by a date to be agreed provides some incentivisation.</p>
Quantum	<p>Advice provided by EY indicates a potential up-front cost of £163 million for Project Co default, which is payable as compensation to IHSL, with the Hospital reverting to NHS Lothian control and ownership.</p> <p>The Annual Service Payment would cease.</p> <p>NHS Lothian would then have to provide for FM and life cycle, with an estimated net present value, including</p>	<p>The current target cost for the Works is £6.3 million, payable by NHS Lothian.</p> <p>NHS Lothian would continue to pay the Annual Service Payment for the remainder of the contract.</p> <p>This option is estimated to carry a net present value of £223 million, the lowest cost option.</p>	<p>The current target cost for the Works is £6.3 million, payable by NHS Lothian.</p> <p>Any other costs are as set out in the main body of text.</p> <p>NHS Lothian would continue to pay the Annual Service Payment for the remainder of the contract.</p> <p>This option is estimated to carry a net present value of £224 million, marginally</p>

	1. Termination	2. Change Protocol / other contractual remedies	3. Settlement Agreement
	<p>the compensation payment, of £234 million, the highest of the three options.</p> <p>EY advice indicates a cost in the range of £230 - 250 million for Voluntary Termination.</p> <p>ASP payment will stop on termination.</p>		higher than option 2.
Ensuring Compliance of the Hospital	<p>Termination for IHSL Default:</p> <p>If a new Bidder tenders for and wins the project under a “retendering” solution, the new contractor would have to fix all the defects in the Hospital.</p> <p>If the “no- retendering” solution is taken NHSL would be responsible, after having paid compensation to Senior Funders, for arranging rectification of the defects at the Hospital.</p> <p>Voluntary Termination:</p> <p>NHSL would be responsible for arranging rectification of the defects at the Hospital.</p>	Ensured via agreed certification process in Change Protocol.	<p>Ensured via agreed certification process of IHSL delivery.</p> <p>Would require careful controls in Supplemental Agreement.</p>
Short term implications	<p>Avoids changing existing risk profile in the Project Agreement.</p> <p>Timescales: uncertain and dependent on whether Senior Funders are prepared to seek to “rescue” the Project. If they saw no point in that and were prepared to negotiate a compensation package based on a “no-retendering route” then the process might be relatively quick.</p> <p>Rectification required by NHSL: of course after gaining control of the Facilities NHS Lothian</p>	<p>Avoids changing existing risk profile in the Project Agreement.</p> <p>Timescales: the process will be slower than the SA route as IHSL are unlikely to expedite the process and would have no incentive to do so.</p> <p>Cost certainty and transparency ensured by Change Protocol controls.</p>	<p>Potential to be faster than other routes – depending on negotiating stance taken by NHS Lothian.</p> <p>An accommodating approach is likely to allow a faster delivery but at cost and with other risks/implications, as set out in the main text of the paper.</p>

	1. Termination	2. Change Protocol / other contractual remedies	3. Settlement Agreement
	would need to see to the Works and snagging items itself.		
Long term implications	NHSL has control of the Hospital and delivery of all services (including hard FM). Direct warranties with MPX and BYES remain in place to provide protection in the event of future latent defects – after Senior Funder rights have been exhausted.	Maintains existing PA risk profile. Leaves open option of reverting to other options in the future.	Will involve NHS Lothian taking on more risk than is the case at present, and some potential costs. Leaves open option of reverting to Option 2, although termination would be ruled out based on performance to date.
NHSL Control	NHSL and IHSL constrained by PA framework: transparent and known risk profile.	NHSL and IHSL constrained by PA framework: transparent and known risk profile but some of the provisions untested in this unusual context.	No control over IHSL negotiating position, leading to amendment of risk profile for NHS Lothian.
Pros	<p>Demonstrable, verifiable, compliance with contractual provisions.</p> <p>Maintenance of agreed and existing risk profile.</p> <p>Potentially a quick option - depending on: (1) the Senior Funders and their attitude to and use of their “step-in” rights; and (2) the compensation route taken – Retendering or No-Retendering.</p> <p>The former involves negotiations with a new bidder and will take many months; the latter will be a quicker, negotiated, settlement with the Senior Funders.</p> <p>It is theoretically possible that in 100 Business Days a compensation figure could be agreed and termination concluded.</p> <p>Compensation on termination for Project Co Events of Default would permit NHSL to deduct from any sum owed to IHSL costs of rectification that</p>	<p>Demonstrable, verifiable, compliance with contractual provisions.</p> <p>Maintenance of agreed and existing risk profile.</p> <p>“Self-Help/ Delivery” remedies may be available.</p> <p>Termination option may be open to NHS Lothian later if this route does not achieve the desired result.</p> <p>Publicity: NHS Lothian retain PR options relating to any IHSL failure to engage with the Change Process or to deliver upon commitments agreed to by IHSL.</p>	<p>Considered a quicker route to delivery – especially if the commercial position adopted by IHSL is accepted by NHS Lothian and concession made. It is intended that the SA would be entered into by February 2020 at the latest, followed by implementation, currently considered consistent with the Scottish Government Spring DCN and Autumn RHCYP dates.</p> <p>Were NHSL to seek to protect its interests from the commercial positions sought by IHSL, a much longer timeframe can be expected.</p>

	1. Termination	2. Change Protocol / other contractual remedies	3. Settlement Agreement
	could include all Snagging Items and genuine defects.		
Cons	<p>Termination for IHSL Default:</p> <p>On Retendering: time and delay in retender process and then in the new contactor fixing the defects in the facilities (potentially years.)</p> <p>On No-Retendering: NHS Lothian would need to find the capital to pay the compensation sum; to fix the defects; carry out the Works and budget to cater for the costs of running of the Hospital itself for the remainder of the intended concession period.</p>	<p>Change Protocol has a complex process to be followed and, presently, the timeframe for that process through is uncertain.</p> <p>Project Co's only obligation as to timing is to proceed regularly and diligently. Given that IHSL's risk profile is altered, there is no incentive for them to proceed quickly and they may seek opportunity to frustrate.</p>	<p>IHSL's commercial negotiating position is conservative and requires NHS Lothian to take on additional risk and cost, as outlined above.</p> <p>Works would only commence once Supplemental Agreement agreed (albeit there is advance design work).</p>

APPENDIX 2**(DRAFT PROPOSED MINUTE AS AT 3 DECEMBER 2019)****LOTHIAN HEALTH BOARD
BOARD MEETING
RHSC & DCN PROJECT**

Certified true copy extract from the private session of the meeting of the Lothian Health Board (the “Board”) on 4th December 2019 at the Scottish Health Service Centre, Crewe Road South, Edinburgh (the “Board Meeting”)

1. PRESENT

1.1 [To be added]

2. APOLOGIES

2.1 [To be added]

3. QUORUM

3.1 Pursuant to paragraph 5.5 (*Quorum*) of NHS Lothian Standing Orders for the Proceedings and Business of Lothian NHS Board (as approved on 03.10.18) (the “**Standing Orders**”) the Chairman noted that a quorum was present. Accordingly, the Chairman declared the meeting duly convened.

4. DECLARATION OF INTERESTS

4.1 [No declaration(s) of interests were raised in relation to any of the matters discussed.]

5. RHSC & DCN PROJECT

5.1 The Board was updated in relation to the progress of the ventilation works in connection with the project described in the project agreement between the Board and IHS Lothian Limited (“**Project Co**”) dated 13th and 14th February 2015 in relation to the Scottish Government’s NPD initiative for the design, build, finance and maintenance of the project to re-provide the services from the Royal Hospital for Sick Children, Children and Adolescent Mental Health Service and Department of Clinical Neuroscience in a single building adjoining the Royal Infirmary of Edinburgh, as amended by a supplemental agreement dated 22nd February 2019 (the “**Project Agreement**”) and the proposed draft Initial Engagement Agreement (draft dated [3rd] December 2019) between the Board and Project Co to facilitate the provision of the ventilation works at the Facilities (the “**Draft Initial Engagement Agreement**”).

5.2 It was noted at the Board Meeting that on 27th November 2019 the Finance & Resources Committee supported the key terms of the Draft Initial Engagement Agreement to be approved by the Board.

5.3 The background to the development, key terms and key risks of the Draft Initial Engagement Agreement, as more fully described in the Director of Finance report to Finance and Resources Committee dated November 2019 in relation to the Draft Initial Engagement Agreement, were noted at the Board Meeting.

- 5.4 Following the consideration of (i) the paper dated 3rd December 2019 from the Director of Finance to approve the Draft Initial Engagement Agreement; and (ii) the key terms of the Draft Initial Engagement Agreement, as set out in paragraph 5.3 above; the Board Meeting **FORMALLY RESOLVED** pursuant to paragraph 6.21 (*Other items of business*) of the Standing Orders to be presented with the Draft Initial Engagement Agreement as an item of business to be reviewed and approved by the Board.
- 5.5 Following the resolution of the Board Meeting described in paragraph 5.4 above, the Board Meeting **FORMALLY RESOLVED AS FOLLOWS**:
- 5.5.1 Approved the Draft Initial Engagement Agreement and accordingly the associated amendments referred to therein to the Project Agreement;
- 5.5.2 Authorised the Chief Executive and/or the Director of Finance to continue to negotiate and agree the final terms of the following documents on behalf of the Board:
- (a) the Draft Initial Engagement Agreement; and
 - (b) any necessary ancillary documentation in connection with the Draft Initial Engagement Agreement;
- 5.5.3 Pursuant to paragraph 7.1 (*Delegation of Authority by the Board*) of the Standing Orders, authorised the Chief Executive and/or the Director of Finance to approve, seal, execute, deliver and/or initial the final form of the following documents on behalf of the Board:
- (a) the Draft Initial Engagement Agreement (as negotiated by them pursuant to paragraph 5.5.2 above); and
 - (b) any necessary ancillary documentation in connection with the Draft Initial Engagement Agreement;
- 5.5.4 Authorised the Board to execute, deliver and perform the following documents:
- (a) the Draft Initial Engagement Agreement (as negotiated pursuant to paragraph 5.5.2 above); and
 - (b) any necessary ancillary documentation in connection with the Draft Initial Engagement Agreement;
- 5.5.5 Authorised an officer of the Board to provide a certificate to Service Co setting out the names and specimen signatures of the Chief Executive and Director of Finance who are authorised to approve, seal, execute, deliver and/or initial the following documentation:
- (a) the Draft Initial Engagement Agreement (as negotiated by them pursuant to paragraph 5.5.2 above); and
 - (b) any necessary ancillary documentation in connection with the Draft Initial Engagement Agreement;
- 5.5.6 Authorised the Chief Executive and/or the Director of Finance or their nominated representative to provide Service Co the following certified true copies of the Board's current versions of the following documentation:
- (a) Standing Orders;

- (b) Standing Financial Instructions; and
- (c) Lothian NHS Board Scheme of Delegation.

The above resolution of the private session of the meeting of Lothian Health Board remains in full force and effect and has not been rescinded or varied.

Douglas Weir

Business Manager, Chair, Chief Executive & Deputy Chief Executive's Office

[]th December 2019



High Value Change Notice

Project:	RHCYP + DCN – Little France Edinburgh
-----------------	--

1 – Issue of Change Notice to Project Co

Title:	Paediatric Critical Care and Haematology / Oncology Ventilation		
Reference No:	0107	Date:	5th December, 2019
Target Cost Capital:	£4.6m	Target Cost Revenue:	TBA

High Value Change Requirements (Schedule Part 16, Section 4, Clause 2.1.3)

Single bedrooms and Multi-bedrooms in Paediatric Critical Care

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems which will deliver **10 air changes/hour at +10pa** as per SHTM 03-01, Appendix 1, Table A1 to the following rooms at the Facilities:

Room Number	Room Type
1-B1-065	Neo Natal 3 cot area including 1-B1-022 – Corridor, 1-B1-069 – Staff Base, 1-B1-066 – Clean Utility and 1- B1-071 – Resus Bay which are all open to 1-B1-065
1-B1-075	Single cot cubicle neo natal including 1-B1-074 en-suite
1-B1-063	Open plan bay 4 bed
1-B1-037	Single bed cubicle
1-B1-031	Open plan bay 4 bed
1-B1-021	Single bed cubicle
1-B1-020	Single bed cubicle
1-B1-019	Single bed cubicle
1-B1-009	Open plan bay 4 bed

Isolation Rooms in Paediatric Critical Care

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems for a positive pressure ventilated lobby PPVL Single Bedroom Isolation Suite with a lobby air supply terminal with a HEPA filter, as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1, to the following rooms at the Facilities.

Project Co may utilise the supply and extract ventilation system description in SHPN 04-01, Supplement 1, Clause 4.5 for a dedicated ventilation system per Suite or SHPN 04-01, Supplement 1, Clause 4.8 for a common ventilation system to multiple Suites as the basis of their design. If Clause 4.8 is selected as the basis of design, a duplicate supply unit is considered necessary. A combination of both methods may be used provided Project Co, as far as is reasonably practical, reuse the existing ventilation installations. Regardless of option chosen, all aspects of the design and installation must be technically compliant with all relevant guidance.

NHSL require to remove or significantly reduce the risk of losing all isolations rooms due to a single point of failure. Ideally each isolation room would benefit from its own supply and extract, however, NHSL appreciate this may not be possible or practical due to other constraints e.g. space. Therefore, Project Co are requested to provide their best practical solution to reduce the risk as low as possible but maintaining guidance criteria as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1.

Room Number	Room Type
1-B1-016	Isolation Bedroom
1-B1-017	Isolation Bedroom
1-B1-026	Isolation Bedroom

HVCN 0107

1-B1-036	Isolation Bedroom
----------	-------------------

Single bedrooms and Multi-bedrooms in Haematology and Oncology

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems which will deliver **10 air changes/hour at +10pa** as per SHTM 03-01, Appendix 1, Table A1 and fit Hepa filters (H12 grade) to the air inlets to the following rooms at the Facilities:

Room Number	Room Type
3-C1.4-059	Single Bedroom
3-C1.4-057	Single Bedroom
3-C1.4-055	Single Bedroom
3-C1.4-046	Single Bedroom
3-C1.4-032	Single Bedroom
3-C1.4-018	Single Bedroom
3-C1.4-016	Single Bedroom
3-C1.4-013	Single Bedroom
3-C1.4-010	Single Bedroom
3-C1.4-074	Single Bedroom
3-C1.4-076	Single Bedroom
3-C1.4-078	Single Bedroom
3-C1.4-084	Multi-Bed (3) Day Care
3-C1.4-061	Multi-Bed (6) Day Care

Isolation Rooms in Haematology and Oncology

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems for a positive pressure ventilated lobby PPVL Single Bedroom Isolation Suite with a lobby air supply terminal with a HEPA filter, as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1, to the following rooms at the Facilities.

Project Co may utilise the supply and extract ventilation system description in SHPN 04-01, Supplement 1, Clause 4.5 for a dedicated ventilation system per Suite or SHPN 04-01, Supplement 1, Clause 4.8 for a common ventilation system to multiple Suites as the basis of their design. If Clause 4.8 is selected as the basis of design, a duplicate supply unit is considered necessary. A combination of both methods may be used provided Project Co, as far as is reasonably practical, reuse the existing ventilation installations. Regardless of option chosen, all aspects of the design and installation must be technically compliant with all relevant guidance.

NHSL require to remove or significantly reduce the risk of losing all isolations rooms due to a single point of failure. Ideally each isolation room would benefit from its own supply and extract, however, NHSL appreciate this may not be possible or practical due to other constraints e.g. space. Therefore, Project Co are requested to provide their best practical solution to reduce the risk as low as possible but maintaining guidance criteria as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1.

Room Number	Room Type
3-C1.4-040	Isolation Bedroom
3-C1.4-043	Isolation Bedroom
3-C1.4-049	Isolation Bedroom



3-C1.4-052	Isolation Bedroom
3-C1.4-072	Isolation Bedroom

(the “**Ventilation Works and Services**”).

All environmental requirements for all spaces in the Facilities served by or affected by the Ventilation Works and Services systems shall be met and maintained – including but not limited to, temperature and control, lighting levels, noise, and humidity. These should be consistent to the agreed parameters throughout the Facilities to meet the specific clinical and operational needs for each space in the Facilities.

The Ventilation Works and Services shall fully comply with SHTM 03-01 requirements which includes, without limitation, implementation of the Ventilation Works and Services so that the system installation, finishes and maintenance regime shall be in accordance with SHTM 03-01 requirements, together with the clinical and operational constraints identified below:

1. All Ventilation Works and Services shall be carried out and monitored after and with reference to a collaborative full Stage 3 HAI SCRIBE assessment being approved by the Board.
2. The fire strategy and systems agreed for the Facilities will be maintained throughout the Ventilation Works and Services and the Operational Term and such that the ventilation systems will integrate with the fire strategy and systems and all other building management systems comprised in the Facilities.
3. The location of the installation within the rooms, external areas, route across such spaces and the take out of any windows, etc, will enable the current operational functionality and safety policies and procedures to be maintained.
4. The design, layouts, finishes and other details etc for the Ventilation Works and Services, at all stages (including during the design development stages), will require to be agreed with the Board’s Representative (and in turn the clinical service and related stakeholders and Project Co recognises that in order to achieve agreement from the Board’s Representative’s the Board’s Representative will seek input from the Board and all appropriate stakeholders.
5. Design must provide resilience in compliance with SHTM 03-01 to ensure performance of ventilation to rooms during maintenance downtime.

The Board will, in consultation with Project Co, continue to review costs as the design develops and at other stages. In order for the Board to assess whether the High Value Change Stage 2 Submission offers it value for money the submission shall include as a minimum the following information:

- A detailed and fully quantified pricing schedule for the construction works
- A detailed breakdown of all Preliminaries and general cost items
- Construction issue drawings and specification
- Proposed, construction and commissioning/testing programme
- Construction phase method statement

Date by which parties are required to meet to review the High Value Change Notice and agree the content for the High Value Change Proposal (Schedule Part 16, Section 4, Clause 2.3.1)	13th December, 2019
---	---------------------------------------

To: **IHS Lothian**

We require the Change described above.
Please advise when Project Co will submit a High Value Change Proposal for the above.

Signed on behalf of NHS Lothian:

Name of Signatory (type or print):Brian Currie – Board Rep – NHS Lothian.....

Date: 5th December, 2019



Shower hose length – summary of issues. December 2019

Lindsay Guthrie (Lead IPCN)

Situation:

HPS/HFS identified as part of review of RHCYP that shower hose length was not compliant with The Water Supply (Water Fittings) (Scotland) Byelaws 2014.

Specifically, the shower hose, if unrestrained, allows contact between the shower head and the toilet, basin and floor drain.

There is also a risk that shower heads could be used for personal cleansing –providing opportunity for direct contact between the patient’s body and the shower head, resulting in the same hazard outlined above.

There is no mechanism to prevent backflow of contaminated water from the shower in a patient room to the cold water distributions system. This means that faecal contaminants could be present in potable (drinking water) delivered through designated drinking water taps and in pantry kitchens. This is a public health risk.

An air break is provided at the cold water storage tank to ensure there is no risk of any hospital contaminant backflow leading to contamination of Scottish Water supply.

Background:

Scottish Water is responsible on behalf of the Scottish Government for the monitoring and enforcement of the regulations. There is a legal duty on all those who design, install, maintain, alter, remove or use water fittings to ensure compliance with these Byelaws.

The current guidance directs Scottish Water to take a risk based approach to enforcement activity.

Assessment:

1. Access to showers and promotion of independent self care is central to a patient centred care approach.
2. The options to aid compliance with the byelaws include shortening the hose, fitting a shower screen or provide a restraining ring.
3. Shortening the hose may address contact with both the toilet and shower drain, but not the hand wash basin, or direct contact with the patient.
4. Provision of a shower screen to would render the shower rooms non compliant with Disability Discrimination Act 2005 requirements. There would be insufficient wheelchair access and access for assistance. A retaining ring would still be required to address direct contact with the patient.
5. A shower screen would also potentially create staff safety issues and non conformance with manual handling regulations.
6. Adult patients may have, as a result of existing mobility/health conditions or treatment require assistance to shower. This often involves the patient being seated for showering, and many patients will be unable to stand during showering. From a care provider perspective, it is important to be able to direct the water to ensure all parts of the patient are washed and rinsed

effectively, even when seated. This has implications for on skin health, odour, reduction in total number of skin organisms (which may impact on surgical site infection risk if showering pre-operatively). There is also a significant impact for patient dignity and comfort.

7. Children and young people may require to sit for showering as outlined above. In addition, children are not as tall as adults, and therefore the water output needs to be at a provided at a level proportionate to their height. As all ages of children and young people will be cared for at RHCYP, a fixed retaining ring may not allow this flexibility.
8. Staff or other care givers are more likely to become soaked when assisting patient showers if the shower height is sub optimal. For staff, additional PPE would be required (gowns, wellies etc).
9. There is a need to provide access to appropriate washing facilities for children, young people and adults who are not continent. Urine and faecal matter has a damaging effect on skin integrity. An inability to direct water may result in incomplete washing and rinsing (and removal of body fluids including blood, urine or faecal matter).
10. This is a particular risk for patients with indwelling urinary catheters. Poor catheter toilet is a known risk factor for developing a device related urinary tract infection.
11. Any solution which impacts on how 'user friendly' the shower is could result in increased numbers of patients opting for no, or other personal hygiene solutions – this could render the shower an infrequently used outlet (and Legionella risk).
12. From a human factors perspective (and based on local experience in NHS Lothian), where an environment is provided which does not meet need or expectation, individuals will identify a 'work around' solution. It is therefore plausible that even where a solution is provided to demonstrate conformance with legislation, patients, parent or staff will identify a way to circumvent this. Therefore, the solution provided to demonstrate conformance does not in itself provide assurance that contamination with faecal organisms will not occur.
13. Faecal organisms (including Clostridia spores) could survive in water temperatures of $\leq 20^{\circ}\text{C}$ (the temperature of circulating cold water) and be ingested by patients, leading to colonisation of the gut. This could result in susceptible patients developing *Clostridioides difficile* infection following antimicrobial treatment for example.
14. Any contamination present would be very dilute when considering the overall volume of water contained and delivered by the hospital water system.
15. Daily cleaning of sanitary outlets with a combined detergent and chlorine releasing agent at 1,000ppm will reduce the overall microbiological burden of the sanitary items and shower heads.
16. Shower heads/hoses are subject to regular planned preventative maintenance.

Recommendations:

1. Further discussion with the regulator and HFS required as a matter of urgency to agree a pragmatic, risk based solution which provides assurance to Scottish Water of water safety, whilst ensuring the shower is fit for purpose from a patient and staff perspective.

http://www.legislation.gov.uk/ssi/2014/364/pdfs/ssi_20140364_en.pdf

https://www.wras.co.uk/consumers/advice_for_consumers/what_are_the_water_regulations/

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1079464/>

NHS Lothian

RHCYP & DCN Oversight Board
05 December 2019

NHS Lothian Director of Finance

SUMMARY OF ESTIMATED DELAY COSTS**1 Purpose of the Report**

- 1.1 The purpose of this report is to provide an update to the Oversight Board on the estimated delay costs identified within the update to Parliament on 11th September 2019.

2 Recommendations

- 2.1 agree the update on the estimated costs arising from the delay in opening the RHCYP & DCN facility; and
- 2.2 delegate the timing and quantum of required funding allocations to be managed by Scottish Government Health and Social Care Division (SGHSCD) Finance and NHS Lothian Finance.

3 Discussion of Key Issues

- 3.1 As part of an update to Parliament on the RHCYP & DCN facility, the Cabinet Secretary for Health and Sport advised Parliament that the costs associated with the delay are £16m. The Cabinet Secretary reiterated a commitment in Parliament on 18th September to support necessary investments in the current RHSC and DCN facilities.
- 3.2 This figure was provided by the Scottish Government Health and Social Care Division Finance, based on estimates prepared by NHS Lothian. Given the timescales, the information included was necessarily high level, and include some contingencies where work is not concluded.
- 3.3 A number of these estimates have now been further refined, and an updated summary is included in Appendix 1. The following should be noted:
- the estimated remedial cost of remedial works at the new facility is unchanged, pending an updated estimate from IHSL;
 - a breakdown of the required works at DCN is to be confirmed;
 - actuals shown reflects invoices receipted and paid through the ledger. This does not reflect the full value of work completed or instructed, and purchase order values will be included in the schedule going forward to give a more accurate indication of commitments; and
 - the estimated costs in Appendix 1 do not currently include any additional implications of the RHSC Fire Compliance Report from November 2019, although it is currently assumed that the existing estimates will be sufficient.

- 3.4 NHS Lothian and the Scottish Government continue to work closely on the requirements for additional allocations to support this work. The respective finance teams are in regular contact, and the position noted in Appendix 1 is consistent with these discussions. Ongoing management of the allocations process is recommended to be delegated to these finance teams.
- 3.5 In addition to the delay costs identified in Appendix 1, NHS Lothian continue to pay the Annual Service Payment for the new facility, at circa £1.4m per month. The contracts management team are working closely with the Special Purpose Vehicle (SPV) and Facilities Management company to ensure the payment mechanism is applied appropriately during this period.
- 3.6 The proposed next steps are:
- agree proposed investments in the current RHSC and DCN sites (to be taken forward by category owners identified in Appendix 1);
 - update costs of remedial works in the new RHCYP / DCN facility, when available.
 - Continue detailed discussion on required funding with Scottish Government, and any potential funding solutions.
 - update Appendix 1 summary schedule to include commitments, as well as actual expenditure.

4 Key Risks

- 4.1 The key risk associated with the estimate of delay costs is that required investments and remedial works may exceed current estimates, once fully scoped and tendered. This is mitigated by the contingencies within the £16m estimates, however the Board will work closely with the Scottish Government to ensure any funding issues are understood and addressed.

5 Resource Implications

- 5.1 The resource implications are addressed in Appendix 1.

Susan Goldsmith
Director of Finance, NHS Lothian
 03 December 2019

List of Appendices

Appendix 1: Estimated RHSC / DCN Continuing Service Costs November 2019

Oversight Board December 5th 2019				
Appendix 1: Estimated costs associated with delay to the new hospital	Spend to Date £k	Estimated Cost £k	Owner	Status
Proposed works for critical care and Haematology/Oncology	-	4,000	Iain Graham	Ongoing
Contingency for further remedial action	-	2,000	Iain Graham	Ongoing
Total: Costs associated with New Hospital	-	6,000		
Costs of maintaining existing sites				
Dual running of existing sites: RHSC/DCN staff				
Specialty Doctors rota cover	-	200	Fiona Mitchell/ Michael Pearson	Ongoing
Pharmacy staff (cross site transport and opening hours at 2 sites)	-	241	Angela Timoney	Ongoing
Logistics Services Improvements	-	25	George Curley	Ongoing
Domestic Services RHSC (poor condition of current site)	-	25	George Curley	Ongoing
Sub Total	-	491		
Dual running of existing sites: RHSC/DCN equipment/supplies				
Medical equipment maintenance	199	199	Fiona Mitchell/ Michael Pearson	Ongoing
Sub Total	199	199		
Additional maintenance / property costs at current RHSC and DCN facilities (energy, rates, building maintenance)				
General estate (both sites)	188	150	George Curley	Ongoing
Catering Services Improvement RHSC	-	50	George Curley	Ongoing
Parent accommodation RHSC	5	10	George Curley	Ongoing
RHSC Rates	-	451	George Curley	Ongoing
RHSC Water	-	89	George Curley	Ongoing
RHSC Energy	-	836	George Curley	Ongoing
DCN Rates	-	91	George Curley	Ongoing
DCN Water	-	30	George Curley	Ongoing
DCN Energy	-	183	George Curley	Ongoing
Sub Total	193	1,890		
Additional capital investments in current RHSC				
Medical equipment & storage	103	450	Fiona Mitchell	Ongoing
Fire prevention	-	250	George Curley	Ongoing
Heating / Ventilation / Temperature Control	-	130	George Curley	Ongoing
Redecoration	-	30	George Curley	Ongoing
Roofing	-	50	George Curley	Ongoing
Sub Total	103	910		
Additional capital investments in current DCN				
Videotelemetry: Ward 33 - Waiting Times	-	25	Michael Pearson	Ongoing
Additional biplane DCN	-	1,200	Michael Pearson	Ongoing
Sub Total	-	1,225		
Contingency	-	2,486		Ongoing
Total: Costs of maintaining existing sites	495	7,200		
Project Team costs (Director of Finance)				
NHL ongoing project team costs	-	1,500	Iain Graham	Ongoing
Additional project support	-	300	Iain Graham	Ongoing
Advisor fees (legal, technical, financial)	-	300	Iain Graham	Ongoing
Aborted commissioning	-	250	Iain Graham	Ongoing
Total: Project team costs	-	2,350		
Independent reviews				
Independent reviews	-	500	Scottish Government	Ongoing
Total: Independent reviews	-	500		
Total Spend/ Estimated Additional Costs	495	16,050		

RHCYP+DCN - Continuity of Services on Existing Sites Action Log Dashboard

10

02/12/2019

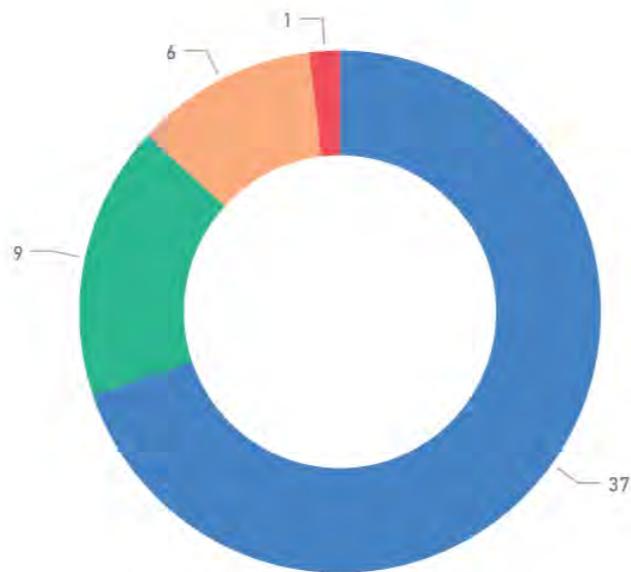
OPEN
16

CLOSED
37



Status against Target Date

- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Actions for DCN at WGH site

OPEN
10

CLOSED
12



Actions for RHSC Sciennes site

OPEN
8

CLOSED
33



RHCYP + DCN

Continuity of service provision on current DCN and RHSC sites

Revision Date: 02/12/2019

Current date for tracking: 02/12/2019

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/ Closed	DCN	RHSC	Source of info	Funding
Capacity												
1	Winter planning	1.1	RHSC: Increase in ED capacity to maintain flow	F Mitchell	05/07/2019	30/11/2019	Work is on track for relocating OPD clinics to 3 Rillbank, from Monday 9 December, to free up more space for the ED	OPEN	No	Yes	Fiona Mitchell 02/12/2019	Service sustainability
		1.2	RHSC: increase medical beds and cubicles	F Mitchell	05/07/2019	30/11/2019	Ward 4 and PIU have now relocated. 2 shower trolleys moved to RHSC from RHCYP.	CLOSED	No	Yes		Service sustainability
		1.3	RHSC: Additional 15 winter B5 posts advertised and shortlisted, to supplement medical nurse staffing. 6 additional B2 posts will be sought from the staff bank on a guaranteed shift basis for night duty staffing on ward 4 (medical). Additional nursing posts approved in June 2019 for an increase in year-round nurse staffing levels in the ED, particularly to support evening and night activity pressures. Most posts now recruited to for Phase 1 of this expansion, including an Advanced Nurse Practitioner for the ED team.	F Mitchell	05/07/2019	30/11/2019	B5 Winter posts - first round of interviews held 2 October. Closing date for second round 18th October; 1 applicant shortlisted. Advertised again closing 15th November 2019. Second round of Winter staff recruitment disappointing- going back out to recruitment again. Extra winter beds being staffed mainly by core ward staffing. Band 2 Winter Posts - Bank Requests from November onwards. Additional permanent ED posts - ENP job descriptions being finalised for recruitment end Oct. onwards.	OPEN	No	Yes		Service sustainability
		1.4	RHSC: Increase haem/onc day care beds by 3	F Mitchell	05/07/2019	30/11/2019	This can be closed as the Ward moves have taken place.	CLOSED	No	Yes	Fiona Mitchell 02/12/2019	Service sustainability
		1.5	Sleep service expanded staffing for new hospital but there is no extra capacity in old RHSC and winter pressures can lead to sleep studies being cancelled. Look at potential for services at home being expanded to address waiting list?	F Mitchell	05/07/2019	07/10/2019	Home sleep studies have now started.	CLOSED	No	Yes	On the list shared by Calum Henderson following CabSec's visit.	Service sustainability
		1.6	Winter Planning adult acute services	M Pearson	05/07/2019		Due to ongoing bed closures and pseudomonas in water, DCN is currently not accessed by the WGH site for boarding. Bed pressures in down stream facilities may affect DCN; managed through operational site and capacity management. CLOSED in relation to cancelled DCN moves.	CLOSED	Yes	No		Service sustainability
2	Paediatrics at St John's	2.1	Consideration of increasing Services at SJH to reduce pressure of RHSC and enhance care closer to home for West Lothian children.	F Mitchell	05/07/2019	TBC	The Royal College of Paediatrics and Child Health have now confirmed that they will carry out a review visit as requested before end February. Dates to be confirmed w/c 2/12/19	OPEN	No	Yes	Fiona Mitchell 02/12/2019	Service sustainability
3	Medical equipment	3.1	Interventional Neuroradiology provision: increased demand (due to service delivery issues in Glasgow) for ageing and increasingly unreliable interventional neuroradiology equipment at DCN.	M Carr	09/07/2019	15/11/2019	Work is ongoing to confirm cost and programme certainty for options. Indicative cost for replacement option is £900k. Recommendation is option to replace existing equipment, supported by Oversight Board 17/10/19. Confirmation was received on 29/10/19 that the Cabinet Secretary was content the Board proceeds with the recommendation to purchase the additional equipment for DCN. Timelines for purchase and installation to be confirmed. Costs confirmed and a PO number issued. Contingency plan being developed with consideration to GG&C INR services and capability of support services including DCN, HDU and Anaesthetics. The times for the start of the project will be confirmed at the initial planning meeting scheduled for 4th Dec.	OPEN	Yes	No		N/A - no additional expenditure anticipated.

		3.2	Theatre lights in four of the operating theatres at RHSC Sciennes are old and unreliable, with no replacement parts available. New lights required.	F Mitchell	09/07/2019	15/02/2020	Quotes received, delivery and installation dates being confirmed with the 2 suppliers as well as confirmation of any enabling works they require pre-installation. Will then require a theatre shutdown timetable to be agreed with clinical teams, to minimise impact on patient service, for removal of old lights and installation of new. Timetable for whole programme expected to be available in next 4-6 weeks. Meeting week beginning 28 October to discuss co-ordinating the planning for installation and theatre down time. Working group planning the theatre light replacement programme met again last week and outline plan expected by 11/11/19. Decision now made to replace lighting in 4 theatres, timetabled for February school half term holiday to minimise down time. Order being placed with Maquet so site survey can be undertaken and any enabling works identified. Maquet is the standard theatre light provider in NHS, so these lights can be re-cycled to other sites after the RHSC move.	OPEN	No	Yes	Fiona Mitchell 11/11/19	Additional - cost of maintaining existing sites.
		3.3	General x-ray equipment that had been installed in RHCYP required again at RHSC	F Mitchell/M Carr	09/07/2019	08/11/2019	New equipment arrived on site 14/10/19 and installation underway. This equipment will be moved elsewhere on closure of RHSC. On schedule to go live on target date of 8/11/19. Room is finished and is now back in full clinical use.	CLOSED	No	Yes	Update from S Evans, Radiology 7/11/19	Additional - cost of maintaining existing sites.
		3.4	Extension of maintenance contracts for elderly equipment at Sciennes and DCN.	F Mitchell/M Carr	09/07/2019	19/09/2019	Contracts and maintenance plans now in place. Will be updated on a quarterly basis.	CLOSED	Yes	Yes	S Evans, Radiology	Service sustainability
		3.5	Additional scope storage is required for theatres at RHSC Sciennes as two cabinets were moved to RHCYP. Currently one is on loan, with rental charges due from October 2019.	F Mitchell/M Carr	09/07/2019	30/11/2019	Scope Cabinets up and functioning according to plan.	CLOSED	No	Yes	Fiona Mitchell 02/12/2019	Additional - cost of maintaining existing sites.
		3.6	Replacement tube for CT scanner at RHSC	F Mitchell/M Carr	09/07/2019	31/07/2019	Tube replaced - COMPLETE	CLOSED	No	Yes	S Evans, Radiology	Additional - cost of maintaining existing sites.
		3.7	Videotelemetry: access to VTEM beds has been reduced in DCN since April 2019 with the reconfiguration of wards and restrictions on admissions due to positive testing for pseudomonas aeruginosa. Delaying moves to Spring 2020 extends the limited capacity and impact on waiting times. Use of portable equipment at one bed has enabled some VTEM admissions since August, but a hardwired bed with full VTEM capability and monitoring is required.	M Pearson	01/08/2019	12/11/2019	Install hardwired VTEM into ward 33. Utilise portable equipment for appropriate waiting list patients at home. Remedial electric works required prior to moving the equipment. An external contractor has been on site to look at the work - Estates to confirm date and cost. Optima will come after the electric works, £7k signed off. Complete from Estates side they just require some IT connection. Then Ward 33 will open up to 16 beds.	CLOSED	Yes	No	Michael Pearson/Hester Niven	Additional - cost of maintaining existing sites.
Clinical Support Services												
4	Pharmacy	4.1	Inadequate staffing to maintain opening hours for dispensary on 2 sites since in organisational change 1 dispensary manager was redeployed to another core service effective July 2019 when integration was meant to occur	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 7 dispensary manager resource required to allow provision of medicines on RIE and RHSC sites to prevent impact upon patient experience while RHSC remains open; and minimise impact of stress on staff health and wellbeing. 1.0wte band 7 Pharmacy Technician = £43,500	CLOSED	No	Yes	2 x SBAR reports	Additional fixed term, long term service sustainability
		4.2	Inadequate pharmacy support workers (PSW) staffing to deliver an integrated medicines distribution hub for RYCYP/RIE with required staff still working on RHSC site to maintain dispensary service	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 2 and 3 PSW resource required to prevent impact upon availability of medicines on RHSC site; and minimise impact of stress on staff health and wellbeing. 1.0wte band 2 PSW plus 2.0wte band 3 PSW = £77,192	CLOSED	No	Yes		Additional fixed term, long term service sustainability
		4.3	Pump-prime funding for staff resource to deliver the One Stop model has ceased, which is the backbone of medicines supply to patients to underpin management of capacity and flow at the new hospital site	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Funding for pharmacy technician resource must be reinstated to continue this model to be delivered. To address 3.4 and 3.5: 1.0wte band 4 Pharmacy Technician = £29,985	CLOSED	No	Yes		Additional fixed term, long term service sustainability
		4.4	Extended opening hours and weekend working rotas of the integrated pharmacy department at RIE was implemented in June 2019 in readiness for move of the RHSC in July 2019. To avoid lone staff working the full staff complement was needed on one site to full fill this rota. With pharmacy staff members remaining on RHSC the late	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 4 pharmacy technician resource needed to ensure extended pharmacy opening hours at RIE not put at risk, which would affect capacity and flow on RIE site See 5.3 above	CLOSED	No	Yes		Additional fixed term, long term service sustainability
		4.5	One Site Lead Pharmacist redeployed to another post during organisational change to integrate the 2 pharmacy departments leaving 1 Site Lead Pharmacist to manage teams across 2 sites without a deputy to support operational day-to-day management or change management of the teams	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Deputy pharmacist (Band 8a) required to support site lead pharmacist for RIE/RHSC until integration of the 2 departments is complete, which will help minimise impact of stress on site lead pharmacist health and wellbeing 1.0wte Band 8a Pharmacist = £65,625	CLOSED	No	Yes		Additional fixed term, long term service sustainability
		4.6	Cross site transport of medicines 7 days a week is needed but the ad hoc arrangements currently in place (e.g. Blood bikes, taxi runs) is not suitable for the extended duration that off-site daily delivery of medicines will be needed until RHSC move. This is especially an issue for delivery of intrathecal chemotherapy agents that have unique transport requirements under CEL30 (i.e. anyone transporting these medicines must be trained and named on the intrathecal register as competent to undertake the task allocated to them including transport)	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Funding to NHS transport and portering services for 1.0wte dedicated driver(s) (to be trained in CEL 30 requirements) to transport medicines between 09:00 to 17:30 Monday to Friday and 10:00 to 14:00 Saturday. 1.0wte Band 2 = £24,370	CLOSED	No	Yes		Additional fixed term, long term service sustainability
5	Laboratories	5.1	Minor changes were made to on-site Blood Science laboratory hours with the announcement of the delay in July 2019, with agreement that provision would remain under constant monitoring/ review.	M Grey	09/07/2019	31/07/2019	The NHS Blood Science laboratory service at RHSC will continue with no alteration to service but service delivery/ performance will be monitored/ kept under continuous review in order to ensure that a robust and sustainable service continues to be provided to RHSC users and their patients.	CLOSED	No	Yes	Blood Science SBAR: Impact of Delay to Move from RHSC to RHCYP 24/09/19	Service sustainability
Facilities Management												
6	Catering	6.1	Extend canteen opening times and preparation of meals on RHSC site - for better utilisation of staffing and reduction in waste.	G Curley	23/09/2019	14/10/2019	Chef now on site. Collation of menus and standard ordering.	CLOSED	No	Yes		Additional - cost of maintaining existing sites.
		6.2	Procurement of two fridges for RHSC facility.		23/09/2019	14/10/2019	Order placed	CLOSED	No	Yes		
		6.3	Communication with catering staff about sites and rosters.		23/09/2019	08/10/2019	Chef now on site; communication with catering staff underway.	CLOSED	No	Yes		
		6.4	Improved signage and marketing for RHSC service		23/09/2019	14/10/2019	Communication in place on site	CLOSED	No	Yes		
		6.5	HACCP		23/09/2019	08/10/2019	Chef now on site: completion of HACCP	CLOSED	No	Yes		
		6.6	Explore options for third party support for catering		23/09/2019	18/11/2019	Discuss with Edinburgh Childrens Hospital Charity - Waiting for feedback from patients and visitors (4 week trial). Explored with charities, no takers.	CLOSED	No	Yes		
		6.7	Replace dining room furniture		21/10/2019	31/10/2019	Ordered for delivery w/c 28/10/19 - DELIVERED	CLOSED	No	Yes		
7	Parent accommodation	7.1	Improve environment of parents accommodation		23/09/2019	02/10/2019	Thorough clean of parents accommodation, and enhanced cleaning within domestic services schedule.	CLOSED	No	Yes		

		7.2		G Curley	23/09/2019	31/10/2019	Parent accommodation reviewed. Refurbishment and new furniture requirements identified.	CLOSED	No	Yes		
		7.3			23/09/2019	30/09/2019	Improve communication between FM team and Family Support re use of and care for parent accommodation. Protocol agreed	CLOSED	No	Yes		
8	Domestics	8.1	Domestic services, including increased pressure on staff to make existing environment as good as it can be.	G Curley	23/09/2019	30/09/2019	Review current provision with a view to providing enhanced service to compensate for condition of the environment.	CLOSED	YES	Yes		
		8.2			23/09/2019	10/10/2019	Ensure all staff only areas are in receipt of full staffing levels.	CLOSED	YES	Yes		
		8.3			23/09/2019	30/09/2019	Complete analysis of Facilities Monitoring Tool.	CLOSED	YES	Yes		
					23/09/2019	30/09/2019	Transfer of new equipment from RHCCYP to RHSC/DCN	CLOSED	YES	Yes		
		8.4			21/10/2019	01/12/2019	Move to disposable mops to avoid double dipping. Laundry of mops does not remove C Dif now extended by 1 week	OPEN	YES	Yes	Marion Calder 02/12/219	
9	Logistics	9.1	Logistics services	G Curley	23/09/2019	06/01/2020	Utilisation of staff in post to provide security at RHSC: give notice to current Security Contractor. Notice given. Security will become NHSL responsibility in the new year, bringing substantial savings.	OPEN	No	Yes	1. ACTION PLAN for RHSC 2. RHSC Catering provisions options paper 3. Update George Curley to Karen Burnside 14/10	
		9.2			23/09/2019	30/09/2019	Secondment opportunity for supervisor vacancy now being progressed.	CLOSED	No	Yes		
10	General estate	10.1	DCN - General state of facilities; walkround and identification of works	G Curley	23/09/2019	05/10/2019	Ward 31 additional shelving	CLOSED	Yes	No		
					23/09/2019	30/11/2019	Ward 33 - Painting completed. Wet room complete. Flooring patches to be confirmed.	OPEN	Yes	No	Update Hester Niven 02/12/2019	
					23/09/2019	30/11/2019	Ward 32- Painting completed. Flooring patches to be confirmed.	OPEN	Yes	No		
					23/09/2019	11/11/2019	Neurophysiology - Consultant office painted. Senior physiologist office to be painted w/b 4/11/19. Carpet due to be replaced on 9/11/19. DCN Admin corridor and Directorate Asst office carpet to be replaced 9/11/19.	CLOSED	Yes	No		
					25/10/2019	06/01/2020	The DCN fire system upgrade works are due to start on Tues 3 rd Dec.	OPEN	YES			
					23/09/2019	30/11/2019	Ward 31 • painting continues in patient Bays. (2 single rooms and 2HDU bays to be completed) DCN OPD • still to be painted. DCN x-ray • corridor still to be painted. • Consultant office carpet to be replaced on Thursday 5th Dec. Neurpphysiology • Reporting room-flooring replaced 30 Nov. • Consultant office-carpet to be replaced 5th Dec (due to a flood from the new wet room in Ward31)	OPEN	Yes	No		
				RHSC - General state of facilities; walkround and identification of works	23/09/2019	31/10/2019		CLOSED	No	Yes		
				Equipment transferred from new RHCCYP to existing site to benefit patient care/experience.	P Campbell	01/10/2019	31/12/2019	Equipment transferred included patient easy chairs, Mon900, Dia900, trollies, fridge, freezers, shower trollies, wheelchairs, bracket table and sedation tubing. Lot of work around transferring back top up items and various high tariff/specialist order sundries.	OPEN	Yes	No	Peter Campbell
				Unannounced HEI Inspection of RHSC and DCN took place 22/10/19-24/10/19.	A McMahon	22/10/2019	15/01/2020	Draft report will be emailed on 4/12/19 to check for factual accuracy. Sign-off of the report and return to HIS by 18/12/19. The final report will be published on 15/1/20. Verbal feedback from inspectors at the end was positive.	OPEN	Yes	Yes	Fiona Mitchell and Alex McMahon
				10.2	Fire and Rescue Service (F&RS) Audit of RHSC Sciennes premises	F Mitchell	20/11/2019	18/12/2019	The Scottish Fire and Rescue Service carried out a re-inspection of the Lower Ground Floor corridor on 25 November and have now withdrawn the Warning Action Notice in relation to this, due to the immediate actions which have been put in place. Draft Action plan to cover all the improvement recommendations is being finalised currently, dates and costing being worked up.	OPEN	No	Yes
Staff												
11	Communication with staff	11.1	General staff communications, including annual leave, pay, expenses, car parking, delaying retirement	J Butler	23/09/2019	10/07/2019	Frequently asked questions updated and published on intranet 10/07/19	CLOSED	Yes	Yes	On the list shared by Calum Henderson following CabSec's visit.	Service sustainability
12	Staff wellbeing	12.1	Supporting staff wellbeing	J Butler	23/09/2019	18/11/2019	Regular Exec team/Senior team Walkarounds are established. Improvements to facilities and environment in RHSC and DCN have been warmly welcomed by staff. As has the reinstatement of the dining room at RHSC. The local staff health and wellbeing programmes continue on both sites as well as access to the wider corporate staff wellbeing programmes. There is good Partnership support from the trades unions. The Employee Director and Site Directors agree that this action can now be closed, with support for staff wellbeing being business as usual. We will be having a massage therapist in DCN for the next 3 weeks, and in January are going to have yoga, breathing coaches and a stress relief workshop.	CLOSED	Yes	Yes	Closed 02/12/2019	Service sustainability
13	DCN staffing	13.1	In light of nursing staff leaving DCN in anticipation of the move to RIE, the workforce has been reduced. There is a need to ensure we retain current staff, and quickly fill vacancies.	G McAuley / M Pearson	07/10/2019	31/03/2020	On going action. Over 50% of vacancies in nursing (band 5 and 2) and administration have been filled - offers made and start dates confirmed. There are 9 x B5 vacancies and mat leave.	OPEN	Yes	No	Email M Pearson to K Burnside 14/10/19	Service sustainability
		13.2	Anaesthetic out of hours rota cover for DCN. Provision of robust out of hours anaesthetic rotas for the ~6-9month period between DCN team moving and Paediatric team moving to the RIE site. Orinally plan was for paediatric and neuro trainee rota to combine.	M Carr	25/11/2019	01/04/2020	Appoint 4 fixed term one year speciality drs to provide sustainable rota and avoid requirement for consultants to cover a junior rota	OPEN	Yes	No	Mike Gillies	Service sustainability
Patients and public												
14	Patient appointments and communications	14.1	Inform patients of any changes to appointments	J Campbell	09/07/2019	31/07/2019	All patients with appointment in July and August were contact by phone to reschedule to the old sites. All further appointments have been notified by letter.	CLOSED	Yes	Yes	On the list shared by Calum Henderson following CabSec's visit, specifically re some DCN patients attending RIE	Service sustainability

22 41

OPEN

16

CLOSED

37

*Service sustainability (incorporated within service plans and no additional cost anticipated)
*Additional cost of maintaining existing sites. This would then align with the £16m schedule

Pseudomonas aeruginosa: NHS Lothian Information for patients and visitors

28th NOVEMBER 2019

We have identified as part of our robust building management, monitoring and hygiene control measures, that there are bacteria affecting water from one tap in Ward 2. This monitoring is carried out as routine activity in line with national guidance, and is not because of a problem with patient infection. The affected tap is not in a patient bedroom, but is in a room used for patient treatment.

We understand you may find this alarming, especially in the light of extensive current media coverage about other bacteria in water outlets in hospital environments and its potential link to infection. However, we wish to reassure you that there have been no cases of patient infection. We can - and have - taken immediate steps to ensure the water remains safe.

We have active infection surveillance systems in place to identify any patient who may develop an infection with *Pseudomonas aeruginosa*, and are reassured that we have not identified any such hospital acquired infections in Ward 2 at RHSC. There have been no cases of *Pseudomonas aeruginosa* bloodstream infection diagnosed on ward 2 RHSC since September 2016.

This bacterium is found widely in the environment, including in soil and ground water. It will thrive in wet places such as sinks, drains, taps and showers, and might commonly be present in household water systems. *Pseudomonas aeruginosa* rarely affects healthy individuals and many of us will carry it in our gut without knowing it.

For a small number of patients who are very vulnerable to infection, exposure to these bacteria can be harmful, and they can contaminate devices placed inside the body such as respiratory equipment and intravenous 'lines'. Infections caused by *Pseudomonas aeruginosa* can be treated with antibiotics.

As part of NHS Lothian's ongoing commitment to safety and hygiene, it is necessary to fit a filter to the tap for a short time while we undertake additional cleaning, disinfection and flushing of this outlet in accordance with national guidance. The filter means the water from the tap is safe to use. Filters will remain in place until repeat water samples confirm that these actions have corrected the water quality issue.

We are taking all steps required by current UK and Scottish Guidance to ensure that patients, visitors and staff are not placed at any increased risk of harm from the hospital environment.

We are confident that these additional actions and precautions mean that this common environmental bacterium is not posing a risk of causing infection in our hospital.

If you have any questions about this, please speak to the nurse in charge.

Further information on *Pseudomonas aeruginosa* can be found here:

Health Protection Scotland (2019) <http://www.nipcm.hps.scot.nhs.uk/a-z-pathogens/#p>

Centre for Disease Control (2018) <https://www.cdc.gov/hai/organisms/pseudomonas.html>

Patient Information Sheet
***Pseudomonas aeruginosa* Bacteria – Ward 2**

Why am I receiving this information?

We want to make you aware that a particular type of bacteria called *Pseudomonas aeruginosa* has been found in water from one tap in Ward 2A. The tap is not located in a patient room but it is in a treatment room.

What is *Pseudomonas aeruginosa*?

Pseudomonas aeruginosa is a very common bacteria that is found widely in the environment, including in soil and ground water. It thrives in wet places such as sinks, drains, taps and showers. It can be found in perfectly good potable drinking water and household water supplies without any harmful effects.

Is it harmful?

It rarely affects healthy individuals and many of us will carry it in our gut without knowing it. However, for a small number of patients who are very vulnerable to infection, exposure to these bacteria can be harmful, and they can contaminate devices placed inside the body such as respiratory equipment and intravenous 'lines'. Infections caused by *Pseudomonas aeruginosa* can be treated with antibiotics.

Is my child at risk?

No. We wish to reassure you that there have been no cases of patient infection with this bacteria on ward 2. We identified the presence of this bacteria in one tap during the course of our normal water monitoring and testing processes. We carry these out regularly to ensure that we spot problems as soon as possible. We have taken steps to ensure the bacteria is not able to contaminate equipment used for patients. We have fitted a special filter to the affected tap which makes the water safe to use.

If there is no risk why are you telling me this?

We think it is very important to be open and honest with our patients and their families. We recognise that there is a great deal of public concern about infections that can arise in the hospital environment and we want to reassure you that we take all necessary steps to keep you and your child safe.

Is this the same bacteria we've been hearing about that's affected the Children's cancer ward in Glasgow?

Several types of bacteria have been reported as causing water related infections in the children's cancer ward in Glasgow and some bloodstream infections in Glasgow were found to be due to the *Pseudomonas aeruginosa* bacteria. We have not identified any such *Pseudomonas aeruginosa* infections on ward 2 RHSC in Edinburgh in recent years

What are you doing to get rid of it?

The tap is being dismantled to allow it to be disinfected. If necessary we will replace it.

20191203 *Pseudomonas* Q&A

From: [Graham, Chris](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Chief Medical Officer](#); [Henderson C \(Calum\)](#); [McLaughlin C \(Christine\)](#); ["Colin Sinclair"](#); [Cosens, Sorrel](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); ["Gordon James"](#); [Graham, Chris](#); ["Jacqui Reilly"](#); [Joyce, Alex](#); ["Judith Mackay"](#); [Little, Kerryann](#); [McMahon, Alex](#); [Morgan, Mary](#); [Murray, Fiona](#); [Nicoll, Nadine](#); ["Peter Reekie"](#); [Roxanne Gallacher \(Jim Miller PA\)](#); [Trotter, Audrey](#); [Walker, Anna](#)
Cc: [Marinitsi, Katerina](#)
Subject: Oversight Board Papers for 19 December
Date: 18 December 2019 10:08:25
Attachments: [image001.png](#)
[2. RHCYP OB 05-12-19 Minutes - Draft.doc](#)
[6. Fire Enhancements briefing.docx](#)
[8. RHCYP DCN - Business Continuity Action Log.pdf](#)
[AGENDA RHCYPDCN Oversight Board 191219.docx](#)
Importance: High

Please find attached the agenda and papers for tomorrow’s meeting – the to follow papers will be sent when received.

The dial in details remain:


Participant code 

Kind regards
Chris

Chris Graham
Secretariat Manager



Achieving [deadlines](#) means you are respecting your colleagues and supporting effective decision-making.



The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 19th December 2019, 8:00 – 9:30am

Venue: Room 5, Waverley Gate, EH1 3EG

AGENDA

1.	Chair's Welcome and Introductions	FMc	V
	Apologies:		
2.	Minutes of previous meeting for approval: 5 December 2019	FMc	*
3.	Matters Arising		
	3.1 Shower hose length feedback	GJ	V
4.	Senior Programme Director's Report	MM	#
5.	Commercial progress update	SG	V
6.	Smoke dampers briefing	BC	*
	STANDING AGENDA ITEMS		
7.	Technical Reviews progress		
	7.1 Ventilation	BC	V
	7.2 Water Quality	BC	V
	7.3 Fire Safety	BC	V
	7.4 Electrical Safety	BC	V
8.	Service Continuity on Existing RHSC & DCN Sites	TG	*
9.	Communications		
	9.1 Proposed communications	JM	#
	9.2 Requests for information	SC	V
10.	Any Other Competent Business		
12.	Date of Next Meeting		
	Thursday 16 ^h January 2020, 8am, Room 5, Waverley Gate		

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Wednesday 05 December 2019 in Meeting Room 5, Waverley Gate, Edinburgh.

Present: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Ms C. McLaughlin, Chief Finance Officer, Scottish Government; Ms T. Gillies, Medical Director, NHS Lothian; Professor A. McMahon, Nurse Director NHS Lothian; Mr P. Reekie, Chief Executive, Scottish Futures Trust and Mr G. Archibald, Joint Staff Side Representative.

Present by Telephone: Mr C. Sinclair, Chief Executive, NHS National Services Scotland and Ms S. Goldsmith, Director of Finance, NHS Lothian;

In Attendance: Ms M. Morgan, Senior Programme Director; Mr B. Currie, Project Director, NHS Lothian; Mr C. Henderson, Scottish Government; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

In Attendance by Telephone: Ms J. Mackay, NHS Lothian Director of Communications and Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work.

Apologies: Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government and Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side)

1. Minutes of previous meeting – 28 November 2019

1.1 The minutes of the meeting held on 28 November 2019 were accepted.

2. Matters Arising

2.1 Helpline Provision - Noted that the establishment of a helpline through the NHSL flow centre was now being taken forward.

3. Senior Programme Director's Report

- The oversight board noted that there had been a lot of work in the last week around high value changes and the commercials.
- It was noted that a positive programme of work continued around the water system.
- The electrical workshop scheduled for 3rd December had been moved to the 11th December 2019

4. Commercial Arrangements paper to NHS Lothian Private Board 4 December 2019

- It was noted that the commercial arrangements had been discussed at the Private NHSL Board Session on 04 December 2019.
- The NHSL Board had received legal input at the meeting and had discussed issues around the letter of engagement, indemnity, financial transaction and waiver of termination rights upon agreement of the SA2 in January/February 2020. It was important to note that until the point of signing there was no contractual commitment by

the Board to procure the works . This had provided assurance to the board that the SA2 did not need to be entered if the provided design was not acceptable.

- The NHSL Board had taken their governance responsibility seriously and whilst not happy about the current situation realised that this was the only option available to progress the opening of the hospital. The board reluctantly agreed the proposal.
- The NHSL Board had requested oversight board approval of the decision which they were agreeing to as it was appreciated that the NHSL Board would be signing the public sector up to unknown financial risks, and currently no programme certainty associated with progressing with the proposal. They wished this concern to be made clear to the Scottish Government and Cabinet Secretary, given how the actions of the NHSL board may be viewed in the future.
- The work of the members of the commercials subgroup in getting to this collective consensus was acknowledged and through working together this proposal was believed to be the best way forward, given the circumstances, to get the RHCYP open.
- The oversight board agreed to approve the decision made by the NHSL Board.

5. High Value Change 107 - Ventilation Works to Paediatric Critical Care and Haematology / Oncology

- 5.1 The oversight board approved the High Value Change combining the Paediatric Critical Care and Haematology/Oncology ventilation works into a single High Value Change. Copy of this High Value Change attached to the minutes at *Appendix 1*. It was noted that the first technical workshop in relation to this work would be held on Tuesday 10 December 2019.

6. Shower hose length – summary of issues

- 6.1 The oversight board received the paper; noted that there remained a bylaw compliance issue in relation to a workable shower hose length for assisted bathing and that work remained ongoing to agree a solution. HFS colleagues would be visiting the site to provide input.

7. Financial Position

- 7.1 The oversight board noted the report providing an update on the estimated delay costs reported in the update to Parliament on 11th September 2019. It was noted that NHSL would liaise directly with the Scottish Government finance team and any significant movement of costs would be reported back to the oversight board.

8. Technical Reviews progress

8.1 Ventilation

- Timelines for ventilation solutions in relation to Theatre corridor extract, Scrub extract room and Anaesthetic rooms had been revised with a view to MPX completion of works in January 2020.

8.2 Water Quality & Sampling

- Pseudomonas testing continues.

8.3 Fire

- The oversight board recognised that the fire enhancement work had now been split into a low value change and a high value change. The low value change was in relation to

scoping work for the enhancements and it was expected that timescales of this would coincide with the ventilation system design work for critical care.

- Following this a high value change would be prepared in relation to the design, installation and testing of the fire enhancement work.
- The oversight board agreed that the low value change for the fire enhancement work could now proceed.
- The oversight board recognised that fire enhancement work would not be part of the letter of engagement and requested that a briefing paper on smoke dampers come to next oversight board meeting. The paper to clearly outline the reasoning and detail behind the separating out the fire enhancement work from the high value change.

BC

- The oversight board noted that there had been a recent fire incident in the CHP engine plant room next to the RHCYP.
- It was acknowledged that the fire smoke activation system had operated as intended and other response and backup processes had worked smoothly. The incident had been in relation to Velcro straps on thermal mats covering the exhaust system of the CHP engine. These straps had become brittle and charred and the system had picked this up and activated the alarm. Investigation was underway as to how this had happened and the only damage had been to the thermal mats.
- The Cabinet Secretary would be updated on the incident as part of the normal process as per any incident on any estate.

8.4 Electrical

- Rescheduled Electrical Workshop to now be held on 11 December 2019.

9. Service Continuity on Existing RHSC & DCN Sites

- It was noted that work remained ongoing and additional space works at existing RHSC were on track for completion. There was no further update from last week on the INR equipment.

10. Communications

10.1 Staff communications

- Newsletter summing up all activities to be developed and would come back through oversight board and executive steering group.
- Current patient information sheet now updated to include Pseudomonas information for ward staff and families.

10.2 Requests for Information

- Nothing to update.

11. Any Other Competent Business

None.

12. Date of Next Meeting

- 12.1 The next meeting is scheduled for **Thursday 19 December 2019, 8am, Room 5, Waverley Gate.**

RHCYP & DCN - Senior Programme Director's Report

Report Date	18/12/2019	Programme RAG Status (now)	A
Submitted by	Mary Morgan	Programme RAG Status (previous Oversight Board)	A

General Update		<p>Commercials (Letter of Engagement & Indemnity waiver) concluded.</p> <p>It is not yet possible to determine the overall programme milestones and dependencies due to outstanding activities (High Value Changes).</p> <p>It is suggested that the Arcadis Independent Tester be re-engaged to confirm completion of the Feb 2019 Settlement Agreement actions and subsequently to confirm completion of HVC works.</p>
-----------------------	--	---

Project Workstreams	RAG Status	Comments
Ventilation	A	Workstream Status to Amber due to absence of a delivery programme for High Value Changes. Other Ventilation issues (Theatres corridor, Scrub and Anaesthetic Rooms) are being progressed by MPX without the need for Board change submission - expected completion by end Jan 2020.
Water Safety	A	ESG approved moving the workstream status to Amber due to: A programme of works to address Pseudomonas findings (W10) is in place. Alternative solutions to resolve the Shower Hose lengths (W12) are being explored. NHSL & HPS are to discuss status of some recommended actions - meeting in early January to be confirmed. The NHSL Authorising Engineer has completed his audit and several actions are anticipated to be closed pending his written report
Drainage	B	Workstream closed.
Fire Safety	A	Amber status due to absence of a defined programme to deliver against these requirements. A LVC has been submitted to IHSL to confirm the scope of works required prior to finalising and submitting an HVC.
Electrical	G	Actions to address the findings of the NSS report into Electrical Safety has commenced. A multi agency workshop to demonstrate evidence required to close actions was held on 11th Dec 2019. Further evidence is required to close actions, with the date of completion likely to extend beyond target of 24th Dec. It is considered that some works to isolate power from outside bedrooms is required. A change notification has been approved.
Medical gases	B	Workstream closed (Oversight Board 27th November 2019)

Key Achievements / Highlights since last Oversight Board

Completion of commercial negotiations required for Letter of Engagement (HVC design works)

Next Period Key Activities / Challenges

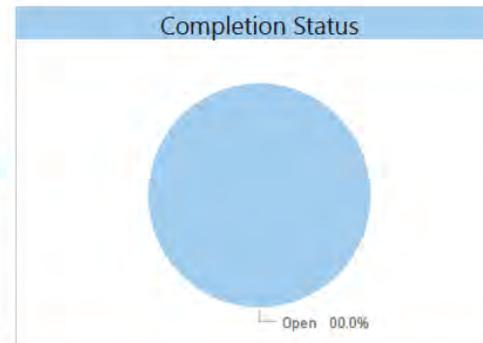
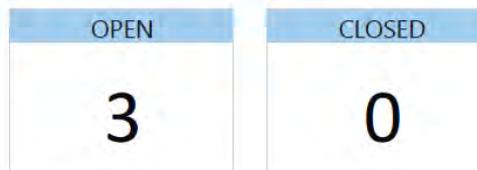
Festive Holiday period for construction industry

Commencement of commercial engagement required for Supplementary Agreement 2 (SA2)

Workshop with BYES, HFS, SFT, NHSL re Pay Mech System and Help Desk improvement 13th January 2020

RHCYP+DCN - Management Action Log Dashboard

13/12/2019



Status against Target Date

- Closed
- Actions on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP

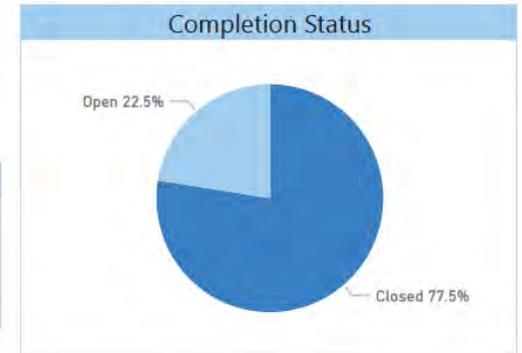


RHCYP+DCN - Ventilation Action Log Dashboard

18/12/2019

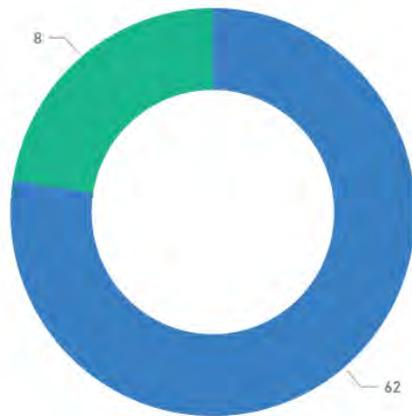
OPEN
18

CLOSED
62



Status against Target Date

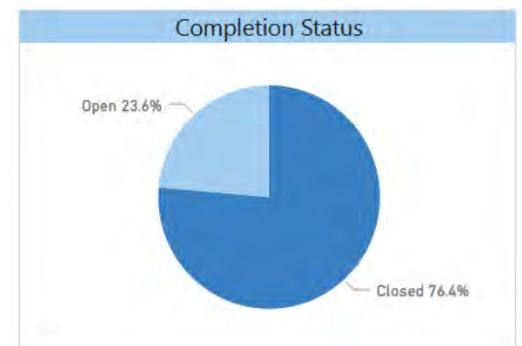
- Closed
- Actions on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



Priority for DCN

OPEN
17

CLOSED
55



Priority for RHCYP

OPEN
18

CLOSED
62



RHCYP+DCN - Water Safety Action Log Dashboard

18/12/2019

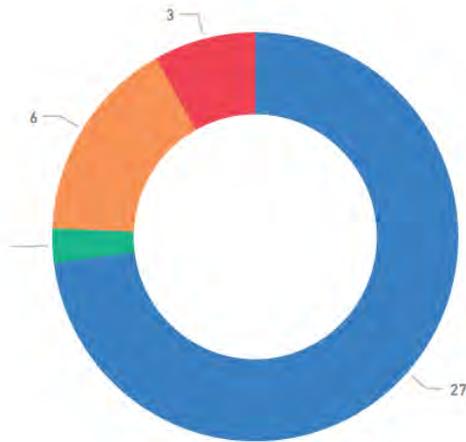
OPEN
10

CLOSED
27



Status against Target Date

- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN

OPEN
10

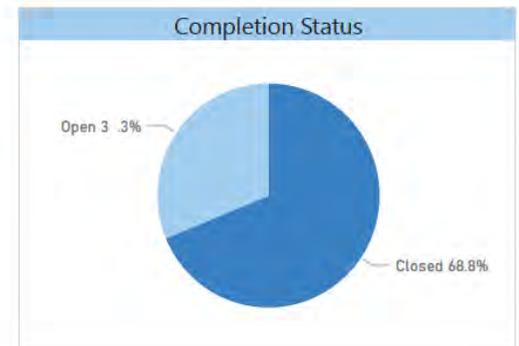
CLOSED
21



Priority for RHCYP

OPEN
10

CLOSED
22



RHCYP + DCN

Water Safety Action Log

Revised Date: 18/12/2019

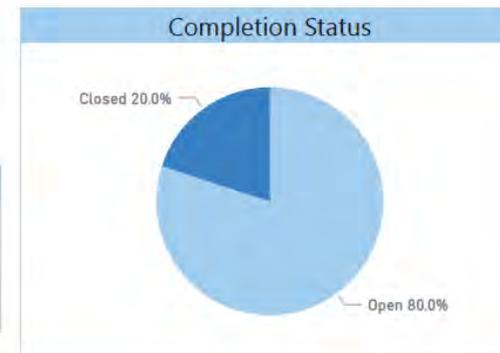
Current Date for tracking: 18/12/2019

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/closed	Priority to RHCYP	Priority to DCN
Documentation										
W2	There is no temporary or permanent site specific water management plan	5	Management: Written confirmation that the actions detailed in the Callidus report have been satisfactorily resolved.	NHSL	11/09/2019	06/12/2019	GS has issued HSL's response to BC and MM. NHSL to confirm by 13/11/19 whether Callidus has confirmed actions are closed. DK provided draft Audit. Audit to be provided to OSB. Confirmation from Calidus is required to close item and any ongoing actions will be moved to the Local Water Safety Group for business as usual management.	OPEN	Yes	Yes
		6	In addition to specific actions for management of <i>P. aeruginosa</i> , a detailed approach to address high TVC counts will be provided in the WSP – this will address removal or cleaning of contaminated inline filters, water temperature regulation, whole system disinfection and further microbiological water sampling as per SHTM 04-01 (TVC, E.coli) to confirm efficacy of control measures.	NHSL	29/07/2019	06/12/2019	DK comments have been issued to BYES. Flowchart will be discussed at the Meeting. Amendments have been agreed with DK and IC and await copy of final version as confirmation for closure of item with any ongoing actions will be moved to the Local Water Safety Group for business as usual management.	OPEN	Yes	Yes
		8	The Legionella Risk assessment Feb 2019 identified a range of actions. The Action Tracker does not demonstrate that the issues raised have been resolved or a timeline provided for resolution. Record rectification of actions. The risk assessment is heavily focused on Legionella and not taking into account other organisms in line with patient type that will occupy the building. Broaden to reflect system contamination in general. Develop analysis categorisation of patient type and consideration to susceptibility for each area.	HFS/NHSL	11/09/2019	06/12/2019	Cannot progress unless further guidance from HFS is provided. IPCT currently building up a package of guidance. In augmented care there is already enhanced measures as part of Pseudo control. Paper in draft. Discussions will take place between Tracey Gillies and Jacqui Reilly at HFS ahead of ESG & OB w/c 15/12/19 when we hope this action will be closed. GC has a paper in draft that will be shared with LG/DK/DI to define the operational threshold, location and number of samples. GC confirmed to be sent to water safety group today and will be circulated for comment. If this is applicable to RHCYP DCN the LG will issue to BYES to adopted within their routine testing.	OPEN	Yes	Yes
W4	Guidance outstanding from NSS	1	HFS via Tim Wafer will advise on the outcome of the additional microbiological testing conducted on their behalf. It was agreed that the actions discussed for inclusion in the water safety plan (flushing remedial action etc.) would address the presence of other organisms. In the absence of any clinical infections the purpose of this exercise remains unclear. No information about the expectation about testing regimes going forwards was discussed. It was highlighted again interpretation of this additional testing may be challenging in the absence of validated testing methodology.	HFS	TBC - Date of QEUH report	06/12/2019	Action from HFS report not linked to any guidance testing methodology results or clinical risk assessment. Draft guidance will not be local to RHCYP and no action will be taken until guidance is produced by HFS for all hospitals. Paper in draft. Discussions will take place between Tracey Gillies and Jacqui Reilly at HFS ahead of ESG & OB w/c 15/12/19 when we hope this action will be closed. LG stated further meeting early next year to discuss the content of the paper with NHSL, HFS and HPS.	OPEN	Yes	Yes
Resolution of Contamination										
W9	Lessons learned for QEUH that my apply in RHCYP+DCN	1	As a result of potential issues identified elsewhere after construction of RHCYP & DCN the following items should be replaced in the system and handed over to Water Solutions Group (they should be in attendance when items are removed to facilitate transportation to laboratory). - One expansion vessel bladder (flow through) - One expansion vessel - One TMT cartridge from augmented care before disinfection/cleaning - Two TMT strainers from augmented care - One system pressure reducing valve - One water meter - One system non-return valve - Two cold water pipe crimp joints - One end-of-line dump valve - Two Kemper venturi valves.	HFS	11/09/2019	06/12/2019	NHSL has provided a risk assessment against HFS/HPS advice for review. LG has discussed in detail with HFS and has provided background info. Further guidance/info awaited from HFS including defined methodology for sampling and interpreting results as well as any resultant actions. (Linked with W4.1 and W3.7) Paper in draft. Discussions will take place between Tracey Gillies and Jacqui Reilly at HFS ahead of ESG & OB w/c 15/12/19 when we hope this action will be closed. LG stated further meeting early next year to discuss the content of the paper with NHSL, HFS and HPS.	OPEN	Yes	Yes

W10	Positive Pseudomonas results	1	<p>Pseudomonas found in taps in Paediatric Medical Inpatients and DCN Inpatients. (SHTM 04-01 Part A published in July 2014) All taps (not just TMT/TMV4) to be disinfected and retested. The following needs to be undertaken:</p> <ul style="list-style-type: none"> - Inspect and replace as appropriate taps, tap components and pipework. - Replace tap strainers and cartridges in affected TMT taps. - Remove all TMT and TMV cartridges and replace with new ones. - Remove and replace all TMT strainers (carried out at the same time as item 3). - Taps to be removed and disinfected - Once pipe work has been disinfected and taps disinfected retest the system (Augmented care areas 100% taps for TVC, fungi and pseudomonas aeruginosa. Rest of a representative sample from the rest of the hospital for TVC and legionella.) <p>Note: Testing should be in accordance with SHTM 04-01 and in accordance with BS 8580-1 LB and HSG 274 and HPS guidance September 2014: "Pseudomonas aeruginosa routine water sampling in augmented care areas for NHS SCOTLAND".</p>	YES	29/07/2019	06/08/2019	<p>NHSL issued Change 092 to disinfect 57 outlets known to be positive for Pseudomonas. The works included within the scope of the change were completed however re-testing proved that there were still positive results returned for 23 of 48 outlets.</p> <p>BYES re-tested 4 no taps for pseudomonas and TVC without any additional disinfection to verify the results - results showed samples taken from the taps were positive but samples taken directly from the outlet were clear. Therefore it was suggested that for these outlets the contamination was local to the tap and these taps have been sent offsite to be autoclaved. Depending on the success of the autoclave a plan will be proposed by BYES on how to deal with the other 53 outlets. DG to provide wording on process with all necessary information required. LG/DI to review process. TVC sampling/remedial scope to be defined within Local Water Safety Group.</p> <p>The disconnected outlets for all 9 ARJO baths both at Taps and outlet have been tested. The results for the outlets have come back clear. However the Baths (taps/shower heads etc) were positive and will be included in the ARJO on site disinfection. The baths are currently disconnected.</p> <p>BYES to reissue the results with ward locations.</p> <p>4 taps to be fitted w/c 0th January or earlier and sampling to start immediately. Remained 33 taps to be sent for disinfection if initial samples (4 taps) are clear. Test results (6 monthly sampling) to be sent by Friday 20th Dec. Results provide indication are 27 positives samples and will be dealt with the same way as above. The current 27 positives to be dealt with at local water safety group.</p> <p>It is proposed that to close this item we need to demonstrate control of the immediate issue, and then move this to the Local Water Safety Group to manage under business as usual.</p>	OPEN	Yes	Yes
		3	<p>Testing has found some fungal / mould contamination and high total viable counts. Given a number of indicators the water system should be disinfected and re-tested. BYES required to seek advice from the manufacturer of the valves on the strongest medium that would ensure a high level of disinfection of the whole system including the removal of bio film if present.</p>	YES	11/09/2019	11/10/2019	<p>The water system will be disinfected and tested prior to occupation by DCN.</p> <ul style="list-style-type: none"> • LVCOB6 has been issued. BYES to respond by 08/11/19. <p>Full system disinfection to address TVC:</p> <ul style="list-style-type: none"> • BYES contacting manufacturers to confirm potential disinfection mediums. Medium to be confirmed and the statement from manufacturers to be provided for consideration. - BYES draft has been issued. • Time line for works required for disinfection considering the best case and worst case scenario. BYES to produce this for tabling at meeting on Monday 25/11/19 <p>Full System disinfection to address fungal/mould:</p> <p>Paper in draft, Discussions will take place between Tracey Gillies and Jacqui Reilly at HPS ahead of ESG & OB w/c 15/12/19 when we hope this action will be closed.</p> <p>LG stated further meeting early next year to discuss the content of the paper with NHSL, HPS and HPS.</p>	OPEN	Yes	Yes
W12	Shower hose lengths do not comply	1	<p>Shower hose lengths do not comply with Scottish Water by-laws and guidance in SHTM 04-01 Water safety for healthcare premises. Shorten hose length or add retaining ring to ensure that shower head cannot reach WC or drain. Disinfect showers hose and drain after rectification.</p>	NHSL	11/09/2019	06/09/2019	<p>The position of some fixed retainers do not allow the hose to function clinically, Scottish Water reviewed on site. Await HPS advice before actions being taken forward.</p> <p>HSF to investigate how other facilities are managing the issues.</p> <p>BYES to confirm issue date for Standard Operating Procedure for Maintenance of hoses and clamps.</p> <p>Await confirmation on MPX activities to comply with Scottish Water byelaws and sample to confirm. Local water safety group to discuss operation el implications.</p>	OPEN	Yes	Yes
W16	Bottle traps - There would appear to be an inconsistency of installation and potential of back-feed from trap to drain.	1	<p>The bottle traps should be the subject of regular planned maintenance and disinfected with a suitable agent to prevent the build-up of biofilm.</p>	HSL		06/12/2019	<p>May require a Board Change. Awaiting further guidance HPS/HPS. Discussions will take place between Tracey Gillies and Jacqui Reilly at HPS ahead of ESG & OB w/c 15/12/19 when we hope this action will be closed.</p> <p>LG stated further meeting early next year to discuss the content of the paper with NHSL, HPS and HPS.</p>	OPEN	Yes	Yes

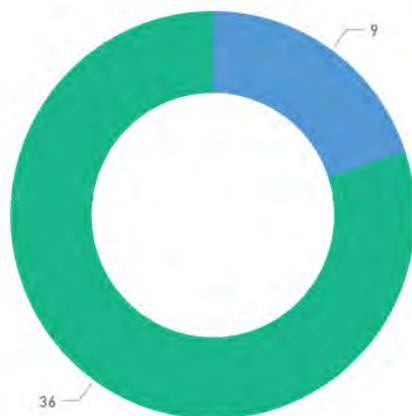
RHCYP+DCN - Electrical Action Log Dashboard

18/12/2019

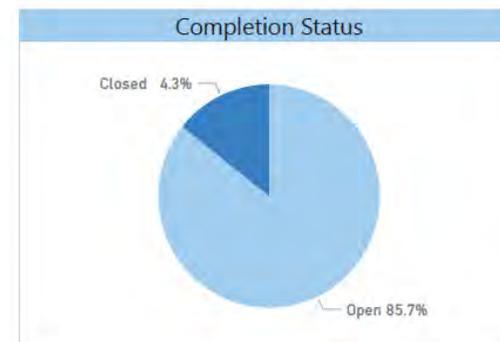
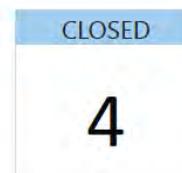


Status against Target Date

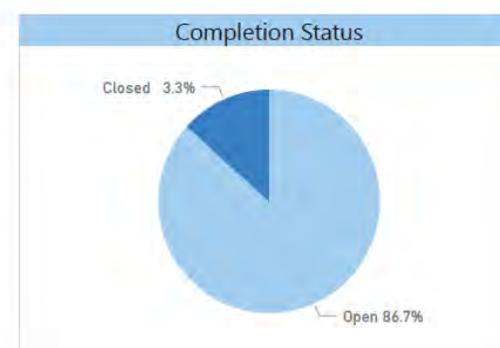
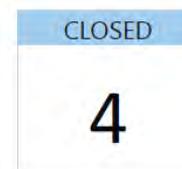
- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN

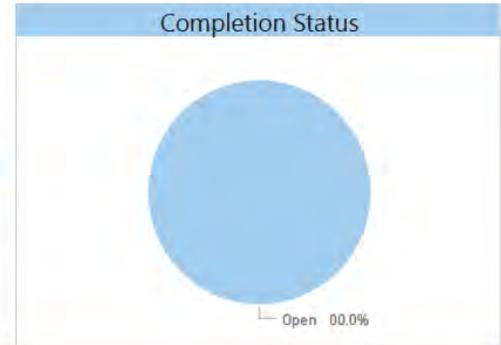
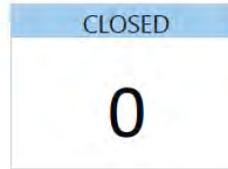


Priority for RHCYP



RHCYP+DCN - Fire Action Log Dashboard

13/12/2019



Status against Target Date

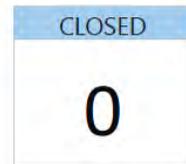
- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP



NHS Lothian

RHCYP & DCN Oversight Board
19 December 2019

Project Director

FIRE ENHANCEMENTS**1 Purpose of the Report**

- 1.1 The purpose of this report is to provide the Oversight Board with an update and seek approval to the proposed implementation strategy for fire enhancement works.

Any member wishing additional information should contact the Project Director in advance of the meeting.

2 Recommendations

The Board is recommended to:

- 2.1 Approve the strategy illustrated in this report.

3 Discussion of Key Issues**3.1 Requirement**

Following publication of "Review of Fire Systems, Electrical Systems and Medical Gas Installation", version 1.0, October 2019 by National Services Scotland (NSS), the Board elected to implement the recommendations contained in section 3.2 Fire through a defined scope of works (see 3.2 below)*.

**Approval given at the NHSL Executive Steering Group of 11th November, 2019 and the Scottish Government Oversight Board of 13th November, 2019.*

3.2 Scope

Following a series of fire risk assessments, attended by clinical team representatives, NHSL Head of Fire Safety, NHSL Fire Safety Adviser, HFS (National Fire Safety Adviser), NHSL Health and Safety officer, Director of Facilities and project team representatives on the 5th and 6th November, 2019 a provisional scope of works was agreed.

3.3 Delivery

A draft High Value Change 108 was subsequently prepared and a draft only shared with IHSL.

At the request of IHSL, this draft HVC 108 was modified to move the initial confirmation of scope stage to a Low Value Change 109. LVC 109 was issued to IHSL on 5th December 2019 (see Appendix 1).

The revised draft HVC 108 is being held as draft pending the outcome and finalisation of the scoping process which will be finalised once the design of new ventilation systems are agreed serving Critical Care and Haematology/ Oncology.

Early indications from IHSL are that the initial concept design for the new ventilation systems will not be available before the end of January 2020. The Board will endeavour to agree the final scope of the fire enhancements with IHSL at that point, finalising HVC 108.

IHSL have been made aware that their delivery programme should prioritise all fire enhancements associated with DCN.

3.4 Recommendation

That the recently issued LVC 109 should be developed with IHSL combining, when available, fire enhancements to Critical Care and Haematology/Oncology. Once achieved, HVC 108 should then be issued to IHSL requesting they design, install and test all scoped fire enhancements.

4 Key Risks

- 4.1 Completion of the design stage for ventilation remedials and enhancements to Critical Care and Haematology/Oncology will determine finalisation of fire enhancement scope and delivery programme. Early indications from IHSL are that their current ventilation programme is not secure, principally due to a delay in finalising a letter of engagement and increase in scope to include isolation rooms and fire enhancements. DCN migration in “spring 2020” may be at risk as a result.

5 Resource Implications

- 5.1 The resource implications of the subject of this paper are unknown, subject to design development with IHSL and their costing the change.

Brian Currie
Project Director
12th December 2019

APPENDIX 1

Low Value Change Notice

Project:	RHCYP + DCN - Little France, Edinburgh
----------	--

1 – Issue of Change Notice to Project Co

Title:	Scope Only – Enhancements to Fire Safety
--------	--

Reference No: 109	Date: 05/12/19
--------------------------	-----------------------

In accordance with Schedule Part 16 (Change Protocol) the Board requires Project Co to provide an estimate, including any lifecycle and maintenance costs, for the provision of a mutually agreed scope of works for the operational design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, the items shown in the table below:

For clarity - Project Co does not hold or retain design liability, nor is it responsible for the method, in determining the location and number of equipment or items requested below. NHSL have requested the below items based on fire design information provided by others.

Activity description and approximate quantities for guidance only*

Item	Description	Total	RHCYP	CAMHS	DCN
1	Install Combined Smoke and Fire Damper (CSFD) at existing vent terminal in corridors. To include all downtakings, reinstatements and a BS approved installation method for damper.	49	14	4	31
2	Install CSFD in ductwork traversing room-to-room boundaries. To include all downtakings and a BS approved installation method for damper.	51	10	37	4
3	Upgrade all doors to Fire Doors to corridors serving sleeping accommodation, in accordance with SHTM 81 and the Non-domestic technical handbook, including the installation of intumescent strip and cold smoke seals and full certification by an approved installer.	16	11	0	5
4	Install mechanical self-closing device to doors and half leaf doors to corridor within sleeping accommodation areas.	199	100	4	95

5	Install electro mechanical, free swing and linked to fire alarm system, self-closing device to doors and half leaf doors to corridor within sleeping accommodation.	25	14	0	11
6	Upgrade existing walls between rooms and corridors, and room to room to “short duration” as per NDTH.	13	11	0	2
7	Update Fire Strategy on completion of the works	-	-	-	-

* Please note: Quantities are approximate and for guidance only and should be read in conjunction with the “marked up” drawings provided to IHSL (list follows below). These drawings and the approximate quantities above do not include the proposed fire enhancements works to Critical Care and Haematology/Oncology which are also required as part of this LVC scoping exercise. Quantification will only be possible once revised ventilation system design in these areas is complete. For the avoidance of doubt, all devices should be installed in full compliance with all applicable regulations.

LIST OF MARKED UP DRAWINGS for guidance only.

Drawing No	Title
WW-Z3-03-PL-524-001	Zone Z3 – Level 03 Ventilation Distribution Sheet 1 of 2
WW-Z4-00-PL-524-001	Zone Z4 – Level 00 Ventilation Distribution Sheet 1 of 2
WW-Z4-00-PL-524-002	Zone Z4 – Level 00 Ventilation Distribution Sheet 2 of 2
WW-Z4-01-PL-524-001	Zone Z4 – Level 01 Ventilation Distribution Sheet 1 of 2
WW-Z4-01-PL-524-002	Zone Z4 – Level 01 Ventilation Distribution Sheet 2 of 2
WW-Z4-02-PL-524-001	Zone Z4 – Level 02 Ventilation Distribution Sheet 1 of 2
WW-Z4-02-PL-524-002	Zone Z4 – Level 02 Ventilation Distribution Sheet 2 of 2
WW-Z4-03-PL-524-001	Zone Z4 – Level 03 Ventilation Distribution Sheet 1 of 2
WW-Z4-03-PL-524-002	Zone Z4 – Level 03 Ventilation Distribution Sheet 2 of 2
HLM-SZ-00-PL-572-002	Ground Floor Fire Strategy General Arrangement
HLM-SZ-01-PL-572-003	First Floor Fire Strategy General Arrangement
HLM-SZ-02-PL-572-004	Second Floor Fire Strategy General Arrangement

HLM-SZ-03-PL-572-006	Third Floor Fire Strategy General Arrangement
----------------------	---

Please note (for guidance only at this stage):

For the avoidance of doubt, all devices should be installed in full compliance with all applicable regulations.

All environmental requirements for all spaces in the Facilities served by or affected by the Works and Services systems shall be met and maintained – including but not limited to, temperature and control, lighting levels, noise, and humidity. These should be consistent to the agreed parameters throughout the Facilities to meet the specific clinical and operational needs for each space in the Facilities.

All works associated with the above will be contained within the scope, including but not limited to, protection and segregation of work area, downtakings, service isolations, service removals, maintaining system performance of services, service reinstatements, builders work reinstatements, decoration, and final builders clean.

There should be no reduction in the spare capacity requirement across and inclusive of all building services.

Overall ventilation requirements, temperature control, natural and artificial lighting levels, acoustic requirements and humidity in the areas affected by these works are to be maintained with no compromises.

The Works and Services shall fully comply with the requirements of all relevant guidance which includes, without limitation, implementation of the Works and Services so that the installation, finishes and maintenance regime shall be in accordance with the requirements of all relevant guidance, together with the clinical and operational constraints identified below:

- 1. DCN work activities and implementation to be prioritised ahead of others.**
2. Dilapidation survey to be carried out in all areas prior to work starting with photographic evidence to document current condition
3. All Works and Services shall be carried out and monitored after, and with reference to, a collaborative full Stage 3 HAI SCRIBE assessment being approved by the Board.
4. The fire strategy and systems agreed for the Facilities will be maintained throughout the Works and Services and the Operational Term and such that where required the newly installed items, systems, and services will integrate with the fire strategy and systems and all other building management systems comprised in the Facilities.
5. The location of the installation within the rooms, external areas, route across such spaces and the segregation of work areas, etc., will enable the current operational functionality and safety policies and procedures to be maintained.
6. The design, layouts, finishes and other details etc. for the Works and Services, at all stages (including during the design development stages),

will require to be agreed with the Board's Representative, the Board's Fire Officer (and in turn the clinical service and related stakeholders). Project Co should recognise that in order to achieve agreement from the Board's Representatives the Board's Representative will seek input from the Board and all appropriate stakeholders.

A post completion walk round with relevant stakeholders will take place after completion of work in a specific area following all necessary inspections, validations and verification by the Board or its authorised agents.

Date of required implementation (only if not a Catalogue item): TBA

To: IHS Lothian

We require the Change described above.
Please advise the cost and timescale for implementation.

Signed on behalf of NHS Lothian: 

Name of Signatory (type or print):STUART DAVIDSON.....

Date: 5TH DECEMBER 2019.....

2 – IHS Lothian Issue Change Notice to BYES

BYES - In accordance with Schedule Part 16 of the Services Contract, the Change as noted in Section 1 above is required.

Date of Issue:

Signed on behalf of IHS Lothian:

Name of Signatory (type or print):

Date:

2.1 – Response to Change Notice from BYES

BYES – We accept the requested change

Yes - Please find our costs attached which are in accordance with Schedule Part 16 Part 2 of the Services Contract.

No – Our reason for rejecting is:
.....
.....
.....

Signed on behalf of BYES:

Name of Signatory (type or print):

Date:

3.1 – Catalogue Response to Change Notice by Project Co	
To: NHS Lothian	DATE:
In accordance with Schedule Part 16 Section 2 of the Project Agreement, we offer the following cost and timescales for the Change Notice.	
Listed in Catalogue:	<input type="checkbox"/> Yes <input type="checkbox"/> No – Please go to section 3.2
Catalogue Cost of Change:	£
Time period for implementing the Change:	

3.2 – Non Catalogue Response to Change Notice by Project Co	
Cost of Materials:	£
Labour Rates:	£
Time period for implementing the Change:	
Lifecycle Impact:	
FM Impact:	
NB: The lifecycle and FM service payment figures refer to the base date and are subject to indexation in accordance with the Project Agreement and Services Contract.	
Comments:	
Signed on behalf IHS Lothian: Name of Signatory (type or print): Date:	

4. – NHS Lothian Response to costed Change Notice. (must be issued within 5 BDs of receipt costed Change Notice)
<p>To: IHS Lothian</p> <p>Having considered the implications of the proposed Change Notice:</p> <p><input type="checkbox"/> Please proceed with the implementation of this Change Notice.</p> <p><input type="checkbox"/> Please do not proceed with the implementation of this Change Notice. Our reason for rejecting is:</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>Signed on behalf of NHS Lothian:</p> <p>Name of Signatory (type or print):</p>

Date:

4.1 – IHS Lothian instruction to BYES

To: BYES

In accordance with Schedule Part 16 Part 2 of the Services Contract:

Please **proceed** with the implementation of this Change Notice.

Please **do not** proceed with the implementation of this Change Notice.

Signed on behalf of IHS Lothian Ltd:

Name of Signatory (type or print):

Date:

5 – Completion of Change Notice from Contractor

To: IHS Lothian

In accordance with Schedule Part 16 Part 2, BYES hereby advises that all work in relation to this Change Notice is now complete. Please see attached evidence.

Signed on behalf of BYES:

Name of Signatory (type or print):

Date:

6 – Completion of Change Notice

To: NHS Lothian

In accordance with Schedule Part 16 Section 2, Project Co hereby advises that all work in relation to this Change Notice is now complete.

Signed on behalf of IHS Lothian:

Name of Signatory (type or print):

Date:

7 – Approval of works completed

To: IHS Lothian

NHS Lothian accept that all works relating to this change notice have been carried out within the agreed timescales and specification as noted above.

Signed on behalf of NHS Lothian:

Name of Signatory (type or print):

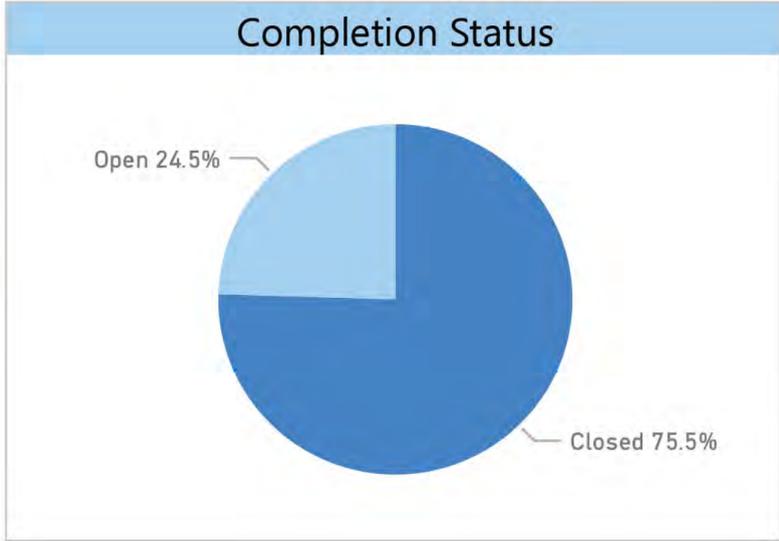
Date:

RHCYP+DCN - Continuity of Services on Existing Sites Action Log Dashboard

18/12/2019

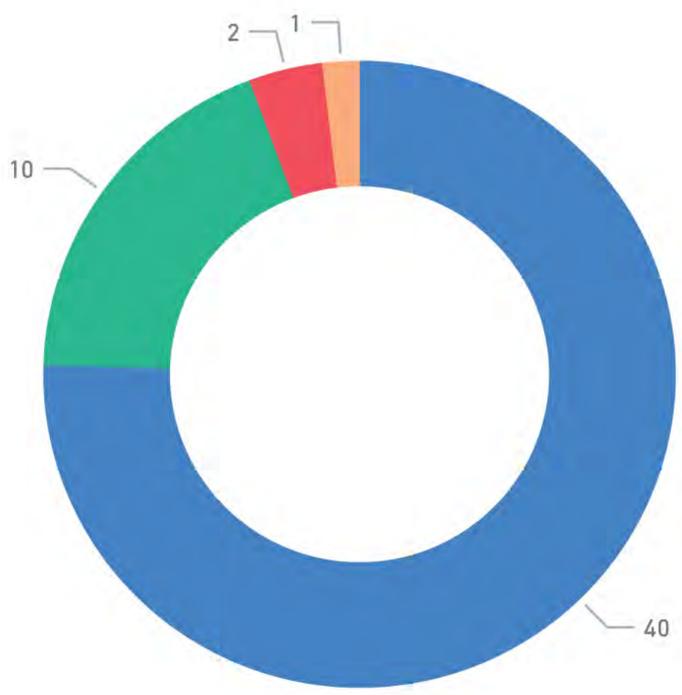
OPEN
13

CLOSED
40



Status against Target Date

- Due Status
- Closed
 - Actions on Target
 - Over 2 Weeks Beyond Target Date
 - Up to 2 Weeks Beyond Target Date



Actions for DCN at WGH site

OPEN
9

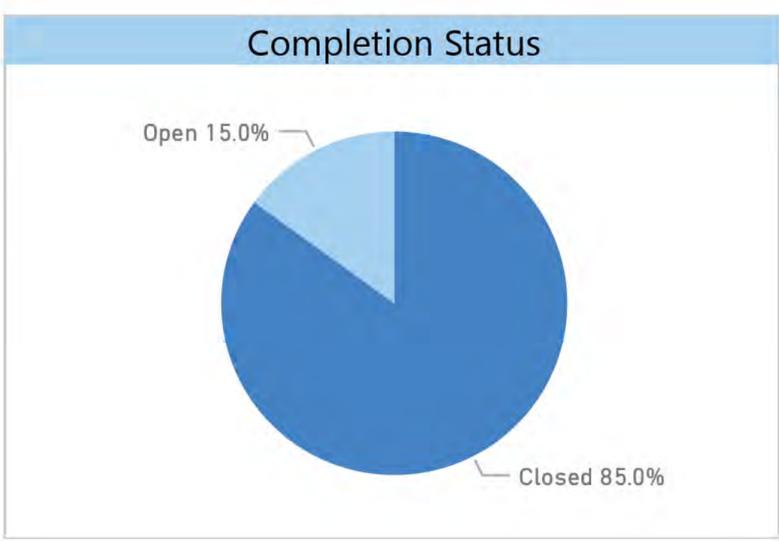
CLOSED
13



Actions for RHSC Sciennes site

OPEN
6

CLOSED
34



RHCYP + DCN

Continuity of service provision on current DCN and RHSC sites

Revision Date: 18/12/2019

Current date for tracking: 18/12/2019

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/ Closed	DCN	RHSC
8	Domestics	8.4	Domestic services, including increased pressure on staff to make existing environment as good as it can be.	G Curley	21/10/2019	01/12/2019	Move to disposable mops to avoid double dipping. Supplies ordered, delivery and implementation date to be confirmed. Note: laundry of mops does not remove C Dif.	OPEN	YES	Yes
10	General estate	10.1	DCN - General state of facilities; walkround and identification of works	G Curley	23/09/2019	30/11/2019	DCN OPD painting started 5th Dec should be completed by 20 December. Disabled toilet upgrade expected to complete 19/12/19.	OPEN	Yes	No
		10.2	Fire and Rescue Service (F&RS) Audit of RHSC Sciennes premises	F Mitchell	20/11/2019	18/12/2019	The Scottish Fire and Rescue Service carried out a re-inspection of the Lower Ground Floor corridor on 25 November and have now withdrawn the Warning Action Notice in relation to this, due to the immediate actions which have been put in place. Draft Action plan to cover all the improvement recommendations is being finalised currently, dates and costing being worked up.	OPEN	No	Yes

RHCYP + DCN UPDATE

DECEMBER 2019

Update on Royal Hospital for Children and Young People and Department of Clinical Neurosciences

There's been a huge amount of work going on to prepare the new building to ensure the Department of Clinical Neurosciences migrates to the new building in Spring 2020 and also to keep us on track to move Sick Kids and CAMHS in the Autumn. The intention of this newsletter is to provide an overview of some of the key elements of work that has been progressing over recent months.

Driving the Project Forward

Each week an **Executive Steering Group** meets to check on progress, discuss any problems as they arise and agree solutions. This group is attended by members of the Executive Leadership Team, and senior colleagues representing Infection Prevention and Control, Facilities, Partnership and the Project Team. The members of the group are:

Alex McMahon, Director of Nursing, Midwifery and Allied health Professionals and Executive Lead for Infection Control, **(Chair)**

Janis Butler, Director of HR & OD

Jacquie Campbell, Chief Officer, Acute Services

George Curley, Director of Facilities

Brian Currie, Project Director

Tim Davison, Chief Executive

Tracey Gillies, Medical Director

Susan Goldsmith, Director of Finance

Iain Graham, Director of Capital Planning

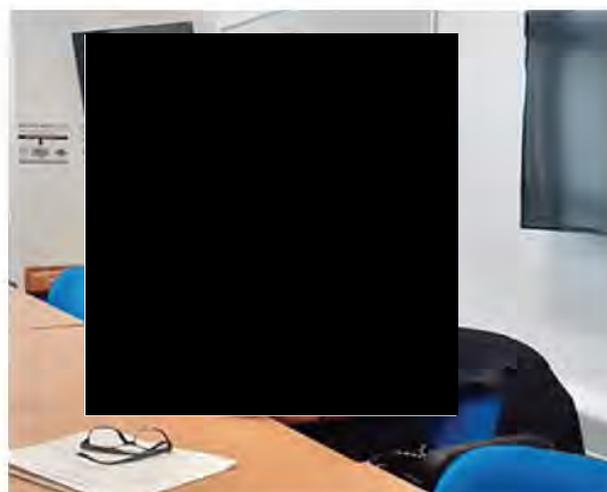
Lindsay Guthrie, Acting Infection Control Service Lead and Lead Infection Control Nurse,

Donald Inverarity, Consultant Microbiologist and Lead Infection Control Doctor

Alex Joyce, Employee Director

Mary Morgan, Senior Programme Director

Judith Mackay, Director of Communications, Engagement and Public Affairs



Mary Morgan was appointed Senior Programme Director by the Scottish Government following the decision to delay the opening and is responsible for the actions required to ensure that the project facility is fit for occupation. She provides an update to the **Oversight Board** and reports to its Chair, Scotland's Chief Nursing Officer, Fiona McQueen. The Oversight Board usually also meets weekly and its role is to scrutinise the recommendations of the Executive Steering Group ultimately with the aim of providing assurance to the Cabinet Secretary that work is progressing as it should and that the building will meet the required relevant standards. The members of the Oversight Board are:

Fiona McQueen, Chief Nursing Officer, Scottish Government **(Chair)**

Catherine Calderwood, Chief Medical Officer, Scottish Government

Christine McLaughlin, Chief Finance Officer, Scottish Government

Gordon Archibald, Joint Staff Side Representative

Tracey Gillies, Medical Director, NHS Lothian

Susan Goldsmith, Director of Finance, NHS Lothian;

Alex McMahon, Nurse Director, NHS Lothian

Peter Reekie, Chief Executive, Scottish Futures Trust

Colin Sinclair, Chief Executive, NHS National Services Scotland.

This meeting is also attended by the Senior Programme Manager, representatives of Health Protection Scotland, Health Facilities Scotland, the Senior Programme Director and additional NHS Lothian staff involved in the project as and when required.

Working with Health Facilities Scotland and Health Protection Scotland (NSS)



In September and at the end of October, National Services Scotland (NSS) published two reports commissioned by Scottish Government to give assurance that the building meets all relevant national guidelines and standards and is safe for patients. These reports covered all aspects of the building's technical specification including ventilation, water safety and drainage,

the provision of medical gases as well as electrical and fire safety. You can find those reports on the intranet <http://intranet.lothian.scot.nhs.uk/NewBuildingReports>



Most of the issues identified in the reports had already been identified during NHS Lothian's own commissioning checks. This includes the issue with the ventilation system in the hospital's critical care area that came to light just days ahead of the move. However, these comprehensive reports have provided us with external validation as well as recommendations for possible enhancements to consider.

Work has been organised into 'workstreams', and we are making good progress in all areas. Checks on the drainage system and the system that supplies medical gases are now complete and no further work is required in those areas.

Ventilation

The problem with the critical care ventilation design was the single and significant issue that prevented us from moving into the building. We have been working positively with our contractor partners, Integrated Health Solutions Lothian (IHSL), who are responsible for the design, build and maintenance of the building. There have been contractual complexities to resolve however IHSL have now selected Imtech to undertake the works, and they in turn have sub contracted the design works to Hoare Lee. Both these companies have a proven track record for delivery of complex health care projects.

We are all agreed on the way the ventilation must perform and a workshop has been held to progress development of a design to be delivered by IHSL.

Whilst this issue is progressed, the ventilation air handing units throughout the building are also being improved. Work is on track to complete the units serving DCN in January and we expect work on the units serving the rest of the building to be complete in April 2020.

Enhancements

Building design does not stand still. We are always learning new things about the relationship between the built environment and patient safety. For this reason, as well as verifying that the building meets all relevant national standards, the NSS reports also proposed additional enhancements. We have agreed to carry out these enhancements while the building is unoccupied, incorporating the latest thinking on design and patient safety to create the best environment possible for our patients, visitors and staff.

Fire safety



The building as designed is compliant with fire safety standards. It received its Completion Certificate from The City of Edinburgh's Building Control Department before the original opening date in July and the Scottish Fire and Rescue Service (SFRS) was an integral part of that certification process. However, NHS National Services Scotland recommended we consider some extra measures be put in place with the aim of further enhancing fire safety.

Following a workshop with fire safety specialists and a cross section of clinical staff extra fire safety measures have been agreed. The scope of those works is now being finalised.

The DCN area will be prioritised when this work begins to ensure their move in the spring remains on track. It is anticipated that the scope for fire enhancements for the rest of the facility including Critical Care and CAMHS will be agreed by the end of February 2020.

Water System



Three independent reviews including the National Services Scotland review found no evidence of systemic problem with water quality or the water delivery in the new building. Some improvement actions were identified by NSS, and we are working through these in partnership with our building facilities management team.

As part of our ongoing robust building management, monitoring and hygiene control measures, we undertake regular water sampling for *Pseudomonas aeruginosa* in all acute hospital wards which provide care for our highest risk patients. This approach is in line with national guidance.

At RHCYP DCN we identified a small number of water outlets that were affected by this bacteria. This is not unusual and is not a cause for alarm. This is a common bacteria found widely in the environment (for example in soil and water) and it thrives in wet places such as sinks and taps. Where we identify this bacteria in the water, a range of measures are taken to disinfect or replace some fittings to improve water quality and reduce the risk to patients. This work is supported by infection surveillance by the infection prevention and control team to identify early any patient infections which might be associated with poor water quality.

To complement the ongoing water management actions in place, the water system at RHCYP DCN will be disinfected before patients move in next year as a further precaution and in line with best practice advised in current guidance.

CAMHS

Colleagues from the CAMHS service are actively working with the project team to ensure that any remedial work requiring to be done will be achieved with their full input.

Maintenance and Improvement at Existing Sites

A schedule of maintenance and improvement work has been underway for some months now to make conditions at DCN at WGH and at RHSC as safe and comfortable as it can be for the remainder of the time before we move all services to the new building.

At DCN, wards have been freshened up with a new coat of paint, flooring repaired and a bathroom in each of ward 31 and ward 33 have been converted to wet rooms.

Staff from both services have been encouraged to identify equipment in the new hospital that could support further improvements to services and these items have been transferred and put into use. Additional medical equipment that is being bought and installed in the current sites includes operating theatre lights for RHSC and interventional neuroradiology in DCN.

Work began in late November to upgrade the family accommodation at the RHSC and additional capacity has been created for ED and inpatients to meet increasing demand over the winter. The refurbishment of the dining room at the RHSC, extended opening hours and a chef on site has been warmly welcomed and is of great benefit to staff and visitors.

A new suite of clinic rooms (7 rooms) have been created on site at 3 Rillbank Terrace (vacated CAMHS space). This area will be operational on Tuesday 17th December 2019.

The vacated space in the main Outpatient Department has been taken over by ED to create an area for minor flow. ED currently use this space out of hours and at the weekends. This will be fully operational from Tuesday 17th December 2019.

Unannounced Inspection

The Healthcare Environment Inspectorate (HEI) carried out an unannounced inspection in both DCN and RHSC in October 2019. The initial feedback received was very positive and no serious concerns were identified. The draft report has been shared with NHS Lothian and will be published alongside the Board action plan on 15th January 2020.

Healthy Working Lives

There has also been a lot of work to provide services to improve staff wellbeing. Smoking cessation sessions have been held and visits from Edinburgh community food give staff and patients at RHSC access to fresh fruit and veg. Both WGH and RHSC have Healthy Working Lives bronze awards and will work hard to retain those and possibly work towards gaining silver next year. Massage has been on offer to staff at DCN over the past 3 weeks and in January there are plans to provide yoga breathing and stress relief workshops.

Public Inquiry

The Cabinet Secretary Jeane Freeman, MSP announced in September that a Public Inquiry will be held to examine how problems relating to hospital building projects occurred, and to understand what steps can be taken to prevent these in future projects. Ms Freeman has appointed Lord Brodie to chair Public Inquiry and will give more detail in the scope and timescales of the Inquiry early in the New Year.

Feedback – We'd like to know if you found this useful and to answer any questions you may have about the project. Please email them to Lothian.communications@nhs.net. We'll collate those questions and respond with a Q&A in the New Year.



From: [Graham, Chris](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Chief Medical Officer](#); [Henderson C \(Calum\)](#); ["Colin Sinclair"](#); [Cosens, Sorrel](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); ["Gordon James"](#); [Graham, Chris](#); ["Jacqui Reilly"](#); [REDACTED]; [Joyce, Alex](#); ["Judith Mackay"](#); [Little, Kerryann](#); [McMahon, Alex](#); [Morgan, Mary](#); [Murray, Fiona](#); [Nicoll, Nadine](#); ["Peter Reekie"](#); ["Roxanne Gallacher \(Jim Miller PA\)"](#); [Trotter, Audrey](#); [Walker, Anna](#)
Subject: Oversight Board Papers for 16 January 2020 - including Item 7.1.1
Date: 15 January 2020 20:38:18
Attachments: [image001.png](#)
[RHCYP DCN Oversight Board Papers 16-01-20.pdf](#)
[7.1.1 - 150120 RHCYP DCN HVC Works Rev 01 - Clarifications for ESG and OSB Approval \(2\).pdf](#)
[20200114 Water Safety Report v1.0 final for approval.docx](#)
Importance: High

Dear Colleagues

Item 7.1.1 - HVC 107 Ventilation Update - Queries + Clarifications now attached along with the rest of the meeting papers.

Revised Water Safety report paper also attached.

The dial in details remain:

[REDACTED]
Participant code [REDACTED]

Kind regards
Chris

Chris Graham
Secretariat Manager
[REDACTED]

Achieving [deadlines](#) means you are respecting your colleagues and supporting effective decision-making.



The information contained in this message may be confidential or

legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 16th January 2020, 8:00 – 9:30am

Venue: Room 5, Waverley Gate, EH1 3EG

AGENDA

1.	Chair's Welcome and Introductions	FMc	V
	Apologies: Sorrel Cosens, Susan Goldsmith		
2.	Minutes of previous meeting for approval: 19 December 2019	FMc	*
3.	Matters Arising		
4.	Senior Programme Director's Report	MM	*
5.	Commercial progress update	IG	V
6.	NHSL IPCT Water safety report	TG/JR	*
	STANDING AGENDA ITEMS		
7.	Technical Reviews progress		
	7.1 Ventilation	BC	V
	7.1.1 HVC 107 Ventilation Update - Queries + Clarifications	BC	*
	7.2 Water Quality	BC	V
	7.3 Fire Safety Enhancements	BC	*
	7.4 Electrical Safety	BC	V
8.	Service Continuity on Existing RHSC & DCN Sites	TG	*
9.	Communications		
	9.1 Proposed Communications	JM	V
10.	Any Other Competent Business		
11.	Date of Next Meeting		
	Thursday 30 th January 2020, 8am, Room 5, Waverley Gate		

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Wednesday 19 December 2019 in Meeting Room 5, Waverley Gate, Edinburgh.

Present: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Ms S. Goldsmith, Director of Finance, NHS Lothian; Ms C. McLaughlin, Chief Finance Officer, Scottish Government; Miss T. Gillies, Medical Director, NHS Lothian; Professor A. McMahon, Nurse Director NHS Lothian; Mr P. Reekie, Chief Executive, Scottish Futures Trust; Mr C. Sinclair, Chief Executive, NHS National Services Scotland and Mr G. Archibald, Joint Staff Side Representative.

In Attendance: Ms M. Morgan, Senior Programme Director; Mr B. Currie, Project Director, NHS Lothian; Mr C. Henderson, Scottish Government; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

In Attendance by Telephone: Mr E. McLaughlan, Assistant Director, Engineering, Environment and Decontamination, Health Facilities Scotland and Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work.

Apologies: Mr G. James, Director of Facilities, Health Facilities Scotland; Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side) and Ms J. Mackay, NHS Lothian Director of Communications

1. Minutes of previous meeting – 05 December 2019

1.1 The minutes of the meeting held on 05 December 2019 were accepted.

2. Matters Arising

2.1 Shower Hose Length Feedback

- Noted that a solution was now identified to achieve compliance with Scottish bylaw and Scottish Water would come back to confirm this compliance once work completed and internally audited
- Clinical Assessment of the shower hose length to be undertaken; solutions would depend on nature of patients and size of rooms.
- It would be useful in the long term to speak to Scottish Water about the bylaws and how this works generally for NHS Scotland
- Shower hose length to now be removed from Oversight Board agenda as an item and would now be reported through the water safety action log

3. Senior Programme Director's Report

- Noted that commercials had now been signed off and Imtech were engaged and progressing the design works around ventilation
- It had been agreed with IHSL and NHL to re-procure the same independent tester as for SA1 to confirm completion of works
- Independent Tester process around SA2 works to be mapped out and IHSL to bring forward a proposal for how to do this together

- Processes for all testing and validation to be clarified in the new year
- Testing to be ongoing throughout works to reduce level of risk at end of programme
- Fixed date for move needed for clinical services to work with. Working ongoing to consider if reducing the 8 weeks preparation time was possible, and the point at which the 8 weeks would be triggered to be agreed on
- Noted that progress against actions would slow down due to the festive period and construction industry holidays
- Ventilation works on track and target. DCN Air Handling Units to be completed by Christmas
- Scrub Extract and Anaesthetic Room work progressing
- Design for the Critical Care and Haematology/Oncology work is complex. NHSL are hoping to receive first RFIs tomorrow, then workshops to be held 10, 14 and 28 January to shape up the final design by end of January 2020
- Confidence around smoke damper work required remains positive – final programme of works around smoke dampers expected by end January 2020.
- Governance processes will be developed once programme received
- George Street Asset Management to self-deliver some of the low value change work which BYES are unable to do
- Works in relation to chiller pipework (scopes room) to be undertaken by February 2020
- Water report noted. Status had moved from red to amber and action tracker progress next month would justify this
- Pseudomonas findings 57 taps – water group expect programme work to be completed before Christmas and testing to take place in January
- Decontamination of ARJO baths confirmed for week commencing 13/01/20 and would be a 3 week programme
- Fuller water report to come to oversight board on 16 January 2020; to include HPS response to NHS Lothian review.
- Authorising Engineer water audit completed and final report to come to oversight board on 16 January 2020

4. Commercial Progress Update

- Noted that letter of engagement and waiver signed on 13/12/19
- Focus is now on mapping out of Supplemental Agreement 2 work
- Awareness of NHSGGC issues in relation to contractual position and MPX. Only to come to oversight board for discussion of any areas of concern
- Noted that NHSL still to fully investigate an prospect of legal action
- Mechanism for working with NHSGGC to be investigated with an update paper coming to oversight board on 16/01/20.

SG/MM

- Dr Brian Montgomery and Andrew Fraser to be contacted about possibility of discussing interim report with NHSL Executive Steering Group to discuss. Also to discuss with Tom Steele and to come back to the oversight board around areas of learning from elsewhere.

SG/MM

5. Smoke dampers briefing paper

- Short summary paper noted. Low value change for scoping of the fire safety enhancements and particularly any interdependency with work on the new ventilation design for critical care and haematology/oncology underway.
- Potential risks recognised as timing, synchronisation of works and moves, logistics and ability of IHSL to deliver ventilation design and how this links to fire enhancement works

6. Technical Reviews progress

6.1 Ventilation - Covered above.

6.2 Water Quality - Covered above.

6.3 Fire Safety - Covered above.

6.4 Electrical Safety

- Workshop held 11/12/19 covering all points on action plan from HFS with IHSL, supply chain contractors. Cleared a number of points around verification and correspondence paperwork. Remaining issues to be resolved in January 2020
- Concern that information to be received on a significant number issues from IHSL may not be satisfactory
- CAMHS power and lighting isolation may require a medium value change for works in all CAMHS rooms now to remove dubiety

7. Service Continuity on Existing RHSC & DCN Sites

- Noted that work to complete extra space at Sciennes was now completed and area was functioning
- DCN maintenance almost complete
- INR machine replacement to go ahead in January 2020, aligned with NHSGGC locum availability

8. Communications

8.1 Staff communications

- RHCYP + DCN Update has now been issued

8.2 Requests for Information

- Nothing further reported

9. Any Other Competent Business

9.1 Section 22 report – Noted that this was issued yesterday

9.2 NHSL Internal Audit Report

- First phase coming to conclusion and would go to NHSL Audit and Risk Committee on 13/01/20.
- Phase 2 likely to be commissioned
- Report to form part of suite of information for Public Inquiry
- Tim Davison and Malcolm Wright to meet when first full draft available
- Terms of Reference for Public Inquiry now expected in January as further work around engaging with Lothian families to be completed. Suggested that RHSC Family Council could be involved but Public Inquiry team would take this forward as appropriate

9.3 Retiral: Christine McLaughlin, Chief Finance Officer, Scottish Government

- The oversight board passed on its deep and grateful thanks to Christine whose calm, measured and practical approach had made a real difference to the work of the oversight board since July. The oversight board wished Christine well in her retirement. Christine looked forward to coming to see the new hospital when complete.

10. **Date of Next Meeting**

- 10.1 The next meeting is scheduled for **Thursday 16 January 2020, 8am, Room 5, Waverley Gate.**

RHCYP & DCN - Senior Programme Director's Report

Report Date	14/01/2020	Programme RAG Status (now)	R
Submitted by	Mary Morgan	Programme RAG Status (previous Oversight Board)	A

General Update		<p>As anticipated the festive period has resulted in a hiatus of activity and slippage against some action timescales. However, IHSL has made progress against the design of the HVC 107 (Critical Care & Lochranza Ventilation). Overall the programme has moved to Red Status, primarily because the HVC107 – Initial Estimated Program of Works (presented 10/01/20) shows handover at end November 2020. Work to mitigate this timeline will continue through weekly workshops.</p> <p>Contract/commercial meetings continue - A meeting of respective principals and lawyers will take place 15/01/20 to set out needs for SA2. It is noted that there is little outstanding commercial negotiation to be undertaken as this was done for the Letter of Engagement agreed pre Christmas. The main focus will be on the management processes for the SA2 document and the technical dimensions therein(completion criteria for example)</p>
-----------------------	--	--

Project Workstreams	RAG Status	Comments
Ventilation	R	Workstream Status to Red due to initial delivery programme for HVC 107 showing handover end November 2020. Weekly workshops established to progress work. First workshop (10/01/20) identified many Requests For Information (RFIs), that are now being progressed with clinical and specialist teams. Other Ventilation issues (AHU, Theatres corridor, Scrub and Anaesthetic Rooms) expected completion now by end Feb 2020.
Water Safety	A	A programme of works to address Pseudomonas findings (W10) is in place. Alternative solutions to resolve the Shower Hose lengths (W12) are being explored. Arjo bath decontamination commencing w/c 20/01/2020 NHSL & HPS discussed status of some recommended actions - meeting 13/10/20 and paper submitted.
Drainage	B	Workstream closed.
Fire Safety	A	Amber status due to absence of a defined programme to deliver against these requirements. A LVC has been submitted to IHSL to confirm the scope of works required prior to finalising and submitting an HVC, which has now been requested. DCN fire enhancement work is being prioritised.
Electrical	A	The workstream has been moved to Amber due to failure to meet timelines agreed at the multi agency workshop held on 11th Dec 2019. Further evidence is required to close actions, with the date of completion to be escalated to Delivery Group meeting on 15/01/20. A further workshop will be organised.
Medical gases	B	Workstream closed (Oversight Board 27th November 2019)

Key Achievements / Highlights since last Oversight Board

HVC107 – Initial Estimated Program of Works received

Next Period Key Activities / Challenges

Water safety report RHCYP DCN: IPCT assessment November 2019

1. Introduction & Context Setting

National Services Scotland (NSS) were commissioned by Scottish Government to review the Royal Hospital for Children & Young People & Department of Clinical Neurosciences (RHCYP & DCN) following issues relating to ventilation and a decision to postpone opening of the new building in July 2019.

The purpose of the NSS review, led by Health Protection Scotland (HPS) and Health Facilities Scotland (HFS) was twofold:

- i) To review and provide assurance that all relevant technical specification and guidance is in place at the site
- ii) To advise on necessary remedial actions required where these specifications and guidance is not in place

Six systems that form part of the building infrastructure were reviewed across two reports and two of specific areas of focus for the review discussed further in this paper are water (which includes a review of the water delivery system and water quality) and drainage. These issues and the resulting advice are considered in detail in this, and are intended to inform NHS Lothian's response to a small number of the recommendations of the NSS report in the short, medium and long term.

Independent of, and prior to the NSS review, NHS Lothian commissioned two separate independent specialist water consultant assessments of water quality at the site. The output of these reviews was considered in parallel with the findings of an independent Health & Safety compliance report (the 'Callidus Report') of March-April 2019 commissioned by NHS Lothian to inform the handover of site responsibilities following the financial settlement agreement. The Callidus report highlighted some areas for improvement required in relation to management of Legionella in water systems as required by legislation. This report is discussed in more detail in the relevant section.

In addition to NSS review of the Board's compliance with current legislation, technical guidance and best practice, emerging information from an incident at the recently opened Queen Elizabeth University Hospital Glasgow, and their review of other NHS Scotland Boards was used by NSS to inform the recommendations made. This incident related to widespread contamination of the water system at the hospital, and a number of blood stream infections in immunosuppressed patients caused by a wide range of uncommon environmental pathogens, many of which are commonly found in water.

That incident is ongoing and new or revised policy or guidance has not yet been developed. Limited information is available to NHS Lothian on this incident. The published summary report QUEH¹ made two specific recommendations for all NHS Boards:

- i) To ensure facilities teams are adequately resourced to ensure maintenance of all aspects of water systems are maintained in accordance with policies and guidance
- ii) Maintenance should be recorded and maintenance records reviewed regularly to ensure all aspects of the water system are maintained in accordance with policies and guidance

20200114Water Safety Report v1.0 final for approval

A number of actions for NSS were identified relating to the establishment of a national expert group, literature review and development of risk based guidance on water testing, interpretation of results, roles and responsibilities and remedial actions required in response to findings.

1.1 What is currently required by legislation and guidance?

NHS Lothian has a statutory duty of care under Health & Safety law to undertake appropriate risk assessments to identify hazards associated with water and water delivery systems, and to apply a hierarchy of controls to eliminate or mitigate for these hazards based on the likelihood and impact of outcomes associated with these. Residual risk must be documented on organisational risk registers and control measures reviewed at regular intervals to provide ongoing assurance that these remain appropriate and effective. This risk assessment is provided in the site water safety plan for RHCYP and DCN, and has been reviewed by NHS Lothian Authorising Engineer (water).

The Authorising Engineer (water) is defined by SHTM 04-01 (Part B) as someone who *“acts as an independent professional advisor to the NHS Board, appointed by the organisation with a brief to provide services in accordance with SHTM guidance”*. They also act as *“an assessor, making recommendations on Duty Holders and for the appointment of Designated Persons, Authorised Persons and Competent Persons, monitoring the performance of the service and providing an annual audit to the NHS Board’s Designated Person”*.

Potable water (drinking water) is not sterile, and is not required by legislation or guidance to be sterile i.e. without any microorganisms of any type. The absence of a range of particular organisms in potable water is used as surrogate markers of its safety. These include tests for coliforms and Escherichia coli (as an indicator of faecal contamination) and Pseudomonas aeruginosa. The total viable count (TVC) in 100mls of water (the total number of organisms including bacteria, fungi, mould and yeasts) present in drinking water can be measured as a further indicator of water quality. Under current guidance (SHTM 04-01 Part C) this is an optional rather than mandated action. In practice however, TVC monitoring remains a commonly used test across NHS Scotland. There are currently no clearly defined safe working thresholds for TVC in water. Interpretation of results is the responsibility of the site water safety group in conjunction with the microbiologist and infection control team.

Existing legislation and guidance directs organisations to take a risk based approach to water sampling and risk management. In the absence of any systemic contamination of the water supply, ongoing evidence of contamination or risk of exposure to patients, and where the controls of temperature and water quality are in place and can be evidenced, a risk assessment would not indicate further water sampling or microbiological investigation of the water system **although it is noted that NSS have advised that any such additional testing would be limited to the period before the building is occupied by patients. The approach NHS Lothian have proposed in relation to water sampling and risk management once the building is occupied by patients is outlined in section 8 of this paper.**

2. Actions required of NHS Lothian by National Services Scotland

In addition to the two specific actions identified from the HPS QEUH report for all boards, a list of 26 water specific actions and 6 plumbing/drainage specific actions have been identified by NSS and listed in the detailed action plan (as of October 2019). These include actions required to demonstrate or improve conformation with legislation and guidance, and a small number of actions directed by the expert opinion within NSS. **These recommendations have arisen from the experience of other NHS Boards in relation to an unoccupied building which has a filled water system.** NHS Lothian accepts fully the recommendations and actions to demonstrate or improve conformance. **The proposed NHS Lothian approach to demonstrate that water quality and delivery systems are safe, and conform with legislation and technical guidance prior to patient occupation are outlined in more detail in section 8 of this report. This includes further disinfection of the water system prior to transfer of services and patients on site.**

This paper provides NHS Lothian assessment, conclusions and proposed response in relation to the following actions directed by expert opinion:

These include:

- 1.1 Re-sample 100% of taps in augmented care areas for TVC, *Pseudomonas aeruginosa* and Fungi. The sampling should be in accordance with SHTM 04-01, BS 8580-1, HSG 274, and HPS *Pseudomonas* guidance 2014. The narrative in the NSS review also states that the water sampling programme should be extended to “*reflect system contamination in general*” and take account of “*other organisms*” in line with patient type that will occupy the building, building an analysis of risk categorisation of patient type and consideration of susceptibility for each area.
- 1.2 The removal of items from the water delivery system to be “*handed over to Water Solutions Group*” who will facilitate transportation to laboratory (which is in Harrogate).
- 1.3 Sink drains to be disinfected with a suitable anti-biofilm agent prior to the facility being in use and every 6 months thereafter
- 1.4 Sink drains to be “*monitored*” for biofilm growth (augmented care areas – monthly; non augmented care areas 3 monthly)
- 1.5 Bottle traps to be subject to regular planned preventative maintenance and disinfection with a suitable agent

2.1. Discussion of these (identified by number set out above)

2. Discussion: The statement to broaden sampling to reflect “*wider contamination*” is in direct conflict with the conclusions of the published NSS review, and two independent expert water consultants, which concluded that there is no evidence of systemic contamination at RHCYP DCN.

The exact scope of additional microbiological testing proposed by **NSS prior to the site being occupied by patients** has not been formally communicated to NHS Lothian.

NHS Lothian have been unable to locate any draft or published Scottish, UK or International expert guidance to inform or support the implementation of **routine extended water testing, with specific reference to fungi and moulds,** and this approach is not currently supported by,

or consistent with the risk based approach to water sampling advised by WHO, DEFRA, or NSS.

There is no defined methodology for such sampling. The approach NHS Lothian proposes to monitor and provide assurance of overall water quality and system condition is outlined in section 8 of this report. This includes trend monitoring for total viable counts (TVC) of organisms and system condition assessment as part of planned preventative maintenance.

Tests for fungi are not included in these guidance documents, and NHS Lothian follow the HPS 2018 Guidance for management of Pseudomonas in augmented care which supersedes the 2014 version.

In the absence of interim or published expert guidance, there is no clarity on what actions might be expected by NHS Lothian in response to any water results which are positive for fungi beyond those currently in place as part of the site water safety plan. NHS Lothian have requested NSS support to source an accredited laboratory and framework for interpretation.

2.2 Discussion: There is no defined methodology for the removal and examination of water system components, disinfection or decontamination of drains or bottle traps. The value of this exercise in the absence of guidance, and in the absence of systemic contamination or clinical infections is not clear. NHS Lothian proposed approach to system condition monitoring, and specifically corrosion monitoring is outlined in more detail in section 8 of this report.

2.3 Discussion: There is no published guidance or methodology for the routine monitoring or disinfection of drains. Biofilm is considered a normal feature of waste water drains and bottle traps. No guidance has been provided on a "suitable antibiofilm" agent or disinfectant. Disinfectants generally have poor penetration of biofilm, and are likely to offer limited and short lived impact on the overall microbiological burden in waste water drains. Preventative action to inform staff, patients and visitors on safe and appropriate disposal of waste fluids (including juice, parenteral nutrition, unused IV fluids and drugs) is arguably as important to prevent introduction of nutrient rich material, or exposure to antimicrobial agents which will support the proliferation of pathogenic bacteria including multidrug resistant bacteria.

2.4 Discussion: There is no guidance relating to direct actions that might be expected by NHS hospital management in response to visualisation of biofilm or other contamination within individual components of the water system outwith the context of incident management in response to clinical cases of water borne infection where system wide water disinfection and/or parts replacement may be required. Therefore, NHS Lothian's proposed approach to system condition monitoring, and specifically corrosion monitoring is outlined in more detail in section 8 of this report.

2.5 Discussion: The purpose of additional monitoring and decontamination of drain outlets or bottle traps is therefore not clear in relation to compliance with current legislation and guidance, or to improving patient safety. The purpose of a bottle trap is to provide to prevent gas and odour from the drainage system reaching the room. Cleaning is usually only

indicated when there is an issue with slow drainage (indicating a blockage) or unpleasant odour. There is no specific requirement or guidance for bottle trap disinfection in SHTM 04-01 Parts B (operational management) or Part D (Disinfection of Public Water Systems). Further monitoring and assurance is outlined in section 8 as stated above.

2.2. Comparison of the QEUH and RHCYP DCN

There are relevant and appreciable differences relating to building construction, plumbing, water quality monitoring and management, patient exposure risk and assurance from the QEUH incident to the current situation at RHCYP DCN. These are outlined below based on information in published reviews.

	QEUH	RHCYP
Constructed by	Multiplex (MPX)	Multiplex (MPX)
Size of hospital (Beds)	1109	233
'High Building' Design	Yes	No
Occupied by patients @ July 2019	Yes	No
Design of water system compliant with SHTM 04-01	Unknown	Yes
Provision of very high risk clinical specialties on site? (e.g. Bone Marrow Transplant)	Yes	No
Provision of high risk clinical specialties on site? (e.g. haematology/oncology)	Yes	Yes
Confirmed clinical infections arising from hospital environmental reservoirs	Yes	No
Infection incident investigation associated with built environment	Yes	No
Evidence of water temperature regulation prior to occupation	Unknown	Yes – some areas for improvement noted
Evidence of water system flushing prior to occupation	Unknown	Yes as of July 2019 – increased frequency implemented on advice of NSS
Evidence of water system disinfection prior to occupation	No- based on HPS report	Yes – completed & to be repeated prior to occupation
Evidence of recurring high TVC counts (surrogate marker of water contamination)?	Yes- based on HPS report	No – based on HPS report
Independent assessment of water safety completed	Yes	Yes
Evidence of systemic	Yes- based on HPS published	No- based on HPS

	QEUEH	RHCYP
contamination of the water system?	report (conducted by Water Solutions Group)	commissioned report (conducted by Water Solutions Group)

3. Independent Review of RHCYP DCN Water systems & findings

3.1 NSS report

Non compliance with legislation: The NSS report identified 1 non-compliance with legislation. Shower hose length was revised to comply with Scottish Water Bylaws, in consultation with Scottish Water who are in the process of reviewing a sample of outlets to confirm conformance.

Non conformance to SHTM 04-01 (all parts): The published NSS review of NHS Lothian water systems² confirmed that “ *Independent testing identified no widespread contamination of the water systems, however, remedial actions is required on a number of water system areas as well as system wide disinfection prior to occupation*”

Further actions required: NHS Lothian must complete the remaining actions identified in the wider NSS review, and provide ongoing assurance of compliance to the Board via the Water Safety Group.

3.2 Callidus Report

NHS Lothian commissioned an independent high level Health & Safety compliance report (the ‘Callidus Report’) in March-April 2019. The purpose of this report was to provide assurance and inform any action as part of the handover of site responsibilities following the financial settlement agreement.

Non compliance with legislation: The Callidus report highlighted some areas for improvement required in relation to management of Legionella in water systems as required by legislation.

Non conformance to SHTM 04-01 (all parts): This was not considered as part of the Callidus report.

Further actions required: NHS Lothian have asked Callidus to confirm completion of the recommendations made in their report, and NHS Lothian Authorising Engineer (Water) to confirm compliance with statutory responsibilities in relation to Legionella control (in progress 20/11/19).

3.3 Westfield Report

In June 2019, NHS Lothian commissioned Westfield Caledonian to assess the overall microbiological load on the water in the filled distribution system and to sample augmented care areas for *Pseudomonas aeruginosa* in line with interim HPS Guidance (2018). The scope of this review was extended for Westfield to conduct any investigative sampling or investigation indicated by initial findings in relation to the first two points.

Non compliance with legislation: Legislative compliance was not an explicit part of the Westfield review, but the review did not identify any significant non compliance in relation to ACOP L8 guidance.

There were some excursions in the circulating temperatures of hot and cold water noted, but overall the thermal control regime in the hot and cold water system was deemed to be effective and was compliant with requirements of ACOP L8 guidance.

No Legionella was identified in samples.

Non conformance with SHTM 04-01: Again, this was not an explicit focus of the Westfield review; however the report did identify some issues in relation to system condition.

Some contamination of inlet filters and strainers with swarf and particulate matter was identified requiring further action (removal, cleaning and disinfection of the filters).

Water testing was undertaken in all augmented care areas – , and identified that *Pseudomonas aeruginosa* was present in a number of outlets in geographically localised (served off the same riser) areas in augmented care. It should be noted that this sampling programme included adult medical neurology as part of 'Neurosciences' - ward 231 where some positive samples were identified, but that this specialty does not form part of augmented care and NHS Lothian do not advise that this area is included in routine 6 monthly water testing for *Pseudomonas aeruginosa* going forwards, in line with current HPS Guidance.

As part of the wider review, a small number of outlets in non augmented care areas also found *Pseudomonas aeruginosa* – particularly in ARJO baths and ZIP (hot water) taps – indicating need for further action and monitoring. Both appliances are considered to be high risk for the development of *Pseudomonas aeruginosa*.

No Coliforms or E.coli were identified in samples (compliant with SHTM04-01)

There was some evidence of elevated TVC counts across thermostatic mixing valves in mixed outlets in particular (indicating a need for further review and action)

Further actions required: NHS Lothian are addressing the outlets which have tested positive for *Pseudomonas aeruginosa* in line with current HPS Interim guidance 2018, and continue to implement a biannual water monitoring programme in augmented care.

NHS Lothian must continue to progress the areas for improvement identified by the Westfield report.

The overall conclusion of the Westfield Report was that there was no evidence of systemic contamination with *Pseudomonas aeruginosa*, that the cold water system was microbiologically safe, but that further system disinfection was required to address some localised evidence of general microbiological contamination.

3.4 Water Solutions Group Report

20200114Water Safety Report v1.0 final for approval

A further independent review was commissioned by NSS, and conducted by the Water Solutions Group on their behalf (the Water Solutions Group Report). The testing methods used for analysis of water and component parts were not defined within the written report and have not been shared with NHS Lothian.

Non compliance with legislation: a number of areas for improvement in relation to evidence of compliance with appointment of key roles prescribed by legislation or guidance, quality and availability of records, absence of process and procedures for escalation. These had previously been identified by the Callidus report and internal NHS Lothian review

The report states that water samples obtained by the independent consultant were taken in accordance with the Water Supply Regulations, Private Water Supply Regulations and ACOP L8 (Legionella) and all water results comply with the regulations.

No Legionella was detected in samples.

Non conformance with SHTM 04-01:

Through additional (non standard) water testing for gram negative bacteria, fungi and “atypical” mycobacterium (Non Tuberculous Mycobacterium –NTM) that some water samples grew fungi however these results were not quantified, and no guidance was provided to determine if these results were acceptable or unacceptable. NHS Lothian have requested NSS support to source an accredited laboratory and framework for interpretation.

NTM were not detected in those samples examined for this (note this is not a standard test defined by current legislation or guidance)

Pseudomonas aeruginosa was not detected in any samples obtained by Water Solutions Group.

The overall conclusion of this report was that “There was no indication from the microbiological results to suggest that the water system is not fit for use”.

Further actions required: The NSS report and action plan advise that additional testing for Fungi is carried out across the site prior to patient occupation. The approach proposed by NHS Lothian to provide assurance of water quality and system safety are outlined in section 8 of this report.

In conclusion, the NSS published review and both independent reviews concluded that whilst there were some areas for improvement in relation to water quality and water management, there was no evidence of widespread contamination of the water system and the system complied with regulations.

4. Prevalence of organisms and infection identified at QEUH.

HPS reported a range of causative agents of blood stream infections in their initial report into the incident at QEUH, which includes:

- *Cupriavidus pauculus*

- *Pseudomonas fluorescens*
- *Pseudomonas aeruginosa*
- *Stenotrophomonas maltophilia*
- *Acinetobacter ursingii*
- *Enterobacter cloacae*
- *Klebsiella oxytoca*
- *Serratia marcescens*
- *Pseudomonas putida*
- *Pantoea* spp
- *Klebsiella pneumonia*
- *Chryseomonas indologenes*

Many of these organisms are considered commensal gut organisms. The infective dose for individual organisms was not defined by HPS in the report, but NHS Lothian acknowledge that there is may be a paucity of published guidance in relation this.

It is the view of the NHS Lothian lead IPCN and ICD that the significance of these organisms at QEUH appears to be in the context of paediatric haematology group where these organisms may have arisen from an endogenous or exogenous source. Extrapolation has been made to other clinical specialties with less immuno-suppression and in adult patients, without taking into account that some of these organisms are normal bowel flora and therefore may not arise from an environmental (Water) source.

The QEUH report was focused almost exclusively on the hypothesis that the infections had arisen as from an exogenous source. It is not clear how, when or why endogenous sources have been excluded from the investigation. Subsequent discussions and the opinion provided to NHS Lothian is therefore potentially skewed towards finding a solution to managing environmental sources without certainty that this is relevant.

It is worth noting that the HPS review of NHSGGC paediatric haemato-oncology data (October 2019) “did not provide any evidence of single point of exposure”. The view of the lead ICD and Lead IPCN is that this potentially supports a hypothesis that at least some infections identified may relate to translocation of bowel organisms rather than exposure to a point source (contaminated water) within the hospital.

Limited data is available on the overall incidence of blood stream infections associated with this range of defined pathogens in this patient group over time either at QEUH or within the same patient groups in other UK hospitals.

5. Microbiological assessment of potable water quality

5.1 General requirements

- Scottish Health Technical Memorandum (SHTM) 04-01 Part B paragraph 9.1 states that “routine quality control microbiological testing for TVCs is no longer considered to be necessary (other than where there are taste or odour problems), many estates personnel invariably have them undertaken on a regular basis after acceptance of installations as a

'rule of thumb' indicator by which an abnormal change assists in identifying potential problems at an early stage." SHTM 04-01 Part C v2 Feb 2014 section1.1

- In Scotland, SHTM 04-01 Part C⁴ outlines criteria for testing Total Viable Counts (TVCs) and advocates:
- United Kingdom Accreditation Service (UKAS) or ISO 9002 accredited laboratories should always be used for analysis.
- Sampling should be undertaken in accordance with European and British Pharmacopoeia requirements to test the total number of bacteria, yeasts and moulds within water services distribution pipe work.
- In 2002 the United States Environmental Protection Agency (EPA) established a non enforceable Maximum Contaminant Level Goal (MCLG) of zero organisms (bacteria and viruses) including Mycobacteria, for drinking water.
- However, in current EPA protocols⁵ the MCLG of zero only applies to total coliforms count, giardia, cryptosporidium, Legionella and viruses.
- There is a Scottish Health Protection Network (SHPN) Public Health Microbiology Group. "The SHPN is a multi-disciplinary, multi-organisational, cross sectoral entity, reporting via its Chair to the Chief Medical Officer of Scotland therefore providing the necessary links with all stakeholders for the delivery of a successful Public Health Microbiology service." Within this group, Food, water and Environmental Microbiology are recognised as distinct from Diagnostic Human Microbiology and Reference Laboratory Services⁶
- WHO⁷ advocate a Hazard Analysis and Critical Control Point (HACCP) approach to risk management from water borne pathogens which involves establishing that the organism is an established hazard to human health through exposure to water, dose response studies should establish critical control levels, effective monitoring techniques need to be available to evaluate those control levels and effective corrective action must be available at each control point.
- Drinking water distribution systems are complex pipe networks which function as discrete ecosystems which are dominated by micro-organisms that are attached to the inner pipe surfaces and grow into the lumen of the pipes⁸.

5.2 Fungal Assessment of Water in Healthcare

- The Water Solutions Group Audit Report of water quality at RHCYP/DCN produced for HFS (July 2019) detected "some" fungi but it is unclear whether that was quantified in colony forming units/100ml water. It is unclear what testing methodology was used.
- Microbiological assessment of water for fungi is not part of the microbiological assessment of water advocated by the World Health Organisation to establish if the water is of a potable standard⁹.
- Fungi are commonly found in drinking water⁸.

20200114Water Safety Report v1.0 final for approval

- Microbiological assessment of household and commercial plumbing systems for fungi presents multiple methodological challenges and difficulties in interpretation of results. There is a need for standardised methods to investigate water for fungi⁸
- Some mould (*Aspergillus*) attaches to pre-existing biofilm created by *Pseudomonas aeruginosa* to form further biofilm⁸.
- Polymicrobial biofilm (including pathogenic fungi) is “unavoidable” in healthcare facilities waterlines. Interventions to mitigate this have included: UV treatment of incoming water, continuous chemical treatment, thermal shock and point of use filters⁸.
- Water system disinfection can paradoxically increase the abundance of *Aspergillus* detected in the water post-disinfection⁸.
- Fungi in water may arise from the municipal water supply and so the source may not necessarily be from within a healthcare setting(10)
- Fungal assessment of drinking water is performed in Sweden but not routinely. “Fungal analyses of water are conducted only in cases of complaints of taste and odour problems. The limit for the occurrence of fungi in water is 100cfu per 100ml water according to the Swedish regulatory authority.” (11)
- The Swedish drinking water fungal testing procedure is outlined and full document referenced (in Swedish) in Babic MN et al, Fungal Contaminants in Drinking Water Regulation? A tale of Ecology, Exposure, Purification and Clinical relevance. International Journal of Environmental Research and Public Health. 2017, 14, 636.
- Secondary metabolites produced by fungi, particularly those growing in localised pockets near the consumer end may be responsible for altering the taste and odour of drinking water. It is thought that the threshold level for numbers of fungi that can cause such issues may be around 102-103 CFU per 100ml water . While problems with taste and odour do not necessarily imply a health risk they are often perceived as such by the consumer. (12)
- Shower hoses are a particular ecological niche for fungal biofilm which may facilitate transmission of organisms to patients. (13)

5.3 Interpretation

- TVC testing may assist in providing both an indicator of water quality being of a potable standard and a surrogate marker of the burden of fungi that may be present in the water.
- It is unlikely that there can be extensive fungal contamination of healthcare water if TVC tests are within the previously used (2000) acceptable limits of 10cfu/ml at 37oC and 100cfu/ml at 22oC
- A trend of raised TVC counts should be further investigated by identifying which micro-organisms are present (whether bacteria or fungi) with full microbiological identification of the dominant organisms. Mapping the source location of the tested water with raised TVC counts should allow identification of locations within the water system which are most likely

affected by biofilm, which can then be assessed further visually or microbiologically and corrective action taken to reduce the count – a “find and fix” strategy, as advised by US EPA.

- Assessing pipework visually for macroscopic biofilm is crude and gives false assurance if nothing is seen as most biofilm is initially microscopic and not visible (14)
- Although NHS Lothian has been advised that “some” fungi have been identified in RHCYP water, the information received does not explicitly state how much in terms of colony forming units/100ml water to assess whether this is above or below the 100cfu/100ml water threshold used in Sweden to trigger further investigation and corrective action.
- Testing and interventions that prevent and control *Pseudomonas aeruginosa* biofilm development should also assist in prevention of fungal biofilm development.
- Water system disinfection may have unintended consequences of promoting fungal contamination of water systems.

5.4 Microbiological assessment of water system components & drainage outlets

There is no industry standard or technical guidance available to inform the methodology for selection of parts for testing, the qualitative methods for examination of parts, the operational definitions of acceptable thresholds for biofilm on visual evaluation, or the quantitative sampling of components or drainage outlets.

BSI 7592:2008 *Sampling for Legionella bacteria in water systems – Code of Practice* provides some guidance on seeking confirmation of the presence of *Legionella* in sampled biofilm, through the removal of pipe work and other components for examination. This is in the context of investigating a single organism which requires specific conditions for laboratory testing, and extrapolation of this to other water borne bacteria should only be considered with caution as part of a risk assessment which forms part of incident investigation. This type of microbiological assessment cannot provide assurance of the efficacy of control measures, other than complete eradication of any other specified organism.

It is accepted best practice in Infection Prevention & Control to consider environmental sources of infection where this is biologically plausible, and to consider sampling of the environment during infection incidents or outbreaks. However, environmental sampling is usually only undertaken with a high degree of caution in light of the limitations of meaningful analysis of results to demonstrate a causal link rather than association bias. For example, the presence of specific bacteria in a drain might be the cause of an infection with the same organism, or the bacteria may be present if patient wash water has been disposed of down the drain.

From the limited information provided by NSS in relation to the contamination identified in water components at QEUH, it is not possible to provide a standardised procedure for the removal and inspection of water components, or how any actual (rather than theoretical) clinical risks associated with any findings might be quantified or articulated. Should the proposed action be completed, the interpretation of results would rely heavily on subjective

assessment, in the absence of any guidance. On an ongoing basis, it would continue to be impossible to differentiate normal from abnormal results.

Current HPS guidance on the management of Public Health Incidents (2017) requires an IMT to undertake an investigation to *"form a working hypothesis about the route of exposure to the infective agent or the environmental hazard involved, the source and level of that exposure, the nature and size of the population exposed or likely to be exposed, and the degree of risk to the public health"*

This is based on information available from:

1. an epidemiological investigation;
2. an investigation into the nature and characteristics of the implicated hazard e.g. a microbiological investigation, and
3. A specific investigation into how cases were exposed to the infective agent or other hazard (e.g. food supply and hygiene, hygiene in healthcare settings) in order to inform control measures

The approach taken at QEUH to examine water parts is therefore consistent with this guidance in relation to their situation. That is, an ongoing incident management investigation into confirmed cases of clinical infection in a very high risk patient group (i.e. bone marrow transplant patients) caused by pathogens known to be associated with water and biofilm, where the water system was determined to be systemically contaminated (based on high TVC counts).

NHS Lothian is not in an outbreak situation, and has no clinical cases to investigate. The implications and characteristics of the hazards in relation to patient health and risk of infection (the organisms of interest identified in the QEUH incident) are currently poorly understood with limited published case studies or research to guide appropriate action. Lothian do not have an equivalent patient population to QEUH (i.e. paediatric bone marrow transplant patients)

As part of robust incident management, the HPS guidance also requires further risk assessment, defined as *"essentially entails appraising the balance of evidence collected in the incident investigation and reaching a view as to whether it indicates that there is an ongoing significant threat to public health"*

That assessment should consider the following points:

- **Severity:** Dynamically assessed risk of the degree of foreseeable harm that may be caused to individuals or to the population and possible issues with recovery.
- **Confidence:** Knowledge, derived from all sources of information that confirm the existence and nature of the threat and the routes by which it can affect the population.
- **Spread:** The size of the actual and potentially affected population.
- **Interventions:** The availability and feasibility of population interventions to alter the course and influence the outcome of the event.

- **Context:** The broad environment, including media interest, public concern and attitudes, expectations, pressures, strength of professional knowledge and external factors including political decisions

As discussed above, it is difficult to extrapolate the findings from QEUH to NHS Lothian as there are material differences in the building, patient population and absence of clinical cases. Infectious doses of individual pathogens are not clearly defined and therefore the severity of risk, confidence in evidence, understanding the impact of interventions cannot be clearly defined.

NHS Lothian have been provided with expert opinion in the absence of published evidence and we would suggest that this should be appraised for risk of bias in the same way that research evidence is appraised (Schuneman, Zhang & Oxman 2019).

The current situation in NHS Lothian does not fulfil the criteria for incident investigation, and therefore we suggest that to undertake speculative environmental sampling in the absence of a clear rationale or risk assessment could result in unintended high risk consequences.

There is significant political, media and public interest and anxiety relating to the incident at QEUH, and NHS Lothian are thoughtful that this may lead to unintended context bias for the nature of the actions being requested. **Currently this is based on experiential learning by NSS from emerging situations and understanding of those specific healthcare environments. These emerging lessons have not yet been extrapolated into formal guidance.**

6. Summary of Actions taken to date

A detailed action plan was developed and implemented in response to the NSS review, and is considered at weekly meetings with NSS in the oversight board. This has already addressed, or is in the process of addressing:

- *P. aeruginosa* in a small number of outlets in augmented care areas [ongoing]
- Removal, cleaning and replacement of all tap strainers
- Shower hose length -revised to comply with Scottish Water Bylaws, in consultation with Scottish Water who are reviewing a sample of outlets to confirm conformance
- The site facilities provider (Bouygues) have provided a site specific water safety plan which has been assessed by NHS Lothian Authorising Engineer (Water) and NHS Lothian are awaiting confirmation from him that this is compliant with current legislation and mandatory requirements.
- NHS Lothian are in the process of reviewing the structure and membership of the Board Water Safety Group, including the review of the Board Water Safety Policy, Operational Plan and supporting risk assessments. This review takes into account both the findings of the NSS review in NHS Lothian, and the emerging findings from the QEUH incident.

7. Description of current controls

7.1 Temperature control of hot and cold water supply

Requirements:

20200114Water Safety Report v1.0 final for approval

- Temperature control of hot and cold water is a statutory requirement (HSE Approved Code of Practice L8: Legionnaires Disease in respect of the control of Legionella)
- Cold water is stored and provided at temperatures below 20°C
- Hot water is stored and provided at temperatures above 55°C.

The temperature of stored and circulating water is monitored through the automated building management system, and temperature logs are available. Where temperature excursions are noted at critical points in the system, an alarm is triggered to alert the FM provider.

Issues relating to the way the building management system automated notification system operates have been identified and are in the process of being resolved. This will ensure that there is out of hours' notification of any issues with temperature control so that prompt action can be taken. A formal written escalation plan has been requested from BYES.

Temperature logs are being reviewed monthly, and exceptions reported by BYES to the site water safety group.

Where temperature excursions are noted, BYES have a protocol which requires them to contact the IPCT to ensure appropriate risk assessment is completed in relation to Legionella risk. This process will be kept under review at the site water safety group.

Exception reports from all site/provider water safety groups [will be] tabled at the overarching NHS Lothian Water Safety Group.

Additional actions required: None. A response has been provided to NSS for consideration in response to a range of questions posed by them in relation to water temperature excursions noted in July 2019. NSS have reviewed the response provided by NHS Lothian and have confirmed they are satisfied.

8.2 Microbiological monitoring of water quality

Requirements: Testing for Legionella specified by ACOP L8 , with optional TVC monitoring advised by SHTM 04-01 Part C.

There is no absolute requirement to undertake TVC monitoring, however NHS Lothian's preferred approach is to undertake a regular program of sampling as per SHTM 040-01 part C. This will be detailed in both site and Board Water Safety Plans .

Sampling for Legionella will be carried out from specified locations and sentinel outlets as part of a coordinated programme which is approved by the NHS Lothian Authorising Engineer (Water).

Biannual water quality monitoring will be carried out in augmented care areas as per HPS Interim guidance 2018, and any remedial work required in response to findings carried out as required. This will include further water testing as part of a return to use protocol as per the same guidance.

Additional actions required: NHS Lothian should ensure that the all estates and hard FM providers have a standard SOP requiring them to contact the IPCT promptly if issues are identified relating to quality of water, quality of domestic cleaning or compliance with flushing. This is to facilitate prompt risk assessment and action to mitigate risk to patients.

NHS Lothian should consider developing standardised reporting templates for the site and board water safety groups to ensure site estates teams report (by exception) any issues relating to the quality of tap water, domestic cleaning of outlets or issues with water flushing.

8.3 Planned preventive maintenance (System condition)

Requirements: The system condition is maintained by regular and periodic maintenance.

The requirements for water flushing, and operational management of water systems are defined in ACOP L8 guidance and SHTM 04-01 Part B. This includes (but is not limited to) removal and cleaning or replacement of strainers, shower hoses, shower heads; water tank inspections.

The site WSP will contain comprehensive detail of this, and the plan has been reviewed by NHS Lothian Authorising Engineer (Water). Confirmation that planned work has been achieved will require to be submitted to the site and Board Water Safety Group.

Additional actions required: There is a risk of introducing contamination into the water delivery system during the removal of multiple water system components. Therefore to mitigate for this risk and taking cognisance of NSS recommendation arising from wider NHS Scotland review, specific provision for system condition and corrosion monitoring of water components will be included in the FM service provider PPM schedule at the RCHYP.

Further development, assessment and review of water management processes are ongoing and iterative.

8.4 Reporting and Governance arrangements

Requirements: defined by SHTM 04-01 Part B

Description of current controls: NHS Lothian has a Water Safety Group and Water Safety Policy. Work is ongoing to review and update all site water safety plans.

The site WSP for RHCYP DCN is currently being reviewed by NHS Lothian Authorising Engineer (Water) who will confirm to NHS Lothian that this is compliant with legislation and guidance and advise on any further actions required.

Additional actions required: Further work is required internally within NHS Lothian to strengthen the structure and governance of the board Water Safety Group. Further work is also required to review the Water Safety Policy and associated guidance and documentation. This work is in progress and is supported by a multidisciplinary team under the direction of the Executive Medical Director.

The RHCYP DCN site water safety plan will be revised and aligned with NHS Lothian Water Safety Policy and associated guidance and documentation on completion of the wider Lothian review. This will provide improved consistency and review of information at the WSG.

8.5 Domestic cleaning

Requirements: Sink cleaning methodology, training, competency assessment, monitoring and QA

In line with NHS Scotland National Cleaning Specification (NCSS) and Infection Prevention and Control policy requirements, all sanitary outlets are cleaned daily using a disinfectant solution (ChlorClean) to a concentration of 1000parts per million available chlorine.

The frequency of cleaning is scheduled on a risk assessment basis, as per NCSS with more frequent cleaning occurring in high risk areas. At present, a reduced cleaning schedule is in place to reflect an unoccupied building, but dust control, and cleaning of sanitary items have been prioritised, and aligned with the ongoing water flushing programme provide by Bouygues as the building FM provider. This is intended to manage the risk of any aerosol or splash contamination during flushing activity.

Domestic staff have received tool box talk training on correct sink cleaning methodology, and this forms part of an ongoing programme of education, training for domestic staff.

Additional cleaning (builders clean and deep cleaning) are arranged as required in response to ongoing remedial estates investigation and work ongoing across the site.

Additional actions required: The best method of monitoring and quality assuring cleaning activity is currently under discussion. Domestic cleaning is provided by night shift staff.

8.6 Alert organism surveillance

Requirements: there is a mandatory requirement for IPCT to maintain alert organism surveillance as per Appendix 13 of NIPCM. This includes the investigation of single cases of laboratory results in patients in high risk areas.

NHS Lothian already complies with the mandatory requirements for alert organism surveillance.

NHS Lothian use ICNet as an electronic infection case management system, which has an automated data feed from the laboratory reporting system APEX. This allows the IPCT to receive authorised results in as near to real time as possible, monitor the incidence of infections, set triggers for specific organisms and within specific clinical areas.

All positive microbiological laboratory results for patients are validated by a Consultant Microbiologist; this means any unusual infection identified will be picked up with local clinical teams for further review.

All blood stream isolates are communicated by phone by Consultant Microbiologist to the clinical team to assess the clinical significance of the result, and the likelihood of the infection arising from an endogenous and exogenous source in a patient centred approach rather than an organism centred approach.

Once the services move onto the RIE campus, this process will be easier as Laboratory and Children's services will be co-located on the same site facilitating bedside review by an infection specialist.

NHS Lothian already complies with the mandatory outbreak and incident reporting requirements detailed in the HPS National Infection Prevention & Control Manual Chapter 3. This means that HPS are notified of all incidents and outbreaks, and invited to provide expert external support where this is required.

9. Residual Risks

- There is significant risk for further delay in the transition of services from the existing sites at WGH and RHSC Sciennes if all actions advised on expert opinion are accepted by NHS Lothian. There is a moderate likelihood that specific (and non specific) bacterial and fungal pathogens of interest to NSS could be identified in the water supply or delivery system which has $\geq 1\text{cfu}/100\text{ml}$ TVC. The absence of guidance to meaningfully interpret the results and articulate clinical risk, and absence of guidance for actions required to achieve a water supply free from these organisms with ongoing monitoring, means that further discussion will be required with NSS and possibly other UK experts to agree a suitable course of action., it is worth highlighting that Glasgow, wards 2A & 2B remained closed for more than 1 year after patients were decanted as a result of the incident. It is therefore conceivable that further disruptive and invasive work to disinfect or replace parts of the water system might be advised. Further water sampling will be required to demonstrate that work is effective. This has the potential to push the timeline for occupation for any services out further than spring and autumn 2020. The Cabinet Secretary has advised that RHCYP DCN will not open until she is assured the facility is safe. NHS Lothian IPCT would be unable to provide that assurance in the absence of guidance or a quantitative test to demonstrate a reduction in the organism(s) being tested for which do not currently form part of extant legislation or guidance (for example fungi or moulds). The risk of occupation of RHCYP in this context must be balanced against the ongoing (managed) risk to patient safety associated with prolonged occupation of the DCN building at WGH. There is persisting intermittent colonisation of the water system in the building which requires ongoing monitoring and management. This is associated with some disruption to service delivery, and also with significant financial costs (ongoing water sampling, use of point of use filters and other remedial plumbing work). *Pseudomonas aeruginosa* has also been identified in routine water monitoring in both critical care and ward 2 (Haematology-Oncology) at RHSC Sciennes.
- There is a risk that susceptible patients at increased risk of infection could be exposed to uncommon environmental pathogens in potable tap water of low or uncertain pathogenicity, the detection of which is not required by existing legislation, technical manuals, policy or guidance.
- Equally, there is a risk that highly susceptible patients are at risk of translocation of enteric organisms which could result in serious infection.

- There is a risk of unintended consequences for patient safety and service delivery associated with implementation of additional microbiological evaluation of water, water disinfection, and removal of parts in the absence of clear guidance, sampling methodology or actions required to address findings. This is associated with a lack of information to:
 - inform escalation and de-escalation of additional water sampling and remedial actions
 - inform clinical risk assessment (i.e. what is the risk to patient safety)
 - determine operational thresholds and triggers for actions (i.e. what level of contamination is unsafe)
 - patient, parent information (i.e. what does this mean for my care)
 - actions required to reliably address contamination
- There is a risk of unintended consequences of disturbing water ecology by repeated disinfection which may paradoxically increase the risk of Aspergillus biofilm
- There is a risk that there will be microscopic biofilm present in pipe work which is not detectable through visual inspection or impacted by routine cleaning, flushing or maintenance; and that this will continue to provide a source of microbial contamination of the water supply at low level. This is mitigated through a structured programme of TVC monitoring.
- There is a risk that additional and more stringent infection prevention and control measures may be required in the short or medium term in some clinical areas where there is a higher risk of infection (patient susceptibility to infection) in response to dynamic risk assessment in response to infection data and water monitoring results. These additional measures may include enhanced environmental cleaning, increased frequencies of cleaning, and increased frequencies of PPM.
- There is a risk of unintended consequences associated with performing drain cleaning and biofilm removal which is not addressed by current cleaning practices in the absence of transparent expert evidence and defined methodology. This action may increase risk of aerosolisation and dissemination of pathogens normally stable within such biofilm and increase risk of infection to susceptible patients.

10. Conclusion and recommendations

- 10.1 In response to the QEUH report, NHS Lothian Water Safety Group should review how facilities teams are resourced to deliver the Board Water Safety Policy and operational plan. The way in which assurance levels are defined, and demonstrated, and/or any gap with existing resource should be highlighted through the escalation and governance structure to the Board.
- 10.2 NHS Lothian Water Safety Group should review the process for recording, reporting and storing maintenance records and water sampling results to ensure that legislative and mandatory requirements are met.
- 10.3 In response to the NSS recommendation to retrieve and examine individual components of the water delivery system, we recommend that this approach is not consistent with current IPCT/Public Health, Water Quality guidance or best practice and the risks associated with undertaking this work outweigh the value of the information such an exercise would provide, and the benefit for patient safety cannot be defined or quantified. A range of

system condition and corrosion monitoring will be provided through the hard FM providers PPM schedule, and oversight and governance through the site and NHS Lothian Water Safety Groups.

- 10.4 In response to the NSS recommendation to undertake more extensive microbiological water sampling, we recommend that NHS Lothian seek expert advice from a suitably qualified Public Health/Environmental Microbiologist and/or Authorising Engineer (Water) to conduct a clinical risk assessment of the water delivery system and to provide a standardised method of testing which is reproducible and can be performed by a ISO accredited laboratory and further guidance on the interpretation of results.
- 10.5 NHS Lothian should seek the advice of a suitably qualified authorising engineer (Water) to provide practical guidance on what actions could be taken by NHS Lothian to address microbiological contamination in the water system – over and above the existing controls.
- 10.6 NHS Lothian should continue to follow current policy and cleaning methodology in relation to domestic cleaning of sanitary outlets. This includes the routine use of a chlorine solution at 1000ppm available chlorine and does NOT include disturbing any biofilm beyond the drain outlet in the sink basin.
- 10.7 NHS Lothian should undertake a coordinated programme of education, training and awareness raising for staff and the general public in relation to safe disposal of waste fluids in hospitals. This should help minimise the risk of biofilm proliferation in clinical hand wash basins and other outlets.
- 10.8 NHS Lothian should be cognisant of emerging and updated national guidance relating to the built environment, and through the Board governance structure, make recommendations for the prompt implementation and monitoring of this to ensure delivery of safe, effective and patient centred care.

Lindsay Guthrie (Lead Nurse Infection Prevention & Control)

Dr Donald Inverarity (Consultant Microbiologist & Lead Infection Prevention & Control Doctor)

14th January 2020

References:

1. Health Protection Scotland (2018) *Summary of Incident and Findings of the NHS Greater Glasgow and Clyde: Queen Elizabeth University Hospital /Royal Hospital for Children water contamination incident and recommendations for NHS Scotland*
<https://www.hps.scot.nhs.uk/web-resources-container/summary-of-incident-and-findings-of-the-nhs-greater-glasgow-and-clyde-queen-elizabeth-university-hospitalroyal-hospital-for-children-water-contamination-incident-and-recommendations-for-nhsscotland/>
2. National Service Scotland (2019) *NHS Lothian-Royal Hospital for Children and Young People & Department of Clinical Neurosciences: Review of Water, Ventilation, Drainage and Plumbing Systems* [Royal Hospital for Children and Young People and Department of Clinical Neurosciences: review of water, ventilation, drainage and plumbing systems - gov.scot](#)

20200114Water Safety Report v1.0 final for approval

3. WHO Guidelines for drinking-water quality: fourth edition incorporating the first addendum. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.
4. SHTM 04-01 Part C TVC Testing Protocol
<http://www.hfs.scot.nhs.uk/publications/1475662815-SHTM%2004-01%20V2%20Part%20C.pdf>
5. EPA Drinking Water Contaminants – Standards and Regulations
<https://www.epa.gov/dwstandardsregulations>
6. SHPN (2018) A Public Health Microbiology Strategy for Scotland. November 2018. Published by Health Protection Scotland
7. WHO (2004) *Pathogenic Mycobacteria in Water: A Guide to Public Health Consequences, Monitoring and Management* edited by S. Pedley, I. Bartram, G. Rees, A Dufour and I. Coiruvu.
8. Richardson M, Rautemaa-Richardson R. Exposure to Aspergillus in Home and Healthcare Facilities' Water Environments: Focus on Biofilms. *Microorganisms* 2019, 7, 7.)
9. (*Pathogenic Mycobacteria in Water: A Guide to Public Health Consequences, Monitoring and Management* edited by S. Pedley, I. Bartram, G. Rees, A Dufour and I. Coiruvu. (2004))
10. Kadaifcler DG, Demirel R. Fungal contaminants in manmade water systems connected to municipal water. *Journal of Water and Health*. 16.2 2018. 244-252.
11. Hageskal G, Lima N, Skaar I. The study of fungi in drinking water. *Mycological Research* 113 (2009) 165-172.)
12. DEFRA. A review of fungi in drinking water and the implications for human health. 2011.)
13. Moat J et al. Domestic shower hose biofilms contain fungal species capable of causing opportunistic infection. *Journal of Water and Health*. 2016. 14.5; 727-737.
14. Kostakioti M et al, Bacterial Biofilms: Development, Dispersal, and Therapeutic Strategies in the Dawn of the Post antibiotic Era. [Cold Spring Harb Perspect Med](#). 2013 Apr; 3(4): a010306)
15. Health Protection Network (2017) *Management of Public Health Incidents: Guidance on the Roles and Responsibilities of NHS Led Incident Management Teams*
https://hpspubsrepo.blob.core.windows.net/hps-website/nss/1673/documents/1_shpn-12-mphi-21062017.pdf
16. Health Protection Scotland (2019) National Infection Prevention & Control Manual
<http://www.nipcm.hps.scot.nhs.uk/>
17. Schunemann, H.J. Zhang, Y. & Oxman, A.d. (2019) *Distinguishing opinion from evidence in guidelines* *BMJ* 2019;366:l4606
18. HPS (2019) *Review of NHSGG&C paediatric haemato-oncology data* October 2019

Report	NSS Action	Conformance with Legislation	Conformance with Guidance (e.g. SHTM 04-01)	NHS Lothian response
Health Protection Scotland (2018) <i>Summary of Incident and Findings of the NHS Greater Glasgow and Clyde: Queen Elizabeth University Hospital /Royal Hospital for Children water contamination incident and recommendations for NHS Scotland</i>	To ensure facilities teams are adequately resourced to ensure maintenance of all aspects of water systems are maintained in accordance with policies and guidance	General principle- Written Scheme of Control for Legionella	Not required by guidance	Water maintenance, monitoring and assurance activity including roles and responsibilities is currently being revised by NHS Lothian Water Safety Group
	Maintenance should be recorded and maintenance records reviewed regularly to ensure all aspects of the water system are maintained in accordance with policies and guidance	General principle- Written Scheme of Control for Legionella	SHTM 04-01 Part B Operational Management	This will be monitored through the NHS Lothian Water Safety Group
National Service Scotland (2019) <i>NHS Lothian- Royal Hospital for Children and Young People & Department of Clinical Neurosciences: Review of Water, Ventilation, Drainage and Plumbing Systems</i>	Once the pipe work has been disinfected and taps disinfected retest the system: Re-sample 100% of taps in augmented care areas for TVC, Pseudomonas aeruginosa and Fungi. The sampling should be in accordance with SHTM 04-01, BS 8580-1, HSG 274, and HPS Pseudomonas guidance 2014.	Sampling will be performed for Legionella in accordance with ACOP L8 guidance	Optional TVC monitoring will be performed to provide assurance of water quality in line with SHTM 04-01 Part C Additional programme of water sampling in all augmented care areas biannually in line with HPS 2018 Interim guidance	In the absence of sampling methodology and guidance, no extended microbiological water sampling is planned at this time. Assurance of water quality and system condition is achieved as described - water testing programme and PPM.

	The removal of items from the water delivery system to be "handed over to <i>Water Solutions Group</i> " who will facilitate transportation to laboratory (which is in Harrogate).	Not required by legislation	Not required by guidance (other than on specific risk assessment as part of an outbreak investigation)	In the absence of defined methodology for selection, no removal and microbiological sampling of water components is planned at this time.
	Sink drains to be disinfected with a suitable anti-biofilm agent prior to the facility being in use and every 6 months thereafter	Not required by legislation	Not required by guidance	Biofilm is a normal finding in drains. Evidence to support disinfection of drains is limited, and may be associated with unintended consequences. No methodology for disinfection or suitable agent exists.
	Sink drains to be "monitored" for biofilm growth (augmented care areas – monthly; non augmented care areas 3 monthly)	Not required by legislation	Not required by guidance	No methodology for quantitative monitoring. Qualitative (visualisation) monitoring is subjective and cannot be meaningfully interpreted
	Bottle traps to be subject to regular planned preventative maintenance and disinfection with a suitable agent	Not required by legislation	Not required by guidance	Biofilm is a normal finding in bottle traps. Bottle trap cleaning does not form part of routine PPM. There may be unintended consequences associated with repeatedly opening systems, and exposing biofilm to disinfectants.

NHS Lothian
RHCYP + DCN
HVC Clarifications for ESG and OSB Approval
Revision Number: 01
Revised Date: 15/01/2020

NHSL Ref	Raised By	Change Ref	Title	Type	Imtech RFI No.	Project Team Status	ESG Status	OSB Status	Open / Closed
CLAR 001	Imtech	HVC 107	Critical Care Ventilation works - Additional isolation room on Level 1	Imtech RFI	001	Ready for Approval			open
CLAR 002	Imtech	HVC 107	Critical Care and Haematology and Oncology - Clarification that Hoare Lea environmental matrix shows correct room type	Imtech RFI	002	Work in Progress			open
CLAR 003	Imtech	HVC 107	Critical Care and Haematology and Oncology - Difference in temperature between environmental matrix and SHTM-03-01	Imtech RFI	003	Ready for Approval			open
CLAR 004	Imtech	HVC 107	Confirmation en-suites will not be added to 4 isolation rooms in level 1	Imtech RFI	004	Ready for Approval			open
CLAR 005	Imtech	HVC 107	Critical Care / DCN - The dirty extract system appears to serve areas out with scope area.	Imtech RFI	005	Ready for Approval			open
CLAR 006	Imtech	HVC 107	Critical Care and Haematology and Oncology - Helicopter draught	Imtech RFI	006	Work in Progress			open

NHS Lothian RHCYP + DCN HVC Clarifications for ESG and OSB Approval	NHSL REF	CLAR 001
---	----------	----------

Raised By	Imtech
Change Ref	HVC 107
Title	Critical Care Ventilation works - Additional isolation room on Level 1
Type	Imtech RFI 001

DESCRIPTION OF CLARIFICATION :-

From Imtech RFI 001

"There is an additional isolation room on Level 1 which is not detailed on HVC 107, please confirm this has to be added to scope?"

Additional note from the Project Team;

The Project Team note the isolation room in H2 Clinical Research Facility (1-H2-018, 1-H2-021, 1-H2-023) is adjacent to Critical Care and shares the same AHU as Critical Care.

In addition, the Project Team note an isolation room in C1.3 Borthwick (3-C1.3-007, 3-C1.3-008 and 3-C1.3-009) is adjacent to Haematology and Oncology and shares the same AHU as C1.4 Haematology and Oncology.

CLINICAL INPUT :-

Clinical consultees - Julie Freeman (Consultant Paediatric Anaesthetics), Jillian McFadzean (Consultant Paediatric Anaesthetics) Laura Reilly (Clinical Nurse Manger Paediatric Critical Care), Ann Cairney (Charge Nurse ward 2)

Clinical comments - Assurance requested that Project Co are required to maintain the environmental design characterises of all other rooms which are supplied by the proposed HVC 107 ventilation system(s).

This assurance was provided by Project Co in a meeting on 14/01/2020.

PROPOSED RESPONSE FOR ESG AND OSB APPROVAL :-

The Isolation Room located in H2 Clinical Research Facility (1-H2-018, 1-H2-021, 1-H2-023) is to be excluded from the scope of HVC 107.

In addition, the isolation room in C1.3 Borthwick 3-C1.3-007, 3-C1.3-008 and 3-C1.3-009 (adjacent to Haematology and Oncology) is also to be excluded from the scope of HVC 107.

ESG status :- TBC

OSB Status :- TBC

NHS Lothian RHCYP + DCN HVC Clarifications for ESG and OSB Approval	NHSL REF	CLAR 002
---	----------	----------

Raised By	Imtech
Change Ref	HVC 107
Title	Critical Care and Haematology and Oncology - Clarification that Hoare Lea environmental matrix shows correct room type
Type	Imtech RFI 002

DESCRIPTION OF CLARIFICATION :-
From Imtech RFI 002 "Confirmation that all room type selections in the environmental matrix are correct?"

CLINICAL INPUT :-
Work in progress

PROPOSED RESPONSE FOR ESG AND OSB APPROVAL :-
Work in progress
ESG Status :- TBC
OSB Status :- TBC

NHS Lothian RHCYP + DCN HVC Clarifications for ESG and OSB Approval	NHSL REF	CLAR 003
---	----------	----------

Raised By	Imtech
Change Ref	HVC 107
Title	Critical Care and Haematology and Oncology - Difference in temperature between environmental matrix and SHTM-03-01
Type	Imtech RFI 003

DESCRIPTION OF CLARIFICATION :-

From Imtech RFI 003

"Difference in temperature between original environmental matrix and SHTM-03-01. Original has temperature range of 18 to 28 against SHTM 18 - 25 in critical care areas and 21 to 28 against 18 to 28 in SHTM for Isolation rooms. What temperature range is required?"

CLINICAL INPUT :-

Clinical consultees - Julie Freeman (Consultant Paediatric Anaesthetics), Jillian McFadzean (Consultant Paediatric Anaesthetics) Laura Reilly (Clinical Nurse Manger Paediatric Critical Care), Ann Cairney (Charge Nurse ward 2)

Clinical comments

B1 Critical Care - consideration should be made for exposed patients with skin pathology, e.g. burns or other dermatologic pathologies, and thus the Clinical teams require a range of 18-28 DegC.

C1.4 Haematology and Oncology – consideration should be made to patients that are pyrexial e.g. febrile neutropenic and would need control, and thus the Clinical teams require a range of 18-28 DegC.

The clinical teams have also highlighted the need for individual temperature control per Isolation Room, Single Room and Multibed in both Critical Care and Haematology and Oncology. The temperature control needs to be responsive to cater for change in clinical needs, e.g. rapid warming or cooling of the patients environment.

PROPOSED RESPONSE FOR ESG AND OSB APPROVAL :-

B1 Critical Care - In addition to compliance with SHTM 03-01 Appendix 1 Table A1 'Critical Care Areas', due to the range of paediatric patients that will be cared for, Critical Care requires an enhanced temperature range of 18-28 DegC in each Isolation Room, Single Room and Multibed. Please note this will also be addressed in the response to CLAR 2 with a comment the SHTM03-01 Appendix A Table 1 Classification would be Ward Isolation Room with Critical Care plus environmental requirements.

Please also note, as required in the SHTM, each Isolation Room, Single Room and Multibed room in Critical Care should have the ability to rapidly control the temperature in the each room.

C1.4 Haematology and Oncology - In addition to compliance with SHTM 03-01 Appendix 1 Table A1 'Neutropenic Patient Ward', due to the range of paediatric patients that will be cared for, an enhanced control is required for the temperature in each Isolation Room, Single Room and Multibedroom, sufficient to allow the rapid warming or cooling of the patients environment. Please note this will also be addressed in the response to CLAR 2 with a comment the SHTM03-01 Appendix A Table 1 Classification would be Ward Isolation Room with Neutropenic Patient Ward plus environmental requirements.

Please also note, as required in the SHTM, each Isolation Room, Single Room and Multibedroom in Haematology and Oncology require a temperature range of 18-28 DegC.

ESG status :- TBC

OSB Status :- TBC

NHS Lothian RHCYP + DCN HVC Clarifications for ESG and OSB Approval	NHSL REF	CLAR 004
---	----------	----------

Raised By	Imtech
Change Ref	HVC 107
Title	Confirmation en-suites will not be added to 4 isolation rooms in level 1
Type	Imtech RFI 004

DESCRIPTION OF CLARIFICATION :-

From Imtech RFI 004

"SHPN04 shows two options for Isolation rooms, both having en-suites. Confirmation required that en-suites will not be added to 4 isolation rooms in level 1."

CLINICAL INPUT :-

N/A

PROPOSED RESPONSE FOR ESG AND OSB APPROVAL :-

The Board do not require en-suites to be added to 4 No. isolation rooms located within B1 Critical Care (1-B1-016, 1-B1-017, 1-B1-026 & 1-B1-036).

ESG status :- TBC

OSB Status :- TBC

NHS Lothian RHCYP + DCN HVC Clarifications for ESG and OSB Approval	NHSL REF	CLAR 005
---	----------	----------

Raised By	Imtech
Change Ref	HVC 107
Title	Critical Care / DCN - The dirty extract system appears to serve areas out with scope area.
Type	Imtech RFI 005

DESCRIPTION OF CLARIFICATION :-

From Imtech RFI 005

"The dirty extract system appears to serve areas outwith scope area. NHS to advise as this potentially cause issue with DCN"

CLINICAL INPUT :-

N/A

PROPOSED RESPONSE FOR ESG AND OSB APPROVAL :-

The Board require the dirty extract in DCN to remain live for the duration of the works.

In addition, Project Co should confirm all services serving DCN remain live and unaffected for the duration of the works, noting as an example there appears to be a live Isolation Extract Fan ductwork from Critical Care to DCN.

ESG status :- TBC

OSB Status :- TBC

NHS Lothian RHCYP + DCN HVC Clarifications for ESG and OSB Approval	NHSL REF	CLAR 006
---	----------	----------

Raised By	Imtech
Change Ref	HVC 107
Title	Critical Care and Haematology and Oncology - Helicopter downdraught
Type	Imtech RFI 006

DESCRIPTION OF CLARIFICATION :-

From Imtech RFI 006

"It has been mentioned that the downdraught from Helicopters could have an effect on the ventilation. Please provide details for this"

CLINICAL INPUT :-

Work in progress

PROPOSED RESPONSE FOR ESG AND OSB APPROVAL :-

Work in progress

ESG status :- TBC

OSB Status :- TBC

NHS Lothian

RHCYP & DCN Oversight Board
16 December 2019

Project Director

**RHCYP + DCN Little France
 Fire Enhancements**

1 Purpose of the Report

- 1.1 The purpose of this report is to provide the Executive Steering Board with an update and seek approval to the proposed implementation strategy for fire enhancement works.

Any member wishing additional information should contact the Project Director in advance of the meeting.

2 Recommendations

The ESG is recommended to;

- 2.1 Approve the strategy illustrated in this report.

3 Discussion of Key Issues

3.1 Requirement

Following publication of “Review of Fire Systems, Electrical Systems and Medical Gas Installation”, version 1.0, October 2019 by National Services Scotland (NSS), the Board elected to implement the recommendations contained in section 3.2 Fire through a defined scope of works (see 3.2 below)*.

**Approval given at the ESG of 11th November, 2019 and Oversight Board (OSB) of 13th November, 2019*

3.2 Scope

Following a series of fire risk assessments, attended by clinical team representatives, NHSL Head of Fire Safety, NHSL Fire Safety Adviser, HFS (National Fire Safety Adviser), NHSL Health and Safety officer, Director of Facilities and project team representatives on the 5th and 6th November, 2019 a provisional scope of works was agreed.

3.3 Delivery

A draft High Value Change 108 was subsequently prepared and a draft only shared with IHSL.

At the request of IHSL this draft HVC 108 was modified to move the initial confirmation of scope stage to a Low Value Change 109. LVC 109 was issued to IHSL on 5th December, 2019 (see Appendix 1).

The revised draft HVC 108 is being held as draft pending the outcome and finalisation of the scoping process which will be finalised once the design of new ventilation systems are agreed serving Critical Care and Haematology/ Oncology.

Early indications from IHSL are that the initial concept design for the new ventilation systems will not be available before the end of January 2020. The Board will endeavour to agree the final scope of the fire enhancements with IHSL at that point, finalising HVC 108.

IHSL have been made aware that their delivery programme should prioritise all fire enhancements associated with DCN.

3.4 Recommendation

That the recently issued LVC 109 should be developed with IHSL combining, when available, fire enhancements to Critical Care and Haematology/Oncology. Once achieved, HVC 108 should then be issued to IHSL requesting they design, install and test all scoped fire enhancements.

4 Key Risks

- 4.1 Completion of the design stage for ventilation remedials and enhancements to Critical Care and Haematology/Oncology will determine finalisation of fire enhancement scope and delivery programme. Early indications from IHSL are that their current ventilation programme is not secure, principally due to a delay in finalising a letter of engagement and increase in scope to include isolation rooms and fire enhancements. DCN migration in "Spring 2020" may be at risk as a result.

5 Resource Implications

- 5.1 The resource implications of the subject of this paper are unknown, subject to design development with IHSL and their costing the change.

Brian Currie
Project Director
12th December 2019

APPENDIX 1

Low Value Change Notice

Project:	RHCYP + DCN - Little France, Edinburgh
----------	--

1 – Issue of Change Notice to Project Co

Title:	Scope Only – Enhancements to Fire Safety
--------	--

Reference No: 109	Date: 05/12/19
-------------------	----------------

In accordance with Schedule Part 16 (Change Protocol) the Board requires Project Co to provide an estimate, including any lifecycle and maintenance costs, for the provision of a mutually agreed scope of works for the operational design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, the items shown in the table below:

For clarity - Project Co does not hold or retain design liability, nor is it responsible for the method, in determining the location and number of equipment or items requested below. NHSL have requested the below items based on fire design information provided by others.

Activity description and approximate quantities for guidance only*

Item	Description	Total	RHCYP	CAMHS	DCN
1	Install Combined Smoke and Fire Damper (CSFD) at existing vent terminal in corridors. To include all downtakings, reinstatements and a BS approved installation method for damper.	49	14	4	31
2	Install CSFD in ductwork traversing room to room boundaries. To include all downtakings and a BS approved installation method for damper.	51	10	37	4
3	Upgrade all doors to Fire Doors to corridors serving sleeping accommodation, in accordance with SHTM 81 and the Non-domestic technical handbook, including the installation of intumescent strip and cold smoke seals and full certification by an approved installer.	16	11	0	5
4	Install mechanical self closing device to doors and half leaf doors to corridor within sleeping accommodation areas.	199	100	4	95

5	Install electro mechanical, free swing and linked to fire alarm system, self closing device to doors and half leaf doors to corridor within sleeping accommodation.	25	14	0	11
6	Upgrade existing walls between rooms and corridors, and room to room to “short duration” as per NDTH.	13	11	0	2
7	Update Fire Strategy on completion of the works	-	-	-	-

* Please note: Quantities are approximate and for guidance only and should be read inconjunction with the “marked up” drawings provided to IHSL (list follows below). These drawings and the approximate quantities above do not include the proposed fire enhancements works to Critical Care and Haematology/Oncology which are also required as part of this LVC scoping exercise. Quantification will only be possible once revised ventilation system design in these areas is complete. For the avoidance of doubt, all devices should be installed in full compliance with all applicable regulations.

LIST OF MARKED UP DRAWINGS for guidance only.

Drawing No	Title
WW-Z3-03-PL-524-001	Zone Z3 – Level 03 Ventilation Distribution Sheet 1 of 2
WW-Z4-00-PL-524-001	Zone Z4 – Level 00 Ventilation Distribution Sheet 1 of 2
WW-Z4-00-PL-524-002	Zone Z4 – Level 00 Ventilation Distribution Sheet 2 of 2
WW-Z4-01-PL-524-001	Zone Z4 – Level 01 Ventilation Distribution Sheet 1 of 2
WW-Z4-01-PL-524-002	Zone Z4 – Level 01 Ventilation Distribution Sheet 2 of 2
WW-Z4-02-PL-524-001	Zone Z4 – Level 02 Ventilation Distribution Sheet 1 of 2
WW-Z4-02-PL-524-002	Zone Z4 – Level 02 Ventilation Distribution Sheet 2 of 2
WW-Z4-03-PL-524-001	Zone Z4 – Level 03 Ventilation Distribution Sheet 1 of 2
WW-Z4-03-PL-524-002	Zone Z4 – Level 03 Ventilation Distribution Sheet 2 of 2
HLM-SZ-00-PL-572-002	Ground Floor Fire Strategy General Arrangement
HLM-SZ-01-PL-572-003	First Floor Fire Strategy General Arrangement
HLM-SZ-02-PL-572-004	Second Floor Fire Strategy General Arrangement
HLM-SZ-03-PL-572-006	Third Floor Fire Strategy General Arrangement

Please note (for guidance only at this stage):

For the avoidance of doubt, all devices should be installed in full compliance with all applicable regulations.

All environmental requirements for all spaces in the Facilities served by or affected by the Works and Services systems shall be met and maintained – including but not limited to, temperature and control, lighting levels, noise, and humidity. These should be consistent to the agreed parameters throughout the Facilities to meet the specific clinical and operational needs for each space in the Facilities.

All works associated with the above will be contained within the scope, including but not limited to, protection and segregation of work area, downtakings, service isolations, service removals, maintaining system performance of services, service reinstatements, builders work reinstatements, decoration, and final builders clean.

There should be no reduction in the spare capacity requirement across and inclusive of all building services.

Overall ventilation requirements, temperature control, natural and artificial lighting levels, acoustic requirements and humidity in the areas affected by these works are to be maintained with no compromises.

The Works and Services shall fully comply with the requirements of all relevant guidance which includes, without limitation, implementation of the Works and Services so that the installation, finishes and maintenance regime shall be in accordance with the requirements of all relevant guidance, together with the clinical and operational constraints identified below:

1. **DCN work activities and implementation to be prioritised ahead of others.**
2. Dilapidation survey to be carried out in all areas prior to work starting with photographic evidence to document current condition
3. All Works and Services shall be carried out and monitored after, and with reference to, a collaborative full Stage 3 HAI SCRIBE assessment being approved by the Board.
4. The fire strategy and systems agreed for the Facilities will be maintained throughout the Works and Services and the Operational Term and such that where required the newly installed items, systems, and services will integrate with the fire strategy and systems and all other building management systems comprised in the Facilities.
5. The location of the installation within the rooms, external areas, route across such spaces and the segregation of work areas, etc, will enable the current operational functionality and safety policies and procedures to be maintained.
6. The design, layouts, finishes and other details etc for the Works and Services, at all stages (including during the design development stages), will require to be agreed with the Board's Representative, the Board's Fire Officer (and in turn the clinical service and related stakeholders). Project Co should recognise that in order to achieve agreement from the Board's

Representative's the Board's Representative will seek input from the Board and all appropriate stakeholders.

A post completion walk round with relevant stakeholders will take place after completion of work in a specific area following all necessary inspections, validations and verification by the Board or its authorised agents.

Date of required implementation (only if not a Catalogue item): TBA

To: IHS Lothian

We require the Change described above.
Please advise the cost and timescale for implementation.



Signed on behalf of NHS Lothian:

Name of Signatory (type or print):STUART DAVIDSON.....

Date: 5TH DECEMBER 2019.....

2 – IHS Lothian Issue Change Notice to BYES

BYES - In accordance with Schedule Part 16 of the Services Contract, the Change as noted in Section 1 above is required.

Date of Issue:

Signed on behalf of IHS Lothian:

Name of Signatory (type or print):

Date:

2.1 – Response to Change Notice from BYES

BYES – We accept the requested change

Yes - Please find our costs attached which are in accordance with Schedule Part 16 Part 2 of the Services Contract.

No – Our reason for rejecting is:

.....
.....
.....

Signed on behalf of BYES:

Name of Signatory (type or print):

Date:

3.1 – Catalogue Response to Change Notice by Project Co

To: NHS Lothian	DATE:
-----------------	-------

<p>In accordance with Schedule Part 16 Section 2 of the Project Agreement, we offer the following cost and timescales for the Change Notice.</p>	
Listed in Catalogue:	<input type="checkbox"/> Yes <input type="checkbox"/> No – Please go to section 3.2
Catalogue Cost of Change:	£
Time period for implementing the Change:	

3.2 – Non Catalogue Response to Change Notice by Project Co	
Cost of Materials:	£
Labour Rates:	£
Time period for implementing the Change:	
Lifecycle Impact:	
FM Impact:	
<p>NB: The lifecycle and FM service payment figures refer to the base date and are subject to indexation in accordance with the Project Agreement and Services Contract.</p>	
<p><u>Comments:</u></p> <p>Signed on behalf IHS Lothian:</p> <p>Name of Signatory (type or print):</p> <p>Date:</p>	

4. – NHS Lothian Response to costed Change Notice. (must be issued within 5 BDs of receipt costed Change Notice)
<p>To: IHS Lothian</p> <p>Having considered the implications of the proposed Change Notice:</p> <p><input type="checkbox"/> Please proceed with the implementation of this Change Notice.</p> <p><input type="checkbox"/> Please do not proceed with the implementation of this Change Notice. Our reason for rejecting is:</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>Signed on behalf of NHS Lothian:</p> <p>Name of Signatory (type or print):</p> <p>Date:</p>

4.1 – IHS Lothian instruction to BYES

To: **BYES**

In accordance with Schedule Part 16 Part 2 of the Services Contract:

- Please **proceed** with the implementation of this Change Notice.
- Please **do not** proceed with the implementation of this Change Notice.

Signed on behalf of IHS Lothian Ltd:

Name of Signatory (type or print):

Date:

5 – Completion of Change Notice from Contractor

To: **IHS Lothian**

In accordance with Schedule Part 16 Part 2, BYES herby advises that all work in relation to this Change Notice is now complete. Please see attached evidence.

Signed on behalf of BYES:

Name of Signatory (type or print):

Date:

6 – Completion of Change Notice

To: **NHS Lothian**

In accordance with Schedule Part 16 Section 2, Project Co herby advises that all work in relation to this Change Notice is now complete.

Signed on behalf of IHS Lothian:

Name of Signatory (type or print):

Date:

7 – Approval of works completed

To: **IHS Lothian**

NHS Lothian accept that all works relating to this change notice have been carried out within the agreed timescales and specification as noted above.

Signed on behalf of NHS Lothian:

Name of Signatory (type or print):

Date:

RHCYP+DCN - Continuity of Services on Existing Sites Action Log Dashboard

10/01/2020

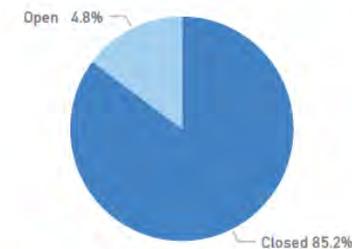
OPEN

8

CLOSED

46

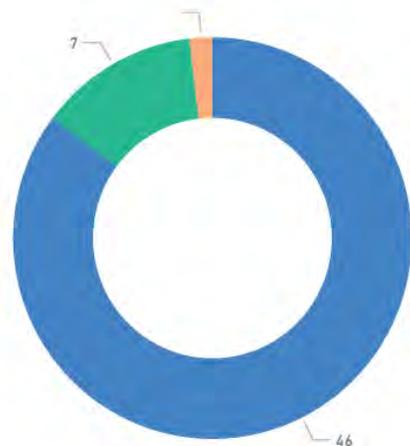
Completion Status



Status against Target Date

Due Status

- Closed
- Actions on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



Actions for DCN at WGH site

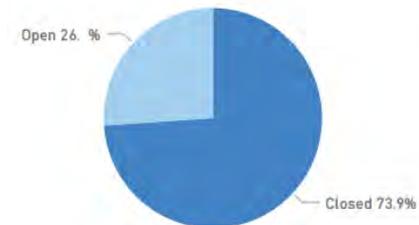
OPEN

6

CLOSED

17

Completion Status



Actions for RHSC Sciennes site

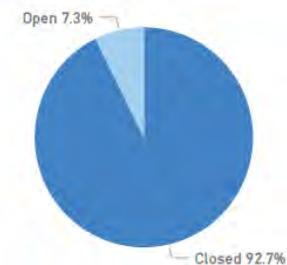
OPEN

3

CLOSED

38

Completion Status



RHCYP + DCN

Continuity of service provision on current DCN and RHSC sites

Revision Date: 10/01/2020

Current date for trackin 10/01/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/ Closed	DCN	RHSC
Capacity										
1	Winter planning	1.1	RHSC: Increase in ED capacity to maintain flow	F Mitchell	05/07/2019	30/11/2019	Increased OPD capacity in Rillbank Terrace. ED capacity was opened Tuesday 17 December.	CLOSED	No	Yes
		1.2	RHSC: increase medical beds and cubicles	F Mitchell	05/07/2019	30/11/2019	Ward 4 and PIU have now relocated. 2 shower trolleys moved to RHSC from RHCYP.	CLOSED	No	Yes
		1.3	RHSC: Additional 15 winter B5 posts advertised and shortlisted, to supplement medical nurse staffing. 6 additional B2 posts will be sought from the staff bank on a guaranteed shift basis for night duty staffing on ward 4 (medical). Additional nursing posts approved in June 2019 for an increase in year-round nurse staffing levels in the ED, particularly to support evening and night activity pressures. Most posts now recruited to for Phase 1 of this expansion, including an Advanced Nurse Practitioner for the ED team.	F Mitchell	05/07/2019	30/11/2019	B5 Winter posts - first round of interviews held 2 October. Closing date for second round 18th October; 1 applicant shortlisted. Advertised again closing 15th November 2019. Second round of Winter staff recruitment disappointing- going back out to recruitment again. Extra winter beds being staffed mainly by core ward staffing. Band 2 Winter Posts - Bank Requests from November onwards. Additional permanent ED posts - ENP job descriptions being finalised for recruitment end Oct. onwards. Advert for winter post closed again with 1 applicant. Gone out to advert again. Able to cope with core staffing at the moment.	CLOSED	No	Yes
		1.4	RHSC: Increase haem/onc day care beds by 3	F Mitchell	05/07/2019	30/11/2019	This can be closed as the Ward moves have taken place.	CLOSED	No	Yes
		1.5	Sleep service expanded staffing for new hospital but there is no extra capacity in old RHSC and winter pressures can lead to sleep studies being cancelled. Look at potential for services at home being expanded to address waiting list?	F Mitchell	05/07/2019	07/10/2019	Home sleep studies have now started.	CLOSED	No	Yes
		1.6	Winter Planning adult acute services	M Pearson	05/07/2019		Due to ongoing bed closures and pseudomonas in water, DCN is currently not accessed by the WGH site for boarding. Bed pressures in down stream facilities may affect DCN; managed through operational site and capacity management. CLOSED in relation to cancelled DCN moves.	CLOSED	Yes	No
2	Paediatrics at St John's	2.1	Consideration of increasing Services at SJH to reduce pressure of RHSC and enhance care closer to home for West Lothian children.	F Mitchell	05/07/2019	31/03/2020	Royal College of Paediatrics and Child Health have confirmed that they will carry out their review visit on 11 and 12 February.	OPEN	No	Yes
3	Medical equipment	3.1	Interventional Neuroradiology provision: increased demand (due to service delivery issues in Glasgow) for ageing and increasingly unreliable interventional neuroradiology equipment at DCN.	M Carr	09/07/2019	04/02/2020	Confirmation was received on 29/10/19 that the Cabinet Secretary was content the Board proceeds with the recommendation to purchase the additional equipment for DCN. Timelines for purchase and installation to be confirmed. Costs confirmed and a PO number issued. Contingency plan being developed with consideration to GG&C INR services and capability of support services including DCN, HDU and Anaesthetics. Programme confirmed at meeting on 4/12 - • Start date 14th Jan. Completion date 4th Feb • Clinical contingency plan being finalised: o Acute services being undertake on an alternative unit o Some cases referred to GG&C o Elective cases being referred to GG&C o Elective cases being undertaken on alternative unit o Additional sessions created post project completion to reduce the extended waits • Planning includes discussions with H&S team, HAI team, Traffic Management team, Estates, Adjacent clinical services including DCN and HDU	OPEN	Yes	No
		3.2	Theatre lights in four of the operating theatres at RHSC Sciennes are old and unreliable, with no replacement parts available. New lights required.	F Mitchell	09/07/2019	15/02/2020	All the required theatre lights have been ordered and are due for delivery shortly, with the programme of works to install timetabled for week commencing 10 February, to coincide with schools half term holiday. We do not expect to lose any activity over and above the normal reduction during half term holidays.	OPEN	No	Yes
		3.3	General x-ray equipment that had been installed in RHCYP required again at RHSC	F Mitchell/M Carr	09/07/2019	08/11/2019	New equipment arrived on site 14/10/19 and installation underway. This equipment will be moved elsewhere on closure of RHSC. On schedule to go live on target date of 8/11/19. Room is finished and is now back in full clinical use.	CLOSED	No	Yes
		3.4	Extension of maintenance contracts for elderly equipment at Sciennes and DCN.	F Mitchell/M Carr	09/07/2019	19/09/2019	Contracts and maintenance plans now in place. Will be updated on a quarterly basis.	CLOSED	Yes	Yes
		3.5	Additional scope storage is required for theatres at RHSC Sciennes as two cabinets were moved to RHCYP. Currently one is on loan, with rental charges due from October 2019.	F Mitchell/M Carr	09/07/2019	30/11/2019	Scope Cabinets up and functioning according to plan.	CLOSED	No	Yes
		3.6	Replacement tube for CT scanner at RHSC	F Mitchell/M Carr	09/07/2019	31/07/2019	Tube replaced - COMPLETE	CLOSED	No	Yes
		3.7	Videotelemetry: access to VTEM beds has been reduced in DCN since April 2019 with the reconfiguration of wards and restrictions on admissions due to positive testing for pseudomonas aeruginosa. Delaying moves to Spring 2020 extends the limited capacity and impact on waiting times. Use of portable equipment at one bed has enabled some VTEM admissions since August, but a hardwired bed with full VTEM capability and monitoring is required.	M Pearson	01/08/2019	12/11/2019	Install hardwired VTEM into ward 33. Utilise portable equipment for appropriate waiting list patients at home. Remedial electric works required prior to moving the equipment. An external contractor has been on site to look at the work - Estates to confirm date and cost. Optima will come after the electric works, £7k signed off. Complete from Estates side they just require some IT connection. Then Ward 33 will open up to 16 beds.	CLOSED	Yes	No

Clinical Support Services										
4	Pharmacy	4.1	Inadequate staffing to maintain opening hours for dispensary on 2 sites since in organisational change 1 dispensary manager was redeployed to another core service effective July 2019 when integration was meant to occur	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 7 dispensary manager resource required to allow provision of medicines on RIE and RHSC sites to prevent impact upon patient experience while RHSC remains open; and minimise impact of stress on staff health and wellbeing. 1.0wte band 7 Pharmacy Technician = £43,500	CLOSED	No	Yes
		4.2	Inadequate pharmacy support workers (PSW) staffing to deliver an integrated medicines distribution hub for RYCYP/RIE with required staff still working on RHSC site to maintain dispensary service	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 2 and 3 PSW resource required to prevent impact upon availability of medicines on RHSC site; and minimise impact of stress on staff health and wellbeing. 1.0wte band 2 PSW plus 2.0wte band 3 PSW = £77,192	CLOSED	No	Yes
		4.3	Pump-prime funding for staff resource to deliver the One Stop model has ceased, which is the backbone of medicines supply to patients to underpin management of capacity and flow at the new hospital site	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Funding for pharmacy technician resource must be reinstated to continue this model to be delivered. To address 3.4 and 3.5: 1.0wte band 4 Pharmacy Technician = £29,985	CLOSED	No	Yes
		4.4	Extended opening hours and weekend working rotas of the integrated pharmacy department at RIE was implemented in June 2019 in readiness for move of the RHSC in July 2019. To avoid lone staff working the full staff complement was needed on one site to full fill this rota. With pharmacy staff members remaining on RHSC the	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 4 pharmacy technician resource needed to ensure extended pharmacy opening hours at RIE not put at risk, which would affect capacity and flow on RIE site See 5.3 above	CLOSED	No	Yes
		4.5	One Site Lead Pharmacist redeployed to another post during organisational change to integrate the 2 pharmacy departments leaving 1 Site Lead Pharmacist to manage teams across 2 sites without a deputy to support operational day-to-day management or change management of the teams	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Deputy pharmacist (Band 8a) required to support site lead pharmacist for RIE/RHSC until integration of the 2 departments is complete, which will help minimise impact of stress on site lead pharmacist health and wellbeing 1.0wte Band 8a Pharmacist = £65,625	CLOSED	No	Yes
		4.6	Cross site transport of medicines 7 days a week is needed but the ad hoc arrangements currently in place (e.g. Blood bikes, taxi runs) is not suitable for the extended duration that off-site daily delivery of medicines will be needed until RHSC move. This is especially an issue for delivery of intrathecal chemotherapy agents that have unique transport requirements under CEL30 (i.e. anyone transporting these medicines must be trained and named on the intrathecal register as competent to undertake the task allocated to them including transport)	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Funding to NHS transport and portering services for 1.0wte dedicated driver(s) (to be trained in CEL 30 requirements) to transport medicines between 09:00 to 17:30 Monday to Friday and 10:00 to 14:00 Saturday. 1.0wte Band 2 = £24,370	CLOSED	No	Yes
5	Laboratories	5.1	Minor changes were made to on-site Blood Science laboratory hours with the announcement of the delay in July 2019, with agreement that provision would remain under constant monitoring/ review.	M Grey	09/07/2019	31/07/2019	The NHSL Blood Science laboratory service at RHSC will continue with no alteration to service but service delivery/ performance will be monitored/ kept under continuous review in order to ensure that a robust and sustainable service continues to be provided to RHSC users and their patients.	CLOSED	No	Yes
Facilities Management										
6	Catering	6.1	Extend canteen opening times and preparation of meals on RHSC site - for better utilisation of staffing and reduction in waste.	G Curley	23/09/2019	14/10/2019	Chef now on site. Collation of menus and standard ordering.	CLOSED	No	Yes
		6.2	Procurement of two fridges for RHSC facility.		23/09/2019	14/10/2019	Order placed	CLOSED	No	Yes
		6.3	Communication with catering staff about sites and rosters.		23/09/2019	08/10/2019	Chef now on site; communication with catering staff underway.	CLOSED	No	Yes
		6.4	Improved signage and marketing for RHSC service		23/09/2019	14/10/2019	Communication in place on site	CLOSED	No	Yes
		6.5	HACCP		23/09/2019	08/10/2019	Chef now on site: completion of HACCP	CLOSED	No	Yes
		6.6	Explore options for third party support for catering		23/09/2019	18/11/2019	Discuss with Edinburgh Childrens Hospital Charity - Waiting for feedback from patients and visitors (4 week trial). Explored with charities, no takers.	CLOSED	No	Yes
		6.7	Replace dining room furniture		21/10/2019	31/10/2019	Ordered for delivery w/c 28/10/19 - DELIVERED	CLOSED	No	Yes
7	Parent accommodation	7.1	Improve environment of parents accommodation	G Curley	23/09/2019	02/10/2019	Thorough clean of parents accommodation, and enhanced cleaning within domestic services schedule.	CLOSED	No	Yes
		7.2			23/09/2019	31/10/2019	Parent accommodation reviewed. Refurbishment and new furniture requirements identified.	CLOSED	No	Yes
		7.3			23/09/2019	30/09/2019	Improve communication between FM team and Family Support re use of and care for parent accommodation. Protocol agreed	CLOSED	No	Yes
8	Domestics	8.1	Domestic services, including increased pressure on staff to make existing environment as good as it can be.	G Curley	23/09/2019	30/09/2019	Review current provision with a view to providing enhanced service to compensate for condition of the environment.	CLOSED	YES	Yes
		8.2			23/09/2019	10/10/2019	Ensure all staff only areas are in receipt of full staffing levels.	CLOSED	YES	Yes
		8.3			23/09/2019	30/09/2019	Complete analysis of Facilities Monitoring Tool.	CLOSED	YES	Yes
					23/09/2019	30/09/2019	Transfer of new equipment from RHCYP to RHSC /DCN	CLOSED	YES	Yes
		8.4			21/10/2019	01/12/2019	Moved to disposable mops to avoid double dipping from 20/12/19. Note: laundry of mops does not remove C Dif.	CLOSED	YES	Yes
9	Logistics	9.1	Logistics services	G Curley	23/09/2019	06/01/2020	Utilisation of staff in post to provide security at RHSC. Notice given and contract with G4S has ceased, and this is now the responsibility of NHSL Logistic Services.	CLOSED	No	Yes
		9.2			23/09/2019	30/09/2019	Secondment opportunity for supervisor vacancy now being progressed.	CLOSED	No	Yes
			DCN - General state of facilities; walkround and identification of works	G Curley	23/09/2019	05/10/2019	Ward 31 has a shower with +ve water result, but it remains in use with a point of use filter (these do not work in Ward 33 due to lack of pressure) This has NOT had any adverse effect on DCN admissions this week. The beds in DCN were NOT being accessed for boarding anyway, so it does not impact.	CLOSED	Yes	No
					23/09/2019	30/11/2019	DCN ward 33 has 2 showers out of use, leaving only one shower available, so 6 beds closed. Ward 33 capped at 10-12 patients (depending on mobility).	CLOSED	Yes	No
					23/09/2019	30/11/2019	Ward 32- Painting completed. Flooring patches no date yet still to be confirmed.	CLOSED	Yes	No
					23/09/2019	11/11/2019	Neurophysiology - Consultant office painted. Senior physiologist office to be painted w/b 4/11/19. Carpet due to be replaced on 9/11/19. DCN Admin corridor and Directorate Asst office carpet to be replaced 9/11/19.	CLOSED	Yes	No
					25/10/2019	06/01/2020	Upgrade/replacement to DCN Fire System commenced with ward 33 in November. 4-6 weeks further work anticipated from 06/01/20	OPEN	YES	

10	General estate	10.1			23/09/2019	30/11/2019	DCN OPD painting and disabled toilet upgrade due to complete 20/12/19.	CLOSED	Yes	No
					23/09/2019	04/02/2020	DCN x-ray corridor to be painted mid January after bi-plane removal and install (3.1 above)	OPEN	Yes	No
			RHSC - General state of facilities; walkround and identification of works Equipment transferred from new RHCYP to existing site to benefit patient care/experience.	P Campbell	01/10/2019	31/12/2019	Equipment transferred included patient easy chairs, Mon900, Dia900, trolleys, fridge, freezers, shower trolleys, wheelchairs, bracket table and sedation tubing. Lot of work around transferring back top up items and various high tariff/specialist order sundries.	CLOSED	Yes	No
				23/09/2019	31/10/2019		CLOSED	No	Yes	
		Unannounced HEI Inspection of RHSC and DCN took place 22/10/19-24/10/19.	A McMahon	22/10/2019	15/01/2020	Draft report will be emailed on 4/12/19 to check for factual accuracy. Sign-off of the report and return to HIS by 18/12/19. The final report will be published on 15/1/20. Verbal feedback from inspectors at the end was positive.	OPEN	Yes	Yes	
		10.2	Fire and Rescue Service (F&RS) Audit of RHSC Sciennes premises	F Mitchell	20/11/2019	18/12/2019	Following SFRS Audit in Nov 2019, "Operations Notification Form" placed on the Basement Level was rescinded following work bring completed by Fire Safety / Estates Services. The RHSC Fire Action Plan has been finalised and shared with SFRS. Some actions are already complete, others timetabled from January- to April 2020, with other items ongoing through the year eg Fire evacuation training, electrical inspections at weekends etc.	CLOSED	No	Yes
]										
11	Communication with staff	11.1	General staff communications, including annual leave, pay, expenses, car parking, delaying retirement.	J Butler	23/09/2019	10/07/2019	Frequently asked questions updated and published on intranet 10/07/19	CLOSED	Yes	Yes
12	Staff wellbeing	12.1	Supporting staff wellbeing	J Butler	23/09/2019	18/11/2019	Regular Exec Team/Senior Team Walkarounds are established. Improvements to facilities and environment in RHSC and DCN have been warmly welcomed by staff. As has the reinstatement of the dining room at RHSC. The local staff health and wellbeing programmes continue on both sites as well as access to the wider corporate staff wellbeing programmes. There is good Partnership support from the trades unions. The Employee Director and Site Directors agree that this action can now be closed, with support for staff wellbeing being 'business as usual'. We will be having a massage therapist in DCN for the next 3 weeks, and in January are going to have yoga breathing coaches and a stress relief workshop.	CLOSED	Yes	Yes
13	DCN staffing	13.1	In light of nursing staff leaving DCN in anticipation of the move to RIE, the workforce has been reduced. There is a need to ensure we retain current staff, and quickly fill vacancies.	G McAuley / M Pearson	07/10/2019	31/03/2020	Ongoing recruitment. Nursing vacancies now at 10%, reduced through recruitment of new starts and returns from maternity leave. Five new CSWs starting January takes the department at WGH to full establishment. Approximately 12wte to be recruited for the move to the new site.	OPEN	Yes	No
		13.2	Anaesthetic out of hours rota cover for DCN. Provision of robust out of hours anaesthetic rotas for the ~6-9month period between DCN team moving and Paediatric team moving to the RIE site. Originally plan was for paediatric and neuro trainee rota to combine.	M Carr	25/11/2019	01/04/2020	The team are planning to recruit fellows to cover the rota in the period between DCN moving and RHSC moving.	OPEN	Yes	No
Patients and public										
14	Patient appointments and communications	14.1	Inform patients of any changes to appointments	J Campbell	09/07/2019	31/07/2019	All patients with appointment in July and August were contact by phone to reschedule to the old sites. All further appointments have been notified by letter.	CLOSED	Yes	Yes

From: [Cosens, Sorrel](#)
To: [Graham, Chris](#); [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Chief Medical Officer](#); [Henderson C \(Calum\)](#); ["Colin Sinclair"](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); ["Gordon James"](#); ["Jacqui Reilly"](#); ["Jim Miller \(\)"](#); [Joyce, Alex](#); ["Judith Mackay"](#); [Little, Kerryann](#); [McMahon, Alex](#); [Morgan, Mary](#); [Murray, Fiona](#); [Nicoll, Nadine](#); ["Peter Reekie"](#); ["Roxanne Gallacher \(Jim Miller PA\)"](#); [Trotter, Audrey](#); [Walker, Anna](#)
Subject: RE: Oversight Board Papers for 29 January 2020
Date: 28 January 2020 15:28:58
Attachments: [image001.png](#)
[4. Senior Programme Director Report 280120.pdf](#)

Dear All

Please find attached an updated report for item 4, which now has the latest progress with the Electrical action log included in it.

Best wishes,
Sorrel

From: Graham, Chris [REDACTED]
Sent: 28 January 2020 09:55
To: 'Alan Morrison' [REDACTED]; Archibald, Gordon [REDACTED]; 'Calum Henderson' [REDACTED]; 'Calderswood, Catherine' [REDACTED]; 'Calum Henderson' [REDACTED]; 'Colin Sinclair' [REDACTED]; Cosens, Sorrel [REDACTED]; Currie, Brian [REDACTED]; 'Fiona McQueen' [REDACTED]; Gillies, Tracey <[REDACTED]>; Goldsmith, Susan [REDACTED]; 'Gordon James' [REDACTED]; Graham, Chris [REDACTED]; 'Jacqui Reilly' [REDACTED]; 'Jim Miller [REDACTED] [REDACTED]'; Joyce, Alex [REDACTED]; 'Judith Mackay' [REDACTED]; Little, Kerryann [REDACTED]; McMahon, Alex [REDACTED]; Morgan, Mary [REDACTED]; Murray, Fiona [REDACTED]; Nicoll, Nadine [REDACTED]; 'Peter Reekie' [REDACTED]; 'Roxanne Gallacher (Jim Miller PA)' [REDACTED]; Trotter, Audrey [REDACTED]; Walker, Anna [REDACTED]
Subject: Oversight Board Papers for 29 January 2020
Importance: High

Dear Colleagues

Please find attached the Oversight Board Papers for tomorrow's meeting.

The dial in details remain:

[REDACTED]
Participant code [REDACTED]

Kind regards
Chris

Chris Graham
Secretariat Manager



Achieving [deadlines](#) means you are respecting your colleagues and supporting effective decision-making.



The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 29th January 2020, 8:00 – 9:30am

Venue: Room 5, Waverley Gate, EH1 3EG

AGENDA

1.	Chair's Welcome and Introductions	FMc	V
	Apologies: Alex Joyce;		
2.	Minutes of previous meeting for approval: 16 January 2020	FMc	*
3.	Matters Arising		
	3.1 Finalisation of the IPCT Water Safety Report	TG	V
	3.2 Go live date for Interventional Neuroradiology	TG	V
4.	Senior Programme Director's Report	MM	*
5.	Commercial progress update	IG	V
	STANDING AGENDA ITEMS		
6.	Technical Reviews progress		
	6.1 Ventilation	BC	V
	6.1.1 Concept Design Proposal for HVC 107	BC	*
	6.2 Water Quality	BC	V
	6.3 Fire Safety	BC	*
	6.4 Electrical Safety	BC	V
7.	Service Continuity on Existing RHSC & DCN Sites	TG	*
8.	Communications		
	8.1 Proposed Communications	JM	V
	8.2 Requests for Information	JM	V
9.	Any Other Competent Business		
10.	Date of Next Meeting		
	Thursday 13 ^h February 2020, 8am, Room 5, Waverley Gate		

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Wednesday 16 January 2020 in Meeting Room 5, Waverley Gate, Edinburgh.

Present: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Miss T. Gillies, Medical Director, NHS Lothian; Professor A. McMahon, Nurse Director NHS Lothian; Mr G. Archibald, Joint Staff Side Representative and Mr P. Reekie, Chief Executive, Scottish Futures Trust.

In Attendance: Ms M. Morgan, Senior Programme Director; Mr B. Currie, Project Director, NHS Lothian; Mr C. Henderson, Scottish Government; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Ms J. Mackay, NHS Lothian Director of Communications; Mr I Graham Director of Capital Planning and Projects, NHS Lothian (deputising for Mrs Goldsmith) and Mr C. Graham, Corporate Governance Team (minutes).

Present by Telephone: Mr C. Sinclair, Chief Executive, NHS National Services Scotland.

In Attendance by Telephone: Mr G. James, Director of Facilities, Health Facilities Scotland; Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work; Mr J. Miller, Health Facilities Scotland and Ms Laura Imrie, Nurse Consultant, Infection Prevention and Control, Health Protection Scotland.

Apologies: Mrs S. Goldsmith, Director of Finance, NHS Lothian; Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side) and Ms S. Cosens, Capital Programme Business Manager, NHS Lothian.

1. Minutes of previous meeting – 19 December 2019

- 1.1 The minutes of the meeting held on 19 December 2019 were accepted subject to noting that Christine McLaughlin was taking a career break rather than retiring and this should be amended in the minute.

CG

2. Matters Arising

- 2.1 No matters arising not already covered by the agenda.

3. Senior Programme Director's Report

- Acknowledged that the festive period had resulted in a hiatus of activity and slippage against some action timescales. IHSL had made progress against the design of the HVC 107 (Critical Care & Lochranza Ventilation), however it was noted that the overall programme had moved to Red Status, primarily because the HVC107 Initial Estimated Programme of Works (presented 10/01/20) shows handover at end November 2020. This is an initial estimation and work to mitigate this timeline to continue through weekly workshops.
- Accepted that there was a need to understand internally what the 8 weeks commissioning period was made up of so that this timeframe could be reduced if possible.

- Noted that construction work hoped to be finished in August 2020 followed by testing and commissioning period.
- Discussion around potential for additional resource to reduce commissioning period. Hoped to have a finalised, clearer programme end January into February 2020.
- SA2 Signing would provide part of the certainty that will help work move forward
- Work around DCN Fire enhancements and whole hospital fire enhancements progressing
- DCN works expected to be complete in May 2020 – finalised programme to be confirmed. Completion of DCN works on schedule would see DCN move into the building late spring 2020.
- Lot of engagement work with CAMHS team over the last weeks in relation to consolidation of board changes. IHSL now looking at how best to deliver these. Good progress made and it had been made clear to the clinical teams that this would be the final iteration of the works as this had now been discussed in detail.

4. Commercial Progress Update

- Noted that there had been a constructive meeting around contract approach held with NHSL, IHSL and solicitors on 15/01/20.
- Noted that design development will help to remove risk and move things along quickly and Commercials were expected to be mostly completed by end of January 2020.
- The Oversight Board would be content with the proposed principle for joint appointments as part of commissioning and approvals process, to include joint duties of care obligations. This was subject to a paper articulating the benefits and risks of a joint appointment approach coming to the next meeting. **SG**
- Noted that the Commercials Sub Group would meet next week and outcomes would come back to the next meeting. Also agreed that AM would replace CMc on Commercial Subgroup. **SG**
- Recognised that it was important to keep the pace of commercials up whilst acknowledging complexities.
- Noted that NHSL Board and NHSL Finance and Resources Committee (delegated authority) were both now meeting on a monthly basis and were prepared to meet out with normal arrangements if required.

5. NHSL IPCT Water Safety Report

- Noted that the version of the report circulated on 14/01/20 was an older version
- Correct version had been circulated on 15/01/20 and incorporated comments following discussion between NHSL and NSS colleagues on 13/01/20. Changes between the versions were now highlighted in blue.
- NSS content with overall direction and infection control and prevention plan
- Remains a couple of editorial issues with the report and a final edit checking for factual inaccuracies, to protect NHSL, was required the report could then be finalised and come back for approval at the next meeting.

TG/JR

6. Technical Reviews progress

6.1 Ventilation

- All ventilation works ongoing, scheduled completion by end of February 2020.

6.1.1 HVC 107 Ventilation Update - Queries + Clarifications

- Noted that the first design workshop with IHSL had been held last week and there would be further discussion this week. NHSL had undertaken an internal review on 14/01/20 and the circulated report was the output from this.
- Noted that 6 queries for clarification (**CLAR001 – 006**) had been received from Imtech and these were being presented to the oversight board for approval and to confirm that the group were content with the proposed responses and progress:
 - **CLAR 001** - Critical Care Ventilation works - Additional isolation room on Level 1
 - **CLAR 002** - Critical Care and Haematology and Oncology - Clarification that Hoare Lea environmental matrix shows correct room type
 - **CLAR 003** - Critical Care and Haematology and Oncology - Difference in temperature between environmental matrix and SHTM-03-01
 - **CLAR 004** - Confirmation en-suites will not be added to 4 isolation rooms in level 1
 - **CLAR 005** - Critical Care / DCN - The dirty extract system appears to serve areas out with scope area.
 - **CLAR 006** - Critical Care and Haematology and Oncology - Helicopter downdraught
- The Oversight Board agreed they were content with the clarifications and responses as proposed and these BC would now take these forward with Imtech.

BC

6.2 Water Quality

- Covered above work ongoing through the Water Safety Group to achieve a steady state position.
- Shower Hose Length – noted it was proving difficult to determine solutions required ahead of patients, staff and services moving. There remains a conflict between compliance and clinical use with a solution not being the same for each bathroom. Work ongoing to achieve Scottish Water Bylaw compliance further risk assessments to consider adaptations would then take place once the building was operational.

6.3 Fire Safety

- Covered above.
- Noted that workshops with IHSL had been held to capture principles and scope out works. Contractual team to shortly be in place to get on with works.

6.4 Electrical Safety

- Noted that the speed of responses between IHSL/MPX and NHSL needed to improve and a further workshop was planned.
- The difference between an unoccupied building and what would be required before opening was noted. Mary Morgan, Gordon James and Brian Currie to meet to go over what would be required prior to occupation; what would be business as usual and what was a pre-occupation issue. A refreshed timeline to come back to the Oversight Board.

MM, GJ, BC

7. Service Continuity on Existing RHSC & DCN Sites

- Little to report other than normal activity

- DCN water quality issues persist and Incident Management Team for this remains ongoing
- Prioritisation of DCN move remains high
- INR Scanner work ongoing at moment in partnership with Glasgow Colleagues. Go live date for new equipment to be confirmed.

TG

- The Oversight Board expressed its thanks to nurses, domestic staff and other teams across both facilities for the hard work and commitment being put in which had been demonstrated in recent inspection reports.

8. Communications

8.1 Proposed Communications

- Noted that the Auditor General would be giving evidence today to the Public Audit and Post-legislative Scrutiny (PAPLS) Committee and a staff briefing may be prepared depending on the outcome from this.
- Noted that information around the current RHSC site inspection had been circulated.

9. Any Other Competent Business

- 9.1 Future HVC Queries + Clarifications – PR asked if it was practical for the Oversight Board to review these given the potential volume of queries coming through. It was pointed out that the feeling within NHSL was that it was important that every clarification come through the group to ensure monitoring of everything being done.

10. Date of Next Meeting

- 10.1 The next meeting is scheduled for **Wednesday 29 January 2020, 8am, Room 5, Waverley Gate.**

RHCYP DCN Senior Programme Director's Report

Report Date	28/01/2020	Programme RAG Status (now)	–
Submitted by	Mary Morgan	Programme RAG Status (previous Oversight Board)	–

General Update		<p>IHSL has made progress against the design of the HVC 107 (Critical Care & Lochranza Ventilation) with the concept design submitted for NHSL consideration and approval Friday 24/01/20. The programme remains at Red Status, because the HVC107 / Estimated Program of 20.3G has not been handed over at end November 2020. 20.3 to mitigate this timeline will continue through weekly workshops and in liaison with IHSL.</p> <p>Contract/commercial meetings continue. It has been acknowledged that SA2 cannot be "signed off" until the design for HV107 is completed and maintenance and lifecycle costs reported for inclusion on SA2. It has also been noted that IHSL Funder & NHSL governance engagement required within timeline. Currently still targeting end Feb for SA2 with design finalised 6th March (Overall programme allows for this)</p>
-----------------------	--	---

Project Workstreams	RAG Status	Comments
Ventilation	–	Workstream Status to Red due to initial delivery programme for HVC 107 showing handover end November 2020. Weekly workshops established to progress 20.3, Requests for Information (RFIs), that are being progressed with clinical and specialist teams. There is a risk of "scope creep" & benefits & time/cost need to be assessed, Other Ventilation issues (AHU, Theatres corridor, Scrub and Anaesthetic) expected completion by end Feb 2020.
Water Safety	K	K programme of 20.3G to address Pseudomonas findings (W10) is in place. Solutions to resolve the Shower Hose lengths (W12) continue to be evaluated. K bath decontamination has commenced w/c 20/01/2020
Drainage	✓	Workstream closed.
Fire Safety	K	Amber status due to absence of a defined programme to deliver against these requirements. An MVC has been submitted to IHSL for DCN fire enhancements. Verbal programme completion by 8w/ 2020. However, consideration is being given to extending working arrangements, increasing teams deployed and also scheduling of 20.3G to compress timeline.
Electrical	K	The workstream has been moved to Amber due to failure to meet timelines agreed at the multi agency workshop held on 11th Dec 2019. Further evidence is required to close actions. Liaison with HPS (meeting on 27/01/20) agreed to move forward for coming week.
Medical gases	✓	Workstream closed (Oversight by 27th November 2019)

5& Achievements / Highlights since last Oversight Board

Concept design proposals for ventilation solutions received for review
 NHSL 08- meeting with RHCYP Medical Staff Committee 27th January 2020

Next Period 5& Activities / Challenges

Deployment of additional NHSL 08 specialist resources to support workstreams and quantum of 20.3
 Decision re provision of negative pressure isolation facility as part of HV107

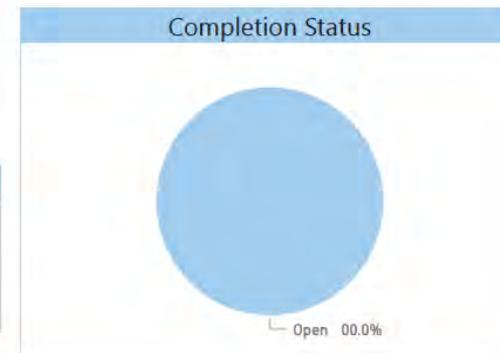
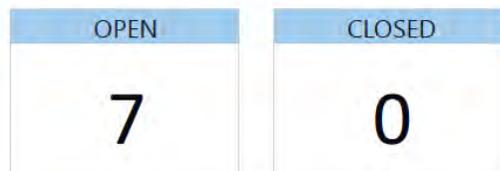
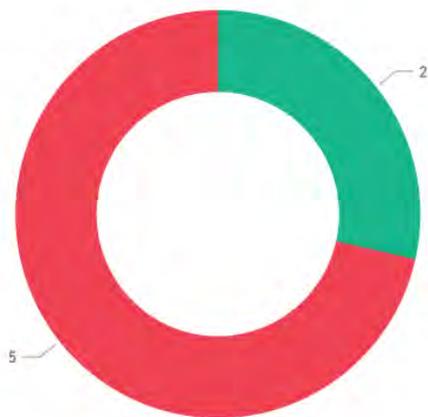
RHCYP+DCN - Management Action Log Dashboard

24/01/2020

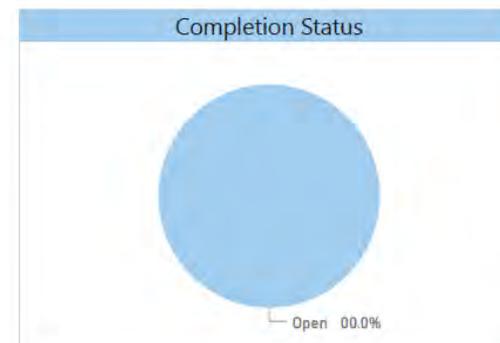
Actions closed since last dashboard : 0

Status against Target Date

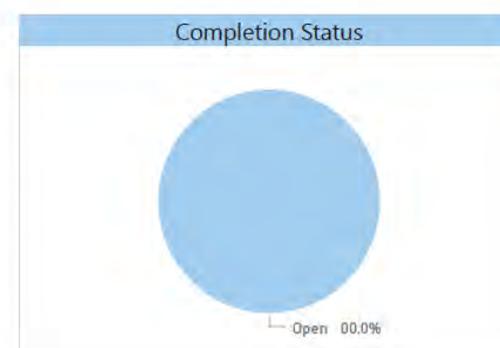
- Closed
- Actions on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP



RHCYP + DCN

Management

Revised Date: 24/01/2020

Current Date for tracking: 24/01/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to Close	Open/Closed	Priority To RHCYP	Priority To DCN
MA1	Structures and processes are not fully in place to assure the Board that the facility is being operated in compliance with contract requirements. These should be in place from the point where the building services referred to in this report are put into use.	1	NHS Lothian and IHSL should adopt the management and reporting processes as described in SHTM 00 – Best Practice Guidance for Healthcare Engineering and the SHTMs for each critical engineering service	NHSL	11/09/2019	31/12/2019	IHSL have issued an update responsibility Matrix to the Board for review. Currently under review.	OPEN	NO	NO
		2	Confirmation is required that IHSL have the following in place <ul style="list-style-type: none"> •Responsible person •Adequate numbers of Authorised persons •Adequate numbers of Competent persons •Suitable onsite training has taken place for HV and LV personnel. 	NHSL	30/10/2011	20/12/2019	IHSL have issued an update responsibility Matrix to the Board for review. Currently under review.	OPEN	NO	NO
MA2	Some of the records and documents necessary for the effective and safe operation of the hospital could not be found. The document management system appears to lack a logical structure which will impact on the ability to readily find necessary information. Some of the sections contain none, or only part, of the documentation they should have as required by the Construction (Design and Management) Regulations 2015.	2	Confirmation is required that the HV installation has been tested and commissioned to BS EN 61936 as no documentation has been produced to support this.	MPX	06/11/2019	24/12/2019	Specific conformity statement required. Responsible person to confirm conformance with BS. It was noted that no standard forms in the BS for providing this information.	OPEN	YES	YES
		3	Confirmation that all distribution board charts are provided and accurate.	BYTES	06/11/2019	24/12/2019	This will be confirmed during the HV/LV Audit - the Audit is complete - awaiting report.	OPEN	NO	NO
MA3	The alarms for the building are reportedly un-prioritised, resulting in a very large number of alarms potentially masking critical alarms.	1	Prioritise alarms to make most critical failures visible and manageable. Until alarms are prioritised, have procedures and staff in place to ensure critical alarms are not missed as per SHTM 08-05 - Specialist services building management systems.	BYTES	11/09/2019	24/12/2019	MPX have confirmed complete and BYES are currently reviewing the full system. BYES are to provide the Board a list of alarms. The Board will then identify which alarms they will review. Evidence required to confirm how alarms are prioritised, ongoing testing, and witnessing of updated system. RH to review.	OPEN	YES	YES

closed 0
Open 7
Closed since last issue of Dashboard 0

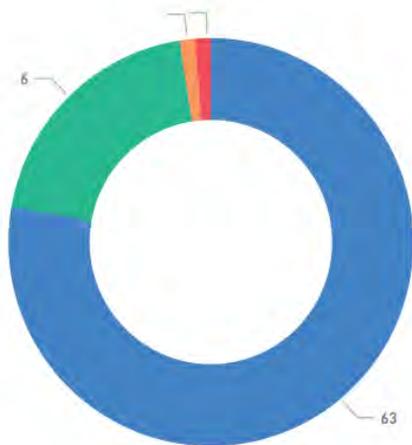
RHCYP+DCN - Ventilation Action Log Dashboard

24/01/2020

Actions closed since last dashboard : 0

Status against Target Date

- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



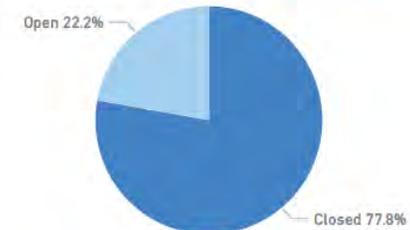
OPEN

18

CLOSED

63

Completion Status



Priority for DCN

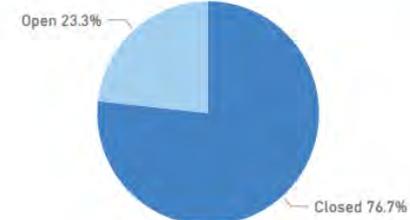
OPEN

17

CLOSED

56

Completion Status



Priority for RHCYP

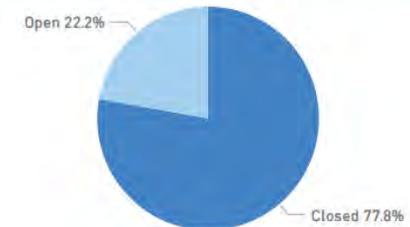
OPEN

18

CLOSED

63

Completion Status



RHCYP + DCN

Ventilation Action Log

Revised Date: 24/01/2020
 Current Date for tracking: 24/01/2020

Issue No.	Item	Action Number	Requirements	Owner	Start Date	Target Date	Action to Close	Open /Closed	Priority to RHCYP	Priority to DCN
V38	The "maintenance by-pass" associated with the AHU requires to be fully detailed and proven.	1	Details required include - <ul style="list-style-type: none"> Full written details for each system Identification of systems which do not have a secondary source of ventilation. Identification of all spaces which will have no mechanical ventilation when by-pass is initiated. The minimum and maximum estimated times for a maintenance by-pass and for recovery of a major fault. The impact of these arrangements on the fire strategy. The strategy for advising clinical staff in the areas affected. Commissioning and validation certificates for the changeover system, all associated controls, revised room volumes and pressures. The clinical service plan should reflect the operational procedures in the event of failure of an air handling unit. 	NHSL	11/09/2019	24/12/2019	MPX issued report on By-pass arrangement on 17/10/19. NHSL provided comments on 4/11/19. Overall report is unsatisfactory, works to critical care and haematology / oncology will resolve some items but not Level 3. <ul style="list-style-type: none"> MPX will provide training to BYES. BYES confirmed control side demonstrated, physical side not demonstrated. BYES issued details on frequency and duration of planned PPM downtimes on 13/1/19. BYES to update inline with Board comments. BYES have drafted an SOP awaiting final demonstration to complete. MPX to identify impact to air change rates on a per room basis. - NHSL/BYES want a full demonstration with H&V to measure to inform the clinical risk assessment. Following confirmation of the above NHSL to undertake a full clinical risk assessment for impact in bypass mode and in total failure mode and develop a plan for maintenance downtime. Additional dampers to be closed when maintenance bypass is in use	OPEN	YES	YES

OPEN 18
 CLOSED 63
 Closed since last issue of Dashboard 0

RHCYP + DCN

Ventilation Action Log

Revised Date: 24/01/2020

Current Date for tracking: 24/01/2020

Issue No.	Item	Action Number	Requirements	Owner	Start Date	Target Date	Action to Close	Open /Closed	Priority to RHCYP	Priority to DCN
V5	Fire dampers in some locations cannot be adequately tested as duct access has not been provided. Also, locations of fire dampers and fire rated ductwork has been questioned in relation to the requirements of SHTM 03-01 and confirmation of compliant provision is awaited.	1	Provide access so all fire dampers can be readily visually inspected to verify operation. Review fire damper provision and fire rated ductwork and confirm appropriate provision	BYES	11/09/2019	17/01/2020	MPX confirmed completed - BYES Engineers will confirm complete on COB 24-01-2020, however will proceed on the basis that items are complete in the interim as advised by MPX. BYES have requested MPX provide certification for sign-off including O&M documentation so that this can return to full service	OPEN	YES	YES

OPEN 18
 CLOSED 63
 Closed since last issue of Dashboard 0

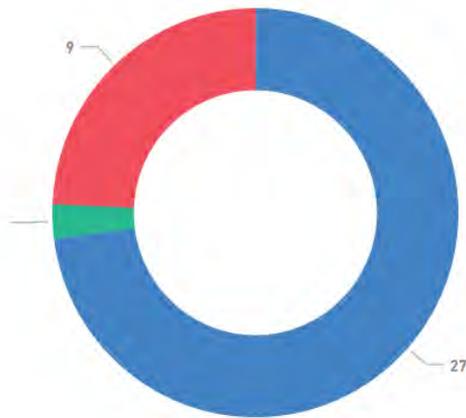
RHCYP+DCN - Water Safety Action Log Dashboard

24/01/2020

Actions closed since last dashboard : 0

Status against Target Date

- Closed
- Actions on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



OPEN
10

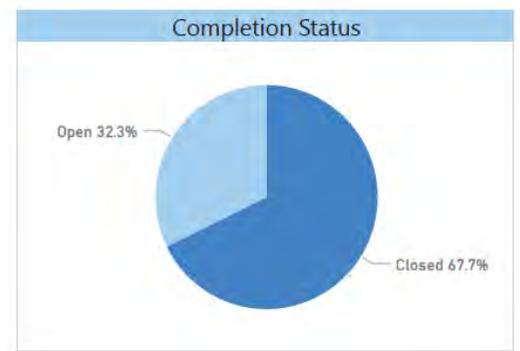
CLOSED
27



Priority for DCN

OPEN
10

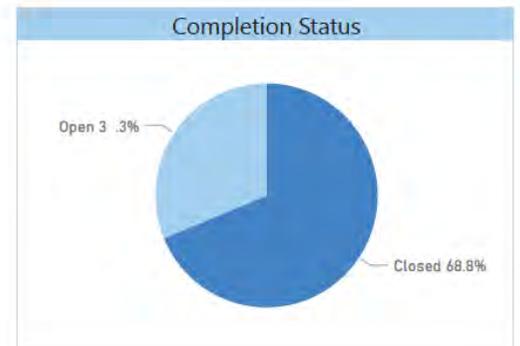
CLOSED
21



Priority for RHCYP

OPEN
10

CLOSED
22



RHCYP + DCN

Water Safety Action Log

Revised Date: 24/01/2020

Current Date for tracking: 24/01/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/Closed	Priority to RHCYP	Priority to DCN
W2	There is no temporary or permanent site specific water management plan	5	Management: Written confirmation that the actions detailed in the Callidus report have been satisfactorily resolved.	NHSL	11/09/2019	06/12/2019	GS has issued HSL's response to BC and MM. NHSL to confirm by 13/11/19 whether Callidus has confirmed actions are closed. DK has provided closing statement which has been issued to Callidus. The Board are awaiting confirmation from Callidus to close item and any ongoing actions will be moved to the Local Water Safety Group for business as usual management.	OPEN	Yes	Yes
		6	In addition to specific actions for management of <i>P. aeruginosa</i> a detailed approach to address high TVC counts will be provided in the WSP – this will address removal or cleaning of contaminated inline filters water temperature regulation whole system disinfection and further microbiological water sampling as per SHTM 04-01 (TVC E.coli) to confirm efficacy of control measures.	NHSL	29/07/2019	06/12/2019	BYES have updated the flowchart with recent Board comments. Board reviewing.	OPEN	Yes	Yes
		8	The Legionella Risk assessment Feb 2019 identified a range of actions. The Action Tracker does not demonstrate that the issues raised have been resolved or a timeline provided for resolution. Record rectification of actions. The risk assessment is heavily focused on Legionella and not taking into account other organisms in line with patient type that will occupy the building. Broaden to reflect system contamination in general. Develop analysis categorisation of patient type and consideration to susceptibility for each area.	HFS/NHSL	11/09/2019	06/12/2019	Cannot progress unless further guidance from HFS is provided. IPCT currently building up a package of guidance. In augmented care there is already enhanced measures as part of Pseudo control. 13/01/20 meeting with HPS with commentary returned to IPCT - in general it was agreed that in relation to additional testing for fungal organisms HPS are going to issue a methodology for testing which will include TVC monitoring with a controls for quality and delivery as defined for Legionella and pseudomonas. - waiting for Methodology to be issued by HPS and agreement at the OSB. GC has a paper in draft that will be shared with LG/DK/DI to define the operational threshold, location and number of samples. GC confirmed to be sent to water safety group today and will be circulated for comment. If this is applicable to RHCYP DCN the LG will issue to BYES to adopted within their routine testing.	OPEN	Yes	Yes
W4	Guidance outstanding from NSS	1	HFS via Tim Wafer will advise on the outcome of the additional microbiological testing conducted on their behalf. It was agreed that the actions discussed for inclusion in the water safety plan (flushing remedial action etc.) would address the presence of other organisms. In the absence of any clinical infections the purpose of this exercise remains unclear. No information about the expectation about testing regimes going forwards was discussed. It was highlighted again interpretation of this additional testing may be challenging in the absence of validated testing methodology.	HFS	TBC - Date of QEUH report	06/12/2019	Action from HFS report not linked to any guidance testing methodology results or clinical risk assessment. Draft guidance will not be local to RHCYP and no action will be taken until guidance is produced by HFS for all hospitals. NSS guidance needed. Final paper going to Oversight Board to OSB 16/1/20 A final copy of the paper has been issued to OSB for discussion on 16/1/20. NSS Guidance still outstanding.	OPEN	Yes	Yes
W9	Lessons learned for QEUH that may apply in RHCYP DCN	1	As a result of potential issues identified elsewhere after construction of RHCYP & DCN the following items should be replaced in the system and handed over to Water Solutions Group (they should be in attendance when items are removed to facilitate transportation to laboratory). - One expansion vessel bladder (flow through) - One expansion vessel - One TMT cartridge from augmented care before disinfection/cleaning - Two TMT strainers from augmented care - One system pressure reducing valve - One water meter - One system non-return valve - Two cold water pipe crimp joints - One end-of-line dump valve - Two Kemper venturi valves.	BYES	11/09/2019	06/12/2019	Following a review of the paper and discussions with HFS 13/01/20 it has been concluded that due to the risk of introducing contaminants to the water system by undertaking an intrusive investigation there will be no removal of component parts for testing. This potential issue is to be monitored through PPM which if not already included will be adapted to include corrosion monitoring together with TVC level monitoring. BYES to confirm current PPM and if required Board will issue a change for an update to PPM methodology.	OPEN	Yes	Yes

W10	Positive Pseudomonas results	1	<p>Pseudomonas found in taps in Paediatric Medical Inpatients and DCN Inpatients . (SHTM 04-01 Part A published in July 2014) All taps (not just TMT/TMV4) to be disinfected and retested. The following needs to be undertaken:</p> <ul style="list-style-type: none"> - Inspect and replace as appropriate taps tap components and pipework. - Replace tap strainers and cartridges in affected TMT taps. - Remove all TMT and TMV cartridges and replace with new ones. - Remove and replace all TMT Strainers (carried out at the same time as item 3). - Taps to be removed and disinfected - Once pipe work has been disinfected and taps disinfected retest the system (Augmented care areas 00% taps for TVC fungi and pseudomonas aeruginosa. Rest of a representative sample from the rest of the hospital for TVC and legionella.) <p>Note: Testing should be in accordance with SHTM 04-01 and in accordance with BS 8580-1 L8 and HSG 274 and WPS guidance September 2014: "Pseudomonas aeruginosa routine water sampling in augmented care areas for NHS SCOTLAND".</p>	BYES	29/07/2019	30/09/2019	<p>Final results for the 4 autoclaved taps are expected today. The taps have passed the initial two tests.</p> <p>On this basis, BYES are to provide the remainder of the contaminated taps to the Board for autoclaving.</p> <p>DG to provide wording on process with all necessary information required. LG/DI to review process.</p> <p>BYES have provided a list of samples taken to confirm whether any of the positives were from the same locations as the 57 known positives. Board to review. BYES to submit H&V method statements.</p> <p>Also noted two fails are from hydrotap - All confirmed that Zip taps to be changed to hot only in augmented care areas. Board to draft a change.</p> <p>It is proposed that to close this item we need to demonstrate control of the immediate issue, and then move this to the Local Water Safety Group to manage under business as usual.</p> <p>Concern noted over BYES process - when occupied sampling will need to work around clinical activity. Sampling needs to be correct now.</p> <p>Autoclaving needs to be accredited process to demonstrate sterilisation.</p>	OPEN	Yes	Yes
		3	<p>Testing has found some fungal / mould contamination and high total viable counts. Given a number of indicators the water system should be disinfected and re-tested. BYES required to seek advice from the manufacturer of the valves on the strongest medium that would ensure a high level of disinfection of the whole system including the removal of bio film if present.</p>	BYES	11/09/2019	31/10/2019	<p>The water system will be disinfected and tested prior to occupation by DCN in line with LVC 086.</p> <p>Full system disinfection to address TVC:</p> <ul style="list-style-type: none"> + BYES contacting manufacturers to confirm potential disinfection mediums. Medium to be confirmed and the statement from manufacturers to be provided for consideration. - BYES draft has been issued. + Time line for works required for disinfection considering the best case and worst case scenario. Final programme to be confirmed once the process for disinfecting positive pseudo taps is confirmed. <p>Full System disinfection to address fungal/mould:</p> <p>A final copy of the paper has been issued to OSB for discussion on 16/1/20. NSS Guidance still outstanding.</p>	OPEN	Yes	Yes
W12	Shower hose lengths do not comply	1	<p>Shower hose lengths do not comply with Scottish Water by-laws and guidance in SHTM 04-01 Water safety for healthcare premises. Shorten hose length or add retaining ring to ensure that shower head cannot reach WC or drain. Disinfect showers hose and drain after rectification.</p>	NHSL	11/09/2019	30/09/2019	<p>BYES to confirm issue date for Standard Operating Procedure for Maintenance of hoses and clamps.</p> <p>Await confirmation from MPX activities to comply with Scottish Water byelaws and sample to confirm. Local water safety group to discuss operation implications.</p> <p>Some showers don't have the clamps attached yet. BYES to help identify which showers when on site.</p>	OPEN	Yes	Yes
W16	Bottle traps - There would appear to be an inconsistency of installation and potential of back-feed from trap to drain.	1	<p>The bottle traps should be the subject of regular planned maintenance and disinfected with a suitable agent to prevent the build-up of biofilm.</p>	IHSL		06/12/2019	<p>Subject to approval of paper at OsB 16/01/20 this action is closed.</p>	OPEN	Yes	Yes

closed 27
 Open 10
 Closed since last issue of Dashboard 0

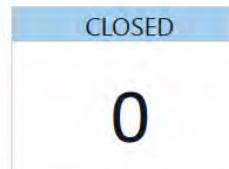
RHCYP+DCN - Fire Action Log Dashboard

24/01/2020

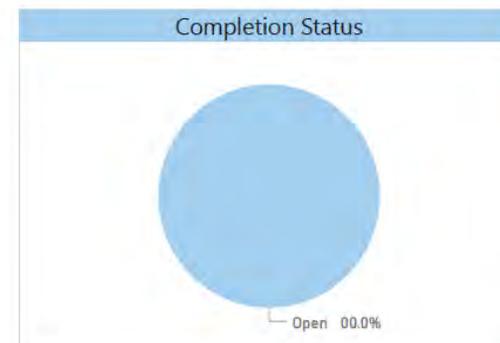
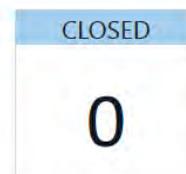
Actions closed since last dashboard : 0

Status against Target Date

- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP



RHCYP + DCN

Fire Action Log

Revised Date: 24/01/2020

Current Date for tracking: 24/01/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to Close	Open/Closed	Priority To RHCYP	Priority To DCN
F4	A number of remedial snagging and housekeeping issues were identified; damage to fire doors, seals and workmanship; penetrations in compartment walls; delineation of rooftop escape.	1	A number of the items have already been identified and logged by NHS Lothian via the helpdesk process. NHS Lothian and IHSL should ensure all works are undertaken prior to occupation. Procedures should be adopted to ensure rooftop escape remains clear.	IHSL	30/10/2019	24/12/2019	This work is in progress and will be completed and/or in place prior to occupation. Confirmation for completion of the 'Snagging' and identification of the business as usual process for onward management.	OPEN	YES	YES

OPEN 5
 CLOSED 0
 Closed since last issue of Dashboard 0

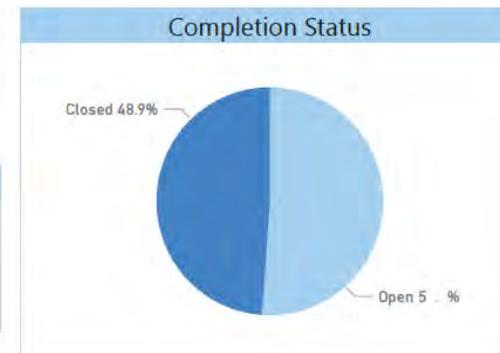
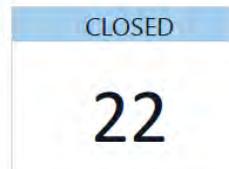
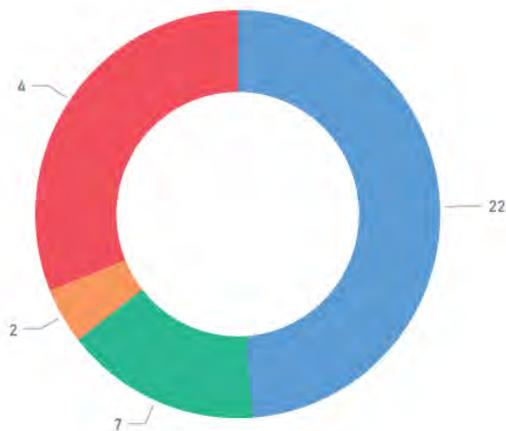
RHCYP+DCN - Electrical Action Log Dashboard

28/01/2020

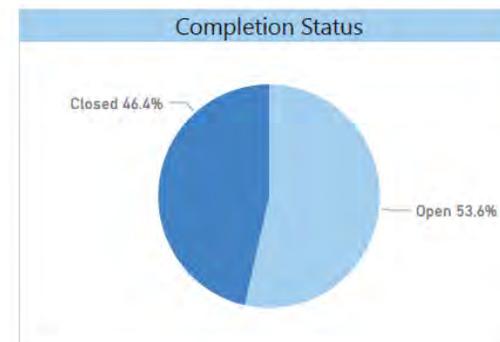
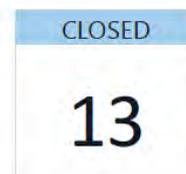
Actions closed since last dashboard : 13

Status against Target Date

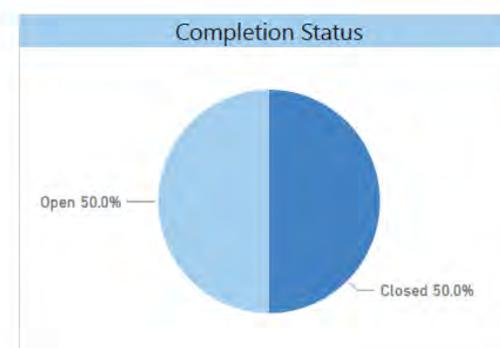
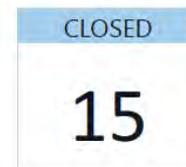
- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP



RHCYP + DCN

Electrical Action Log

Revised Date: 28/01/2020

Current Date for tracking: 28/01/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to Close	Open / Closed	Priority To RHCYP	Priority To DCN
E4	HV and LV Audits	1	A copy of the HV and LV audits should be made available to the Board and any finding shared with a program for resolution.	BYES	06/11/2019	24/12/2019	The LV and HV AE audits report needs to be issued by BYES and reviewed by NHSL and HFS.	OPEN	NO	NO
E7	HV and LV Switch room escape lighting	1	Ensure that escape lighting and signage in HV and LV switch rooms has been provided to BS 5266 and the Health and Safety (Safety Signs and Signals) Regulations 1996	BYES	06/11/2019	24/12/2019	The LV and HV AE audits report needs to be issued by BYES and reviewed by NHSL and HFS.	OPEN	YES	YES
E16	Modular Wiring System	1	A certificate of conformity is required	MPX	06/11/2019	24/12/2019	HFS has confirmed that the modular wiring system technical submission doesn't provide sufficient information to close. MER to review. - Certificate required	OPEN	NO	NO
		2	Tap off units are not secure on the side of the trunking	MPX	06/11/2019	24/12/2019	IHSL to provide statement to confirm identified items have been repaired and what other checks have been carried out.	OPEN	YES	YES
		3	Fire integrity is required to be checked and confirmed	MPX	06/11/2019	24/12/2019	IHSL to provide statement to confirm identified items have been repaired and what other checks have been carried out.	OPEN	YES	YES
		4	All missing parts to be fitted to prevent access to live parts	MPX	06/11/2019	24/12/2019	IHSL to provide statement to confirm identified items have been repaired and what other checks have been carried out.	OPEN	YES	YES
		5	Confirmation that de-rating of cable has been applied due to excessive cable coils and connectors left in trunking	MPX	06/11/2019	24/12/2019	IHSL to provide statement to confirm identified items have been repaired and what other checks have been carried out.	OPEN	YES	YES
		6	Concern is raised that fixing bolts/screws could damage the single core cables in the trunking.	MPX	06/11/2019	24/12/2019	IHSL to provide statement to confirm identified items have been repaired and what other checks have been carried out.	OPEN	YES	YES

E17	Earth Bonding Bars (EBB) A number of EBB have been installed incorrectly posing a potential infection control risk.	1	A "circuit chart" should be provided for all EBB and the conductors should be checked to ensure they have individual labels.	MPX	06/11/2019	24/12/2019	A schematic for one theatre (30) has been provided. Confirmation required that labels have been fitted and all other schematics have been loaded into Zutec. IHSL to provide response.	OPEN	NO	NO
		3	EBB fitted above ceilings cannot be easily/adequately accessed for testing and inspection.	MPX	06/11/2019	24/12/2019	IHSL To provide a statement to confirm.	OPEN	YES	YES
		4	EBB connection to meet the requirements of BS 7671 710.415.2 and 543.2.7	MPX	06/11/2019	24/12/2019	IHSL To provide a statement to confirm.	OPEN	YES	YES
E18	Medical IT Systems	5	Medical IT system cables are considered essential and covered by BS 7671 chapter 56, however this does not appear to be the case in the installation as they are not fire rated or segregated from other cables.	HFS	06/11/2019	24/12/2019	HFS have advised the resilience report does not address this question, as it concentrates on the mains and sub-mains distribution infrastructure.	OPEN	YES	YES
E21	There is excessive heat build-up in the heat stations which will have a negative impact on the life of the electronic equipment and the ability of the operatives to safely work in these areas.		We would recommend additional ventilation in these areas.	IHSL	06/11/2019	24/12/2019	IHSL to provide statement to confirm identified risk has been addressed and removed and also evidence of acceptance by service provider.	OPEN	YES	YES
E25	Refrigerant used for the various cooling systems in the hospital.		Confirmation is required regarding the refrigerant used for the various cooling systems in the hospital. The specification calls for "R134A"; has this been installed and what is the impact of the European F-Gas regulations in utilising this gas?	IHSL	06/11/2019	24/12/2019	R449A has been used by CDS - statement to be provided. Main chillers supplied by Carrier who have confirmed <i>R134a is due to be phased out in 2024. Carrier are still using it in the manufacture of their chillers and don't have any plans at the moment to phase it out</i> IHSL to confirm included within LCP for 2024	OPEN	YES	YES

RHCYP + DCN

Electrical Action Log

Revised Date: 28/01/2020

Current Date for tracking: 28/01/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to Close	Open / Closed	Priority To RHCYP	Priority To DCN
E17	Earth Bonding Bars (EBB) A number of EBB have been installed incorrectly posing a potential infection control risk.	2	Schematics should be provided to meet BS 7671 710.514.9.1	IHSL / MPX	06/11/2019	17/01/2020	Confirmation required that all electrical record drawings relating to medical locations as detailed in 710.514.9.1 have been provided and are contained in Zutec. IHSL to provide response.	OPEN	NO	NO
E19	The main electrical test certificates are incomplete.	1	In addition to the medical IT, completed signed certificates are not fully completed e.g. main bonding etc. missing from certification. It should be noted that this appears to be a number of administrative errors contained within the ZUTEK certification.	NHSL / HFS	06/11/2019	17/01/2020	MPX have confirmed certificates have been uploaded to Zutec	OPEN	NO	NO

HOARE LEA 

Imtech

Royal Hospital for Children & Young People & DCN. Concept Proposals.

HIGH VALUE CHANGE 107

PROPOSALS DOCUMENT



Contents (presented on 10/1/20)

- Paediatric Critical Care – Change Requirements
- Haematology and Oncology - Change requirements
- Existing Level 01 Ductwork Configuration.
- Existing Level 03 Ductwork Configuration.
- Proposed Environmental Matrix.
- Isolation Room Option Study (Preferred option).
- Single & Multi Bed Room Option Study (Preferred option).
- Proposed Air Handling Unit Manufacturers

Contents (presented on 21/1/20)

- Electrical SHTM Requirements
- Existing Electrical Infrastructure Configuration
- Paediatric Critical Care Isolation Rooms – Electrical Concept Proposal
- Haematology and Oncology Isolation Rooms– Electrical Concept Proposals
- AHU04-06 & AHU04-07 – Electrical Concept Proposals
- Paediatric Critical Care Isolation Rooms – Heating & Cooling Concept Proposal
- Haematology and Oncology Isolation Rooms– Heating & Cooling Concept Proposal
- Cooling Coil SHTM Requirements
- Temperature Control (Concept Proposal)

HOARE LEA (H.)



Paediatric Critical Care Change requirements.

Level 01.



Single bedrooms and Multi-bedrooms

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems which will deliver **10 air changes/hour at +10pa** as per SHTM 03-01, Appendix 1, Table A1 to the following rooms at the Facilities:

Room Number	Room Type
1-B1-065	Neo Natal 3 cot area including 1-B1-022 – Corridor, 1-B1-069 – Staff Base, 1-B1-066 – Clean Utility and 1-B1-071 – Resus Bay which are all open to 1-B1-065
1-B1-075	Single cot cubicle neo natal including 1-B1-074 en-suite
1-B1-063	Open plan bay 4 bed
1-B1-037	Single bed cubicle
1-B1-031	Open plan bay 4 bed
1-B1-021	Single bed cubicle
1-B1-020	Single bed cubicle
1-B1-019	Single bed cubicle
1-B1-009	Open plan bay 4 bed

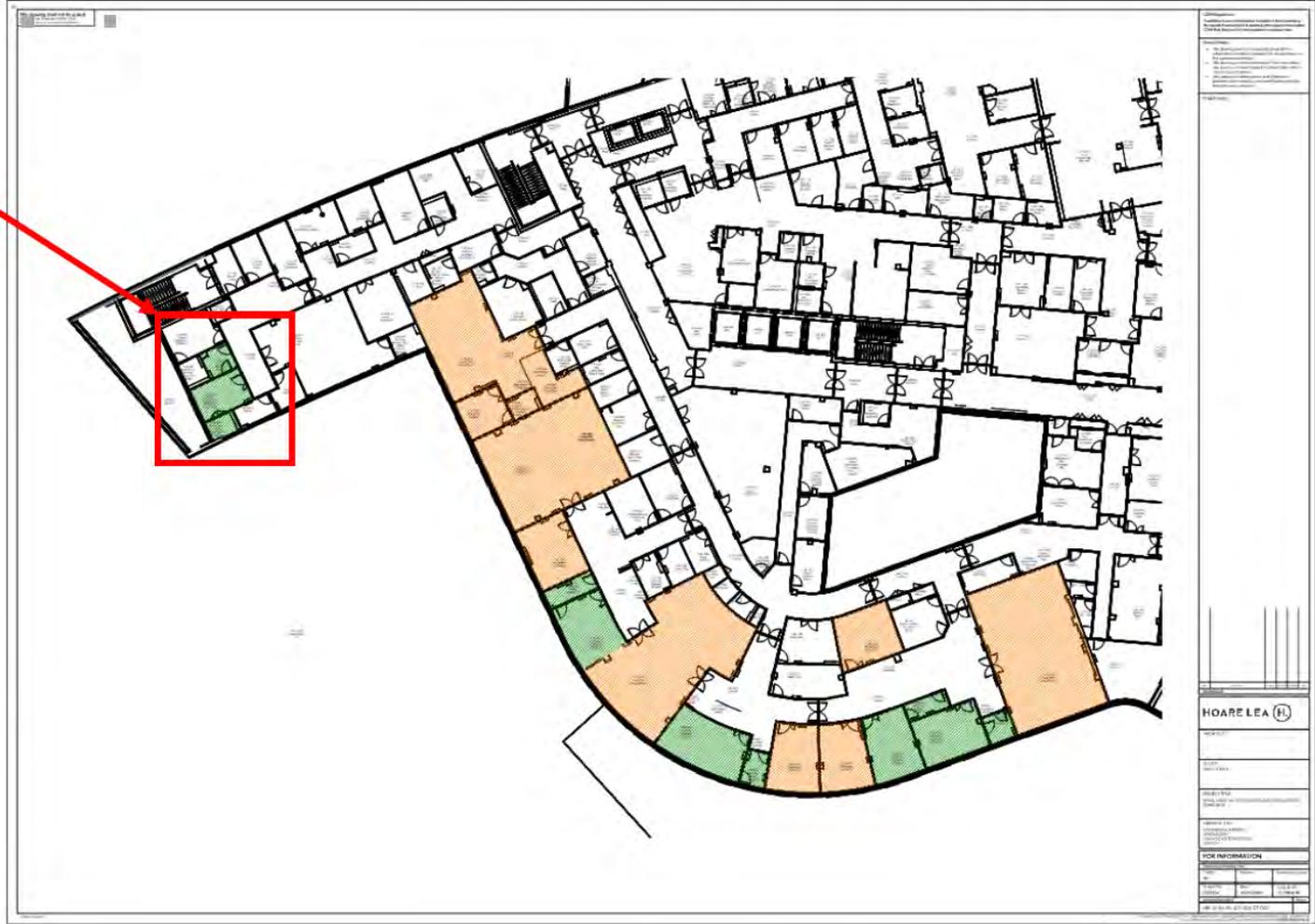
Isolation Rooms

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems for a positive pressure ventilated lobby PPVL Single Bedroom Isolation Suite with a lobby air supply terminal with a HEPA filter, as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1, to the following rooms at the Facilities.

Room Number	Room Type
1-B1-016	Isolation Bedroom
1-B1-017	Isolation Bedroom
1-B1-026	Isolation Bedroom
1-B1-036	Isolation Bedroom

Isolation room is not part of the HVC107 Change request.

- Single & multi bed rooms
- Isolation Rooms



HOARE LEA (H.)



Haematology and Oncology Change requirements.

Level 03.



Single bedrooms and Multi-bedrooms

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems which will deliver **10 air changes/hour at +10pa** as per SHTM 03-01, Appendix 1, Table A1 and fit Hepa filters (H12 grade) to the air inlets to the following rooms at the Facilities:

Room Number	Room Type
3-C1.4-059	Single Bedroom
3-C1.4-057	Single Bedroom
3-C1.4-055	Single Bedroom
3-C1.4-046	Single Bedroom
3-C1.4-032	Single Bedroom
3-C1.4-018	Single Bedroom
3-C1.4-016	Single Bedroom
3-C1.4-013	Single Bedroom
3-C1.4-010	Single Bedroom
3-C1.4-074	Single Bedroom
3-C1.4-076	Single Bedroom
3-C1.4-078	Single Bedroom
3-C1.4-084	Multi-Bed (3) Day Care
3-C1.4-061	Multi-Bed (6) Day Care

Isolation Rooms

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems for a positive pressure ventilated lobby PPVL Single Bedroom Isolation Suite with a lobby air supply terminal with a HEPA filter, as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1, to the following rooms at the Facilities.

Room Number	Room Type
3-C1.4-040	Isolation Bedroom
3-C1.4-043	Isolation Bedroom
3-C1.4-049	Isolation Bedroom
3-C1.4-052	Isolation Bedroom
3-C1.4-072	Isolation Bedroom

- Single & multi bed rooms
- Isolation Rooms



HOARE LEA (H.)



Existing Level 01 Ductwork Configuration.



General Observations

- Currently all areas are fed (i.e. supply air) from 1 central supply and extract AHU (Ref:04-06).
- The ventilation systems for this area also service another ward to the East.
- Most appropriate plant space for additional Air Handling plant would be at ground level within the open courtyard.



HOARE LEA (H.)



Existing Level 03 Ductwork Configuration.



General Observations

- Currently all areas are fed (i.e. supply air) from 1 central supply and extract AHU (Ref:04-07).
- The ventilation systems for this area also service another ward to the West.
- Most appropriate plant space for additional Air Handling plant would be at second floor level on the flat roof.
- There is existing plant on the flat roof that would require coordination with distribution and maintaining access.



HOARE LEA (H.)



Proposed Environmental Matrix.



HOARE LEA (H.L.)



ENVIRONMENTAL MATRIX

REFER TO HANDOUT

Existing Design Date
 Proposed Design Date
 * All Open to 1-01-088
 ** Windows will be tested shut
 Rooms associated with Single bedrooms and Multi-bedrooms in Paediatric Critical Care & Single bedrooms and Multi-bedrooms in Haematology and Oncology
 Rooms associated with Isolation Rooms in Paediatric Critical Care & Isolation Rooms in Haematology and Oncology

Room No.	Department	Room Name	Qty	Room Function	DHW/DB-01 Appendix A Table 1 Classification	Heating				Cooling				Ventilation				Lighting												
						EXISTING		PROPOSED		EXISTING		PROPOSED		EXISTING		PROPOSED		EXISTING		PROPOSED		Relative Humidity	Min. Fresh Air	Normal lux	Night lux	Level lux	Biodiversity grade	Colour render	Control	Plane
						Time (hr)	Temp (deg)	Time (hr)	Temp (deg)	Type	Type	Control	Control	Seasonal	Seasonal	Model	Brand	Brand	Brand	Brand	Brand									
1-01-003	RCPM and HDU's 24 Beds	Recovery Equipment Store	1	Storage Area Equipment		20	24			Adjacent Space Transfer Air	None	None	Yes	None	None	None	0	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-003		Staff Room	1	Common room/Staff lounge		20	24			Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Switch	Floor On			
1-01-004		Senior Charge Nurse Office	1	Cellular / Ward Office		20	24			Radon Panels	Remote Sensor Adj.	Yes	Yes	On Key Cassette - On/Off Valve	None	None	4	0	None	None	200	n/a	None	A	BD	Switch	Desk 0.75 to 0.85m			
1-01-005		W/C - Staff	1	Toilet		20	24			Adjacent Space Transfer Air	None	None	Yes	None	None	None	0	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-006		W/C - Staff	1	Toilet		20	24			Adjacent Space Transfer Air	None	None	Yes	None	None	None	0	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-007		Equipment Service Room	1	Store/Workshop		20	24			Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Switch	Desk 0.75 to 0.85m			
1-01-008		IPS Room	1	IPS Room		20	24			Adjacent Space Transfer Air	None	None	Yes	None	None	None	0	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-009		Wk 1	1	Full-Bed Ward		20	24	23	23	Radon Panels	Remote Sensor Adj.	No Change	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	300	A	BD	Switch / Dimmer	Bed / Tray 1.45m		
1-01-010		Gas Cylinder Store	1	Storage Area Gas		20	24			None	None	None	Yes	None	None	None	0	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-011		Hub/Bedroom Ward Area PCU	1	Multi-Disciplinary Work Areas		20	24			Radon Panels	Remote Sensor Adj.	Yes	Yes	On Key Cassette - On/Off Valve	None	None	4	0	None	None	400	n/a	None	A	BD	Switch	Desk 0.75 to 0.85m			
1-01-012		Staff Room 2	1	Cellular / Ward Office		20	24			Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Switch	Desk 0.75 to 0.85m			
1-01-013		Resuscitation Tray Bay	1	Circulation Equipment Storage Bay		20	24			Adjacent Space Transfer Air	None	None	Yes	None	None	None	0	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-014		Wk 2	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-015		Single Room 3 Isolation	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-016		Single Room 4 Isolation	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-017		Wk 3	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-018		Wk 4	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-019		Single Room 5	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-020		Single Room 6	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-021		Single Room 7	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-022		Single Room 8	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-023		Staff Room 3	1	Cellular / Ward Office		20	24			Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Switch	Desk 0.75 to 0.85m			
1-01-024		Resuscitation Tray Bay	1	Circulation Equipment Storage Bay		20	24			Adjacent Space Transfer Air	None	None	Yes	None	None	None	0	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-025		Wk 5	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-026		Wk 6	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-027		Wk 7	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-028		Wk 8	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-029		Wk 9	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-030		Wk 10	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-031		Wk 11	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-032		Wk 12	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-033		Wk 13	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-034		Wk 14	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-035		Wk 15	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-036		Wk 16	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-037		Wk 17	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-038		Wk 18	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-039		Wk 19	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-040		Wk 20	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-041		Wk 21	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On			
1-01-042	Wk 22	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On				
1-01-043	Wk 23	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On				
1-01-044	Wk 24	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On				
1-01-045	Wk 25	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On				
1-01-046	Wk 26	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On				
1-01-047	Wk 27	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On				
1-01-048	Wk 28	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On				
1-01-049	Wk 29	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On				
1-01-050	Wk 30	1	Isolation Location		20	24	20	24	Radon Panels	Remote Sensor Adj.	Yes	Yes	Comfort Cooled Fresh Air	None	None	4	0	None	None	200	n/a	None	A	BD	Automatic Controls	Floor On				

HOARE LEA (H.)

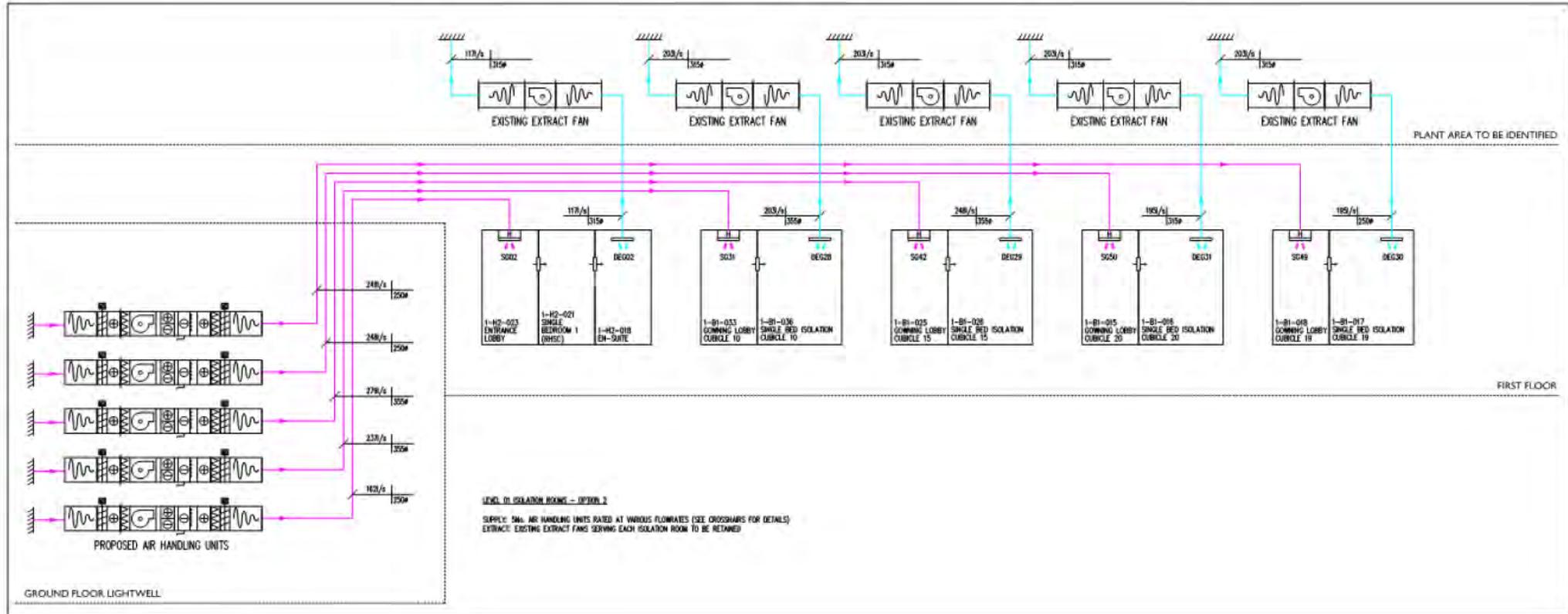


Option Study.

Isolation Rooms.



OPTION 2



Isolation Rooms - Option 2

- Individual Air Handling Units serving the 4(5) Isolation Rooms.

Note the options are the same for both Paediatric Critical Care and Haematology and Oncology

Advantages	Disadvantages
Simpler control as each supply AHU would serve each Isolation room.	Although the AHU's would be smaller, a slightly larger plant area would be required.
Commissioning and balancing would be easier to achieve and maintain (+pressure).	Although smaller, there would be 5 x 250mm diameter duct as apposed to 1 x 700x400 duct. (coordination issue)
Individual temperature control in each room as each AHU would be able to supply at different temperatures.	There would be more builderswork holes through the façade
This option fits within the plant area available.	
This option achieved complete fire and smoke separation from all other areas.	

HOARE LEA (H.)



Option Study.

Single Bed & Multi Bed Rooms.





Statements

1. All existing supply air to Haematology and Oncology (level 03) comes from AHU 04-07. This includes the isolation suites.
2. We are proposing to increase the air volume to account for the HVC107 increase in ACH from 4 to 10.
3. The supply air volume, associated with the isolation suites will be removed from AHU 04-07 as part of this proposal.
4. There will be an add and omit scenario for calculating the AHU supply air volume.
5. This project is classed as a refurbishment, therefore we would need to comply with Building Standards for plant and equipment.

HOARE LEA (H)



- All areas within Paediatric Critical Care and Haematology and Oncology have been recalculated.
- This still needs to be verified against the previous design figures and the as-built commissioning results (still awaited). This is for non-change order areas.

Project Summary										Financial Summary										Operational Summary										HOARE LEA (H)																																																																					
Project Name: [Project Name]										Total Budget: [Total Budget]										Total Revenue: [Total Revenue]										Company Logo																																																																					
Project Manager: [Project Manager]										Total Expenditure: [Total Expenditure]										Total Profit: [Total Profit]										Project Details																																																																					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

HOARE LEA (H.L.)

Imtech

Paediatric Critical Care level 01

Description	Air Volume (l/s)
Additional air volume associated with single bed and multi bed rooms	2387
Removal of Isolation room supply air from AHU 04-06	-1200
Resultant Air Volume	1187 (increase)

Haematology and Oncology level 03

Description	Air Volume (l/s)
Additional air volume associated with single bed and multi bed rooms	1575
Removal of Isolation room supply air from AHU 04-07	-1098
Resultant Air Volume	479 (increase)

Single bed & multi bed rooms – Option 2

- The existing AHU is replaced with a slightly larger AHU capable of delivering the slight uplift in air volume.

Note the options are the same for both Paediatric Critical Care and Haematology and Oncology

Advantages	Disadvantages
Reliability and capability issues with the existing AHU's would be rectified.	Existing AHU would have to be replaced (cost)
No additional external plant would be required	
No additional builderswork holes through the façade.	
Majority of the primary ductwork infrastructure would not change.	
No additional CHW or LTHW would be required as this is sufficiently sized to the plantroom.	
No additional power infrastructure required	

HOARE LEA (H.L.)



Proposed Air Handling Unit Manufacturers

- Daikin Applied
- Dalair
- Barkell
- Airedale

All the above manufacturers are UK based and have a strong Healthcare pedigree.

HOARE LEA (H.)



Electrical SHTM Requirements.



SHTM 06-01 Part A

'For clinical areas, there should be 100% essential load provision. A segregated duplicated essential system could be used to overcome the inherent single-fault breakdown potential.'

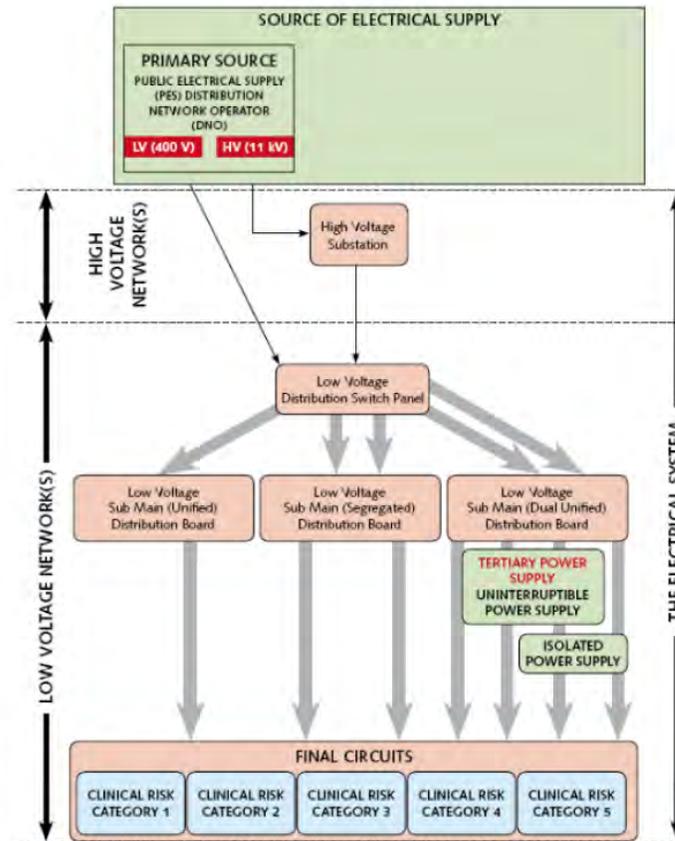


Figure 1: Primary electrical infrastructure for healthcare premises.

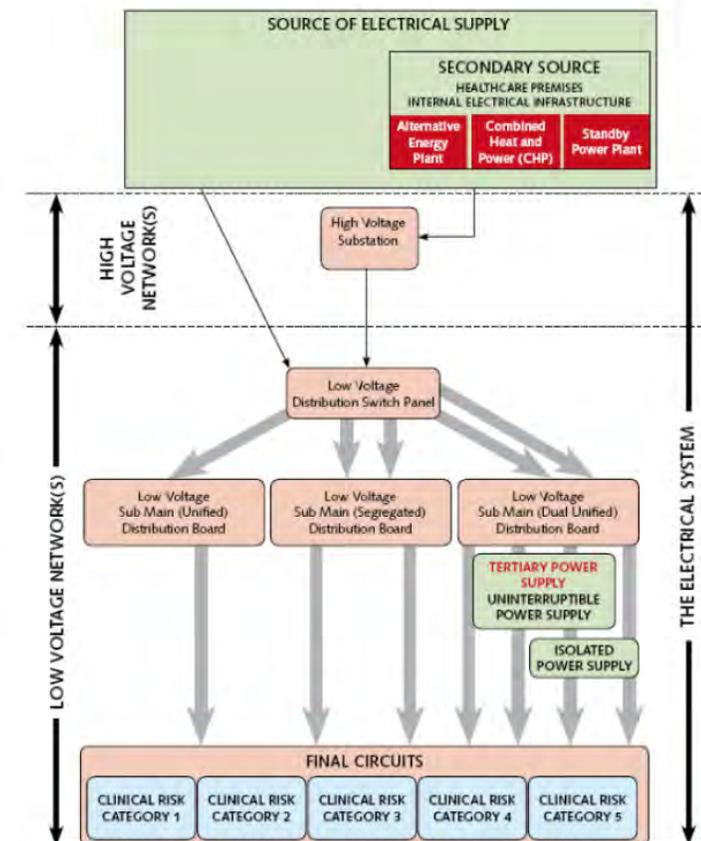


Figure 2: Secondary electrical infrastructures for healthcare premises.

HOARE LEA (H.)



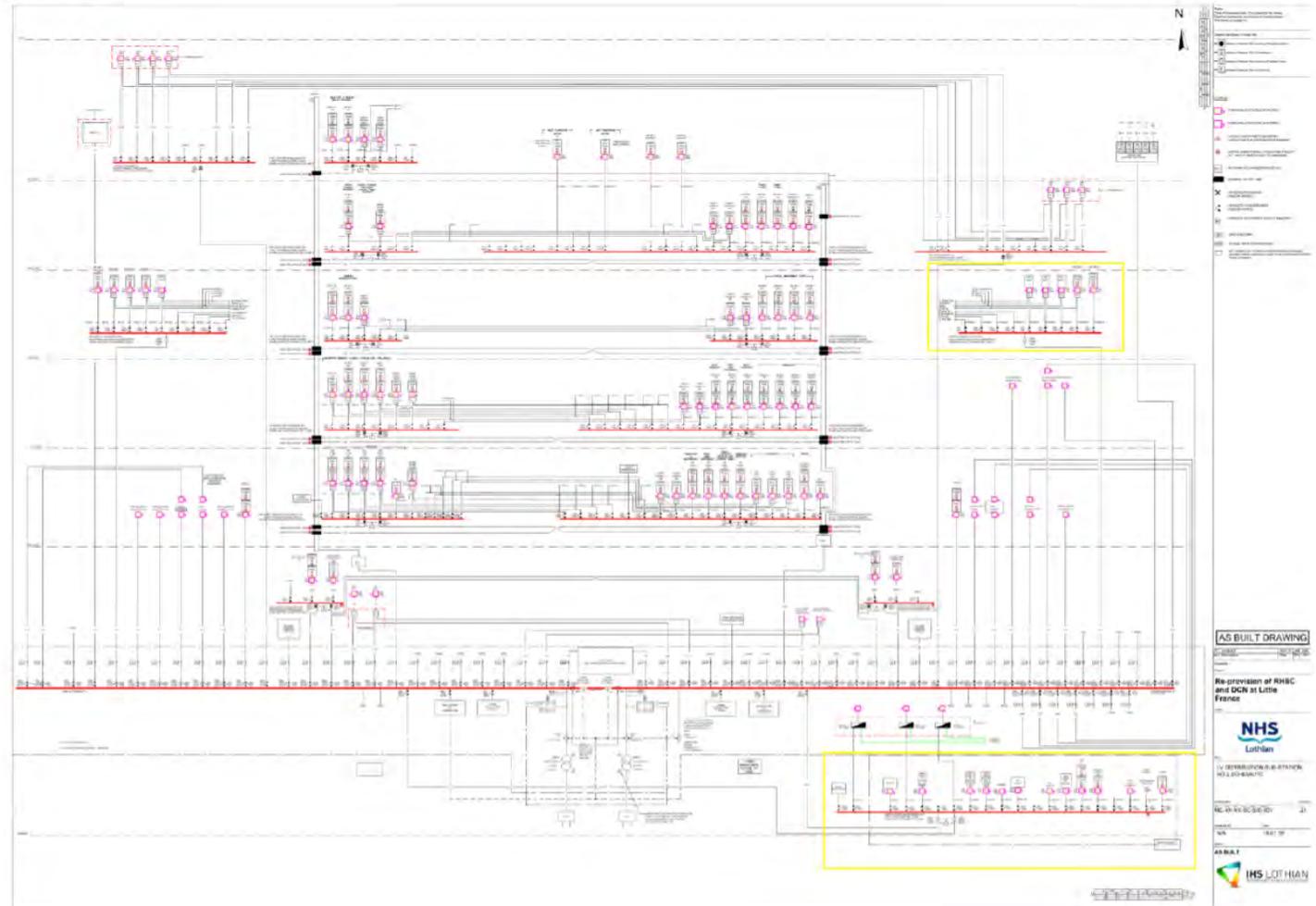
Existing Electrical Infrastructure Configuration



RHCYP+DCN – CONCEPT PROPOSALS 23/01/2020

General Observations

- Energy Centre has 2no. Section Boards with dual incomers ('A' and 'B'), each supplied from different substations
- All AHUs supplied from Level 2 Plant Room are provided with dual diverse supplies from different substations
- AHUs 04-06 and 04-07 have dual supplies from the 'A' and 'B' side of the same switchboard



HOARE LEA (H.)

Imtech

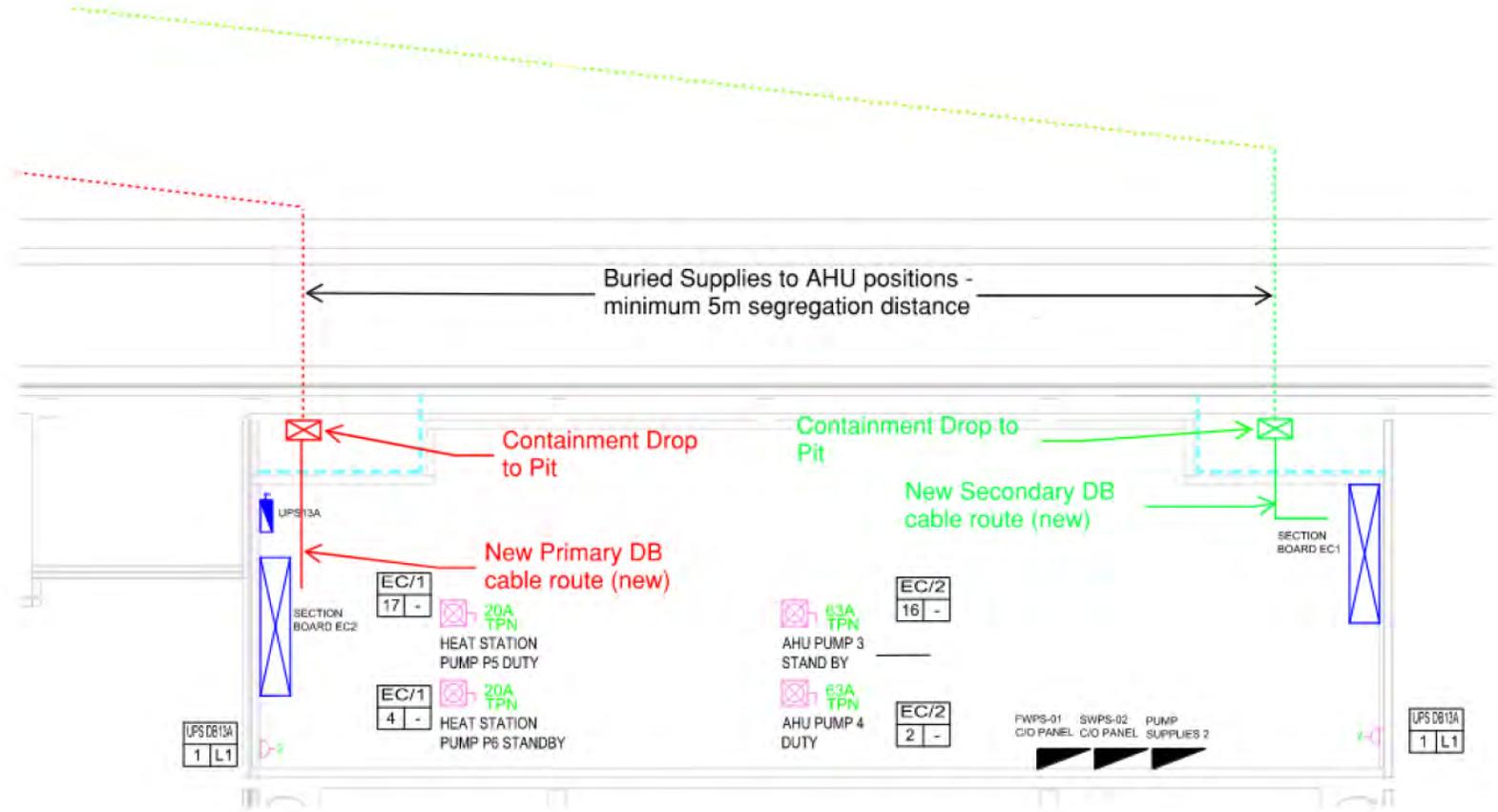
Paediatric Critical Care Isolation Rooms Electrical Concept Proposals.

Level 01.



Electrical Proposals

- Diverse electrical supplies derived from spare three phase ways on the Energy Centre Mezzanine level Section Boards EC/1 & EC/2
- Containment routes drop to services pits
- Cables are run in ducts from Energy Centre penetrations to AHU positions





**Energy Centre Section Board
EC/2 - Mezzanine Level**

RHCYP+DCN - CONCEPT PROPOSALS 23/01/2020



**Energy Centre Mezzanine Level
- Proposed Containment Drop
to Pit EC/2**

Electrical Proposals

- Auto Changeover Switch (ATS) between Primary & Secondary AHU supplies
- AHUs interfaced with Fire Alarm System (Cause & Effect)
- IT Cabling ducted to AHU Positions (for BMS)

HOARE LEA (H.)

Imtech

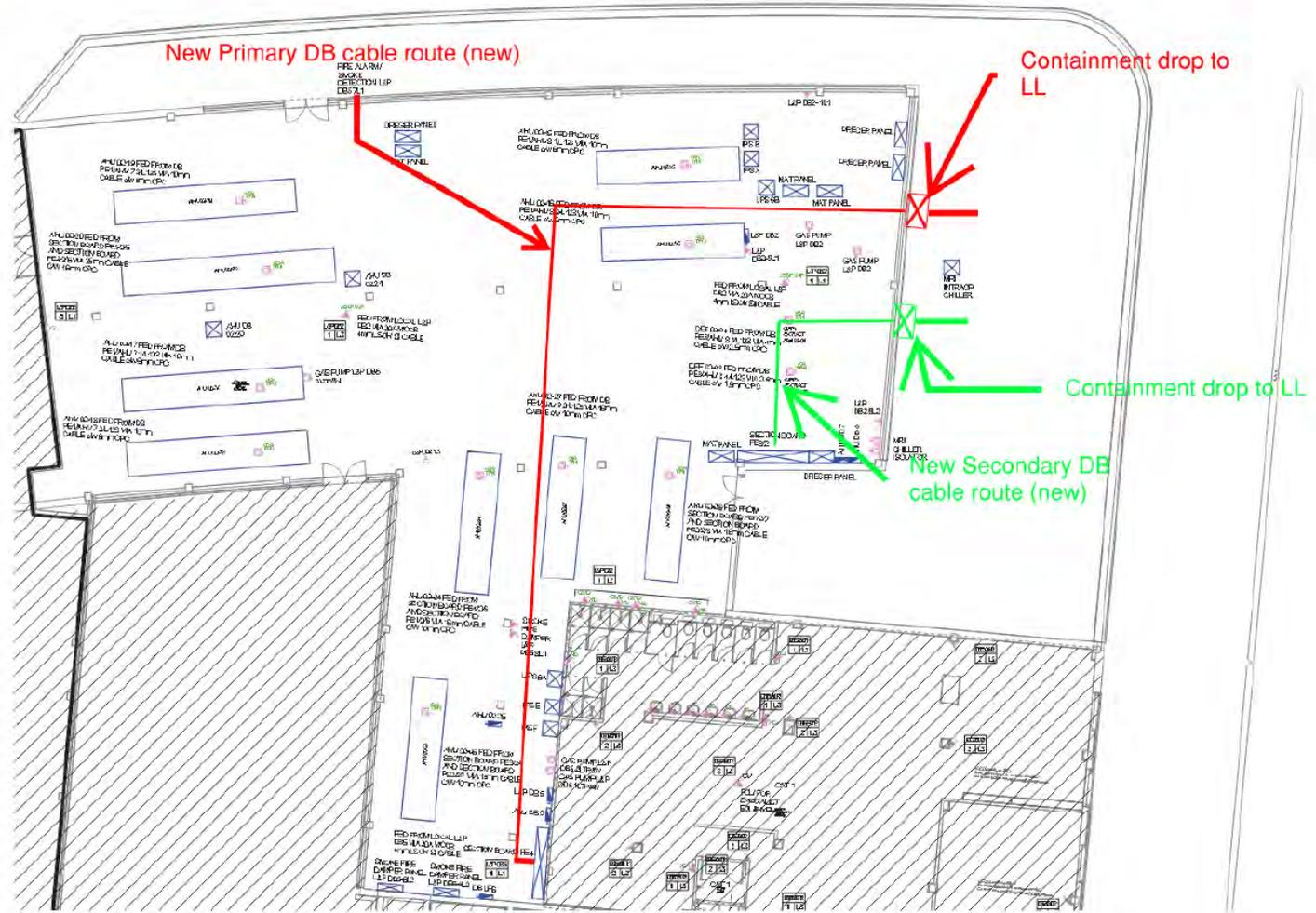
Haematology and Oncology Isolation Rooms Electrical Concept Proposals.

Level 03.



Electrical Proposals

- Diverse electrical supplies derived from spare three phase ways on the Level 2 Theatre Plant Room Section Boards PE3/2 & PE4/2
- Containment routes drop to low level externally
- Cable Containment is routed at low level to AHU positions on 'Big Foot' System





Level 02 Plant Room - Section Board PE3/2



Level 02 Plant Room – Existing High Level Services

Electrical Proposals

- Auto Changeover Switch (ATS) between Primary & Secondary AHU supplies
- AHUs interfaced with Fire Alarm System (Cause & Effect)
- IT Cabling ducted to AHU Positions (for BMS)

HOARE LEA (H.)



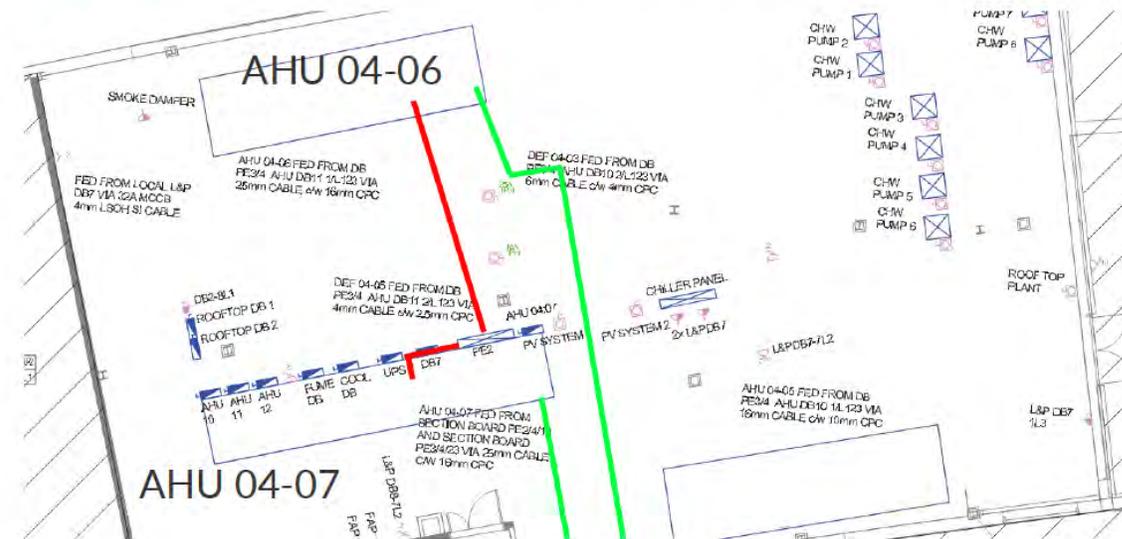
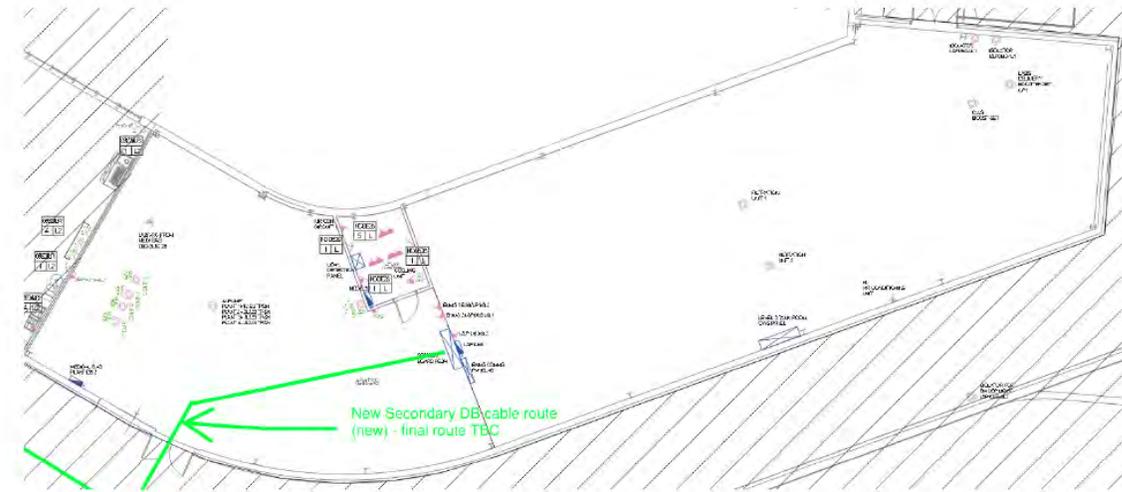
AHU 04-06 & AHU 04-07 Concept Proposals.

Level 04.



Electrical Proposals

- Diverse electrical supplies derived from spare three phase ways on the Level 4 Section Boards Theatre Plant Room Section Boards PE2/4 & PE3/4
- Containment routes from Level 04 Plant Room 06 to AHU 04-06 & 04-07 positions





Level 04 Plant Room - Section Board PE2/4

Electrical Proposals

- Auto Changeover Switch (ATS) between Primary & Secondary AHU supplies
- AHUs interfaced with Fire Alarm System (Cause & Effect)
- IT Cabling ducted to AHU Positions (for BMS)

HOARE LEA (H.)

Imtech

Paediatric Critical Care Isolation Rooms Heating & Cooling Concept Proposals.

Level 01.



HOARE LEA (H.L.)



Isolation Rooms Level 01

Heating Load

ISO-01-01 = 4.2+3.7

ISO-01-02 = 4.2+3.7

ISO-01-03 = 4.7+4.1

ISO-01-04 = 4.0+3.5

Total Heating = 32.1kW

Cooling Load

ISO-01-01 = 8.2

ISO-01-02 = 8.2

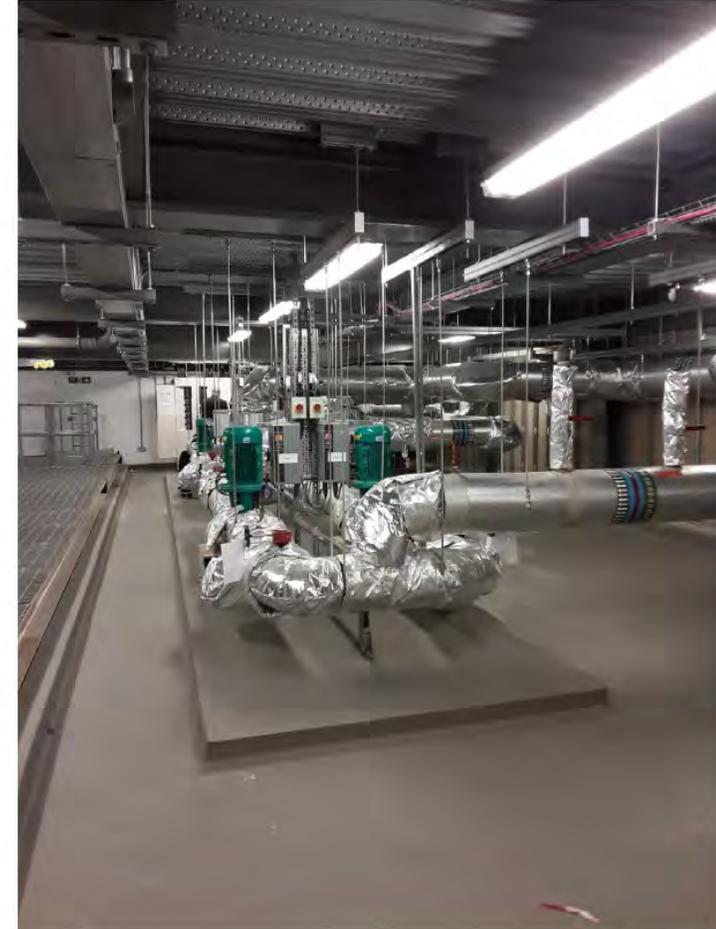
ISO-01-03 = 9.3

ISO-01-04 = 7.9

Total Heating = 33.6kW

Paediatric Critical Care
Isolation Rooms
Heating Concept Proposals.

- Location of new pump within the energy centre
- Pipework route is either route 1 or route 2.



HOARE LEA (H.)

Imtech

Haematology and Oncology Isolation Rooms Heating & Cooling Concept Proposals.

Level 03.



HOARE LEA (H.L.)



Isolation Rooms Level 03

Heating Load

ISO-01-01 = 3.3+3.0

ISO-01-02 = 3.3+3.0

ISO-01-03 = 3.3+3.0

ISO-01-04 = 3.3+3.0

ISO-01-05 = 3.3+3.0

Total Heating = 31.5kW

Cooling Load

ISO-01-01 = 6.4

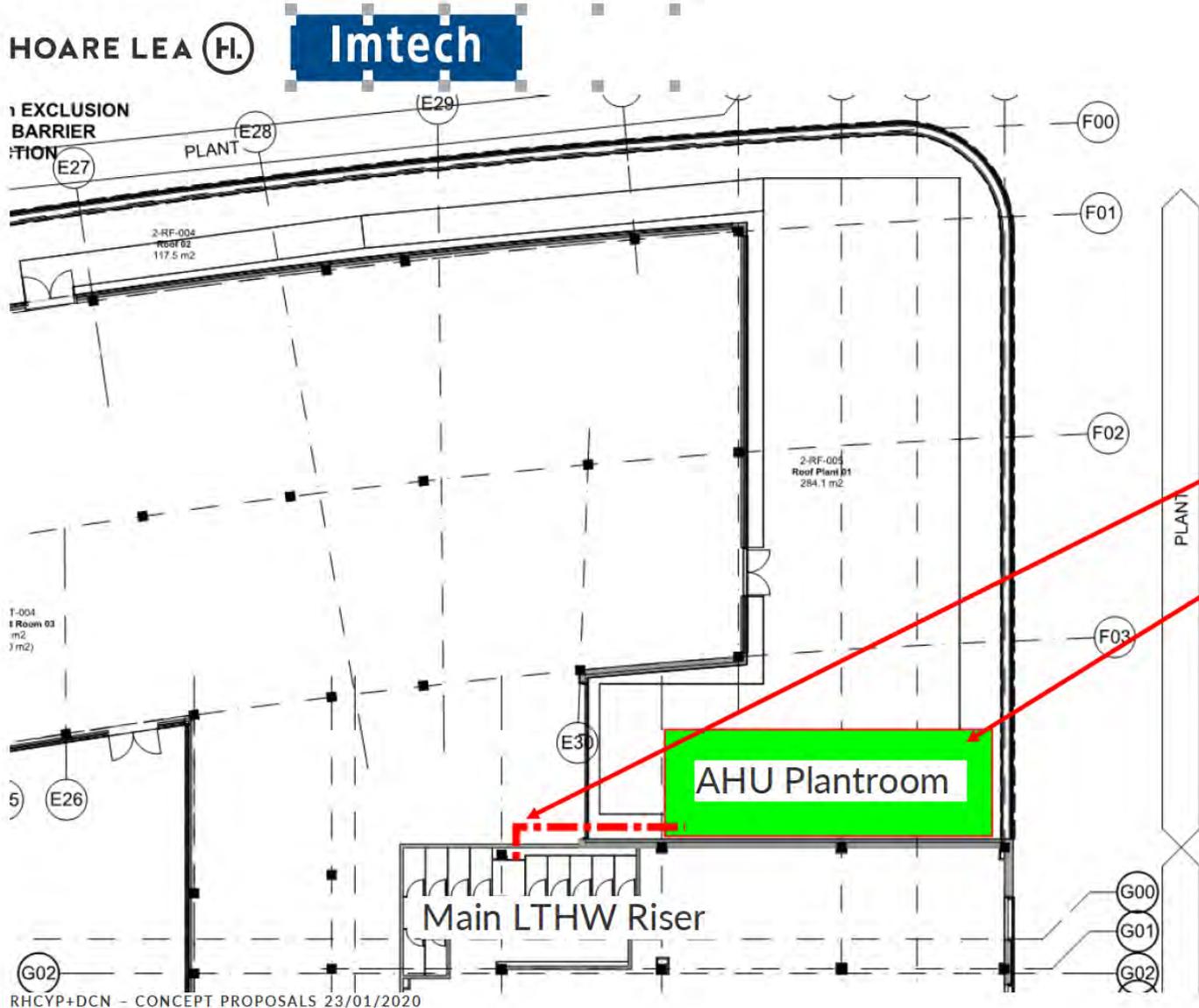
ISO-01-02 = 6.4

ISO-01-03 = 6.4

ISO-01-04 = 6.4

ISO-01-05 = 6.4

Total Heating = 32.0kW



Connection to existing LTHW pipework serving the Theatre plantroom.

12mx5m Plantroom

Haematology and Oncology Isolation Rooms Heating Concept Proposals.

- Location of pipework connection within the Theatre plantroom
- Required checks on the pipework sizing
- Re-balance of flowrates from this riser
- Modification of the pump flowrates (check capability)



HOARE LEA (H.)



Cooling Coil SHTM Requirements.



HOARE LEA (H.L.)

Imtech

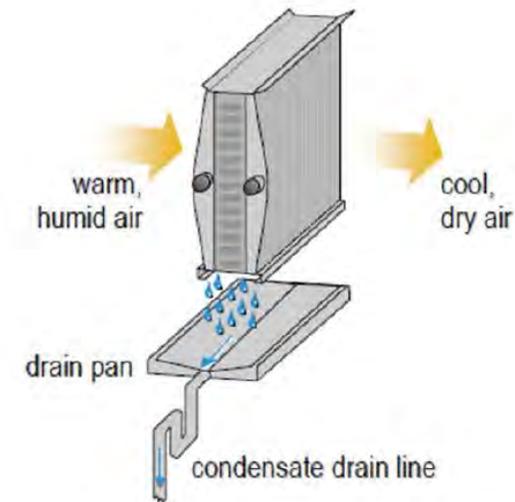
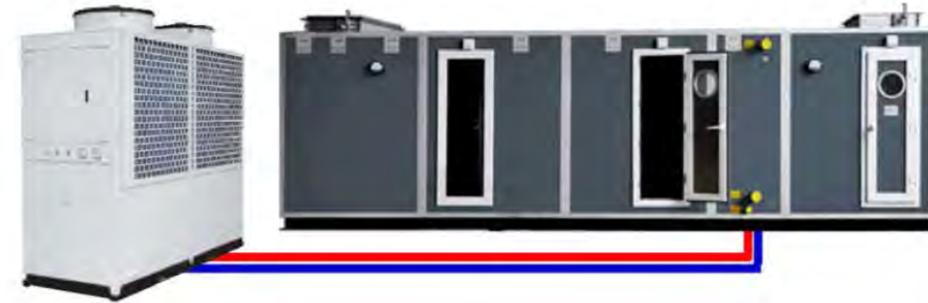
4.83 Cooling coils supplied with chilled water are the preferred option. For small loads or where chilled water is not available, direct expansion coils may be used.

Is DX acceptable? (It was agreed that CHW is required)

4.88 Where any cooling coil has to be located above a ceiling, drip-trays should be installed under both the coil and the control valve assembly to protect the ceiling. A moisture sensor and alarm should be fitted in the tray. To facilitate maintenance access, they should be located above corridors or other non critical areas and never above patient occupied spaces.

We consider this a legionella risk + significant ongoing maintenance and therefore would like to discuss the temperature control of the single and multi bed rooms.

RHCYP+DCN - CONCEPT PROPOSALS 23/01/2020



HOARE LEA (HL)



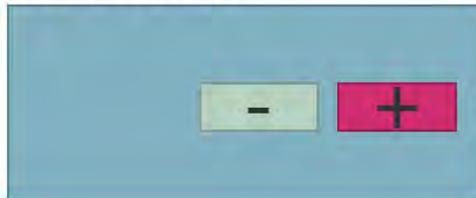
Post Meeting Addition

Cooling

Note Temperatures are supply not room

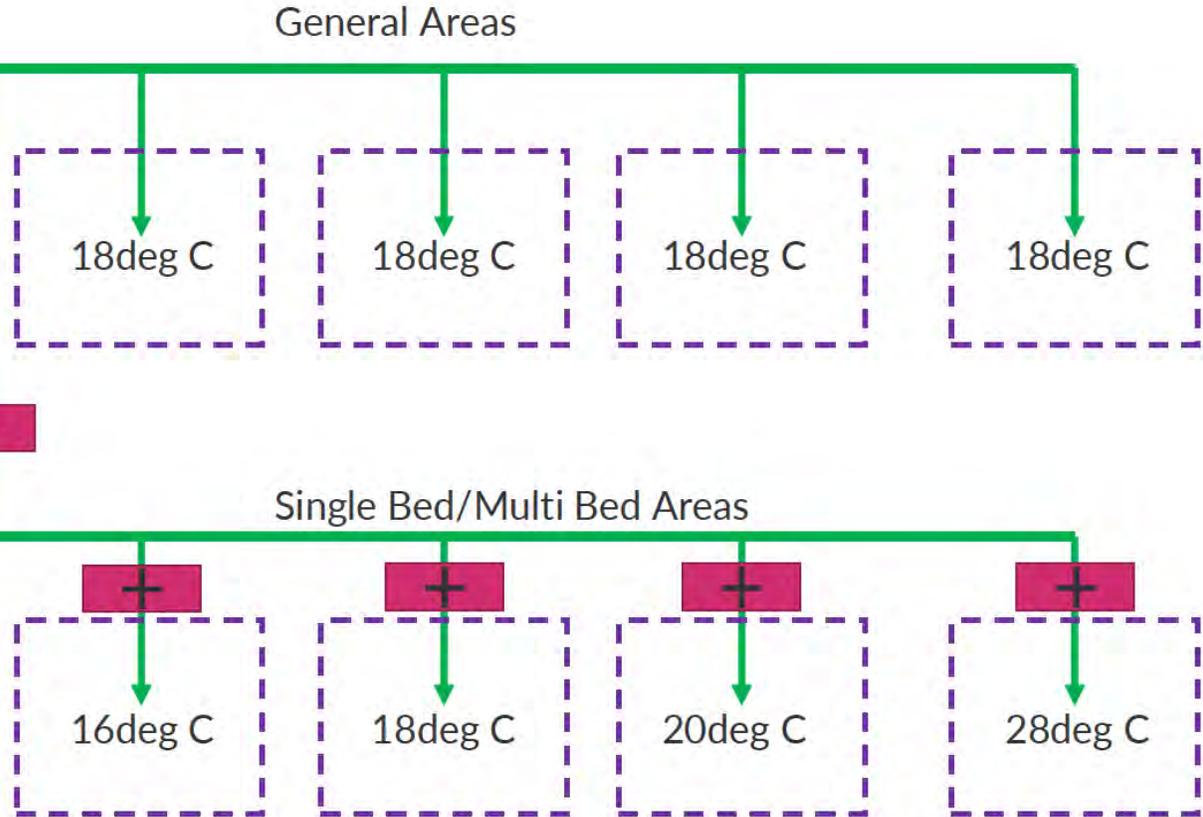
Duct Mounted heater battery for the non-single bed/multi bed rooms

Central AHU



16deg C

Single Bed/Multi Bed Areas



The benefit is all cooling is done within the central AHU.

No duct mounted cooling would be required.

HOARE LEA 



Thank you.
hoarelea.com

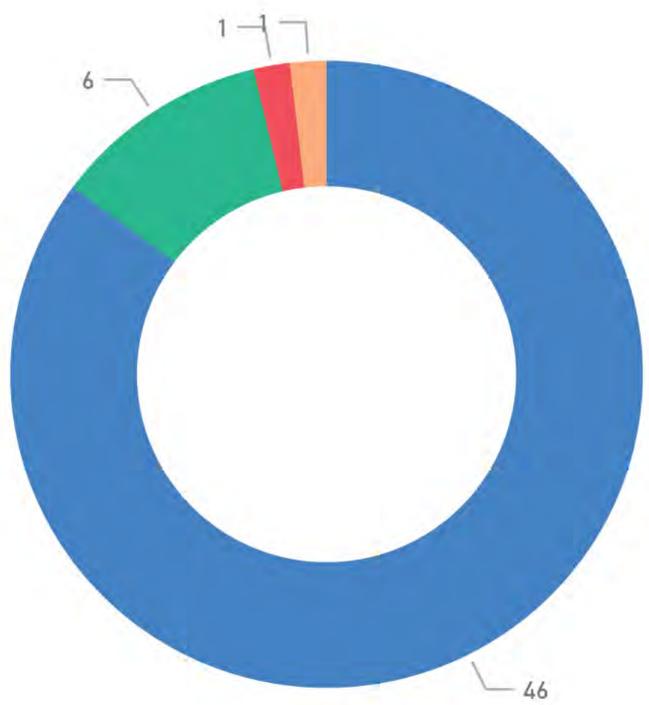
RHCYP+DCN - Continuity of Services on Existing Sites Action Log Dashboard

27/01/2020

Actions closed since last dashboard : 0

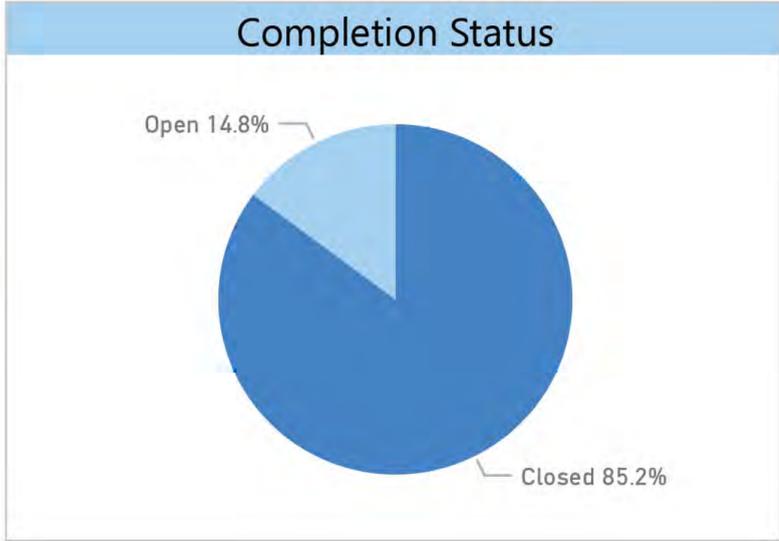
Status against Target Date

- Due Status**
- Closed
 - Actions on Target
 - Over 2 Weeks Beyond Target Date
 - Up to 2 Weeks Beyond Target Date



OPEN
8

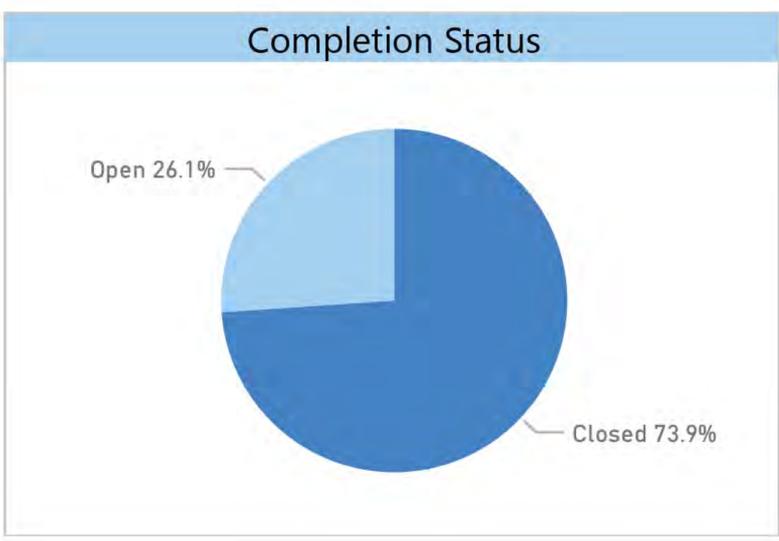
CLOSED
46



Actions for DCN at WGH site

OPEN
6

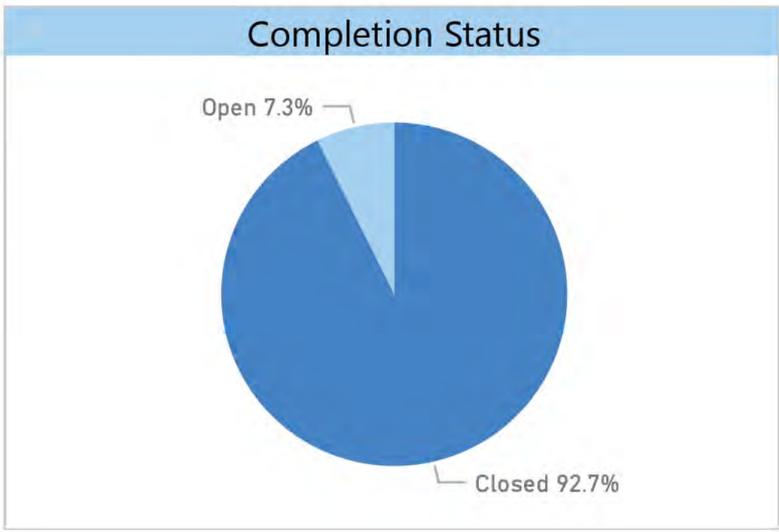
CLOSED
17



Actions for RHSC Sciennes site

OPEN
3

CLOSED
38



RHCYP + DCN

Continuity of service provision on current DCN and RHSC sites

Revision Date: 27/01/2020

Current date for tracking 27/01/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/ Closed	DCN	RHSC
Capacity										
1	Winter planning	1.1	RHSC: Increase in ED capacity to maintain flow	F Mitchell	05/07/2019	30/11/2019	Increased OPD capacity, 3 RBT opening. All equipment and IT in place, going live Tuesday 17 December.	CLOSED	No	Yes
		1.2	RHSC: increase medical beds and cubicles	F Mitchell	05/07/2019	30/11/2019	Ward 4 and PIU have now relocated. 2 shower trolleys moved to RHSC from RHCYP.	CLOSED	No	Yes
		1.3	RHSC: Additional 15 winter B5 posts advertised and shortlisted, to supplement medical nurse staffing. 6 additional B2 posts will be sought from the staff bank on a guaranteed shift basis for night duty staffing on ward 4 (medical). Additional nursing posts approved in June 2019 for an increase in year-round nurse staffing levels in the ED, particularly to support evening and night activity pressures. Most posts now recruited to for Phase 1 of this expansion, including an Advanced Nurse Practitioner for the ED team.	F Mitchell	05/07/2019	30/11/2019	B5 Winter posts - first round of interviews held 2 October. Closing date for second round 18th October; 1 applicant shortlisted. Advertised again closing 15th November 2019. Second round of Winter staff recruitment disappointing- going back out to recruitment again. Extra winter beds being staffed mainly by core ward staffing. Band 2 Winter Posts - Bank Requests from November onwards. Additional permanent ED posts - ENP job descriptions being finalised for recruitment end Oct. onwards. Advert for winter post closed again with 1 applicant. Gone out to advert again. Able to cope with core staffing at the moment.	CLOSED	No	Yes
		1.4	RHSC: Increase haem/onc day care beds by 3	F Mitchell	05/07/2019	30/11/2019	This can be closed as the Ward moves have taken place.	CLOSED	No	Yes
		1.5	Sleep service expanded staffing for new hospital but there is no extra capacity in old RHSC and winter pressures can lead to sleep studies being cancelled. Look at potential for services at home being expanded to address waiting list?	F Mitchell	05/07/2019	07/10/2019	Home sleep studies have now started.	CLOSED	No	Yes
		1.6	Winter Planning adult acute services	M Pearson	05/07/2019		Due to ongoing bed closures and pseudomonas in water, DCN is currently not accessed by the WGH site for boarding. Bed pressures in down stream facilities may affect DCN; managed through operational site and capacity management. CLOSED in relation to cancelled DCN moves.	CLOSED	Yes	No
2	Paediatrics at St John's	2.1	Consideration of increasing Services at SJH to reduce pressure of RHSC and enhance care closer to home for West Lothian children.	F Mitchell	05/07/2019	31/03/2020	Royal College of Paediatrics and Child Health have confirmed that they will carry out their review visit on 11 and 12 February	OPEN	No	Yes
3	Medical equipment	3.1	Interventional Neuroradiology provision: increased demand (due to service delivery issues in Glasgow) for ageing and increasingly unreliable interventional neuroradiology equipment at DCN.	M Carr	09/07/2019	04/02/2020	Confirmation was received on 29/10/19 that the Cabinet Secretary was content the Board proceeds with the recommendation to purchase the additional equipment for DCN. Timelines for purchase and installation to be confirmed. Costs confirmed and a PO number issued. Contingency plan being developed with consideration to GG&C INR services and capability of support services including DCN, HDU and Anaesthetics. Programme confirmed at meeting on 4/12 - • Start date 14th Jan. Completion date 4th Feb • Clinical contingency plan being finalised: o Acute services being undertake on an alternative unit o Some cases referred to G\G&C o Elective cases being referred to GG&C o Elective cases being undertaken on alternative unit o Additional sessions created post project completion to reduce the extended waits • Planning includes discussions with H&S team, HAI team, Traffic Management team, Estates, Adjacent clinical services including DCN and HDU	OPEN	Yes	No
		3.2	Theatre lights in four of the operating theatres at RHSC Sciennes are old and unreliable, with no replacement parts available. New lights required.	F Mitchell	09/07/2019	15/02/2020	All the required theatre lights have been ordered and are due for delivery shortly, with the programme of works to install timetabled for week commencing 10 February , to coincide with schools half term holiday. We do not expect to lose any activity over and above the normal reduction during half term holidays.	OPEN	No	Yes
		3.3	General x-ray equipment that had been installed in RHCYP required again at RHSC	F Mitchell/M Carr	09/07/2019	08/11/2019	New equipment arrived on site 14/10/19 and installation underway. This equipment will be moved elsewhere on closure of RHSC. On schedule to go live on target date of 8/11/19. Room is finished and is now back in full clinical use.	CLOSED	No	Yes
		3.4	Extension of maintenance contracts for elderly equipment at Sciennes and DCN.	F Mitchell/M Carr	09/07/2019	19/09/2019	Contracts and maintenance plans now in place. Will be updated on a quarterly basis.	CLOSED	Yes	Yes

		3.5	Additional scope storage is required for theatres at RHSC Sciennes as two cabinets were moved to RHCYP. Currently one is on loan, with rental charges due from October 2019.	F Mitchell/M Carr	09/07/2019	30/11/2019	Scope Cabinets up and functioning according to plan.	CLOSED	No	Yes
		3.6	Replacement tube for CT scanner at RHSC	F Mitchell/M Carr	09/07/2019	31/07/2019	Tube replaced - COMPLETE	CLOSED	No	Yes
		3.7	Videotelemetry: access to VTEM beds has been reduced in DCN since April 2019 with the reconfiguration of wards and restrictions on admissions due to positive testing for pseudomonas aeruginosa. Delaying moves to Spring 2020 extends the limited capacity and impact on waiting times. Use of portable equipment at one bed has enabled some VTEM admissions since August, but a hardwired bed with full VTEM capability and monitoring is required.	M Pearson	01/08/2019	12/11/2019	Install hardwired VTEM into ward 33. Utilise portable equipment for appropriate waiting list patients at home. Remedial electric works required prior to moving the equipment. An external contractor has been on site to look at the work - Estates to confirm date and cost. Optima will come after the electric works, £7k signed off. Complete from Estates side they just require some IT connection. Then Ward 33 will open up to 16 beds.	CLOSED	Yes	No
Clinical Support Services										
4	Pharmacy	4.1	Inadequate staffing to maintain opening hours for dispensary on 2 sites since in organisational change 1 dispensary manager was redeployed to another core service effective July 2019 when integration was meant to occur	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 7 dispensary manager resource required to allow provision of medicines on RIE and RHSC sites to prevent impact upon patient experience while RHSC remains open; and minimise impact of stress on staff health and wellbeing. 1.0wte band 7 Pharmacy Technician = £43,500	CLOSED	No	Yes
		4.2	Inadequate pharmacy support workers (PSW) staffing to deliver an integrated medicines distribution hub for RYCYP/RIE with required staff still working on RHSC site to maintain dispensary service	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 2 and 3 PSW resource required to prevent impact upon availability of medicines on RHSC site; and minimise impact of stress on staff health and wellbeing. 1.0wte band 2 PSW plus 2 0wte band 3 PSW = £77,192	CLOSED	No	Yes
		4.3	Pump-prime funding for staff resource to deliver the One Stop model has ceased, which is the backbone of medicines supply to patients to underpin management of capacity and flow at the new hospital site	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Funding for pharmacy technician resource must be reinstated to continue this model to be delivered. To address 3.4 and 3.5: 1.0wte band 4 Pharmacy Technician = £29,985	CLOSED	No	Yes
		4.4	Extended opening hours and weekend working rotas of the integrated pharmacy department at RIE was implemented in June 2019 in readiness for move of the RHSC in July 2019. To avoid lone staff working the full staff complement was needed on one site to full fill this rota. With pharmacy staff members remaining on RHSC the late evening	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 4 pharmacy technician resource needed to ensure extended pharmacy opening hours at RIE not put at risk, which would affect capacity and flow on RIE site See 5.3 above	CLOSED	No	Yes
		4.5	One Site Lead Pharmacist redeployed to another post during organisational change to integrate the 2 pharmacy departments leaving 1 Site Lead Pharmacist to manage teams across 2 sites without a deputy to support operational day-to-day management or change management of the teams	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Deputy pharmacist (Band 8a) required to support site lead pharmacist for RIE/RHSC until integration of the 2 departments is complete, which will help minimise impact of stress on site lead pharmacist health and wellbeing 1.0wte Band 8a Pharmacist = £65,625	CLOSED	No	Yes
		4.6	Cross site transport of medicines 7 days a week is needed but the ad hoc arrangements currently in place (e.g. Blood bikes, taxi runs) is not suitable for the extended duration that off-site daily delivery of medicines will be needed until RHSC move. This is especially an issue for delivery of intrathecal chemotherapy agents that have unique transport requirements under CEL30 (i.e. anyone transporting these medicines must be trained and named on the intrathecal register as competent to undertake the task allocated to them including transport)	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Funding to NHS transport and portering services for 1.0wte dedicated driver(s) (to be trained in CEL 30 requirements) to transport medicines between 09:00 to 17:30 Monday to Friday and 10 00 to 14:00 Saturday. 1.0wte Band 2 = £24,370	CLOSED	No	Yes
5	Laboratories	5.1	Minor changes were made to on-site Blood Science laboratory hours with the announcement of the delay in July 2019, with agreement that provision would remain under constant monitoring/ review.	M Grey	09/07/2019	31/07/2019	The NHSL Blood Science laboratory service at RHSC will continue with no alteration to service but service delivery/ performance will be monitored/ kept under continuous review in order to ensure that a robust and sustainable service continues to be provided to RHSC users and their patients.	CLOSED	No	Yes
Facilities Management										
6	Catering	6.1	Extend canteen opening times and preparation of meals on RHSC site - for better utilisation of staffing and reduction in waste.	G Curley	23/09/2019	14/10/2019	Chef now on site. Collation of menus and standard ordering.	CLOSED	No	Yes
		6.2	Procurement of two fridges for RHSC facility.		23/09/2019	14/10/2019	Order placed	CLOSED	No	Yes
		6.3	Communication with catering staff about sites and rosters.		23/09/2019	08/10/2019	Chef now on site; communication with catering staff underway.	CLOSED	No	Yes
		6.4	Improved signage and marketing for RHSC service		23/09/2019	14/10/2019	Communication in place on site	CLOSED	No	Yes
		6.5	HACCP		23/09/2019	08/10/2019	Chef now on site: completion of HACCP	CLOSED	No	Yes
		6.6	Explore options for third party support for catering		23/09/2019	18/11/2019	Discuss with Edinburgh Childrens Hospital Charity - Waiting for feedback from patients and visitors (4 week trial). Explored with charities, no takers.	CLOSED	No	Yes
		6.7	Replace dining room furniture		21/10/2019	31/10/2019	Ordered for delivery w/c 28/10/19 - DELIVERED	CLOSED	No	Yes
7	Parent accommodation	7.1	Improve environment of parents accommodation		23/09/2019	02/10/2019	Thorough clean of parents accommodation, and enhanced cleaning within domestic services schedule.	CLOSED	No	Yes

		7.2		G Curley	23/09/2019	31/10/2019	Parent accommodation reviewed. Refurbishment and new furniture requirements identified.	CLOSED	No	Yes
		7.3			23/09/2019	30/09/2019	Improve communication between FM team and Family Support re use of and care for parent accommodation. Protocol agreed	CLOSED	No	Yes
8	Domestics	8.1	Domestic services, including increased pressure on staff to make existing environment as good as it can be.	G Curley	23/09/2019	30/09/2019	Review current provision with a view to providing enhanced service to compensate for condition of the environment.	CLOSED	YES	Yes
		8.2			23/09/2019	10/10/2019	Ensure all staff only areas are in receipt of full staffing levels.	CLOSED	YES	Yes
		8.3			23/09/2019	30/09/2019	Complete analysis of Facilities Monitoring Tool.	CLOSED	YES	Yes
					23/09/2019	30/09/2019	Transfer of new equipment from RHCYP to RHSC /DCN	CLOSED	YES	Yes
		8.4			21/10/2019	01/12/2019	Moved to disposable mops to avoid double dipping from 20/12/19. Note: laundry of mops does not remove C Dif.	CLOSED	YES	Yes
9	Logistics	9.1	Logistics services	G Curley	23/09/2019	06/01/2020	Contract with G4s has ceased, and this is now the responsibility of NHSL Logistic Services.	CLOSED	No	Yes
		9.2			23/09/2019	30/09/2019	Secondment opportunity for supervisor vacancy now being progressed.	CLOSED	No	Yes
10	General estate	10.1	DCN - General state of facilities; walkround and identification of works	G Curley	23/09/2019	05/10/2019	(these do not work in Ward 33 due to lack of pressure) This has NOT had any adverse effect on	CLOSED	Yes	No
					23/09/2019	30/11/2019	DCN ward 33 has 2 showers out of use, leaving only one shower available, so 6 beds closed. Ward 33 capped at 10-12 patients (depending on mobility).	CLOSED	Yes	No
					23/09/2019	30/11/2019	Ward 32- Painting completed. Flooring patches no date yet still to be confirmed.	CLOSED	Yes	No
					23/09/2019	11/11/2019	Neurophysiology - Consultant office painted. Senior physiologist office to be painted w/b 4/11/19. Carpet due to be replaced on 9/11/19. DCN Admin corridor and Directorate Asst office carpet to be replaced 9/11/19.	CLOSED	Yes	No
					25/10/2019	06/01/2020	Upgrade/replacement to DCN Fire System commenced with ward 33 in November. 4-6 weeks further work anticipated from 06/01/20 - Fire Safety Update Site Fire Adviser Brian Halkett liaising with Jim Picken & Fire Alarm Company and the works are still ongoing with a 4-6 Week Programme	OPEN	YES	
					23/09/2019	30/11/2019	DCN OPD painting and disabled toilet upgrade due to complete 20/12/19.	CLOSED	Yes	No
					23/09/2019	04/02/2020	DCN x-ray corridor to be painted mid January after bi-plane removal and install (3.1 above)	OPEN	Yes	No
			31/10/2019		CLOSED	No	Yes			
			01/10/2019	31/12/2019	P Campbell	Equipment transferred included patient easy chairs, Mon900, Dia900, trolleys, fridge, freezers, shower trolleys, wheelchairs, bracket table and sedation tubing. Lot of work around transferring back top up items and various high tariff/specialist order sundries.	CLOSED	Yes	No	
			22/10/2019	15/01/2020	A McMahon	The HIS Report following the unannounced HEI Inspection was published on 15 January. At RHSC, the Requirements and Recommendations are in our Action plan which is being managed through the RSHC Infection Control Committee and also being overseen by our Site Liaison Committee, in terms of the requirement to ensure the fabric of the building is maintained.	OPEN	Yes	Yes	
	10 2	Fire and Rescue Service (F&RS) Audit of RHSC Sciennes premises	F Mitchell	20/11/2019	18/12/2019	CA - Ref SFRS Audit (Nov 19 above) subsequent Action Plan was completed in conjunction with Site Management, Estates Services and Local Staff, timescales were agreed and completed and action Plan was passed to SFRS. The SFRS Letter was FSA02 and was not requiring an Action Plan to be passed to SFRS however due to the "Operations Notification Form" being placed on the Basement Level (Rescinded following work bring completed by Fire Safety / Estates Services) SFRS were sent Action Plan to ensure works completion. - Fire Safety Update Follow up Audit of Basement undertaken with SFRS 21/01/2020, Site Fire Adviser Billy Hamilton and Jamie Ramsey, SFRS visit to ensure that works that had been undertaken resulting in the lifting of the Action Plan/Notice was maintained. FM - The Scottish Fire and Rescue Service revisited RHSC on Tuesday 14 January, to inspect the Basement Corridor and have confirmed that they are satisfied that the required remedial action has been completed.	CLOSED	No	Yes	
Staff										
11	Communication with staff	11.1	General staff communications, including annual leave, pay, expenses, car parking, delaying retirement.	J Butler	23/09/2019	10/07/2019	Frequently asked questions updated and published on intranet 10/07/19	CLOSED	Yes	Yes
12	Staff wellbeing	12.1	Supporting staff wellbeing	J Butler	23/09/2019	18/11/2019	Regular Exec Team/Senior Team Walkarounds are established. Improvements to facilities and environment in RHSC and DCN have been warmly welcomed by staff. As has the reinstatement of the dining room at RHSC. The local staff health and wellbeing programmes continue on both sites as well as access to the wider corporate staff wellbeing programmes. There is good Partnership support from the trades unions. The Employee Director and Site Directors agree that this action can now be closed, with support for staff wellbeing being "business as usual". We will be having a massage therapist in DCN for the next 3 weeks, and in January are going to have yoga breathing coaches and a stress relief workshop.	CLOSED	Yes	Yes
13	DCN staffing	13.1	In light of nursing staff leaving DCN in anticipation of the move to RIE, the workforce has been reduced. There is a need to ensure we retain current staff, and quickly fill vacancies.	G McAuley / M Pearson	07/10/2019	31/03/2020	Ongoing action. Over 50% of vacancies in nursing (band 5 and 2) and administration have been filled - offers made and start dates confirmed. There are 9 x B5 vacancies and mat leave.	OPEN	Yes	No
		13 2	Anaesthetic out of hours rota cover for DCN. Provision of robust out of hours anaesthetic rotas for the ~6-9month period between DCN team moving and Paediatric team moving to the RIE site. Oroinally plan was for paediatric and neuro trainee rota to combine.	M Carr	25/11/2019	01/04/2020	9 applications received for Clinical Fellow posts which were shortlisted on 17 th January. Proposed interview date of 11 th February to be confirmed by HR.	OPEN	Yes	No

Patients and public										
14	Patient appointments and communications	14.1	Inform patients of any changes to appointments	J Campbell	09/07/2019	31/07/2019	All patients with appointment in July and August were contact by phone to reschedule to the old sites. All further appointments have been notified by letter.	CLOSED	Yes	Yes

From: [Graham, Chris](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Chief Medical Officer](#); [Henderson C \(Calum\)](#); ["Colin Sinclair"](#); [Cosens, Sorrel](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); ["Gordon James"](#); [Graham, Chris](#); ["Jacqui Reilly"](#); ["Jim Miller \[REDACTED\]"](#); [Joyce, Alex](#); ["Judith Mackay"](#); [Little, Kerryann](#); [McMahon, Alex](#); [Morgan, Mary](#); [Murray, Fiona](#); [Nicol, Nadine](#); ["Peter Reekie"](#); ["Roxanne Gallacher \(Jim Miller PA\)"](#); [Trotter, Audrey](#); [Walker, Anna](#)
Subject: Oversight Board Papers for 20 February 2020
Date: 19 February 2020 08:23:39
Attachments: [image001.png](#)
[Oversight Board Papers 20-02-2020.pdf](#)
Importance: High

Dear Colleagues

Please find attached the Oversight Board Papers for tomorrow's meeting.

Please note that there is no Senior Programme Manager report for this meeting but the management actions dashboard is included.

The dial in details remain:

[REDACTED]
 Participant code [REDACTED]

Kind regards
Chris

Chris Graham
 Secretariat Manager
 [REDACTED]

Achieving [deadlines](#) means you are respecting your colleagues and supporting effective decision-making.



The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you

have received this message in error or there are any problems
please notify the originator immediately. The unauthorised use,
disclosure, copying or alteration of this message is
strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 20 February 2020, 8:00 – 9:30am

Venue: Room 5, Waverley Gate, EH1 3EG

AGENDA

1.	Chair's Welcome and Introductions	FMc	V
	Apologies: Sorrel Cosens		
2.	Minutes of previous meeting for approval: 29 January 2020	FMc	*
3.	Matters Arising	FMc	V
	3.1 Confirmation of the ventilation/management requirements for source isolation of high consequence infectious diseases	JR	V
4.	RHCYP+DCN - Management Action Log	MM	*
5.	Water Quality Update	TG	*
6.	RHCYP & DCN, Little France Programme; Process; Risks and Dependencies	SG	*
7.	STANDING AGENDA ITEMS		
	Technical Reviews progress		
	7.1 Ventilation	BC	V
	7.2 Water Quality	BC	V
	7.3 Fire Safety Enhancements	BC	V
	7.4 Electrical Safety	BC	V
8.	Service Continuity on Existing RHSC & DCN Sites	TG	*
9.	Communications		
	9.1 Proposed Communications	JM	V
10.	Any Other Competent Business		
11.	Date of Next Meeting		
	Thursday 27 th February 2020, 8am, Room 5, Waverley Gate		

2.

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Wednesday 29 January 2020 in Meeting Room 5, Waverley Gate, Edinburgh.

Present: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Miss T. Gillies, Medical Director, NHS Lothian; Professor A. McMahon, Nurse Director NHS Lothian; Mr G. Archibald, Joint Staff Side Representative; Mr P. Reekie, Chief Executive, Scottish Futures Trust and Mrs S. Goldsmith, Director of Finance, NHS Lothian.

In Attendance: Mr B. Currie, Project Director, NHS Lothian; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Ms J. Mackay, NHS Lothian Director of Communications; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

Present by Telephone: Ms M. Morgan, Senior Programme Director and Mr C. Henderson, Scottish Government.

In Attendance by Telephone: Mr C. Sinclair, Chief Executive, NHS National Services Scotland; Mr G. James, Director of Facilities, Health Facilities Scotland; Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work and Mr J. Miller, Health Facilities Scotland.

Apologies: Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side) and

1. Minutes of previous meeting – 16 January 2020

1.1 The minutes of the meeting held on 16 January 2020 were accepted.

2. Matters Arising

2.1 Finalisation of the IPCT Water Safety Report

- Noted that NSS comments on the report had only been received yesterday (28/01/20) and that there remains a couple of issues to be discussed and resolved between NHSL and NSS.
- It would be helpful for the Oversight Board to have a shorter paper summarising NHSL intentions against the actions in the Report that would sit behind it. It was agreed that this paper was to be prepared but must have the support from HFS/HPS.

TG/JR

2.2 Go live date for Interventional Neuroradiology

- Noted that the expected go live dates remains 06/02/20.

3. Senior Programme Director's Report

- Noted that the overall programme remains at red status due to undefined programme timelines for ventilation and DCN smoke dampers works.

- Good progress with closures of actions in relation to electrical works.
- Closure of actions in relation to remaining ventilation, smoke dampers, water safety and other fire enhancements works expected in the coming weeks.
- Noted that engagement to reach final design was key the ventilation works. Engagement taking place on a weekly basis, involving highly technical discussion. The Supplemental Agreement cannot be completed until the design is signed off. Costs remain to be assessed and the overall programme timeline remains deliverable.
- DCN fire enhancements works expected to get underway on 03/02/20. The programme timeline is awaited.
- All CAMHS programmes now pulled together to become one medium value change.
- Noted that commercial contracts meetings are progressing works at a good pace and were on track for delivery of programmes as previously advised.
- Scoping around requirements involved with the 8 week timeline ahead of any move to be reviewed internally by NHSL.

TG/SG/AMcM

4. Commercial Progress Update

- Commercial discussions remain ongoing. Key issue is the understanding of the technical aspects of the programme.
- Noted that there was now draft completion criteria produced.
- Supplementary Agreement cannot be signed off until the process for testing regime and criteria has been agreed.
- Output for design work expected in February 2020
- The expected paper in relation to joint appointment around the commissioning and approvals process was not yet ready to come the Oversight Board and this action would be added to the agenda.

SC

- A written report on the Supplementary Agreement to be produced for the next Oversight Board meeting.

SG

5. Technical Reviews progress

5.1 Ventilation

- Noted that the remaining items for MPX to carry out were underway.
- Discussion around Air Handling Units works completion certification. This discussion to be taken away for internal discussion between NHSL with HFS support.

TG/BC/GJ

5.1.1 Concept Design Proposal for HVC 107

- Noted that this was a draft document for information only and the inadequacies in the proposal had been highlighted in a session with IHSL on 28/01/20. The document would now be updated to a standard recognisable as a concept design report as this was needed for governance reasons and would be added to the Supplemental Agreement, including costs.
- Inconsistencies within the document around number of air changes to be addressed as part of the document update.
- The draft proposal did set out the key principles and the organisation of the Air Handling Units for critical care and haematology/oncology.

6.2 Water Quality

- Noted that position remains steady state from the management point of view.
- Tested outlets now reinstalled some remaining units to be autoclaved.
- Monitoring remains ongoing.

6.3 Fire Safety

- Medium value change not signed yet further discussion to be held today (29/01/20).
- Good progress with DCN element of works, Paediatric and CAMHS elements to be undertaken in parallel.
- Noted that the supply chain was up and running.

6.4 Electrical Safety

- The remaining NSS items in the report were being closed out and these were mostly paperwork and compliance based.

7. Service Continuity on Existing RHSC & DCN Sites

- Noted that all services remain relatively challenged by plans in place around ventilation and patient care.
- No emerging issues within children's services.
- Water quality DCN remains stable.
- Current service provision remains stable given the usual winter challenges.
- Action plan around fire progressing and going through the normal processes.

8. Communications**8.1 Proposed Communications**

- Next update planned for later in February 2020.
- Noted there had been an update meeting with MSPs on 24/01/20.
- Noted that any move away from the current work plan would be the Cabinet Secretary to inform the Scottish Parliament.

8.2 Requests for Information

- FOI requests continue to be processed.

9. Any Other Competent Business**9.1 Supplemental Agreement Briefing Action (Item 4 above)**

- It was agreed to cancel the Oversight Board meeting scheduled for 13 February 2020.
- In the meantime the Briefing paper would be circulated after the next ESG on 10/02/20 and would include the medium value changes and MPX sign off process detail as part of the report.

SG**10. Date of Next Meeting****10.1 Date of next meeting to be confirmed.**

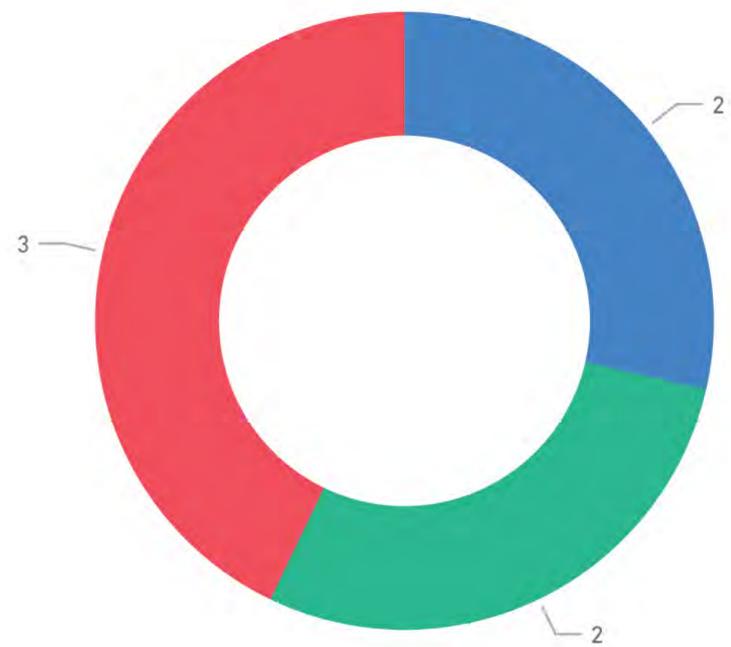
RHCYP+DCN - Management Action Log Dashboard

18/02/2020

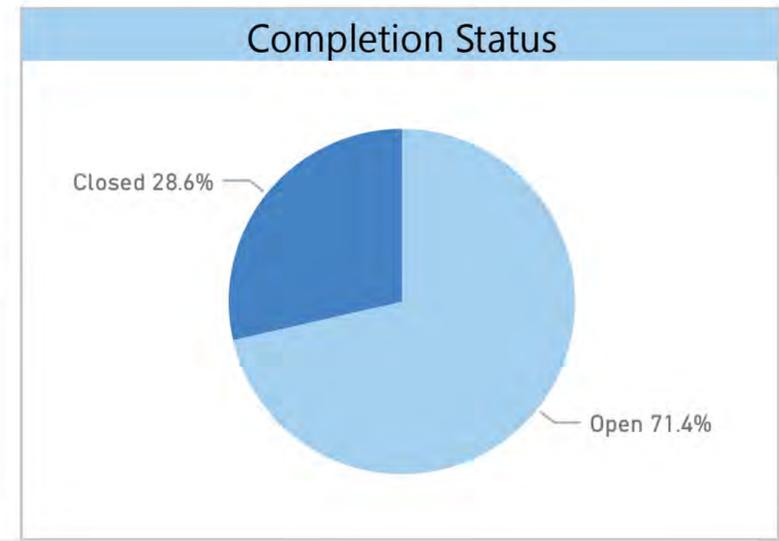
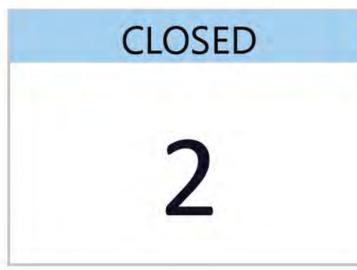
Actions closed since last dashboard : 2

Status against Target Date

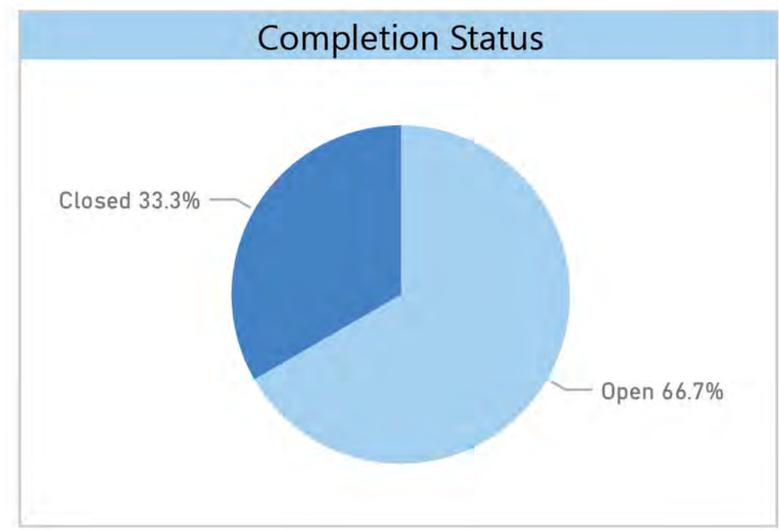
- Due Status**
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



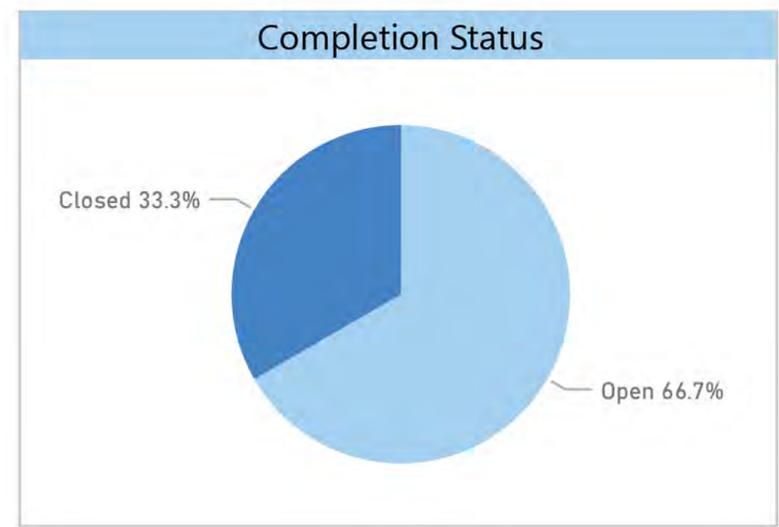
4.



Priority for DCN



Priority for RHCYP



RHCYP + DCN

Management

Revised Date: 18/02/2020

Current Date for tracking: 18/02/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to Close	Open/Closed	Priority To RHCYP	Priority To DCN
MA1	Structures and processes are not fully in place to assure the Board that the facility is being operated in compliance with contract requirements. These should be in place from the point where the building services referred to in this report are put into use.	1	NHS Lothian and IHSL should adopt the management and reporting processes as described in SHTM 00 – Best Practice Guidance for Healthcare Engineering and the SHTMs for each critical engineering service	NHSL	11/09/2019	31/12/2019	HFS have issued comments on the most recent issued version of the document. BYES to respond.	OPEN	NO	NO
		2	Confirmation is required that IHSL have the following in place <ul style="list-style-type: none"> •Responsible person •Adequate numbers of Authorised persons •Adequate numbers of Competent persons •Suitable onsite training has taken place for HV and LV personnel. 	BYES	30/10/2011	20/12/2019	HFS have issued comments on the most recent issued version of the document. BYES to respond. Dates and letters of appointment to be provided by BYES and NHSL	OPEN	NO	NO
MA2	Some of the records and documents necessary for the effective and safe operation of the hospital could not be found. The document management system appears to lack a logical structure which will impact on the ability to readily find necessary information.	2	Confirmation is required that the HV installation has been tested and commissioned to BS EN 61936 as no documentation has been produced to support this.	NHSL	06/11/2019	24/12/2019	Specific conformity statement required. Responsible person to confirm conformance with BS. MPX have issued MPX-GC-030679 as evidence. Board to confirm.	OPEN	YES	YES

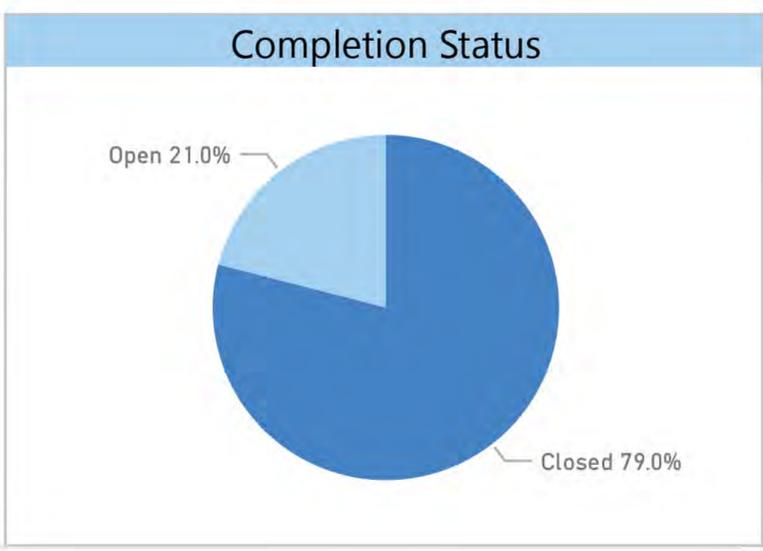
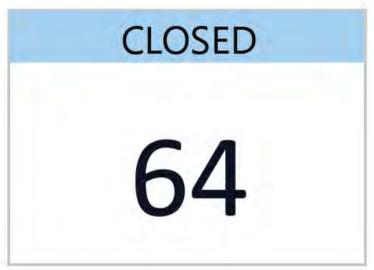
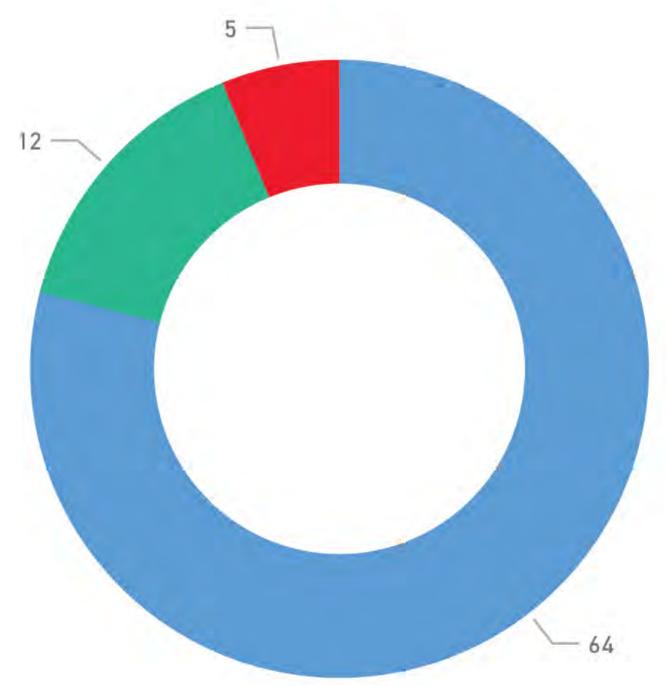
RHCYP+DCN - Ventilation Action Log Dashboard

18/02/2020

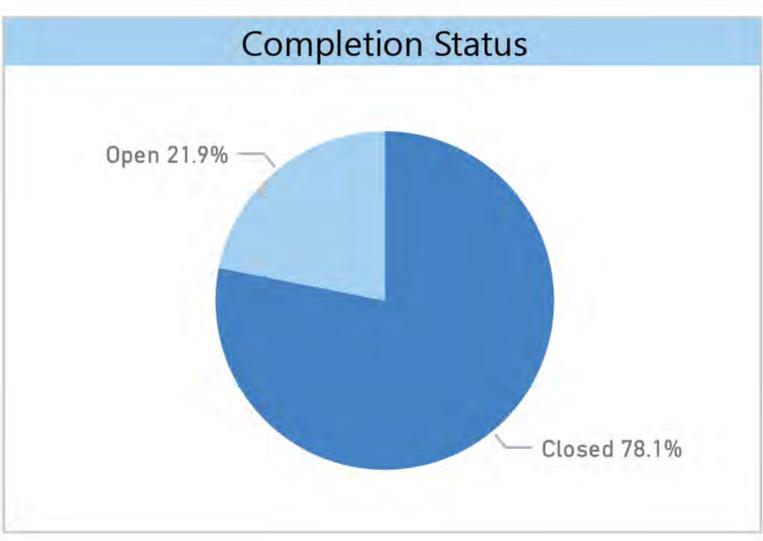
Actions closed since last dashboard : 0

Status against Target Date

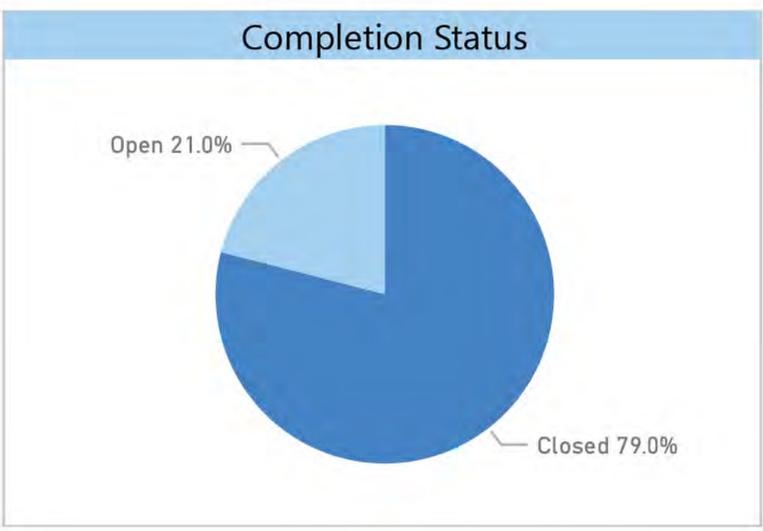
- Due Status**
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP



RHCYP + DCN

Ventilation Action Log

Revised Date:

14/02/2020

Current Date for tracking:

18/02/2020

Issue No.	Item	Action Number	Action number from source document	Requirements	Owner	Start Date	Target Date	Action to Close	Open /Closed	Priority to RHCYP	Priority to DCN
V3	Recommissioning of ventilation system.	1	8.	Confirmation is required that all ventilation systems have been balanced and re-commissioned to meet the requirements of the environmental matrix	MPX	11/09/2019	31/01/2020	<p>MPX confirmed all work would be complete before the end of February with the exception of 2 AHU motor replacements (AHU 02-04 & 02-26) with an estimated delivery time of 8-12 weeks (estimated April). MPX will issue programme on 17th February. MPX confirmed it is not providing the duty required.</p> <p>NHS expecting IOM to come in next week to validate DCN areas. MPX to confirm this week all DCN areas are available for IOM to check.</p> <p>BYES are awaiting commissioning and validation certification from MPX to return AHU's to full service. (Duplicate for item 41 - 74)</p> <p>Joint meeting with IOM and MPX needed the first day IOM are on site.</p> <p>NOTE: Environmental Matrix is not the correct reference point (i.e. still refers to 4ac/h for Critical Care). Mandatory contract conditions are.</p> <p>Note: There is a risk this action will not be closed by the agreed close out date.</p>	OPEN	YES	YES
V6	Some areas are not completed and ready for handover. E.g. ceiling tiles still missing	1	2	CT & Fluoroscopy only areas still affected due to Turnkey works	MPX	25/06/2019	31/01/2020	<p>MPX confirmed works complete and awaiting confirmation after theatre works (V30/V33) have been finished (Theatre 36). NHSL noted that area requiring testing is provided by another AHU system and can be commissioned by MPX. MPX to provide date when IOM can attend.</p> <p>BYES can assist putting tiles in place where necessary if these are identified as works complete above ceilings.</p> <p>BYES con</p>	OPEN	YES	YES
V12	Very limited extract in theatre corridors. Corridors are not at 0 absolute pressure and do not meet required 7 ach/hr (SHTM03-01 part A appendix 2 Table A2). No escape for surplus air. Could impact on open door protection. Pressure in corridors is pushing fire doors open.	1	3	To be reviewed by IPCT, All pressure Cascades are compliant.	MPX		31/01/2020	<p>MPX have submitted further design information and NHSL have provided comments. NHSL requested/escalated outstanding TUV-SUD response to NHSL comments. - MPX are progressing with the work on the basis that the design meets criteria.</p> <p>MPX confirmed works complete. Commissioning will take 10 days but will not progress until V30/V33 are complete (expected 17th Feb). NHS reaffirmed the corridor is to be provided 7 ACH balanced. IOM to test after commissioning. MPX to confirm to BYES when commissioning certificates have been uploaded to Zutec.</p>	OPEN	YES	YES
V33	Scrub areas which are narrow and deep are unlikely to be scavenged effectively by theatre air changes and require e alternative means of achieving removal of contaminants as per SHTM 03-01. The efficacy of the high level extract to achieve sufficient dilution of contaminants or entrainment of heavier than air water droplets is not in accordance with the requirements of SHTM 03-01 and has not demonstrated as equivalent.	1	Theatre ventilation systems 1	The ability of the single high level extract provided in deep plan scrub areas to effectively prevent contaminants being dispersed into theatres should be demonstrated and/or additional low level ventilation provided.	NHSL/IOM	11/09/2019	31/01/2020	<p>IOM have issued report to NHSL/MPX for MPX to progress through supply chain. TUV SUD provided response on IOM report. No Board change required.</p> <p>MPX have confirmed works complete with the expectation of minor repainting. MPX recommends end of February for IOM to validate. NHSL asked MPX to work commissioning and validation in tandem with IOM, MPX to confirm.</p>	OPEN	YES	YES

V38	The "maintenance by-pass" associated with the AHU requires to be fully detailed and proven.	1	4.	<p>Details required include: -</p> <ul style="list-style-type: none"> - Full written details for each system - Identification of systems which do not have a secondary source of ventilation. - Identification of all spaces which will have no mechanical ventilation when by-pass is initiated. - The minimum and maximum estimated times for a maintenance by-pass and for recovery of a major fault. - The impact of these arrangements on the fire strategy. - The strategy for advising clinical staff in the areas affected. - Commissioning and validation certificates for the changeover system, all associated controls, revised room volumes and pressures. - The clinical service plan should reflect the operational procedures in the event of failure of an air handling unit. 	MPX	11/09/2019	24/12/2019	<p>MPX issued report on By-pass arrangement on 17/10/19. NHSL provided comments on 4/11/19. Overall report is unsatisfactory, works to critical care and haematology / oncology will resolve some items but not Level 3.</p> <ul style="list-style-type: none"> - MPX will provide training to BYES. BYES confirmed control side demonstrated, physical side not demonstrated. - MPX to provide additional damper control. (Estimated end of February) - BYES issued details on frequency and duration of planned PPM downtimes on 13/1/19. BYES to update inline with Board comments. - BYES have drafted an SOP awaiting final demonstration to complete. - MPX to identify impact to air change rates on a per room basis. - NHSL/BYES want a full demonstration with H&V to measure to inform the clinical risk assessment. <p>Following confirmation of the above NHSL to undertake a full clinical risk assessment for impact in bypass mode and in total failure mode and develop a plan for maintenance downtime.</p>	OPEN	YES	YES
-----	---	---	----	--	-----	------------	------------	--	------	-----	-----

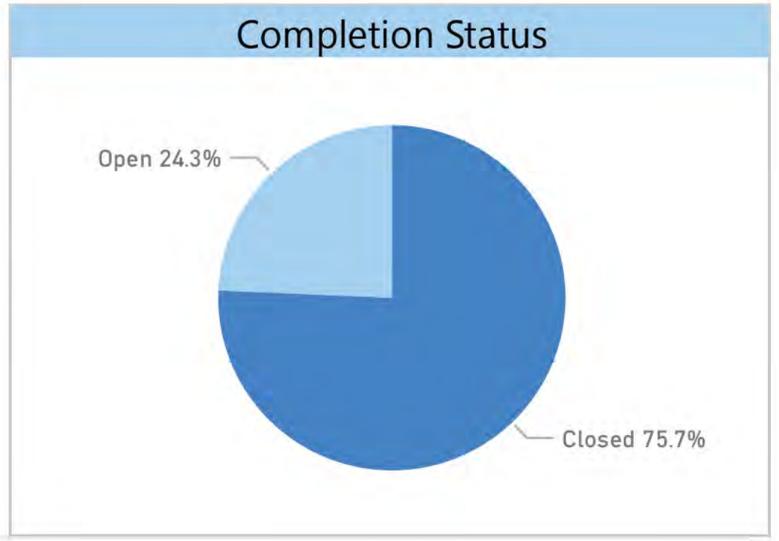
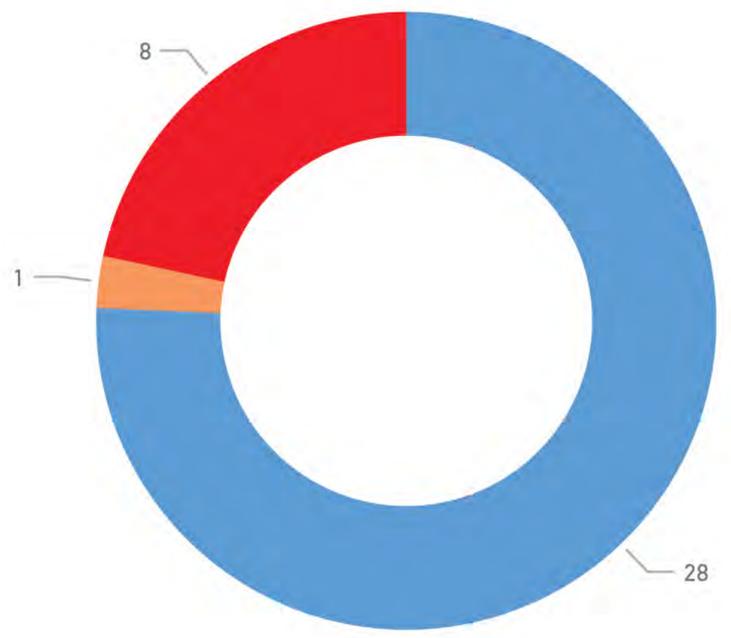
RHCYP+DCN - Water Safety Action Log Dashboard

18/02/2020

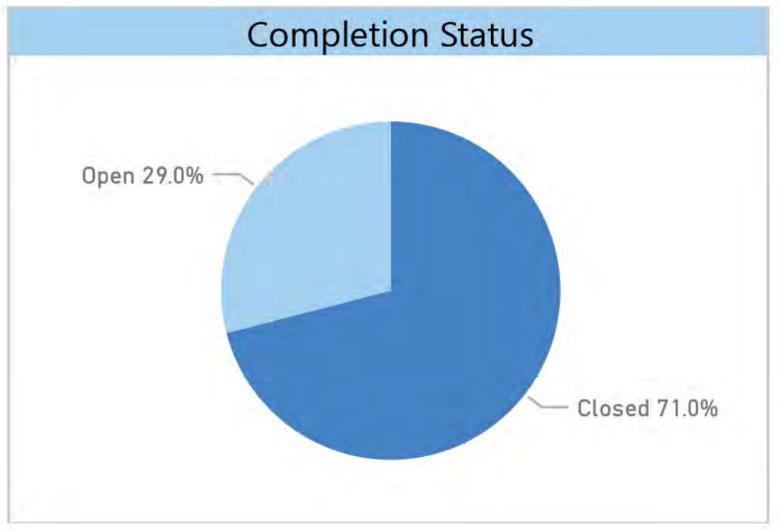
Actions closed since last dashboard : 0

Status against Target Date

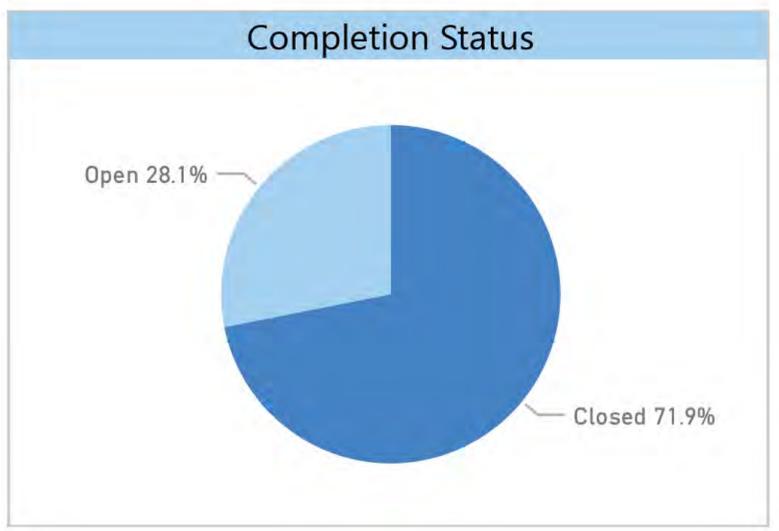
- Due Status**
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP



RHCYP + DCN

Water Safety Action Log

Revised Date: 18/02/2020

Current Date for tracking: 18/02/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/Closed	Priority to RHCYP	Priority to DCN
W2	There is no temporary or permanent site specific water management plan	5	Management: Written confirmation that the actions detailed in the Callidus report have been satisfactorily resolved.	IHSL	11/09/2019	06/12/2019	GS has issued IHSL's response to BC and MM. NHSL to confirm by 13/11/19 whether Callidus has confirmed actions are closed. IHSL/BYES/MPX need to upload evidence to the Callidus simple compliance audit web portal to allow this to be closed. Currently with Fraser Dunlop (FD won't upload to Callidus) - JT to confirm the site has been updated.	OPEN	Yes	Yes
		8	The Legionella Risk assessment Feb 2019 identified a range of actions. The Action Tracker does not demonstrate that the issues raised have been resolved or a timeline provided for resolution. Record rectification of actions. The risk assessment is heavily focussed on Legionella and not taking into account other organisms in line with patient type that will occupy the building. Broaden to reflect system contamination in general. Develop analysis categorisation of patient type and consideration to susceptibility for each area.	HFS/NHSL	11/09/2019	06/12/2019	In augmented care there is already enhanced measures as part of Pseudomonas control. Without formal guidance on methodology and how to interpret the results and with a lack of accredited laboratories to test the samples NHSL proposal is no testing for fungal or mould subject to approval at the OSB. The full paper was discussed at ESG on 10/02, a short covering paper is being issued to the ESG on 17/02/20 and OSB on 20/02/20. GC has a paper in draft that will be shared with LG/DK/DI to define the operational threshold, location and number of samples. LG to confirm when this will be available and taken to the Water Safety Group. BYES are to investigate how trend analysis will be provided to the Board.	OPEN	Yes	Yes
W4	Guidance outstanding from NSS	1	HFS via Tim Wafer will advise on the outcome of the additional microbiological testing conducted on their behalf. It was agreed that the actions discussed for inclusion in the water safety plan (flushing, remedial action etc.) would address the presence of other organisms. In the absence of any clinical infections the purpose of this exercise remains unclear. No information about the expectation about testing regimes going forwards was discussed. It was highlighted again interpretation of this additional testing may be challenging in the absence of validated testing methodology.	HFS	TBC - Date of QEUH report	06/12/2019	Without formal guidance on methodology and how to interpret the results and with a lack of accredited laboratories to test the samples NHSL proposal is no additional testing subject to approval at the OSB. The full paper was discussed at ESG on 10/02, a short covering paper is being issued to the ESG on 17/02/20 and OSB on 20/02/20.	OPEN	Yes	Yes

W9	Lessons learned for QEUH that may apply in RHCYP+DCN	1	<p>As a result of potential issues identified elsewhere after construction of RHCYP & DCN, the following items should be replaced in the system and handed over to Water Solutions Group (they should be in attendance when items are removed to facilitate transportation to laboratory).</p> <ul style="list-style-type: none"> - One expansion vessel bladder (flow through) - One expansion vessel - One TMT cartridge from augmented care before disinfection/cleaning - Two TMT strainers from augmented care - One system pressure reducing valve - One water meter - One system non-return valve - Two cold water pipe crimp joints - One end-of-line dump valve - Two Kemper venturi valves. 	BYES	11/09/2019	06/12/2019	<p>Following a review of the paper and discussions with HFS 13/01/20 it has been concluded that, due to the risk of introducing contaminants to the water system by undertaking and intrusive investigation, there will be no removal of component parts for testing.</p> <p>This potential issue is to be monitored through PPM which, if not already included, will be adapted to include corrosion monitoring together with TVC level monitoring.</p> <p>BYES to confirm current PPM and if required Board will issue a change for an update to PPM methodology to include corrosion monitoring of strainers. - Subject to approval from OSB for the principal. BYES will provide a work list when the corrosion footnote is added but formal PPM is required.</p> <p>There was discussion around when water chemistry would be requested. BYES are to provide a flowchart outlining the process for monitoring, exceptions reporting and actions required when trigger levels are exceeded from the following:</p> <ol style="list-style-type: none"> 1. Corrosion identified in the PPM; 2. High TVC in water quality sampling; 3. Patient monitoring. <p>It is noted that this flowchart will be progressed via the Local Water Safety Group.</p>	OPEN	Yes	Yes
W10	Positive Pseudomonas results	1	<p>Pseudomonas found in taps, in Paediatric Medical Inpatients and DCN Inpatients. (SHTM 04-01 Part A published in July 2014)</p> <p>All taps (not just TMT/TMV4) to be disinfected and retested. The following needs to be undertaken:</p> <ul style="list-style-type: none"> - Inspect and replace, as appropriate, taps, tap components and pipework. - Replace tap strainers and cartridges in affected TMT taps. - Remove all TMT and TMV cartridges and replace with new ones. - Remove and replace all TMT strainers (carried out at the same time as item 3). - Taps to be removed and disinfected - Once pipe work has been disinfected and taps disinfected retest the system (Augmented care areas 100% taps for TVC, fungi and pseudomonas aeruginosa. Rest of a representative sample from the rest of the hospital for TVC and legionella.) <p>Note: Testing should be in accordance with SHTM 04-01 and in accordance with BS 8580-1, L8 and HSG 274 and HPS guidance September 2014: "Pseudomonas aeruginosa routine water sampling in augmented care areas for NHS SCOTLAND".</p>	BYES	29/07/2019	30/09/2019	<p>BYES did not order the new tap cartridges required to reinstall the Marwick taps in time for reinstallation following autoclaving. The cartridges are expected today - JT to contact DH when cartridges arrive. These have now been installed and sampling is underway.</p> <p>Shower heads were disinfected 2 weeks ago as part of PPM. Pre and post sampling still needs to be carried out to confirm clear; and 5 anti-lig sinks - BYES to start removing taps and showers today. Other TMVs will follow same action and test water behind.</p> <p>All sampling will be done at the same time.</p> <p>DG to provide wording on process with all necessary information required. LG/DI to review process.</p> <p>BYES to submit H&V method statements.</p> <p>It is proposed that to close this item we need to demonstrate control of the immediate issue, and then move this to the Local Water Safety Group to manage under business as usual.</p> <p>It was noted that results are not being issued directly to IPCT. BYES need to evidence by way of a short formal statement and report from the BMS system illustrating water usage over the year with key markers to identify when MPX stopped flushing, BYES started flushing. This should also show an increase when the NHSL domestics returned to site and commenced cleaning. Going forward this will be evidenced by daily flushing logs on the</p>	OPEN	Yes	Yes

		3	Testing has found some fungal / mould contamination and high total viable counts. Given a number of indicators the water system should be disinfected and re-tested. BYES required to seek advice from the manufacturer of the valves on the strongest medium that would ensure a high level of disinfection of the whole system including the removal of bio film if present.	BYES	11/09/2019	31/10/2019	<p>The water system will be disinfected and tested prior to occupation by DCN in line with LVC 086.</p> <p><u>Full system disinfection to address TVC:</u></p> <ul style="list-style-type: none"> Sanisol proposed but manufacturer unwilling to confirm compatibility with component parts. BYES still to confirm this for forward issue to HFS to advise. The disinfection will be completed prior to triggering the move. <p><u>Full System disinfection to address fungal/mould:</u></p> <p>Without formal guidance on methodology and how to interpret the results and with a lack of accredited laboratories to test the samples NHSL proposal is no additional testing subject to approval at the OSB. The paper is being taken to the OSB for consideration.</p>	OPEN	Yes	Yes
W12	Shower hose lengths do not comply	1	Shower hose lengths do not comply with Scottish Water by-laws and guidance in SHTM 04-01 Water safety for healthcare premises. Shorten hose length, or add retaining ring, to ensure that shower head cannot reach WC or drain. Disinfect showers, hose and drain after rectification.	NHSL	11/09/2019	30/09/2019	<p>In order to achieve compliance with SW Byelaws the following actions have been agreed:</p> <ol style="list-style-type: none"> Board to be provided, by BYES, a sample of welded version of shower head. LG noted that, on basis of review of the non welded shower head, if the head is secure and cannot be tampered with, IPCT have no further comments on the proposed solution. Agreement needed over length of the hose 1.25m is standard shower length and RMCD need to be considered BYES needs to install a 10% sample of the shower head for SW to review. Board will recommend a ward for the sample to be installed. BYES will provide a programme for installing the disposable showerheads. It was agreed this would be after disinfection of system. DCN to be installed prior to DCN and RHCYP to be fitted prior to RHCYP move in but so as to avoid having to replace prior to moves. 	OPEN	Yes	Yes
W14	Instant Boil Taps and Rise and Fall Baths were found to be contaminated	1	Representatives from ZIP and ARJO to attend the site to provide specific maintenance and decontamination guidance for these products. It was proposed, subject to further discussion with the AE (Water) for Lothian and HFS, that the ARJO baths in Paediatric Oncology and Burns dressing clinic/ward care areas are removed and replaced with a suitable alternative. All other baths are to be reviewed, maintained and tested in line with the manufacturer's guidance. to demonstrate safe water delivery as per SHTM 04-01 Water safety for healthcare premises.	IHSL	29/07/2019	14/02/2020	<ul style="list-style-type: none"> Zip tap dealt with above in W4.2 – all augmented care areas now being included. NHSL to confirm and update change - JT to update. <u>ARJO recommendations are:</u> <ul style="list-style-type: none"> ARJO have advised BYES that the samples were not picked up by their courier. Therefore samples have not been tested and certification has not been provided. BYES confirmed that ARJO use a lab called 20-30 based in England. LG raised concern of the distance the samples need to travel and degradation of the sample over this time. BYES are to sample immediately to provide results for the next meeting (26/2/20). outstanding ARJO clarification on instructions for use and cleaning. LG to review SOP. <p>This is not acceptable. BYES chasing background information on costs. Plan B if disinfection doesn't work is still required.</p>	OPEN	Yes	Yes

W16	Bottle traps - There would appear to be an inconsistency of installation and potential of back-feed from trap to drain.	1	The bottle traps should be the subject of regular planned maintenance and disinfected with a suitable agent to prevent the build-up of biofilm.	IHSL		06/12/2019	<p>Subject to approval of paper at OsB.</p> <p>The paper proposes that there will be no routine additional disinfection or removal and inspection as there is currently no industry standard. Additionally the risk to the water system is deemed higher if frequently accessing the traps. Current guidance notes that if there was back flow odour then bottle trap would be removed.</p>	OPEN	Yes	Yes
-----	---	---	---	------	--	------------	---	------	-----	-----

RHCYP+DCN - Fire Action Log Dashboard

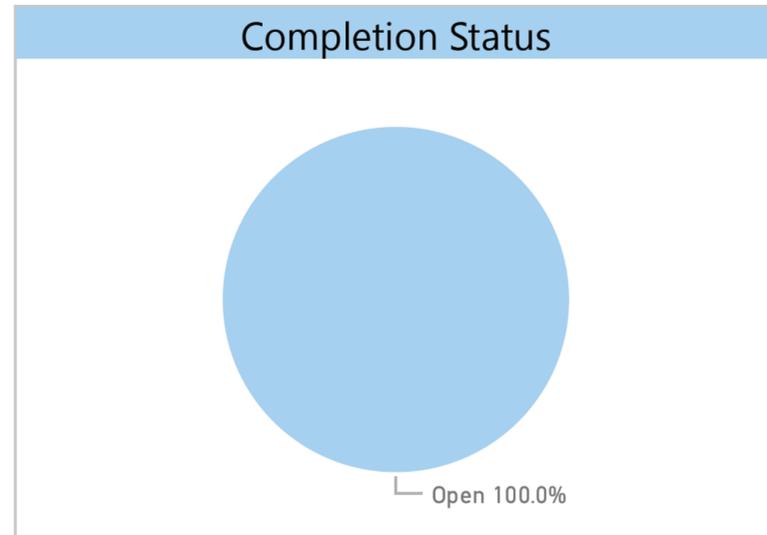
18/02/2020

Actions closed since last dashboard : 0

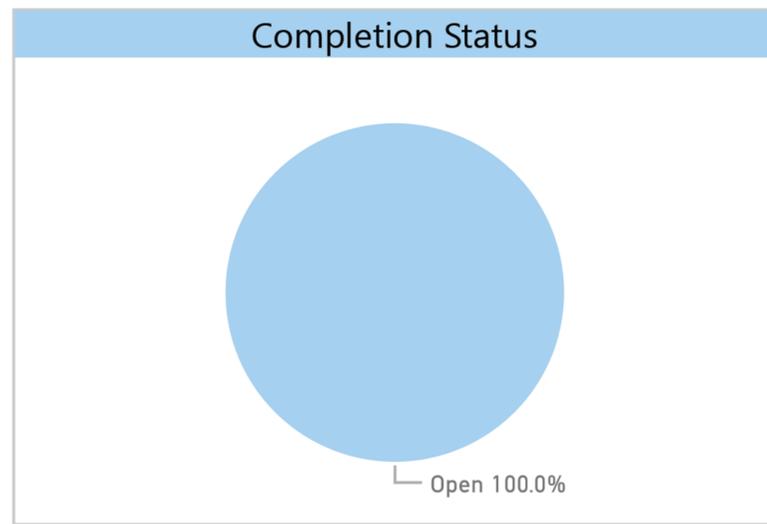
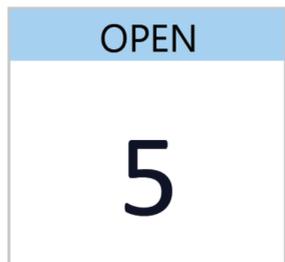
Status against Target Date

Due Status

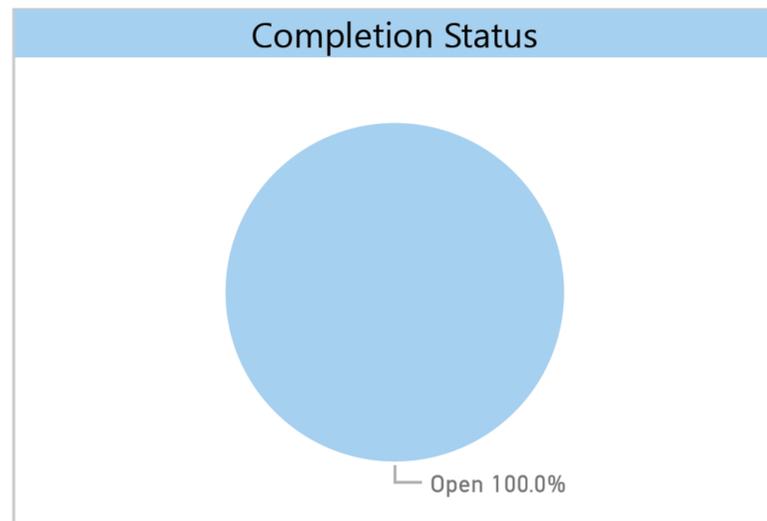
- Closed
- Actions on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP



RHCYP + DCN

Fire Action Log

Revised Date: 18/02/2020

Current Date for tracking: 18/02/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to Close	Open/Closed	Priority To RHCYP	Priority To DCN
F4	A number of remedial snagging and housekeeping issues were identified; damage to fire doors, seals and workmanship; penetrations in compartment walls; delineation of rooftop escape.	1	A number of the items have already been identified and logged by NHS Lothian via the helpdesk process. NHS Lothian and IHSL should ensure all works are undertaken prior to occupation. Procedures should be adopted to ensure rooftop escape remains clear.	IHSL	30/10/2019	24/12/2019	This work is in progress and will be completed and/or in place prior to occupation. Confirmation for completion of the 'Snagging' and Identification of the business as usual process for onward management. Awaiting IT report	OPEN	YES	YES
F5	It is noted that there is not fire barriers in the vertical risers and we have been advised that the risers area single fire compartment.	1	Confirmation is required that the Board has a contingency plan is in place in the unlikely event that a fire takes out the majority of an individual riser.	MPX		31/01/2020	As per electrical items - Resilience and planned management to be detailed to close the item.	OPEN	YES	YES

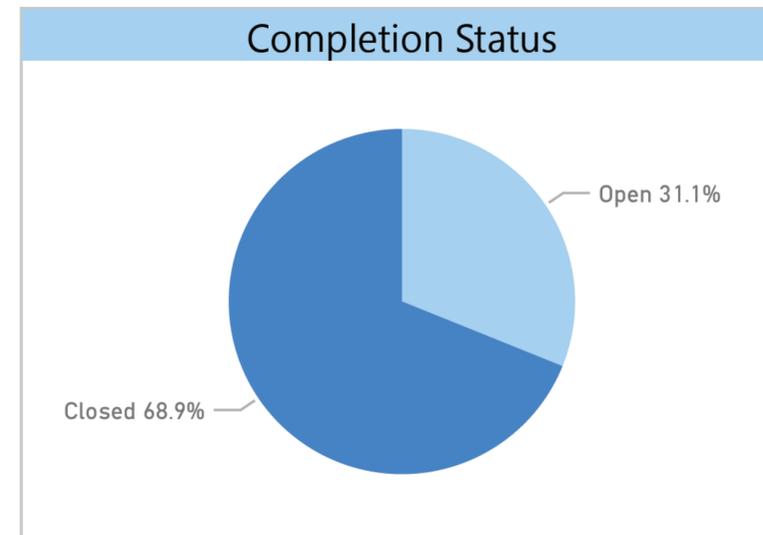
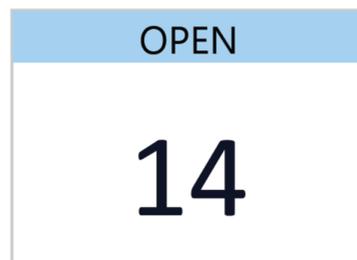
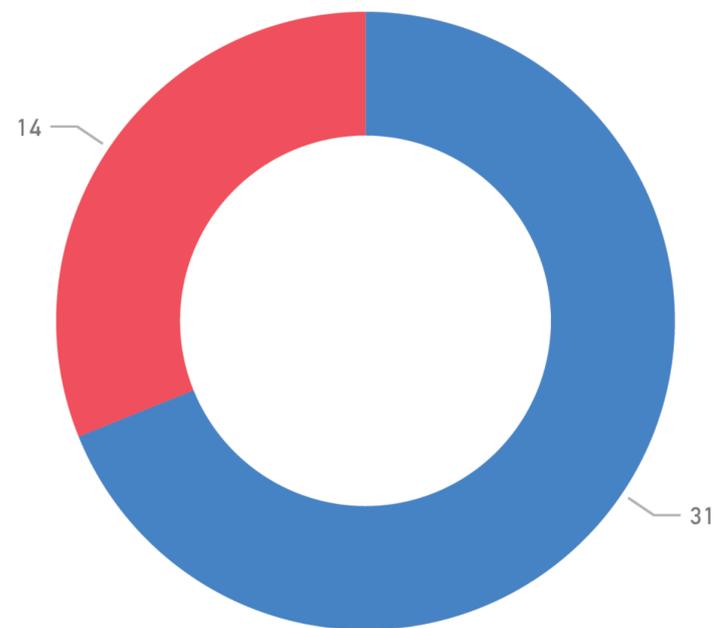
RHCYP+DCN - Electrical Action Log Dashboard

18/02/2020

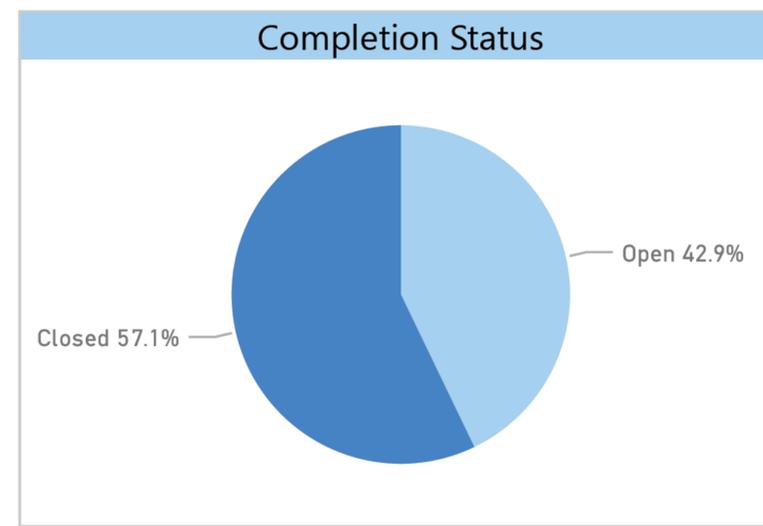
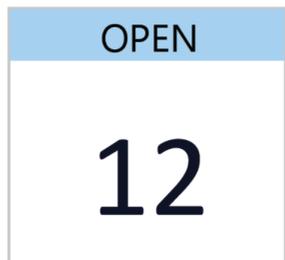
Actions closed since last dashboard : 9

Status against Target Date

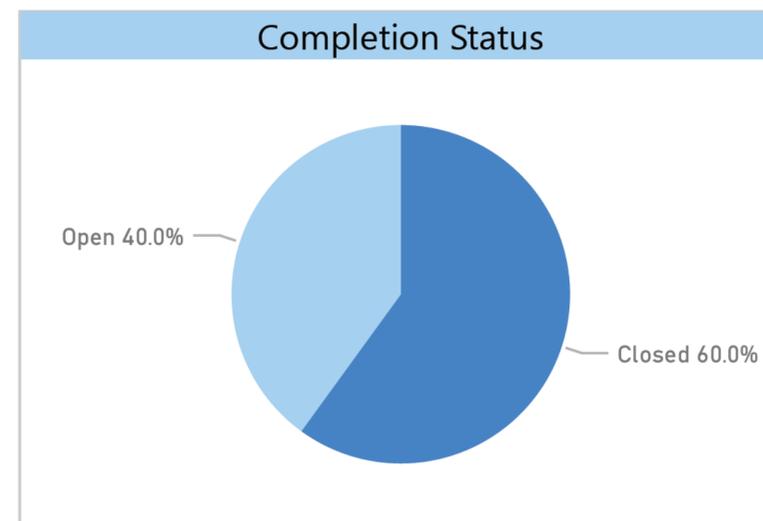
- Due Status**
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP



RHCYP + DCN

Electrical Action Log

Revised Date: 18/02/2020

Current Date for tracking: 18/02/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to Close	Open / Closed	Priority To RHCYP	Priority To DCN
E7	HV and LV Switch room escape lighting	1	Ensure that escape lighting and signage in HV and LV switch rooms has been provided to BS 5266 and the Health and Safety (Safety Signs and Signals) Regulations 1996	BYES	06/11/2019	24/12/2019	HFS confirmed that no information has been received. The email of 14-02-20 containing the HV/LV audit does not address emergency lighting. BYES to provide information.	OPEN	YES	YES
E8	The HV switch room has some specific installation issues which require to be addressed	1	Fire separation as per SHTM 06-01 7.18	IHSL/MPX	06/11/2019	31/01/2020	MPX to provide statement. Information is contained in pages 5-8 of the Access and Maintenance Strategy document attached on Aconex MPX-GC-030661, however, HFS have confirmed the access strategy document does not address the issue.	OPEN	YES	YES
		2	Routing of LV ladder as per SHTM 06-01 7.24	MPX / NHSL / HFS	06/11/2019	31/01/2020	MPX to provide statement. Information is contained in pages 5-8 of the Access and Maintenance Strategy document attached on Aconex MPX-GC-030661, however, HFS have confirmed the access strategy document does not address the issue.	OPEN	YES	YES
		3	Limited access above transformer	MPX / NHSL / HFS	06/11/2019	31/01/2020	MPX responded as per MPX-GC-030661.- The access strategy document does not address the issue. Page 2 of Section 7,0 notes the access for the plant but does not address limited/restricted height access. IHSL to provide statement.	OPEN	YES	YES

E13	The UPS and output switchboards are a significant distance from the point of load. From this point there is no alternative supply within the internal infrastructure thereby increasing the potential for a single point of failure contrary to clause 4.6 of SHTM 06-01.	2	NHS Lothian should require IHSL to provide agreed mitigation strategies to meet SHPN 00-07 and SHTM 06-01 to avoid internal failure of the single electrical supply to the critical electrical services such as Medical IT cabinets serving life support and other critical systems.	NHSL/HFS	30/10/2019	31/01/2020	HFS advised information contained within DSSR resilience report items 15. However no specific reference to Chapter 56 and 710 of BS 7671. MPX have responded as per MPX-GC-030685 - Board to review.	OPEN	NO	NO
E15	Rising main bus bars are not sealed between floors.	1	There are at least two risks associated with this. One is resilience. If there is a fire or catastrophic event then this will traverse all floors and there is the potential for tools/material to drop to lower levels. Access to equipment is difficult with the risers and could be contrary to BS 7671 132.12 for accessibility inspection, testing and repair.	MPX	06/11/2019	31/01/2020	The information provided (NHSL-GC-004253 does not address the point raised. MPX to provide a statement.	OPEN	YES	YES
E16	Modular Wiring System	2	Tap off units are not secure on the side of the trunking	MPX	06/11/2019	24/12/2019	MPX have issued progress statement as per MPX-GC-030689 and have confirmed site works will be complete by 28.02.20.	OPEN	YES	YES
		3	Fire integrity is required to be checked and confirmed	NHSL	06/11/2019	24/12/2019	MPX have responded MPX-GC-030688. Board to review.	OPEN	YES	YES
		4	All missing parts to be fitted to prevent access to live parts	MPX	06/11/2019	24/12/2019	IHSL to provide statement to confirm identified items have been repaired and what other checks have been carried out. MPX have issued progress statement as per MPX-GC-030689. Site works will be complete by 28.02.20.	OPEN	YES	YES
		5	Confirmation that de-rating of cable has been applied due to excessive cable coils and connectors left in trunking	MPX	06/11/2019	24/12/2019	IHSL to provide statement to confirm identified items have been repaired and what other checks have been carried out. MPX have issued progress statement as per MPX-GC-030689. Site works will be complete by 28.02.20.	OPEN	YES	YES
		6	Concern is raised that fixing bolts/screws could damage the single core cables in the trunking.	MPX	06/11/2019	24/12/2019	IHSL to provide statement to confirm identified items have been repaired and what other checks have been carried out. MPX have issued progress statement as per MPX-GC-030689. Site works will be complete by 28.02.20.	OPEN	YES	YES

E17	Earth Bonding Bars (EBB) A number of EBB have been installed incorrectly posing a potential infection control risk.	1	A "circuit chart" should be provided for all EBB and the conductors should be checked to ensure they have individual labels.	MPX	06/11/2019	24/12/2019	MPX issued progress statement as per MPX-GC-030686. MPX have advised the following: Schematics all uploaded to Zutec. Site progress has been reported as 50% complete, remaining mounting of schematics / mastic sealing to be complete by 28.02.20. Once works are complete RH will undertake a sample witnessing and confirm to HFS.	OPEN	NO	NO
		3	EBB fitted above ceilings cannot be easily/adequately accessed for testing and inspection.	HFS	06/11/2019	24/12/2019	MPX issued closing statement as per MPX-GC-030692. - HFS to review.	OPEN	YES	YES
E18	Medical IT Systems	5	Medical IT system cables are considered essential and covered by BS 7671 chapter 56, however this does not appear to be the case in the installation as they are not fire rated or segregated from other cables.	MPX	06/11/2019	24/12/2019	HFS have advised the resilience report does not address this question, as it concentrates on the mains and sub-mains distribution infrastructure.	OPEN	YES	YES



NHS Lothian

Oversight Board RHCYP/DCN
20 February 2020

5.

Medical Director NHS Lothian

WATER QUALITY UPDATE

1 Purpose of the Report

- 1.1 The purpose of this report is to recommend that the Oversight Board accept the actions and monitoring described in the paper to allow closure of the outstanding actions from the Water section in the NSS phase 1 report.

Any member wishing additional information should contact the Executive Lead in advance of the meeting.

2 Recommendations

- 2.1 The Oversight Board is asked to take assurance from the detail provided in this paper and to accept the recommendation to close the outstanding aspects of the actions pertaining to water quality. All the actions have been discussed and agreed with NHS Lothian's Authorising Engineer for Water, who is the expert contracted to provide advice to NHS Lothian, and in order to provide further assurance, it has been agreed that Internal Audit will undertake an assessment of water safety and quality monitoring in NHS Lothian in quarter 1 of 2020-21.

3 Discussion of Key Issues

- 3.1 There has been detailed discussion at the Oversight Board and between NSS and NHS Lothian of the actions required by NHS Lothian to evidence progress and allow the outstanding actions on the tracker to be marked as complete. These fall into the following main areas:

3.1.1 The need to maintain control and oversight of a filled water system prior to occupation: the various reviews undertaken have not identified any systemic issue of contamination with the water system. It is important that NHS Lothian and their Hard Facilities Management (FM) partners for the building, Bouyges, maintain control and oversight of the system prior to occupation. The following actions have been taken:

- A local water safety group has been established and will provide an exception report on temperature control, outlet management and Total Volume Count (TVC) trend monitoring and *Pseudomonas aeruginosa* monitoring in augmented care areas to the Executive Steering Group (NHS Lothian's internal management group for RHCYP/DCN) as well as through the normal water safety reporting structure.
- Maintenance regimes have been amended to reflect the fact that the building is unoccupied, to ensure that every outlet is run every day as part of the cleaning regime, and that this is recorded and monitored.
- Actions are complete on the replacement of fixtures (57 in total) that had been found to be positive for *Pseudomonas aeruginosa*.

- Actions are already complete on temperature excursions noted already in the Building Management System and any further excursions will be monitored through the local water safety group.

3.1.2 Action prior to occupation: a low value change has been issued to cover the need for whole system disinfection prior to occupation of the building by patients. The timing for the disinfection to be undertaken will be made clear to the Oversight Board once the move date is agreed.

3.1.3 Action to ensure the system remains fit for purpose: a planned preventative maintenance regime that includes corrosion monitoring and system condition assessment has been clarified and shared in detail with Bouyges. This aligns to the suite of actions which will be strengthened across the NHS Lothian estate. For this building it will be monitored on an ongoing basis through the local water safety group.

3.1.4 System level assurance: NHS Lothian has moved to strengthen its oversight and assurance of key infrastructure components of its estate, of which water safety is one. The local water safety groups, for all sites, will report to the Health and Safety Committee using standard templates. These will apply whether the Hard FM for the site are NHS Lothian Estates and Facilities staff or this service is from an external provider. The ICNet system is well established and part of routine day to day work, and is the way any patient infection would be identified. Consideration would be given to the aetiology of this (which will include the role of the built environment) using a standard operating procedure, and an Incident Management Team convened if required,. Events that occurred during 2019 in the other occupied parts of NHS Lothian have already demonstrated that this is a robust system, and when issues are identified, they are managed in a proactive and transparent fashion in line with national policy.

3.1.5 Compliance with national guidance: NHS Lothian have a proactive approach to nationally issued guidance and would expect to comply with any evidence based guidance or guidelines produced from expert bodies, or transparently report any reasons not to do so.

4 Key Risks

- 4.1 Multiple changes and requests increase the risk that Bouyges will not provide adequate assurance to the local water safety group.

5 Risk Register

- 5.1 Occupation of the building may be further delayed by seeking a level of assurance about water safety that is greater than the assurance of the water quality that can be provided for either of the current sites.

6 Impact on Inequality, Including Health Inequalities

- 6.1 An impact assessment has not been carried out.

7 Duty to Inform, Engage and Consult People who use our Services

7.1 Engagement with clinical groups has been held regularly.

8 Resource Implications

8.1 The resource implications are part of the costs described for split site working prior to occupation.

Tracey Gillies
Executive Medical Director
03/02/20



6.

RHCYP & DCN Oversight Board
20 February 2020

Director of Finance, NHS Lothian

RHCYP & DCN, LITTLE FRANCE PROGRAMME; PROCESS, RISKS AND DEPENDENCIES

1 Purpose of the Report

- 1.1 The purpose of this report is to invite the Oversight Board to consider the programme implications, as currently understood, in the light of the Cabinet Secretary's timeframe and the risk profile.

2 Recommendations

The Committee is invited to:

- 2.1 Consider the timeframe and decision point for DCN service relocation.
- 2.2 Note the level of work required to inform the decision point for the RHCYP (and CAHMS) service relocation.
- 2.3 Consider the risks and dependencies associated with bringing forward validation and decision points into the period when construction, witness, testing and commissioning activities by IHSL works are still progressing.

3 Discussions of Key Issues

- 3.1 The engagement of NHSL with IHSL and their project managers, designers, contractors and supply chain is through a blend of the extant Project Agreement (PA) processes with a NEC4 suite of contracts. This arrangement is in order for all the parties to secure delivery of the works subsequent to being unable to agree appropriate commercial terms with Multiplex and then Bouygues via IHSL.
- 3.2 There is currently in place an Initial Engagement Agreement between the Board and IHSL for ventilation remedial and enhancement works which has enabled design development and scoping of these works in advance of any formal contract. However, the value of the works determines the risk profile and process to be followed – including the level of PA level assurances required (such as Funder sign off).
- 3.3 The first basket of work relates to DCN:
- 3.3.1 First package is remedial works on AHUs and theatre ventilation (initially identified from the IOM reports and HFS review).

Multiplex are due to complete by end February. (Testing has been undertaken progressively since November 2019 with final testing to be undertaken at the

completion of the installation by late March; including AE, HFS, HPS, IOM, IPCT, Tech Adviser).

The target is therefore End of March for completion of independent validation for this discrete package of works.

- 3.3.2 There is also a package of outstanding remedial defect items and minor Board Changes to be delivered, as per the PA, and it is anticipated that those should also be completed by the end of March although this remains to be confirmed by IHSL
- 3.3.3 The second package of works is the fire enhancements – (three Medium Value Changes (MVC) pertaining respectively to DCN, RHCYP and CAMHS). These do not require a Supplemental Agreement (i.e. a contractual change to the Project Agreement).

This (Medium value) change mechanism is based on a formal request from NHSL to IHSL, as per the PA. This has been issued in draft for the fire enhancements in DCN and the design work completed to date has indicated a programme completion date for DCN of the 7 May. Negotiations continue with IHSL to agree the final wording of this MVC document.

Independent validation including IOM and a specialist fire engineer will be undertaken as the installations are completed zone by zone and could be completed by Mid May for the DCN element if all works go to plan.

- 3.3.4 However, in order to deliver the programme announced by the Cabinet Secretary, and deliver patient transfer by end of May (with retaining 6 weeks migration period), a decision will require to be taken by her on 17 April. This is in advance of all works being completed and fully validated.

NB these are fire enhancement works which will be monitored / assured during works by the Board's Fire Officer, Technical Adviser and Project Team and in particular by the HFS National Fire Advisor and an independent Fire Engineering specialist employed by the Board

- 3.4 The next basket of works is the High Value Changes (HVC) for RHCYP – Ventilation and associated fire enhancements.
- 3.4.1 Following the conclusion of the Initial Engagement Agreement, the initial concept design is programmed for completion at the end February when step in by Board could be enacted. However it is believed by the Project team that the concept design will be sufficiently progressed in early - mid March (given current performance) – allowing for due diligence and both the Boards', the Oversight Board's and the Funders' Assurance checks to be completed prior to sign off and the subsequent conclusion of the Supplemental Agreement.

Given this timeline it is proposed that there is an extension of IEA to meet the gap, if the current assessment of timeline is correct, until the technical details are available to facilitate the continued development of detailed design, production information, advanced procurement and mobilisation including IHSL's supply chain.

Appendix 1 includes a summary of the outstanding points, from a legal perspective, that will require to be addressed in the Supplemental Agreement.

- 3.4.2 A detailed understanding of any adverse impact on the day to day operation of DCN providing clinical areas a result of these significant ventilation works will not be known until IHSL and their supply chain have fully identified all existing services critical to DCN's safe function and any design and construction measures agreed to ensure continuity of operation for DCN. Based on the provisional programme issued by IHSL the earliest date for this point to be reached would be the end of March 2020. It will be important to have fully informed input from the Infection Prevention and Control team through the HAI Scribe process to ensure that any decision is cognisant of the risks.
- 3.4.3 It is assumed construction commences 13 April based on IHSL's preliminary programme. This preliminary programme of construction, testing and commissioning takes IHSL to 13 November. It would be our intention to carry out our own independent validation and testing in parallel. However at this stage there is insufficient design detail to determine how the Board's mobilisation could be delivered in parallel, if indeed this is possible.

3.5 Testing, demonstration of compliance, assurance, certification

Bringing together and understanding who does what when in the process of sign off for RHYCP/DCN is an important step in finalising the final stages of moving in.

There is a low risk appetite from the Board and staff for an overlap in completion of supplementary works and commissioning following criticisms of previous decisions in the KPMG report.

For those who are not close to this, a description of constituent parts and processes will help decision making and understanding where risk may lie:

	Who are the internal contributors to the testing and assurances, checks	Who are the external testers and validators	Is this done sequentially or at the final stage following completion	Does it need to be done before commissioning and service movement plan can start
Remedial work: Ventilation in all theatres	IPCT, Tech Adviser, HFS, HPS, Medical Consultant	IOM, AE	Final Stage	Yes
Remedial work: AHU's	IPCT, Tech Adviser, HFS, HPS	IOM, AE	Progressively and Final Stage	Yes
Enhancement work: F/S dampers in DCN areas	IPCT, Tech Adviser, HFS, HPS	IOM, AE, Fire Engineer Independent	Progressively and Final Stage	Yes

	IHSL's PM and Supervisor	Tester		
Board Changes + Outstanding Remedials	Project Team, Tech Adviser		Final Stage	Critical Changes only.
Recommissioning of medical gases	Pharmacy QC	AE	Final Stage	Yes
Whole water system disinfection	Estates + Facilities, IPCT, Project Team.	AE	Final Stage	Yes
Remedial work on ventilation Critical care children	IPCT, Tech Adviser, HFS, HPS IHSL's PM and Supervisor	IOM, AE Fire Engineer Independent Tester	Progressively and Final Stage	Yes
Enhancement work on Haematology / Oncology	IPCT, Tech Adviser, HFS, HPS IHSL's PM and Supervisor	IOM, AE Fire Engineer Independent Tester	Progressively and Final Stage	Yes
Fire enhancements in childrens (inc CAMHS)	IPC, Tech Adviser, HFS, HPS IHSL's PM and Supervisor	IOM, AE Fire Engineer	Progressively and Final Stage	Yes

- 3.4.2 The Independent Tester also needs to be satisfied as he will undertake the final sign off for these works, after the 13 November.
- 3.5.3 However, to secure the Cabinet Secretary's autumn programme ,with retaining 6 weeks migration period, a decision will require to be taken by 8 October - in advance of all works being completed and fully independently validated and signed off by the IT.
- 3.6 CAHMS will have a significant but smaller programme of works aligned within the other programmes.
- 3.7 High Consequence Infectious Diseases (HCID) capacity for providing either negative pressure rooms (or balanced pressure rooms for temporary patient placement while final placement and diagnosis is in progress in ED) has been requested.

Scottish Government's Health Resilience Unit asked NHSL (email 29 January, 2020) *"In light of the emerging Wuhan coronavirus situation, Scottish Ministers wish*

to have up to date information on the current negative pressure room capacity and occupancy in Scotland”.

NHSL, in response, confirmed the lack of availability of compliant (negative pressure) isolation rooms in ED and other front door services to respond to patient admission with HCID across NHS Lothian.

The minimum requirement currently required by national guidance is a negative pressure isolation room or an ensuite single room which is at balanced pressure to the adjoining spaces.

The area within RHCYP being currently at positive pressure presents the risk that a high consequence microbiological hazard would be disseminated into the wider ED creating an avoidable hazard that would breach COSHH and Health and Safety at Work Regulations and create a public health risk.

A SBAR has just been prepared by IPCT and recommendations will be considered at the next available Executive Steering Group for RHCYP & DCN before being brought to the Oversight Board for consideration.

No discussions have taken place to date with IHSL in relation to programme and cost implications and how might any works arising be implemented.

4. Key Risks

- 4.1 The overlapping of construction, witness and commissioning and Board independent validation poses risks arise if opinion differs.
- 4.2 Target programme and target costs only creating a risk on both programme and cost certainty. In addition the Operational Cost (FM mainly) and future Planned Preventative Maintenance Programme require input and engagement from Bouygues. There has been little evidence of their positive engagement (and proactive management of the Services) contract to date.
- 4.3 The Supplemental Agreement is required for the High Value Changes in order to maintain the PA terms. Works could potentially continue under an extension of the Initial Engagement Agreement.
- 4.4 Impact on patients, staff and Board if publically announced move dates are not met
- 4.5 Introduction of a HCID compliant room within the ED and potential detrimental effect on current advised programme.
- 4.6 Proceeding with DCN move without certainty on any adverse implications on day to day DCN operations arising from Ventilation Works.

5. Resource Implications

- 5.1 In order to meet the programme expectations and assurance requirements there is a range of parties who require to “sign off” at all stages. It is proposed that the parties maintain the current collaborative engagement moving from the current design stages

to the construction phase and into commissioning. This is illustrated in the following table, but there will also be statutory authorities (Planning and Building Standards) and Funders (with advisers) for the High Value Changes:

Board Representative and Project Team	NHS Lothian	IHSL	Technical & Commercial – George Street Asset Management
Technical Adviser – Mott MacDonald Cost Advisor – Thomson Gray			Project Manager– Faithful & Gould
Validation engineer - IOM			Supervisor – Watermans
Authorising engineer – Turner			MEP Consulting Engineers – Hoare Lee
NSS – HFS / HPS			Commissioning Engineer to IMTECH – TBC (H&V?)
Internal NHSL including: Clinical and Service leads, IPCT, Fire Advisers, Facilities, etc			Principal Contractor and Principal Designer - IMTECH
			Hard FM - Bouygues

- 5.2 Forward funding (in advance of any contract being in place) of design costs and potentially pre-orders of plant will be required in order to secure adherence to the programme. Validation of costs will be sought from the Project Managers engaged by IHSL.

Iain Graham
Director of Capital Planning and Projects
 18 February 2020

List of Appendices

The following Appendices are attached:

Appendix 1: High Level Summary of outstanding issues before can conclude SA2 for Ventilation Works

Appendix 1

Note for NHS Lothian/Lothian Health Board

High Level Summary of outstanding issues before can conclude SA2 for Ventilation Works

The following is a list of the key outstanding matters which need to be agreed and finalised before a Supplemental Agreement for the proposed ventilation works and associated works under HVC107 can be concluded between Lothian Health Board/NHS Lothian (“the Board”) and IHS Lothian Limited (“Project Co”).

Construction Issues

1. **Design (and copyright to use design) and construction standards and a suitable design review process which allows for input by all relevant stakeholders** – the design is currently being developed this includes the Board’s Construction Requirement and Project Co’s Proposals to meet those requirements. This together with other information would need to form the “Scope” for the ventilation works. A suitable design review process, is also under discussion it currently being proposed to use something akin to the PPP standard review procedure. Copyright provisions to use the designs and other information provided needs to be agreed
2. **Right of access to the works, inspection, monitoring and ‘opening up’** – during the course of construction the Board and other stakeholders and parties who will validate the ventilation works (e.g. IOM) propose to inspect the works to ensure they are progressing correctly in line with the finally agreed Scope. Such rights are still to be agreed.
3. **Quality plan and CDM requirements** – quality plan is required for the Scope and CDM obligations need to be documented (albeit it seems to be agreed in principle that Project Co will be client and the Construction Contractor will be Principal Contractor and Principal Contractor)
4. **Programme and extension of time and money events (‘compensation events’)** – an agreed programme (which complies with the proposed Construction Contract requirements) including start date, target completion date and a Longstop Date for Board rights of step- in requires to be agreed. The programme is a target programme only and will be subject to change for ‘compensation events’. The exact detail of the compensation events still requires to be agreed and needs to be considered with the Project insurances.
5. **Payment** – it has been agreed that the Board will capital fund the ventilation works and that payment will be made on a monthly basis but the exact details for the payment mechanism for the works (including requirements for open book accounting) have yet to be finalised as do the CAPEX costs.
6. **Commissioning, tests and inspections prior to and at completion, and deliverables on completion** – these need to be detailed and agreed and included in the Scope, as well as agreeing the role of IOM and the Independent Tester for certifying completion in conjunction with the Project Manager and Supervisor under the Construction Contract. Other matters such as delivery of O&M manuals and as built information at completion also needs to be resolved.
7. **Plans** – of the site areas and materials lay down areas/site office needs to be agreed
8. **Scope** - as noted above this needs to cover all of the works (including the BCR’s, PCPs) details of design, quality plan, items of equipment, method statements for the works, and restrictions on working, tests and inspections required (and materials, facilities and samples for the tests)

9. **Defects correction and rectification times** – require to be agreed so that they work with the FM requirements of the Project Agreement (in particular Schedule 14).
10. **Caps or exclusions of liability** – the extent of any limitations or exclusions of liability need to be resolved because Project Co has advised that it will not accept liabilities for the works that are greater than the liability of the construction contractor.
11. **Termination** – and circumstances this can happen (e.g. Board step-in) need to be resolved.
12. **Consequential amendments to the Project Agreement** – this will need to be addressed as a part of a final legal sense check exercise

FM Issues

Any changes to the Services Requirements (including rectification periods) as a result of the ventilation works need to be agreed and reflected in amendments to the Project Agreement and in an agreement amending the FM Contract. Further the OPEX costs of the HVC also need to be established, agreed and documented.

Insurance Issues

Proposals for insuring the ventilation works during the construction phase and also the Project Facilities as amended by the ventilation works on completion, are awaited from Project Co. This may be effected through changes to the Project Insurances. These require to be considered with 'compensation events' which may be different from the Relief Events, Delay Events, Compensation Events and Force Majeure provisions in the Project Agreement.

Details of other insurances to be in place by the Contractor, design consultants, Project Manager and Supervisor, Independent Tester and IOM etc. (for example Professional indemnity insurance) still need to be proposed and agreed.

Other Project and Ancillary Documents

Other Project and Ancillary documents which we expect will be required to implement HVC107 and which need to be agreed and finalised at the time of entering into SA2 are:-

1. Construction Contract between Project Co and the Contractor, Imtech Engineering Services Central Limited
2. Collateral warranty from the Contractor in favour of the Board
3. Appointment between Project Co and Faithful+ Gould Limited for services of Project Manager pursuant to document 1
4. Collateral warranty from the Project Manager in favour of the Board
5. Appointment between Project Co and Watermans for services of Supervisor pursuant to document 1
6. Collateral warranty from the Supervisor in favour of the Board
7. Appointment between the Contractor and design consultant Hoare Lee for design of the ventilation works
8. Collateral warranty from the design consultant Hoare Lee in favour of the Board
9. Amendment to FM Contract between Project Co and BYES
10. Revised Letter appointment for the Independent Tester to extend his remit to the ventilation works
11. Appointment by the Board of IOM to carry out validation of the ventilation works tests and inspections
12. Collateral warranties in favour of the Equity providers may need to be required from the Contractor, Project Manager, Supervisor, Hoare Lee, etc. – (It is confirmed these are not required by Funders but the Equity Provider requirements have yet to be clarified.)
13. Other security documents – assignation in security and notices of assignation – may be required by Funders. The Funder requirements have yet to be clarified.

Third party consents, approvals and vires issues

1. Project Co, board minute approving Project Co entering any of the applicable project documents and Power of Attorney for Project Co's authorised signatory(ies)
2. Funder consent letter – Funders may require a supporting legal report, legal opinion and also a report from the LTA, as part of credit committee approvals. Funder requirements have yet to be clarified
3. Equity providers consent letter(s)
4. Board approvals – Extract Board Minute, up-to-date Standing Orders, Standing Financial Instructions
5. Evidence of valid execution (e.g. board minutes and powers of attorney) may be required for any counterparties to documents using authorised signatories
6. Insurance Broker's certificate(s) – from project insurers and others to support insurance requirements.

MacRoberts LLP
13 February 2020
LOT/7/113 – MWK/JEM



RHCYP+DCN - Continuity of Services on Existing Sites Action Log Dashboard

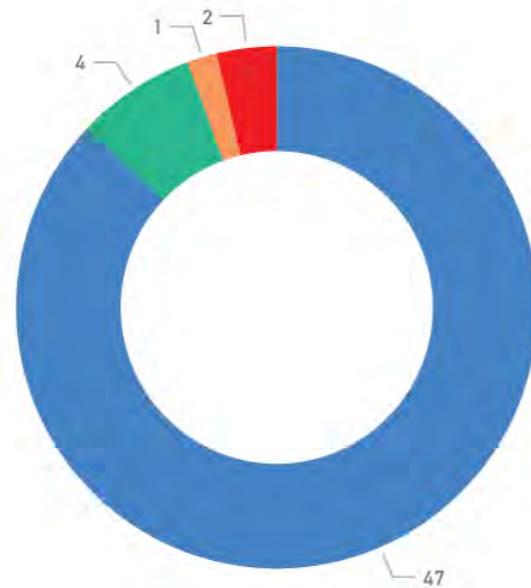
8.

13/02/2020

Actions closed since last dashboard : 1

Status against Target Date

- Closed
- Actions on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



OPEN
7

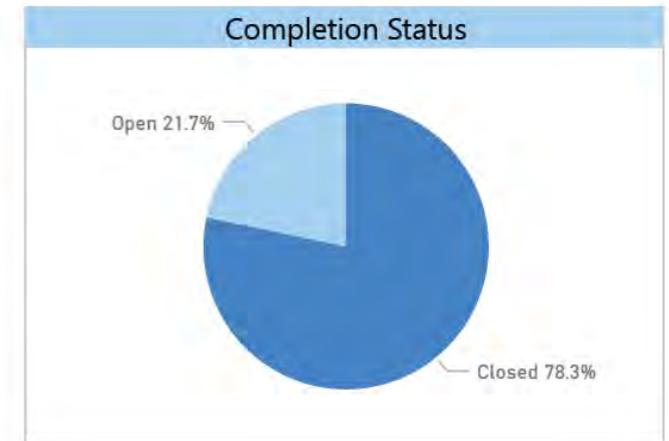
CLOSED
47



Actions for DCN at WGH site

OPEN
5

CLOSED
18



Actions for RHSC Sciennes site

OPEN
3

CLOSED
38



RHCYP + DCN

Continuity of service provision on current DCN and RHSC sites

Revision Date: 12/02/2020

Current date for tracking: 13/02/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/ Closed	DCN	RHSC	Source of info	Funding
Capacity												
1	Winter planning	1.1	RHSC: Increase in ED capacity to maintain flow	F Mitchell	05/07/2019	30/11/2019	Increased OPD capacity, 3 RBT opening. All equipment and IT in place, going live Tuesday 17 December.	CLOSED	No	Yes	Peter Campbell 09/12/2019	Service sustainability
		1.2	RHSC: increase medical beds and cubicles	F Mitchell	05/07/2019	30/11/2019	Ward 4 and PIU have now relocated. 2 shower trolleys moved to RHSC from RHCYP.	CLOSED	No	Yes		Service sustainability
		1.3	RHSC: Additional 15 winter B5 posts advertised and shortlisted, to supplement medical nurse staffing. 6 additional B2 posts will be sought from the staff bank on a guaranteed shift basis for night duty staffing on ward 4 (medical). Additional nursing posts approved in June 2019 for an increase in year-round nurse staffing levels in the ED, particularly to support evening and night activity pressures. Most posts now recruited to for Phase 1 of this expansion, including an Advanced Nurse Practitioner for the ED team.	F Mitchell	05/07/2019	30/11/2019	B5 Winter posts - first round of interviews held 2 October. Closing date for second round 18th October, 1 applicant shortlisted. Advertised again closing 15th November 2019. Second round of Winter staff recruitment disappointing- going back out to recruitment again. Extra winter beds being staffed mainly by core ward staffing. Band 2 Winter Posts - Bank Requests from November onwards. Additional permanent ED posts - ENP job descriptions being finalised for recruitment end Oct. onwards. Advert for winter post closed again with 1 applicant. Gone out to advert again. Able to cope with core staffing at the moment.	CLOSED	No	Yes		Service sustainability
		1.4	RHSC: Increase haem/onc day care beds by 3	F Mitchell	05/07/2019	30/11/2019	This can be closed as the Ward moves have taken place.	CLOSED	No	Yes	Fiona Mitchell 02/12/2019	Service sustainability
		1.5	Sleep service expanded staffing for new hospital but there is no extra capacity in old RHSC and winter pressures can lead to sleep studies being cancelled. Look at potential for services at home being expanded to address waiting list?	F Mitchell	05/07/2019	07/10/2019	Home sleep studies have now started.	CLOSED	No	Yes	On the list shared by Calum Henderson following CabSec's visit.	Service sustainability
		1.6	Winter Planning adult acute services	M Pearson	05/07/2019		Due to ongoing bed closures and pseudomonas in water, DCN is currently not accessed by the WGH site for boarding. Bed pressures in down stream facilities may affect DCN, managed through operational site and capacity management. CLOSED in relation to cancelled DCN moves.	CLOSED	Yes	No		Service sustainability
2	Paediatrics at St John's	2.1	Consideration of increasing Services at SJH to reduce pressure of RHSC and enhance care closer to home for West Lothian children.	F Mitchell	05/07/2019	31/03/2020	Royal College of Paediatrics and Child Health have confirmed that they will carry out their review visit on 11 and 12 February	OPEN	No	Yes	Fiona Mitchell 10/01/2020	Service sustainability
3	Medical equipment	3.1	Interventional Neuroradiology provision: increased demand (due to service delivery issues in Glasgow) for ageing and increasingly unreliable interventional neuroradiology equipment at DCN.	M Carr	09/07/2019	04/02/2020	Confirmation was received on 29/10/19 that the Cabinet Secretary was content the Board proceeds with the recommendation to purchase the additional equipment for DCN. • Works started 14th Jan. Completion date now 5th Feb - 1 day slippage • Clinical contingency plan has worked well and will cease on 5th Feb • Capital cost is £1.5K over spent (estimate was £40K) due to the need to remove railings in the car park to allow delivery of equipment Clinical service commenced 06/02/20	CLOSED	Yes	No	Emma Lally 04/02/2020	N/A - no additional expenditure anticipated.
		3.2	Theatre lights in four of the operating theatres at RHSC Sciennes are old and unreliable, with no replacement parts available. New lights required.	F Mitchell	09/07/2019	15/02/2020	All the required theatre lights have been ordered and are due for delivery shortly, with the programme of works to install timetable for week commencing 10 February, to coincide with schools half term holiday. We do not expect to lose any activity over and above the normal reduction during half term holidays.	OPEN	No	Yes	Fiona Mitchell 10/01/2020	Additional - cost of maintaining existing sites.
		3.3	General x-ray equipment that had been installed in RHCYP required again at RHSC	F Mitchell/M Carr	09/07/2019	08/11/2019	New equipment arrived on site 14/10/19 and installation underway. This equipment will be moved elsewhere on closure of RHSC. On schedule to go live on target date of 8/11/19. Room is finished and is now back in full clinical use.	CLOSED	No	Yes	Update from S Evans, Radiology 7/11/19	Additional - cost of maintaining existing sites.
		3.4	Extension of maintenance contracts for elderly equipment at Sciennes and DCN.	F Mitchell/M Carr	09/07/2019	19/09/2019	Contracts and maintenance plans now in place. Will be updated on a quarterly basis.	CLOSED	Yes	Yes	S Evans, Radiology	Service sustainability
		3.5	Additional scope storage is required for theatres at RHSC Sciennes as two cabinets were moved to RHCYP. Currently one is on loan, with rental charges due from October 2019.	F Mitchell/M Carr	09/07/2019	30/11/2019	Scope Cabinets up and functioning according to plan.	CLOSED	No	Yes	Fiona Mitchell 02/12/2019	Additional - cost of maintaining existing sites.
		3.6	Replacement tube for CT scanner at RHSC	F Mitchell/M Carr	09/07/2019	31/07/2019	Tube replaced - COMPLETE	CLOSED	No	Yes	S Evans, Radiology	Additional - cost of maintaining existing sites.
		3.7	Videotelemetry: access to VTEM beds has been reduced in DCN since April 2019 with the reconfiguration of wards and restrictions on admissions due to positive testing for pseudomonas aeruginosa. Delaying moves to Spring 2020 extends the limited capacity and impact on waiting times. Use of portable equipment at one bed has enabled some VTEM admissions since August, but a hardwired bed with full VTEM capability and monitoring is required.	M Pearson	01/08/2019	17/11/2019	Install hardwired VTEM into ward 33. Utilise portable equipment for appropriate waiting list patients at home. Remedial electric works required prior to moving the equipment. An external contractor has been on site to look at the work - Estates to confirm date and cost. Optima will come after the electric works, £7k signed off. Complete from Estates side they just require some IT connection. Then Ward 33 will open up to 16 beds.	CLOSED	Yes	No	Michael Pearson/Hester Niven	Additional - cost of maintaining existing sites.
Clinical Support Services												
4	Pharmacy	4.1	Inadequate staffing to maintain opening hours for dispensary on 2 sites since in organisational change 1 dispensary manager was redeployed to another core service effective July 2019 when integration was meant to occur	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 7 dispensary manager resource required to allow provision of medicines on RIE and RHSC sites to prevent impact upon patient experience while RHSC remains open; and minimise impact of stress on staff health and wellbeing. 1.0wte band 7 Pharmacy Technician = £43,500	CLOSED	No	Yes	2 x SBAR reports	Additional fixed term, long term service sustainability
		4.2	Inadequate pharmacy support workers (PSW) staffing to deliver an integrated medicines distribution hub for RHCYP/RIE with required staff still working on RHSC site to maintain dispensary service	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 2 and 3 PSW resource required to prevent impact upon availability of medicines on RHSC site, and minimise impact of stress on staff health and wellbeing. 1.0wte band 2 PSW plus 2.0wte band 3 PSW = £77,192	CLOSED	No	Yes		Additional fixed term, long term service sustainability
		4.3	Pump-prime funding for staff resource to deliver the One Stop model has ceased, which is the backbone of medicines supply to patients to underpin management of capacity and flow at the new hospital site	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Funding for pharmacy technician resource must be reinstated to continue this model to be delivered. To address 3.4 and 3.5: 1.0wte band 4 Pharmacy Technician = £29,985	CLOSED	No	Yes		Additional fixed term, long term service sustainability
		4.4	Extended opening hours and weekend working rotas of the integrated pharmacy department at RIE was implemented in June 2019 in readiness for move of the RHSC in July 2019. To avoid lone staff working the full staff complement was needed on one site to full fill this rota. With pharmacy staff members remaining on RHSC the late	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 4 pharmacy technician resource needed to ensure extended pharmacy opening hours at RIE not put at risk, which would affect capacity and flow on RIE site See 5.3 above	CLOSED	No	Yes		Additional fixed term, long term service sustainability

		4.5	One Site Lead Pharmacist redeployed to another post during organisational change to integrate the 2 pharmacy departments leaving 1 Site Lead Pharmacist to manage teams across 2 sites without a deputy to support operational day-to-day management or change management of the teams	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Deputy pharmacist (Band 8a) required to support site lead pharmacist for RIE/RHSC until integration of the 2 departments is complete, which will help minimise impact of stress on site lead pharmacist health and wellbeing 1.0wte Band 8a Pharmacist = £65,625	CLOSED	No	Yes		Additional fixed term, long term service sustainability	
		4.6	Cross site transport of medicines 7 days a week is needed but the ad hoc arrangements currently in place (e.g. Blood bikes, taxi runs) is not suitable for the extended duration that off-site daily delivery of medicines will be needed until RHSC move. This is especially an issue for delivery of intrathecal chemotherapy agents that have unique transport requirements under CEL30 (i.e. anyone transporting these medicines must be trained and named on the intrathecal register as competent to undertake the task allocated to them including transport)	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Funding to NHS transport and portering services for 1.0wte dedicated driver(s) (to be trained in CEL 30 requirements) to transport medicines between 09:00 to 17:30 Monday to Friday and 10:00 to 14 00 Saturday. 1.0wte Band 2 = £24,370	CLOSED	No	Yes		Additional fixed term, long term service sustainability	
5	Laboratories	5.1	Minor changes were made to on-site Blood Science laboratory hours with the announcement of the delay in July 2019, with agreement that provision would remain under constant monitoring/ review.	M Grey	09/07/2019	31/07/2019	The NHS Blood Science laboratory service at RHSC will continue with no alteration to service but service delivery/ performance will be monitored/ kept under continuous review in order to ensure that a robust and sustainable service continues to be provided to RHSC users and their patients.	CLOSED	No	Yes	Blood Science SBAR: Impact of Delay to Move from RHSC to RHCYP 24/09/19	Service sustainability	
Facilities Management													
6	Catering	6.1	Extend canteen opening times and preparation of meals on RHSC site - for better utilization of staffing and reduction in waste.	G Curley	23/09/2019	14/10/2019	Chef now on site. Collation of menus and standard ordering.	CLOSED	No	Yes		Additional - cost of maintaining existing sites.	
		6.2	Procurement of two fridges for RHSC facility.		23/09/2019	14/10/2019	Order placed	CLOSED	No	Yes			
		6.3	Communication with catering staff about sites and rosters.		23/09/2019	08/10/2019	Chef now on site, communication with catering staff underway.	CLOSED	No	Yes			
		6.4	Improved signage and marketing for RHSC service		23/09/2019	14/10/2019	Communication in place on site	CLOSED	No	Yes			
		6.5	HACCP		23/09/2019	08/10/2019	Chef now on site: completion of HACCP	CLOSED	No	Yes			
		6.6	Explore options for third party support for catering	23/09/2019	18/11/2019	Discuss with Edinburgh Childrens Hospital Charity - Waiting for feedback from patients and visitors (4 week trial). Explored with charities, no takers.	CLOSED	No	Yes				
		6.7	Replace dining room furniture	21/10/2019	31/10/2019	Ordered for delivery w/c 28/10/19 - DELIVERED	CLOSED	No	Yes				
7	Parent accommodation	7.1	Improve environment of parents accommodation	G Curley	23/09/2019	02/10/2019	Thorough clean of parents accommodation, and enhanced cleaning within domestic services schedule.	CLOSED	No	Yes			
		7.2			23/09/2019	31/10/2019	Parent accommodation reviewed. Refurbishment and new furniture requirements identified.	CLOSED	No	Yes			
		7.3			23/09/2019	30/09/2019	Improve communication between FM team and Family Support re use of and care for parent accommodation. Protocol agreed	CLOSED	No	Yes			
8	Domestics	8.1	Domestic services, including increased pressure on staff to make existing environment as good as it can be.	G Curley	23/09/2019	30/09/2019	Review current provision with a view to providing enhanced service to compensate for condition of the environment.	CLOSED	YES	Yes			
		8.2			23/09/2019	10/10/2019	Ensure all staff only areas are in receipt of full staffing levels.	CLOSED	YES	Yes			
		8.3			23/09/2019	30/09/2019	Complete analysis of Facilities Monitoring Tool.	CLOSED	YES	Yes			
					23/09/2019	30/09/2019	Transfer of new equipment from RHCYP to RHSC /DCN	CLOSED	YES	Yes			
		8.4			21/10/2019	01/12/2019	Moved to disposable mops to avoid double dipping from 20/12/19. Note: laundry of mops does not remove C. Dif.	CLOSED	YES	Yes			
9	Logistics	9.1	Logistics services	G Curley	23/09/2019	06/01/2020	Contract with G4s has ceased, and this is now the responsibility of NHS Logistics Services.	CLOSED	No	Yes	Sasha Hill 19/12/19		
		9.2			23/09/2019	30/09/2019	Secondment opportunity for supervisor vacancy now being progressed.	CLOSED	No	Yes	Sasha Hill 10/01/2020		
10	General estate	10.1	DCN - General state of facilities; walkround and identification of works	G Curley	23/09/2019	05/10/2019	(these do not work in Ward 33 due to lack of pressure) This has NOT had any adverse effect	CLOSED	Yes	No			
					23/09/2019	30/11/2019	DCN ward 33 has 2 showers out of use, leaving only one shower available, so 6 beds closed. Ward 33 capped at 10-12 patients (depending on mobility).	CLOSED	Yes	No			Update James Picken 16/12/19
					23/09/2019	30/11/2019	Ward 32- Painting completed. Flooring patches no date yet still to be confirmed.	CLOSED	Yes	No			Update James Picken 16/12/19
					23/09/2019	11/11/2019	Neurophysiology - Consultant office painted. Senior physiologist office to be painted w/b 4/11/19. Carpet due to be replaced on 9/11/19. DCN Admin corridor and Directorate Asst office carpet to be replaced 9/11/19.	CLOSED	Yes	No			
					25/10/2019	06/03/2020	Upgrade/replacement to DCN Fire System commenced with ward 33 in November. 4-6 weeks further work anticipated from 06/01/20. To date Alarm System installed on Level 4 & 3. Panel installed on Ground Floor DCN Entrance and Floor 3&4 have been connected. Ward 32, Lvl 2 started 4/2/20. All floors to be completed and connected by 03/04/20. DCN incorporated in updated Fire Alarm Test Programme and Sounder Levels being monitored in all areas. Fire Safety/Estates working with Contractors re Programme for Doors and Surveys for Fire Stopping	OPEN	YES				Update James Picken 06/02/20 Updated Clive Armstrong 07/02/2020
					23/09/2019	30/11/2019	DCN OPD painting and disabled toilet upgrade due to complete 20/12/19.	CLOSED	Yes	No			Update James Picken 06/01/20
					23/09/2019	04/02/2020	DCN x-ray corridor to be painted mid January after bi-plane removal and install (3.1 above)	OPEN	Yes	No			Update James Picken 16/12/19
				23/09/2019	31/10/2019		CLOSED	No	Yes				
			RHSC - General state of facilities; walkround and identification of works	P Campbell	01/10/2019	31/12/2019	Equipment transferred included patient easy chairs, Mon900, Dia900, trolleys, fridge, freezers, shower trolleys, wheelchairs, bracket table and sedation tubing. Lot of work around transferring back top up items and various high tariff/specialist order sundries.	CLOSED	Yes	No	Peter Campbell		
			Equipment transferred from new RHCYP to existing site to benefit patient care/experience.										
			Unannounced HEI Inspection of RHSC and DCN took place 22/10/19-24/10/19.	A McMahon	22/10/2019	15/01/2020	The HIS Report following the unannounced HEI Inspection was published on 15 January. At RHSC, the Requirements and Recommendations are in our Action plan which is being managed through the RHSC Infection Control Committee and also being overseen by our Site Liaison Committee, in terms of the requirement to ensure the fabric of the building is maintained. Most actions to be completed by 28/02/20	OPEN	Yes	Yes	Peter Campbell 07/02/20		
		10.2	Fire and Rescue Service (F&RS) Audit of RHSC Sciennes premises	F Mitchell	20/11/2019	18/12/2019	CA - Ref SFRS Audit (Nov 19 above) subsequent Action Plan was completed in conjunction with Site Management, Estates Services and Local Staff, timescales were agreed and completed and action Plan was passed to SFRS. The SFRS Letter was FSA02 and was not requiring an Action Plan to be passed to SFRS however due to the "Operations Notification Form" being placed on the Basement Level (Rescinded following work bring completed by Fire Safety / Estates Services) SFRS were sent Action Plan to ensure works completion. - Fire Safety Update Follow up Audit of Basement undertaken with SFRS 21/01/2020, Site Fire Adviser Billy Hamilton and Jamie Ramsey, SFRS visit to ensure that works that had been undertaken resulting in the lifting of the Action Plan/Notice was maintained. FM - The Scottish Fire and Rescue Service revisited RHSC on Tuesday 14 January, to inspect the Basement Corridor and have confirmed that they are satisfied that the required remedial action has been completed.	CLOSED	No	Yes	Fiona Mitchell 24/01/2020 Clive Armstrong 24/01/2020	Update Service sustainability	
Staff													
11	Communication with staff	11.1	General staff communications, including annual leave, pay, expenses, car parking, delaying retirement.	J Butler	23/09/2019	10/07/2019	Frequently asked questions updated and published on intranet 10/07/19	CLOSED	Yes	Yes	On the list shared by Calum Henderson following CabSec's visit.	Service sustainability	

12	Staff wellbeing	12.1	Supporting staff wellbeing	J Butler	23/09/2019	18/11/2019	Regular Exec Team/Senior Team Walkarounds are established. Improvements to facilities and environment in RHSC and DCN have been warmly welcomed by staff. As has the reinstatement of the dining room at RHSC. The local staff health and wellbeing programmes continue on both sites as well as access to the wider corporate staff wellbeing programmes. There is good Partnership support from the trades unions. The Employee Director and Site Directors agree that this action can now be closed, with support for staff wellbeing being business as usual. We will be having a massage therapist in DCN for the next 3 weeks, and in January are going to have yoga breathing coaches and a stress relief workshop.	CLOSED	Yes	Yes	Closed 02/12/2019	Service sustainability
13	DCN staffing	13.1	In light of nursing staff leaving DCN in anticipation of the move to RIE, the workforce has been reduced. There is a need to ensure we retain current staff, and quickly fill vacancies.	G McAuley / M Pearson	07/10/2019	31/03/2020	Ongoing action. Over 50% of vacancies in nursing (band 5 and 2) and administration have been filled - offers made and start dates confirmed. There are 9 x BS vacancies and mat leave.	OPEN	Yes	No	Email M Pearson to K Burnside 14/10/19	Service sustainability
		13.2	Anaesthetic out of hours rota cover for DCN. Provision of robust out of hours anaesthetic rotas for the ~6-9month period between DCN team moving and Paediatric team moving to the RIE site. Originally plan was for paediatric and neuro trainee rota to combine.	M Carr	25/11/2019	01/04/2020	9 applications received for Clinical Fellow posts which were shortlisted on 17 th January. Interview's now confirmed for 11 th February 2020.	OPEN	Yes	No	Emma Lally 04/02/2020	Service sustainability
Patients and public												
14	Patient appointments and communications	14.1	Inform patients of any changes to appointments	J Campbell	09/07/2019	31/07/2019	All patients with appointment in July and August were contact by phone to reschedule to the old sites. All further appointments have been notified by letter.	CLOSED	Yes	Yes	On the list shared by Calum Henderson following CabSec's visit, specifically re some DCN patients attending RIE	Service sustainability



From: [Graham, Chris](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Chief Medical Officer](#); [Henderson C \(Calum\)](#); ["Colin Sinclair"](#); [Cosens, Sorrel](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); ["Gordon James"](#); [Graham, Chris](#); ["Jacqui Reilly"](#); ["Jim Miller \(j.miller5@nhs.net\)"](#); [Joyce, Alex](#); ["Judith Mackay"](#); [Little, Kerryann](#); [McMahon, Alex](#); [Morgan, Mary](#); [Murray, Fiona](#); [Nicol, Nadine](#); ["Peter Reekie"](#); ["Roxanne Gallacher \(Jim Miller PA\)"](#); [Trotter, Audrey](#); [Walker, Anna](#)
Subject: Oversight Board Papers for 27 February 2020
Date: 25 February 2020 14:58:16
Attachments: [image001.png](#)
[Oversight Board Papers 27-02-2020.pdf](#)
Importance: High

Dear Colleagues

Please find attached the Oversight Board Papers for Thursday's Oversight Board meeting.

Please note that the meeting is in Meeting room 6&7 this week.

The dial in details remain:

[REDACTED]

Participant code [REDACTED]

Kind regards
Chris

Chris Graham
Secretariat Manager
[REDACTED]

Achieving [deadlines](#) means you are respecting your colleagues and supporting effective decision-making.



The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you

have received this message in error or there are any problems
please notify the originator immediately. The unauthorised use,
disclosure, copying or alteration of this message is
strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 27 February 2020, 8:00 – 9:30am

Venue: Room 6&7, Waverley Gate, EH1 3EG

AGENDA

1.	Chair's Welcome and Introductions	FMc	v
	Apologies: Sorrel Cosens		
2.	Minutes of previous meeting for approval: 20 February 2020	FMc	*
3.	Matters Arising	FMc	v
3.1	Negative Pressure isolation room (In-patients) Briefing: <i>Confirmation of the ventilation/management requirements for source isolation of high consequence infectious disease</i>	TG	v
4.	Senior Programme Director's Report	MM	*
5.	HCID facility in the RHCYP ED report (SBAR for Information)	BC	*
6.	Programme Designs	BC	v
7.	Public Inquiry Terms of Reference	TG/JM	*
8.	STANDING AGENDA ITEMS		
	Technical Reviews progress		
8.1	Ventilation	BC	v
8.2	Water Quality	BC	v
8.3	Fire Safety Enhancements	BC	v
8.4	Electrical Safety	BC	v
9.	Service Continuity on Existing RHSC & DCN Sites	TG	*
10.	Communications		
	10.1 Proposed Communications	JM	v
11.	Any Other Competent Business		
12.	Date of Next Meeting		
	Thursday 12 th March 2020, 8am, Room 5, Waverley Gate		

OVERSIGHT BOARD**NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services**

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 20 February 2020 in Meeting Room 5, Waverley Gate, Edinburgh.

Present: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Miss T. Gillies, Medical Director, NHS Lothian; Professor A. McMahon, Nurse Director NHS Lothian; Mr G. Archibald, Joint Staff Side Representative; Mr P. Reekie, Chief Executive, Scottish Futures Trust; Mrs S. Goldsmith, Director of Finance, NHS Lothian and Mr C. Henderson, Scottish Government.

In Attendance: Ms M. Morgan, Senior Programme Director; Mr B. Currie, Project Director, NHS Lothian; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Ms J. Mackay, NHS Lothian Director of Communications; Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work and Mr C. Graham, Corporate Governance Team (minutes).

In Attendance by Telephone: Mr C. Sinclair, Chief Executive, NHS National Services Scotland and Mr G. James, Director of Facilities, Health Facilities Scotland.

Apologies: Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side); Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr J. Miller, Health Facilities Scotland.

1. Minutes of previous meeting – 29 January 2020

1.1 The minutes of the meeting held on 29 January 2020 were accepted.

2. Matters Arising**2.1 Confirmation of the ventilation/management requirements for source isolation of high consequence infectious diseases**

- Discussion on two issues:
 - provision of a negative pressure room(s) in the Critical Care Environment and the need for clarification around guidance.
 - more emergent issues relating to the emergency department.
- Noted that five isolation rooms in Critical Care currently supply the correct number air changes, all from the same air-handling unit. Work underway to reduce the dependency of all five rooms on the single air-handling unit.
- Discussion on the potential to change PPVL rooms to negative pressure rooms because of high consequence infectious diseases, e.g. for drug resistant TB negative pressure would be preferable to PPVL.
- It was not clear how difficult any works in relation to this would be; what this work would cost and what impact to timeline works may have. It was noted that any works should be to ventilation rather than structural.
- HFS/HPS happy to be involved with looking at any work as required.
- Noted that the building remains fit for purpose when works are undertaken or not however it may be advantageous to do these works.

- Noted that looking at these works was a parallel exercise and was not diverting design team time away from other areas.
- In relation to emergent issues relating to the emergency department. There was discussion on the [Infection prevention and control advice for acute care settings guidance](#) dated 13 February 2020.
- It was noted that this guidance was a refresh document in light of changes in relation to coronavirus (COVID-19). The guidance now covered Acute respiratory illness from novel or emerging pathogens (coronavirus (COVID-19), Middle East Respiratory Syndrome Coronavirus (MERS-CoV), Avian influenza (e.g. A/H7N9, A/H5N1))
- It was agreed that discussion on current practice and appropriate arrangements would be taken out with the meeting and that HFS/HPS would be involved around areas requiring risk assessment in terms of negative/neutral pressures.
- A briefing on the current position to be given to the next Oversight Board following further internal discussion.

AMcM/TG

3. RHCYP+DCN - Management Action Log

- The Oversight Board noted the intention to close off trackers as actions are moved to a business as usual position or moved over to commissioning trackers ahead of occupation.
- Noted the intention to have a workshop in the coming week to look to secure the paper based management items and move to the business as usual position.
- Noted that BYES Performance needed to improve and support was being provided.

4. Water Quality Update

- The Oversight Board accepted the actions and monitoring as described in the paper to allow closure of the outstanding actions from the Water section in the NSS phase 1 report.
- The Oversight Board took assurance from the detail provided in this paper and accepted the recommendation to close the outstanding aspects of the actions pertaining to water quality.
- It was noted that all the actions had been discussed and agreed with NHSL's Authorising Engineer for Water, who is the expert contracted to provide advice to NHSL.
- It was noted that in order to provide further assurance, it had been agreed that NHSL Internal Audit would undertake an assessment of water safety and quality monitoring in NHSL in quarter 1 of 2020-21.
- The Oversight Board noted that both HFS/HPS were content with the paper as it stood.
- The large amount of good work undertaken to get this this position was recognised by the Oversight Board.

5. RHCYP & DCN, Little France Programme; Process; Risks and Dependencies

- There was discussion on the paper and the differences in what had been expected to what had been presented.
- The Oversight Board also discussed the timescale being worked to; the expectation to move into the building when safe and appropriate to do so; the frustration of not being able to set out a clear timeline until the programme of works was absolutely known and

whether 'pushing the button' on the DCN move before seeing the final programme of works could have a negative impact on patients.

- It was unlikely to receive the programme of works before mid-March 2020.
- The low risk appetite from the NHSL Board to overlap completion works, testing and commissioning was acknowledged, given previous experience and potential reputational damage.
- Recognised that when the programme of works is received this would only be a target programme, with no contractual commitment.
- There remained a lot of work to do in terms of final commercials but there was the option to extend the letter of engagement to cover this.
- It was important to note that the issue of whether or not the original specification had been incorrect remained to be proven or otherwise and had not been defined clearly from a legal perspective.
- It was noted that from the technical side and scope of works, the Imtech detailed design report was expected by the end of February 2020. It was then expected that Imtech would be able to investigate and assure around the impact of works on DCN by mid-March 2020. The detailed design would then be ready for sign off by 6 March 2020.
- The Oversight Board recognised that even once the timeline and expectations were clearer any reassurance of confidence would retain a heavy caveat. It was hoped to be able to produce further information based on the programme of works by mid-March 2020.
- It would be helpful for the Oversight Board to have a more realistic view around the date range for completion rather than trying to pinpoint an endpoint.
- It was noted that there was a requirement for an update to be submitted to the Cabinet Secretary today and that any information would be shared with the Oversight Board if possible.

CH

6. Technical Reviews progress

6.1 Ventilation

- MPX to have completed all air handling unit and theatres work by the end of February 2020.
- IOM to do final inspection middle March 2020.

6.2 Water Quality

- 57 outlets now fitted and testing samples expected back shortly.
- Issues with attentiveness of BYES noted, work to reach a steady state position continuing.
- Noted that the issues with the shower hoses had now been resolved. Restriction clamps remain on the hoses but hoses now to be a consumable item which will be replaced every 3 months. The hoses will be colour coded to facilitate the replacement programme.

6.3 Fire Safety

- Snagging works in relation to fire doors complete.
- Awaiting independent tester to close out snagging works.

6.4 Electrical Safety

- Noted that work to close down the HFS identified technical issues was now progressing.

7. Service Continuity on Existing RHSC & DCN Sites

- No new issues to raise at this time
- Noted that the INR Scanner was in and working as planned.

8. Communications

8.1 Proposed Communications

- Discussion on how best to communicate elements of uncertainty to staff.
- Noted that the previous newsletter had been welcomed by staff.
- Discussion to take place out with the meeting with a view to an update being given at the Lothian Partnership Forum on 25/02/2020.

AMcM/GA

9. Any Other Competent Business

9.1 No other business.

10. Date of Next Meeting

10.1 Thursday 27th February 2020, 8am, Room 5, Waverley Gate



SBAR – Emergency Department Ventilation & High Consequence Infectious Diseases (HCID) RHCYP**11th February 2020.****Lindsay Guthrie & Dr Donald Inverarity (Infection Prevention & Control)****Dorothy Hanley & Ronnie Henderson (NHSL Project Commissioning Managers for Clinical & Hard FM)****Situation:**

As part of NHS Lothian preparedness response for Novel Coronavirus (2019 n-CoV) it was identified that the area in the ED at RCHYP previously identified for the quarantine and assessment of patients with HCID room currently provides 10 air changes at positive pressure to the adjacent department.

The ED triage room at RHCYP is designed to, and performs as a treatment room - 10 air changes on positive pressure.

This means that both rooms as currently configured, are not safe or appropriate for the triage or quarantine of paediatric patients with a HCID, particularly those spread by aerosol or droplet transmission (e.g. 2019 nCo-V).

The risk to other patients, staff and the wider public increases if any aerosol generating procedures are performed - e.g. open suctioning; intubation.

Background:

The lack of availability of compliant (negative pressure) isolation rooms in ED and other front door services to respond to patient admission with HCID is not restricted to RHCYP DCN site. In January 2020, it was identified on review that that none of the EDs across NHS Lothian have a compliant negative pressure isolation room with lobby available. The rooms identified in HCID patient pathways at SJH and RIE were also found to have a positive pressure cascade, having been designed as treatment rooms.

The minimum requirement currently required by national guidance is negative pressure isolation room OR an ensuite single room which is at balanced pressure to the adjoining spaces.

Assessment:

The RHCYP project team and IPCT discussed the following options for consideration:

1. **Status quo – continue to use the rooms previously identified and agreed with the ED clinical team; that is**
 - a. G-A1-008 (Wash down Room Dirty Utility) - to be used as the lobby
 - b. G-A1-012 (Treatment Room Bay 5) - for patient treatment/isolation
 - c. G-A1-014 (Treatment Room Bay 6) - for patient treatment/isolation OR store/prep area

The risk associated with this option is that high consequence infectious diseases spread by droplet or airborne transmission may not be effectively contained and support transmission of these infections

20200211 SBAR ED Ventilation & HCID v0.3

in the hospital environment. This could represent a significant public health risk for other patients, staff and visitors. Rooms G-A1-012 and G-A1-014 provide 10 air changes at positive pressure, in line with design requirement for treatment rooms. There is no impact on timescale for patient occupation by RHCYP.

2. **Turn off the air supply to the rooms 5 & 6 (to be achieved through closing the dampers) rendering the treatment space at balanced or slightly negative pressure to the adjoining corridor. Provide negative extract ventilation via new transfer grilles in the doors between rooms 6, 5 and the wash down room. Provide a HEPA filter on extract in the wash down room.**

From an engineering perspective, this provides pressure cascade reliant on the existing extract, so minimal reconfiguration or building work to achieve this solution. However closing the damper would be reliant on BYES being advised of the need to close the dampers to the room. This would be a new service level agreement to be reached with BYES. Patients are likely to self present at ED and therefore no prior notice is likely to be given in most cases.

This solution would probably fall within a low to medium value change. The impact on programme for occupation is unclear until final design for this option confirmed.

There would be clinical risks associated with setting these rooms permanently in extract only mode.

In this setting, a further calculation would be required to demonstrate that adequate air change rates were achieved to meet minimum legislative requirements.

There would require to be a clear SOP restricting any invasive clinical work or similar which requires treatment room ventilation (10 a/c positive) in both rooms 5 and 6. This may have an impact on overall clinical treatment capacity within ED.

3. **Commission a fully compliant type 1 negative pressure room to be provided in ED.**

The risks associated with this are that this would be a complex and disruptive piece of work requiring a high value change (similar to the critical care ventilation change) and would most likely require a new air handling unit to be installed. There would be significant costs and a detrimental impact on the existing project timescale for full transition of clinical services.

4. **Provide new negative pressure extract system with HEPA filtration in rooms 5 and 6 (G-A1-012 and G-A1-014. This will involve the provision of additional ducting, and ancillary services. This is a significant piece of work.**

The risk associated with this option is that it increases the scope of work requested of Imtech/Hoare Lea in relation to critical care and haematology oncology ventilation to provide a safe and compliant system. This will have additional costs, and may impact on the overall timeline to complete required works and allow full occupation of the hospital.

5. **Convert the viewing room and relative rooms (bereavement suite) in ED into a clinical treatment space, including provision of medical gases. Structural work would be required. This area currently has extract ventilation and negative pressure cascades to adjoining spaces.**

20200211 SBAR ED Ventilation & HCID v0.3

The risk associated with this option is that there are significant costs and timescales associated with any planned work, which may impact on timeline for occupation as above. In addition, an alternative location will have to be found to provide an appropriate bereavement suite within ED, which would also have to be provided with extract ventilation (odour control and comfort).

- 6. Identify an alternative clinical space as the designated quarantine/isolation room for ED e.g. a single ensuite bedroom in Castle Mey (PARU). This could provide a suitable clinical treatment room meeting the minimal requirements of current guidance**

The risks associated with this option are that the clinical safety and acceptability of this would have to be agreed by ED clinicians. The room would be on the periphery of the ED and there may be risks associated with access to resuscitation or other clinical support, isolation of staff, reduction in PARU room capacity to create a safe 'zone' and transfer pathway to the room.

Single ensuite bedrooms are currently provided at balanced pressure to the corridor, however there is no additional door protection, meaning there is a small risk of air movement from room to corridor with the door open. This risk would increase if there was any issue with the extract ventilation provided in the en-suite. The extract ventilation forms part of a common extract duct and is not HEPA filtered. This means that there is a small risk that if the extract ventilation was sub optimal/not functioning that contaminated air could spill into other patient bedrooms served off the same common extract.

Recommendations:

1. NHS Lothian should seek the view of their Authorising Engineer (Ventilation) with regards the options outlined above – to support the Board to identify a safe and acceptable solution.
2. The input of Paediatric ED clinical and nursing leads should be sought to understand the feasibility and acceptability of the options outlined above to support the Board to identify a safe and acceptable solution.
3. The Executive Steering Group to discuss the NHS Lothian preferred approach with the Oversight Board.



Cabinet Secretary for Health and Sport
Jeane Freeman MSP

 Scottish Government
Riaghaltas na h-Alba
gov.scot

Issued via NHS Lothian Communications

7.

21 February 2020

Jeane Freeman, Parents and Carers

On the 17 September 2019, I announced that a Public Inquiry would be held into matters of concern at the Queen Elizabeth University Hospital Campus, Glasgow (QEUH) and the Royal Hospital for Children and Young People, Edinburgh (RHCYP).

On the 28 November 2019, I announced that the Inquiry would be chaired by the Right Honourable Lord Brodie QC PC, and that I had a statutory obligation to consult the Chair on the Remit and Terms of Reference. It is very important that the Remit and Terms of Reference are fit for purpose and in consultation with Lord Brodie, time has been taken to carefully consider the content.

Lord Brodie and I are committed to ensuring that the Inquiry addresses the concerns of those who have been affected by the delayed opening of the RHCYP. I would therefore like to take this opportunity to invite those who wish to do so, to provide their comments on the draft Remit and Terms of Reference attached at **ANNEX A**.

At this stage, I am specifically asking for comments on the attached document only.

When the Remit and Terms of Reference are finalised and the Inquiry is formally set up, Lord Brodie, as Chair of the Inquiry, is keen to hear from those affected, and his team will make the necessary arrangements to support this. It is important that these discussions are recorded as part of the evidence to the Inquiry and therefore independent of Scottish Ministers.

Lord Brodie and I are keen to move forward with the Remit and Terms of Reference in order that the Inquiry can be formally set up. I would therefore be grateful if you could respond, with any comments by Friday 13th March.

St Andrew's House, Regent Road, Edinburgh EH1 3DG
www.gov.scot



Comments should be provided on the Remit and Terms of Reference only to the following email address: [REDACTED] or in writing to:

QEUH/RHCYP Sponsor Team
Scottish Government
St Andrew's House
Regent Road
Edinburgh
EH1 3DG

Kind regards

[REDACTED]

[REDACTED] **JEANE FREEMAN**

ANNEX A

Remit and Terms of Reference

Inquiry into the construction of the Queen Elizabeth University Hospital (QEUH), Glasgow and the Royal Hospital for Children and Young People (RHCYP), Edinburgh

Remit

The overarching aim of this Inquiry is to consider the planning, design, construction, commissioning and, where appropriate, maintenance of both the Queen Elizabeth University Hospital (QEUH), Glasgow and the Royal Hospital for Children and Young People (RHCYP) Edinburgh. The Inquiry will determine whether defects in key building systems occurred; if the occurrence of such defects could have been prevented; whether the buildings provide a suitable environment for the delivery of safe, effective person-centred care and; make recommendations to ensure that any past mistakes are not repeated in future NHS infrastructure projects. The Inquiry will do this by fulfilling its Terms of Reference.

Terms of Reference

1. To examine the key building systems in the QEUH and RHCYP, to identify whether and to what extent they were defective in the sense of:
 - a. Not achieving the outcomes or being capable of the function for which they were planned, specified or designed.
 - b. Not conforming to relevant statutory regulation and other applicable recommendations, guidance, and good practice.

2. To examine the arrangements for strategic definition, preparation and brief, and concept design, including the contractual structure adopted for the financing and construction of the buildings, to determine whether any aspect of these arrangements has contributed to such defects, in the sense of specific instances in which the key building systems are defective and which relate to risks to public health, patient safety and infection control.

3. To examine during the delivery of QEUH and RHCYP projects:
 - a. Whether the Boards of NHS Greater Glasgow and Clyde and NHS Lothian put in place governance processes to oversee the projects and whether they were adequate and effectively implemented, particularly at significant project milestones;
 - b. Whether operational management provided by the Boards of NHS Greater Glasgow and Clyde and NHS Lothian was adequate and effective for the scale of such infrastructure projects;
 - c. The extent to which decision makers involved with the projects sought and facilitated the input and took account of the advice and information provided by, or available from, the clinical leadership team; infection control teams; estate teams; technical experts and other relevant parties to ensure that the built environment was optimal for the delivery of clinical care;
 - d. Whether, the organisational culture within the Boards of NHS Greater Glasgow and Clyde and NHS Lothian encouraged staff to raise concerns and highlight issues in relation to the projects at appropriate times throughout the life cycles of the projects and;
 - e. Whether failures in the operation of systems were a result of failures on the part of individuals or organisations tasked with specific functions.

4. To examine whether, based on the governance arrangements in place, national oversight and support of such large-scale infrastructure projects is adequate and effective.

5. To examine, during the life cycle of the QEUH and RHCYP projects, how the Boards of NHS Greater Glasgow and Clyde and NHS Lothian secured assurance and supporting evidence that:
 - a. All necessary inspection and testing had taken place;
 - b. All key building systems had been completed and functioned in accordance with contractual specifications and other applicable regulation, recommendations, guidance, and good practice and;
 - c. Adequate information and training were provided to allow end-users effectively to operate and maintain key building systems.

6. To examine what actions have been taken to remedy such defects and the extent to which they have been adequate and effective.
7. To determine the physical and emotional effect of such defects on patients and their families (in particular in respect of environmental organisms linked to infections at the QEUH) and to determine whether communication with patients and their families supported and respected their rights to be informed and to participate in respect of matters bearing on treatment.
8. In the case of the QEUH, to examine whether the choice of site was appropriate or gave rise to an increased risk to patients of environmental organisms causing infections.
9. To examine whether there are systematic knowledge transfer arrangements in place to learn lessons from Healthcare construction projects and whether they are adequate and effective.
10. To examine whether NHS Lothian had an opportunity to learn lessons from the experience of issues relating to ventilation, water and drainage systems at the QEUH and to what extent they took advantage of that opportunity.
11. To report to the Scottish Ministers on the above matters, and to make recommendations identifying any lessons learnt to ensure that any past mistakes are not repeated in any future NHS infrastructure projects, as soon as reasonably practicable.



9.

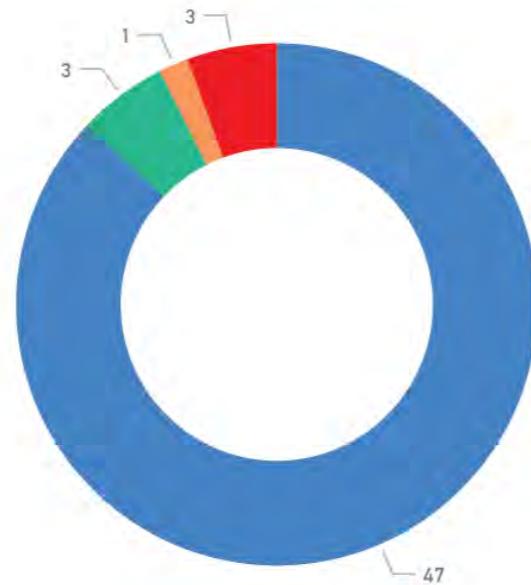
RHCYP+DCN - Connuity of Ser vices on Exising Sit es Acon Log Dashboar d

21/02/2020

Actions closed since last dashboard : 0

Status against Target Date

- Due Status**
- Closed
 - Acons on T arget
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



OPEN
7

CLOSED
47



Acons f or DCN at WGH site

OPEN
5

CLOSED
18



Acons f or RHSC Sciennes site

OPEN
3

CLOSED
38



RHCYP + DCN

Continuity of service provision on current DCN and RHSC sites

Revision Date: 21/02/2020

Current date for tracking: 21/02/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/ Closed	DCN	RHSC	Source of info	Funding
Capacity												
1	Winter planning	1.1	RHSC: Increase in ED capacity to maintain flow	F Mitchell	05/07/2019	30/11/2019	Increased OPD capacity, 3 RBT opening. All equipment and IT in place, going live Tuesday 17 December.	CLOSED	No	Yes	Peter Campbell 09/12/2019	Service sustainability
		1.2	RHSC: increase medical beds and cubicles	F Mitchell	05/07/2019	30/11/2019	Ward 4 and PIU have now relocated. 2 shower trolleys moved to RHSC from RHCYP.	CLOSED	No	Yes		Service sustainability
		1.3	RHSC: Additional 15 winter B5 posts advertised and shortlisted, to supplement medical nurse staffing. 6 additional B2 posts will be sought from the staff bank on a guaranteed shift basis for night duty staffing on ward 4 (medical). Additional nursing posts approved in June 2019 for an increase in year-round nurse staffing levels in the ED, particularly to support evening and night activity pressures. Most posts now recruited to for Phase 1 of this expansion, including an Advanced Nurse Practitioner for the ED team.	F Mitchell	05/07/2019	30/11/2019	B5 Winter posts - first round of interviews held 2 October. Closing date for second round 18th October; 1 applicant shortlisted. Advertised again closing 15th November 2019. Second round of Winter staff recruitment disappointing- going back out to recruitment again. Extra winter beds being staffed mainly by core ward staffing. Band 2 Winter Posts - Bank Requests from November onwards. Additional permanent ED posts - ENP job descriptions being finalised for recruitment end Oct. onwards. Advert for winter post closed again with 1 applicant. Gone out to advert again. Able to cope with core staffing at the moment.	CLOSED	No	Yes		Service sustainability
		1.4	RHSC: Increase haem/onc day care beds by 3	F Mitchell	05/07/2019	30/11/2019	This can be closed as the Ward moves have taken place.	CLOSED	No	Yes	Fiona Mitchell 02/12/2019	Service sustainability
		1.5	Sleep service expanded staffing for new hospital but there is no extra capacity in old RHSC and winter pressures can lead to sleep studies being cancelled. Look at potential for services at home being expanded to address waiting list?	F Mitchell	05/07/2019	07/10/2019	Home sleep studies have now started.	CLOSED	No	Yes	On the list shared by Calum Henderson following CabSec's visit.	Service sustainability
		1.6	Winter Planning adult acute services	M Pearson	05/07/2019		Due to ongoing bed closures and pseudomonas in water, DCN is currently not accessed by the WGH site for boarding. Bed pressures in down stream facilities may affect DCN; managed through operational site and capacity management. CLOSED in relation to cancelled DCN moves.	CLOSED	Yes	No		Service sustainability
2	Paediatrics at St John's	2.1	Consideration of increasing Services at SJH to reduce pressure of RHSC and enhance care closer to home for West Lothian children.	F Mitchell	05/07/2019	31/03/2020	Royal College of Paediatrics and Child Health have confirmed that they will carry out their review visit on 11 and 12 February. The RCPCH visited as planned on 11 and 12 February, draft report expected end March.	OPEN	No	Yes	Fiona Mitchell 20/02/2020	Service sustainability
3	Medical equipment	3.1	Interventional Neuroradiology provision: increased demand (due to service delivery issues in Glasgow) for ageing and increasingly unreliable interventional neuroradiology equipment at DCN.	M Carr	09/07/2019	04/02/2020	Confirmation was received on 29/10/19 that the Cabinet Secretary was content the Board proceeds with the recommendation to purchase the additional equipment for DCN. <ul style="list-style-type: none"> • Works started 14th Jan. Completion date now 5th Feb - 1 day slippage • Clinical contingency plan has worked well and will cease on 5th Feb • Capital cost is £1.5K over spent (estimate was £40K) due to the need to remove railings in the car park to allow delivery of equipment Clinical service commenced 06/02/20. DCN x-ray corridor to be painted mid January after bi-plane removal and install	CLOSED	Yes	No	Emma Lally 04/02/2020	N/A - no additional expenditure anticipated.
		3.2	Theatre lights in four of the operating theatres at RHSC Sciennes are old and unreliable, with no replacement parts available. New lights required.	F Mitchell	09/07/2019	15/02/2020	All the required theatre lights have been ordered and are due for delivery shortly, with the programme of works to install timetabled for week commencing 10 February, to coincide with schools half term holiday. We do not expect to lose any activity over and above the normal reduction during half term holidays. The new Theatre Lights installation has been completed to plan.	OPEN	No	Yes	Fiona Mitchell 20/02/2020	Additional - cost of maintaining existing sites.
		3.3	General x-ray equipment that had been installed in RHCYP required again at RHSC	F Mitchell/M Carr	09/07/2019	08/11/2019	New equipment arrived on site 14/10/19 and installation underway. This equipment will be moved elsewhere on closure of RHSC. On schedule to go live on target date of 8/11/19. Room is finished and is now back in full clinical use.	CLOSED	No	Yes	Update from S Evans, Radiology 7/11/19	Additional - cost of maintaining existing sites.
		3.4	Extension of maintenance contracts for elderly equipment at Sciennes and DCN.	F Mitchell/M Carr	09/07/2019	19/09/2019	Contracts and maintenance plans now in place. Will be updated on a quarterly basis.	CLOSED	Yes	Yes	S Evans, Radiology	Service sustainability
		3.5	Additional scope storage is required for theatres at RHSC Sciennes as two cabinets were moved to RHCYP. Currently one is on loan, with rental charges due from October 2019.	F Mitchell/M Carr	09/07/2019	30/11/2019	Scope Cabinets up and functioning according to plan.	CLOSED	No	Yes	Fiona Mitchell 02/12/2019	Additional - cost of maintaining existing sites.
		3.6	Replacement tube for CT scanner at RHSC	F Mitchell/M Carr	09/07/2019	31/07/2019	Tube replaced - COMPLETE	CLOSED	No	Yes	S Evans, Radiology	Additional - cost of maintaining existing sites.
		3.7	Videotelemetry: access to VTEM beds has been reduced in DCN since April 2019 with the reconfiguration of wards and restrictions on admissions due to positive testing for pseudomonas aeruginosa. Delaying moves to Spring 2020 extends the limited capacity and impact on waiting times. Use of portable equipment at one bed has enabled some VTEM admissions since August, but a hardwired bed with full VTEM capability and monitoring is required.	M Pearson	01/08/2019	12/11/2019	Install hardwired VTEM into ward 33. Utilise portable equipment for appropriate waiting list patients at home. Remedial electric works required prior to moving the equipment. An external contractor has been on site to look at the work - Estates to confirm date and cost. Optima will come after the electric works, £7k signed off. Complete from Estates side they just require some IT connection. Then Ward 33 will open up to 16 beds.	CLOSED	Yes	No	Michael Pearson/Hester Niven	Additional - cost of maintaining existing sites.
Clinical Support Services												
4	Pharmacy	4.1	Inadequate staffing to maintain opening hours for dispensary on 2 sites since in organisational change 1 dispensary manager was redeployed to another core service effective July 2019 when integration was meant to occur	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 7 dispensary manager resource required to allow provision of medicines on RIE and RHSC sites to prevent impact upon patient experience while RHSC remains open; and minimise impact of stress on staff health and wellbeing. 1.0wte band 7 Pharmacy Technician = £43,500	CLOSED	No	Yes	2 x SBAR reports	Additional fixed term, long term service sustainability
		4.2	Inadequate pharmacy support workers (PSW) staffing to deliver an integrated medicines distribution hub for RHCYP/RIE with required staff still working on RHSC site to maintain dispensary service	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 2 and 3 PSW resource required to prevent impact upon availability of medicines on RHSC site; and minimise impact of stress on staff health and wellbeing. 1.0wte band 2 PSW plus 2.0wte band 3 PSW = £77,192	CLOSED	No	Yes		Additional fixed term, long term service sustainability
		4.3	Pump-prime funding for staff resource to deliver the One Stop model has ceased, which is the backbone of medicines supply to patients to underpin management of capacity and flow at the new hospital site	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Funding for pharmacy technician resource must be reinstated to continue this model to be delivered. To address 3.4 and 3.5: 1.0wte band 4 Pharmacy Technician = £29,985	CLOSED	No	Yes		Additional fixed term, long term service sustainability

		4.4	Extended opening hours and weekend working rotas of the integrated pharmacy department at RIE was implemented in June 2019 in readiness for move of the RHSC in July 2019. To avoid lone staff working the full staff complement was needed on one site to full fill this rota. With pharmacy staff members remaining on RHSC the late	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 4 pharmacy technician resource needed to ensure extended pharmacy opening hours at RIE not put at risk, which would affect capacity and flow on RIE site See 5.3 above	CLOSED	No	Yes		Additional fixed term, long term service sustainability
		4.5	One Site Lead Pharmacist redeployed to another post during organisational change to integrate the 2 pharmacy departments leaving 1 Site Lead Pharmacist to manage teams across 2 sites without a deputy to support operational day-to-day management or change management of the teams	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Deputy pharmacist (Band 8a) required to support site lead pharmacist for RIE/RHSC until integration of the 2 departments is complete, which will help minimise impact of stress on site lead pharmacist health and wellbeing 1.0wte Band 8a Pharmacist = £65,625	CLOSED	No	Yes		Additional fixed term, long term service sustainability
		4.6	Cross site transport of medicines 7 days a week is needed but the ad hoc arrangements currently in place (e.g. Blood bikes, taxi runs) is not suitable for the extended duration that off-site daily delivery of medicines will be needed until RHSC move. This is especially an issue for delivery of intrathecal chemotherapy agents that have unique transport requirements under CEL30 (i.e. anyone transporting these medicines must be trained and named on the intrathecal register as competent to undertake the task allocated to them including transport)	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Funding to NHS transport and portering services for 1.0wte dedicated driver(s) (to be trained in CEL 30 requirements) to transport medicines between 09:00 to 17:30 Monday to Friday and 10 00 to 14 00 Saturday. 1.0wte Band 2 = £24,370	CLOSED	No	Yes		Additional fixed term, long term service sustainability
5	Laboratories	5.1	Minor changes were made to on-site Blood Science laboratory hours with the announcement of the delay in July 2019, with agreement that provision would remain under constant monitoring/ review.	M Grey	09/07/2019	31/07/2019	The NHSL Blood Science laboratory service at RHSC will continue with no alteration to service but service delivery/ performance will be monitored/ kept under continuous review in order to ensure that a robust and sustainable service continues to be provided to RHSC users and their patients.	CLOSED	No	Yes	Blood Science SBAR: Impact of Delay to Move from RHSC to RHCYP 24/09/19	Service sustainability
Facilities Management												
6	Catering	6.1	Extend canteen opening times and preparation of meals on RHSC site - for better utilisation of staffing and reduction in waste.	G Curley	23/09/2019	14/10/2019	Chef now on site. Collation of menus and standard ordering.	CLOSED	No	Yes		Additional - cost of maintaining existing sites.
		6.2	Procurement of two fridges for RHSC facility.		23/09/2019	14/10/2019	Order placed	CLOSED	No	Yes		
		6.3	Communication with catering staff about sites and rosters.		23/09/2019	08/10/2019	Chef now on site; communication with catering staff underway.	CLOSED	No	Yes		
		6.4	Improved signage and marketing for RHSC service		23/09/2019	14/10/2019	Communication in place on site	CLOSED	No	Yes		
		6.5	HACCP		23/09/2019	08/10/2019	Chef now on site: completion of HACCP	CLOSED	No	Yes		
		6.6	Explore options for third party support for catering		23/09/2019	18/11/2019	Discuss with Edinburgh Childrens Hospital Charity - Waiting for feedback from patients and visitors (4 week trial). Explored with charities, no takers.	CLOSED	No	Yes		
		6.7	Replace dining room furniture		21/10/2019	31/10/2019	Ordered for delivery w/c 28/10/19 - DELIVERED	CLOSED	No	Yes		
7	Parent accommodation	7.1	Improve environment of parents accommodation	G Curley	23/09/2019	02/10/2019	Thorough clean of parents accommodation, and enhanced cleaning within domestic services schedule.	CLOSED	No	Yes		
		7.2			23/09/2019	31/10/2019	Parent accommodation reviewed. Refurbishment and new furniture requirements identified.	CLOSED	No	Yes		
		7.3			23/09/2019	30/09/2019	Improve communication between FM team and Family Support re use of and care for parent accommodation. Protocol agreed	CLOSED	No	Yes		
8	Domestics	8.1	Domestic services, including increased pressure on staff to make existing environment as good as it can be.	G Curley	23/09/2019	30/09/2019	Review current provision with a view to providing enhanced service to compensate for condition of the environment.	CLOSED	YES	Yes		
		8.2			23/09/2019	10/10/2019	Ensure all staff only areas are in receipt of full staffing levels.	CLOSED	YES	Yes		
		8.3			23/09/2019	30/09/2019	Complete analysis of Facilities Monitoring Tool.	CLOSED	YES	Yes		
					23/09/2019	30/09/2019	Transfer of new equipment from RHCYP to RHSC/DCN	CLOSED	YES	Yes		
		8.4			21/10/2019	01/12/2019	Moved to disposable mops to avoid double dipping from 20/12/19. Note: laundry of mops does not remove C Dif.	CLOSED	YES	Yes		
9	Logistics	9.1	Logistics services	G Curley	23/09/2019	06/01/2020	Contract with G4s has ceased, and this is now the responsibility of NHSL Logistic Services.	CLOSED	No	Yes	Sasha Hill 10/01/2020	
		9.2			23/09/2019	30/09/2019	Secondment opportunity for supervisor vacancy now being progressed.	CLOSED	No	Yes		
		10.1	DCN - General state of facilities; walkround and identification of works	G Curley	23/09/2019	05/10/2019	(these do not work in Ward 33 due to lack of pressure) This has NOT had any adverse effect on	CLOSED	Yes	No		
					23/09/2019	30/11/2019	DCN ward 33 has 2 showers out of use, leaving only one shower available, so 6 beds closed. Ward 33 capped at 10-12 patients (depending on mobility).	CLOSED	Yes	No	Update James Picken 16/12/19	
					23/09/2019	30/11/2019	Ward 32- Painting completed. Flooring patches no date yet still to be confirmed.	CLOSED	Yes	No	Update James Picken 16/12/19	
					23/09/2019	11/11/2019	Neurophysiology - Consultant office painted. Senior physiologist office to be painted w/b 4/11/19. Carpet due to be replaced on 9/11/19. DCN Admin corridor and Directorate Asst office carpet to be replaced 9/11/19.	CLOSED	Yes	No		
					25/10/2019	06/01/2020	Upgrade/replacement to DCN Fire System commenced with ward 33 in November. 4-6 weeks further work anticipated from 06/01/20. To date Alarm System installed on Level 4 & 3. Panel installed on Ground Floor DCN Entrance and Floor 3&4 have been connected. Ward 32, Lvl 2 started 4/2/20. All floors to be completed and connected by 03/04/20. DCN incorporated in updated Fire Alarm Test Programme and Sounder Levels being monitored in all areas. Fire Safety/Estates working with Contractors re Programme for Doors and Surveys for Fire Stopping. DCN Fire alarm work on Schedule Floors 3 & 4 complete tested and connected they are 30% complete in Ward 32	OPEN	YES		Update James Picken 18/02/20	
					23/09/2019	30/11/2019	DCN OPD painting and disabled toilet upgrade due to complete 20/12/19.	CLOSED	Yes	No	Update James Picken 06/01/20	
					23/09/2019	04/02/2020	DCN x-ray corridor to be painted mid January after bi-plane removal and install (3.1 above)	OPEN	Yes	No	Update James Picken 16/12/19	
10	General estate		RHSC - General state of facilities; walkround and identification of works Equipment transferred from new RHCYP to existing site to benefit patient care/experience.	P Campbell	01/10/2019	31/12/2019	Equipment transferred included patient easy chairs, Mon900, Dia900, trolleys, fridges, freezers, shower trolleys, wheelchairs, bracket table and sedation tubing. Lot of work around transferring back top up items and various high tariff/specialist order sundries.	CLOSED	Yes	No	Peter Campbell	
			Unannounced HEI Inspection of RHSC and DCN took place 22/10/19-24/10/19.	A McMahon	22/10/2019	15/01/2020	The HIS Report following the unannounced HEI Inspection was published on 15 January. At RHSC, the Requirements and Recommendations are in our Action plan which is being managed through the RSHC Infection Control Committee and also being overseen by our Site Liaison Committee, in terms of the requirement to ensure the fabric of the building is maintained. Most actions to be completed by 28/02/20	OPEN	Yes	Yes	Peter Campbell 07/02/20	

		10.2	Fire and Rescue Service (F&RS) Audit of RHSC Sciennes premises	F Mitchell	20/11/2019	18/12/2019	CA - Ref SFRS Audit (Nov 19 above) subsequent Action Plan was completed in conjunction with Site Management, Estates Services and Local Staff, timescales were agreed and completed and action Plan was passed to SFRS. The SFRS Letter was FSAD2 and was not requiring an Action Plan to be passed to SFRS however due to the "Operations Notification Form" being placed on the Basement Level (Rescinded following work bring completed by Fire Safety / Estates Services) SFRS were sent Action Plan to ensure works completion. - Fire Safety Update Follow up Audit of Basement undertaken with SFRS 21/01/2020, Site Fire Adviser Billy Hamilton and Jamie Ramsey, SFRS visit to ensure that works that had been undertaken resulting in the lifting of the Action Plan/Notice was maintained. FM - The Scottish Fire and Rescue Service revisited RHSC on Tuesday 14 January, to inspect the Basement Corridor and have confirmed that they are satisfied that the required remedial action has been completed.	CLOSED	No	Yes	Fiona Mitchell 24/01/2020 Clive Armstrong 24/01/2020	Update	Service sustainability
Staff													
11	Communication with staff	11.1	General staff communications, including annual leave, pay, expenses, car parking, delaying retirement.	J Butler	23/09/2019	10/07/2019	Frequently asked questions updated and published on intranet 10/07/19	CLOSED	Yes	Yes	On the list shared by Calum Henderson following CabSec's visit.		Service sustainability
12	Staff wellbeing	12.1	Supporting staff wellbeing	J Butler	23/09/2019	18/11/2019	Regular Exec Team/Senior Team Walkarounds are established. Improvements to facilities and environment in RHSC and DCN have been warmly welcomed by staff. As has the reinstatement of the dining room at RHSC. The local staff health and wellbeing programmes continue on both sites as well as access to the wider corporate staff wellbeing programmes. There is good Partnership support from the trades unions. The Employee Director and Site Directors agree that this action can now be closed, with support for staff wellbeing being business as usual . We will be having a massage therapist in DCN for the next 3 weeks, and in January are going to have yoga breathing coaches and a stress relief workshop.	CLOSED	Yes	Yes	Closed 02/12/2019		Service sustainability
13	DCN staffing	13.1	In light of nursing staff leaving DCN in anticipation of the move to RIE, the workforce has been reduced. There is a need to ensure we retain current staff, and quickly fill vacancies.	G McAuley / M Pearson	07/10/2019	31/03/2020	Ongoing action. Over 50% of vacancies in nursing (band 5 and 2) and administration have been filled - offers made and start dates confirmed. There are 9 x B5 vacancies and mat leave. Fire safety works ongoing on Wards 31/32/33. Then they will move to DCN Xray and DCN ops.	OPEN	Yes	No	Hester Niven 18/02/2020		Service sustainability
		13.2	Anaesthetic out of hours rota cover for DCN. Provision of robust out of hours anaesthetic rotas for the ~6-9month period between DCN team moving and Paediatric team moving to the RIE site. Orinially plan was for paediatric and neuro trainee rota to combine.	M Carr	25/11/2019	01/04/2020	9 applications received for Clinical Fellow posts which were shortlisted on 17 th January. Interview's now confirmed for 11 th February 2020. Interviews held last week and 4 clinical fellows appointed. Start dates TBC	OPEN	Yes	No	Kirsten Burns 19/02/2020		Service sustainability
Patients and public													
14	Patient appointments and communications	14.1	Inform patients of any changes to appointments	J Campbell	09/07/2019	31/07/2019	All patients with appointment in July and August were contact by phone to reschedule to the old sites. All further appointments have been notified by letter.	CLOSED	Yes	Yes	On the list shared by Calum Henderson following CabSec's visit, specifically re some DCN patients attending RIE		Service sustainability

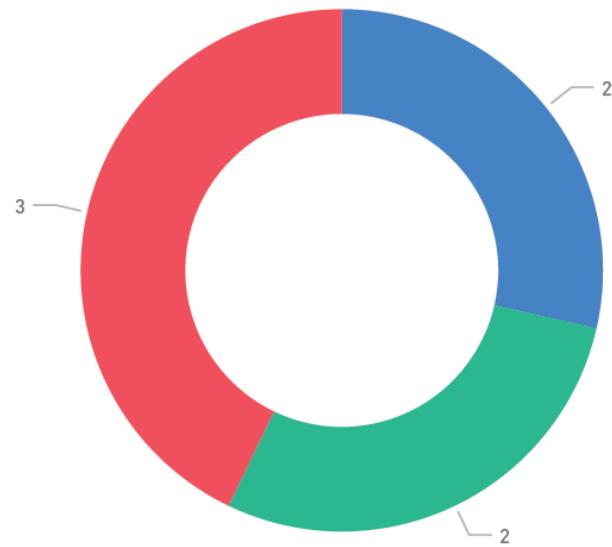
RHCYP+DCN - Management Acon Log Dashboard

21/02/2020

Actions closed since last dashboard : 0

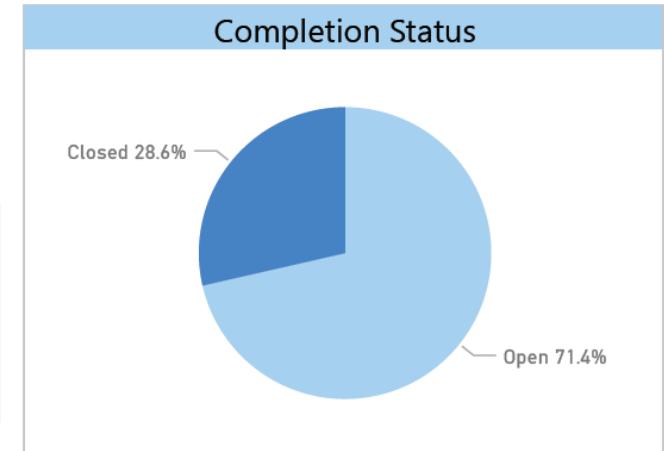
Status against Target Date

- Closed
- Acons on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



OPEN
5

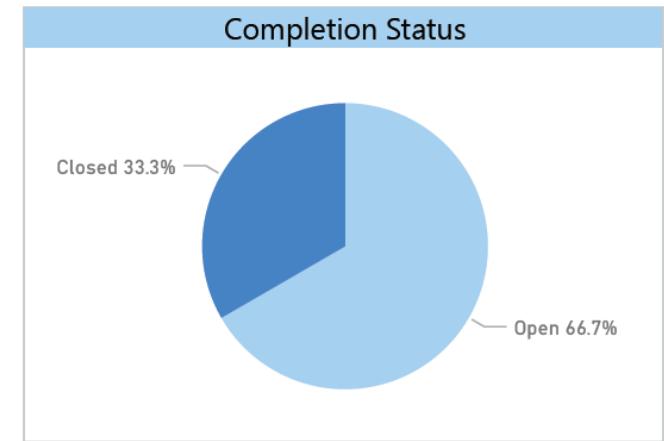
CLOSED
2



Priority for DCN

OPEN
2

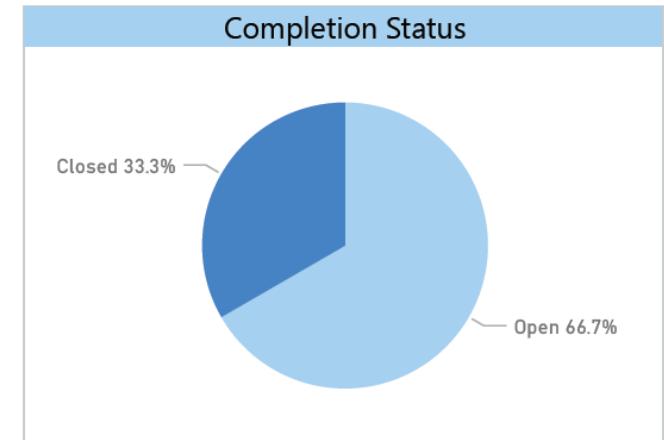
CLOSED
1



Priority for RHCYP

OPEN
2

CLOSED
1



RHCYP + DCN

Management

Revised Date: 21/02/2020

Current Date for tracking: 21/02/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to Close	Open/Closed	Priority To RHCYP	Priority To DCN
MA1	Structures and processes are not fully in place to assure the Board that the facility is being operated in compliance with contract requirements. These should be in place from the point where the building services referred to in this report are put into use.	1	NHS Lothian and IHSL should adopt the management and reporting processes as described in SHTM 00 – Best Practice Guidance for Healthcare Engineering and the SHTMs for each critical engineering service	NHSL	11/09/2019	31/12/2019	HFS have issued comments on the most recent issued version of the document. BYES to respond.	OPEN	NO	NO
		2	Confirmation is required that IHSL have the following in place <ul style="list-style-type: none"> •Responsible person •Adequate numbers of Authorised persons •Adequate numbers of Competent persons •Suitable onsite training has taken place for HV and LV personnel. 	BYES	30/10/2011	20/12/2019	HFS have issued comments on the most recent issued version of the document. BYES to respond. Dates and letters of appointment to be provided by BYES and NHSL	OPEN	NO	NO
MA2	Some of the records and documents necessary for the effective and safe operation of the hospital could not be found. The document management system appears to lack a logical structure which will impact on the ability to readily find necessary information.	2	Confirmation is required that the HV installation has been tested and commissioned to BS EN 61936 as no documentation has been produced to support this.	NHSL	06/11/2019	24/12/2019	Specific conformity statement required. Responsible person to confirm conformance with BS. MPX have issued MPX-GC-030679 as evidence. Board to confirm.	OPEN	YES	YES

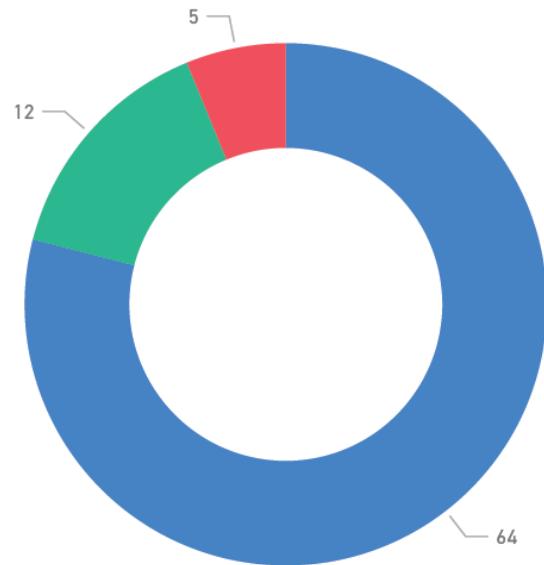
RHCYP+DCN - Venla on Acon Log Dashboard

21/02/2020

Actions closed since last dashboard : 0

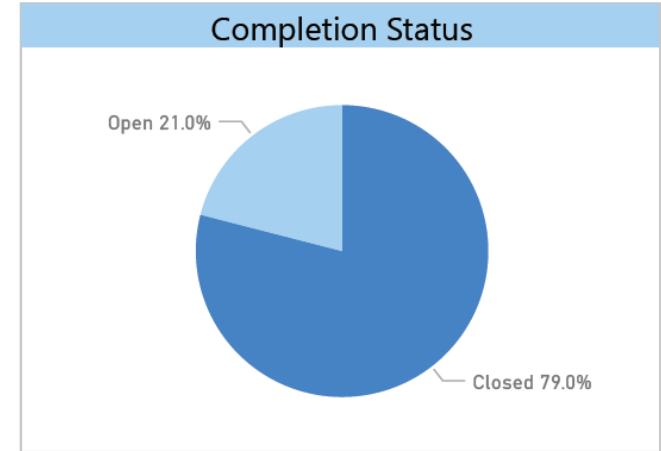
Status against Target Date

- Closed
- Acons on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



OPEN
17

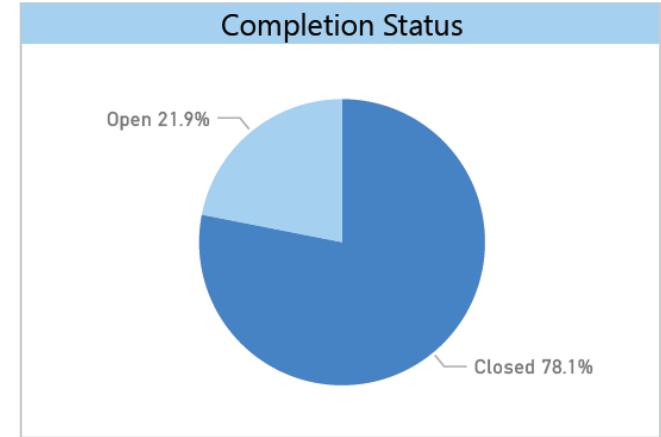
CLOSED
64



Priority for DCN

OPEN
16

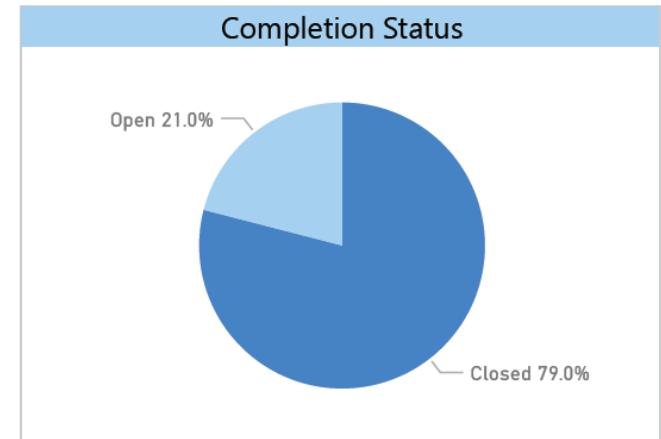
CLOSED
57



Priority for RHCYP

OPEN
17

CLOSED
64



RHCYP + DCN

Ventilation Action Log

Revised Date:

21/02/2020

Current Date for tracking:

21/02/2020

Issue No.	Item	Action Number	Requirements	Owner	Start Date	Target Date	Action to Close	Open /Closed	Priority to RHCYP	Priority to DCN
V3	Recommissioning of ventilation system.	1	Confirmation is required that all ventilation systems have been balanced and re-commissioned to meet the requirements of the environmental matrix	MPX	11/09/2019	31/01/2020	<p>MPX confirmed all work would be complete before the end of February with the exception of 2 AHU motor replacements (AHU 02-04 & 02-26) with an estimated delivery time of 8-12 weeks (estimated April). MPX will issue programme on 17th February. MPX confirmed it is not providing the duty required.</p> <p>IOM are carrying out validation in DCN areas. Inspections note 1 no. dirty extract is ramping down multiple times and causing measuring issues. MPX to investigate in Schneider.</p> <p>BYES are awaiting commissioning and validation certification from MPX to return AHU's to full service. (Duplicate for item 41 - 74)</p> <p>Joint meeting with IOM and MPX needed the first day IOM are on site.</p> <p>NOTE: Environmental Matrix is not the correct reference point (i.e. still refers to 4ac/h for Critical Care). Mandatory contract conditions are.</p> <p>Note: There is a risk this action will not be closed by the agreed close out date.</p>	OPEN	YES	YES
V6	Some areas are not completed and ready for handover. E.g. ceiling tiles still missing	1	CT & Fluoroscopy only areas still affected due to Turnkey works	MPX	25/06/2019	31/01/2020	<p>MPX confirmed works complete and awaiting confirmation after theatre works (V30/V33) have been finished (Theatre 36). NHSL noted that area requiring testing is provided by another AHU system and can be commissioned by MPX. MPX confirmed IOM can carry out validation on Wednesday 26th February and Thursday 27th February.</p> <p>BYES can assist putting tiles in place where necessary if these are identified as works complete above ceilings.</p>	OPEN	YES	YES
V12	Very limited extract in theatre corridors. Corridors are not at 0 absolute pressure and do not meet required 7 ach/hr (SHTM03-01 part A appendix 2 Table A2). No escape for surplus air. Could impact on open door protection. Pressure in corridors is pushing fire doors open.	1	To be reviewed by IPCT, All pressure Cascades are compliant.	MPX		31/01/2020	<p>MPX have submitted further design information and NHSL have provided comments. NHSL requested/escalated outstanding TUV-SUD response to NHSL comments. - MPX are progressing with the work on the basis that the design meets criteria.</p> <p>MPX confirmed works complete. Commissioning will take 10 days but will not progress until V30/V33 are complete, MPX anticipate middle/end of w/c 24/02/20. NHS reaffirmed the corridor is to be provided 7 ACH balanced. MPX H&V will carry out commissioning after 2nd March. IOM to consider full revalidation of theatres with all parties present. MPX to confirm to BYES when commissioning certificates have been uploaded to Zutec.</p>	OPEN	YES	YES
V33	Scrub areas which are narrow and deep are unlikely to be scavenged effectively by theatre air changes and require alternative means of achieving removal of contaminants as per SHTM 03-01. The efficacy of the high level extract to achieve sufficient dilution of contaminants or entrainment of heavier than air water droplets is not in accordance with the requirements of SHTM 03-01 and has not demonstrated as equivalent.	1	The ability of the single high level extract provided in deep plan scrub areas to effectively prevent contaminants being dispersed into theatres should be demonstrated and/or additional low level ventilation provided.	NHSL/IOM	11/09/2019	31/01/2020	<p>IOM have issued report to NHSL/MPX for MPX to progress through supply chain. TUV SUD provided response on IOM report. No Board change required.</p> <p>MPX have confirmed works complete with the expectation of minor repainting. MPX recommends end of February for IOM to validate. NHSL asked MPX to work commissioning and validation in tandem with IOM, MPX to confirm.</p>	OPEN	YES	YES

V38	The "maintenance by-pass" associated with the AHU requires to be fully detailed and proven.	1	<p>Details required include: -</p> <ul style="list-style-type: none"> - Full written details for each system - Identification of systems which do not have a secondary source of ventilation. - Identification of all spaces which will have no mechanical ventilation when by-pass is initiated. - The minimum and maximum estimated times for a maintenance by-pass and for recovery of a major fault. - The impact of these arrangements on the fire strategy. - The strategy for advising clinical staff in the areas affected. - Commissioning and validation certificates for the changeover system, all associated controls, revised room volumes and pressures. - The clinical service plan should reflect the operational procedures in the event of failure of an air handling unit. 	MPX	11/09/2019	24/12/2019	<p>MPX issued report on By-pass arrangement on 17/10/19. NHSL provided comments on 4/11/19. Overall report is unsatisfactory, works to critical care and haematology / oncology will resolve some items but not Level 3.</p> <ul style="list-style-type: none"> - MPX will provide training to BYES. BYES confirmed control side demonstrated, physical side not demonstrated. - MPX to provide additional damper control. (Estimated end of February) - BYES issued details on frequency and duration of planned PPM downtimes on 13/1/19. BYES to update inline with Board comments. - BYES have drafted an SOP awaiting final demonstration to complete. - MPX to identify impact to air change rates on a per room basis. - NHSL/BYES want a full demonstration with H&V to measure to inform the clinical risk assessment. <p>Following confirmation of the above NHSL to undertake a full clinical risk assessment for impact in bypass mode and in total failure mode and develop a plan for maintenance downtime.</p> <p>Demonstration planned on 26th February on all bypass systems. NHSL to contact IOM to identify impact. BYES noted H&V may be on site as well.</p>	OPEN	YES	YES
-----	---	---	--	-----	------------	------------	--	------	-----	-----

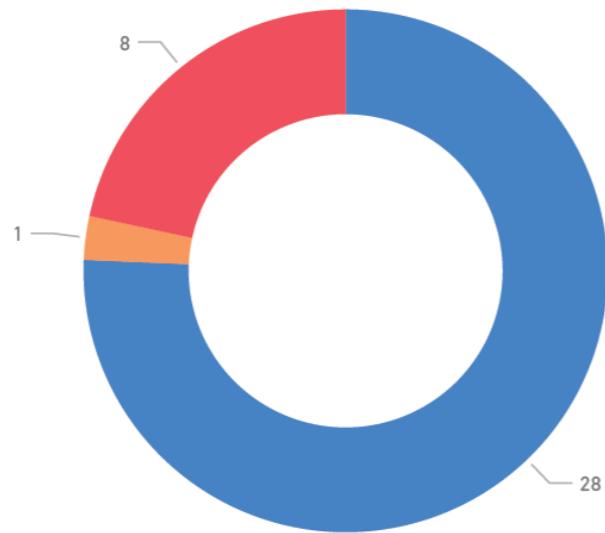
RHCYP+DCN - Water Safety Acon Log Dashboard

21/02/2020

Actions closed since last dashboard : 0

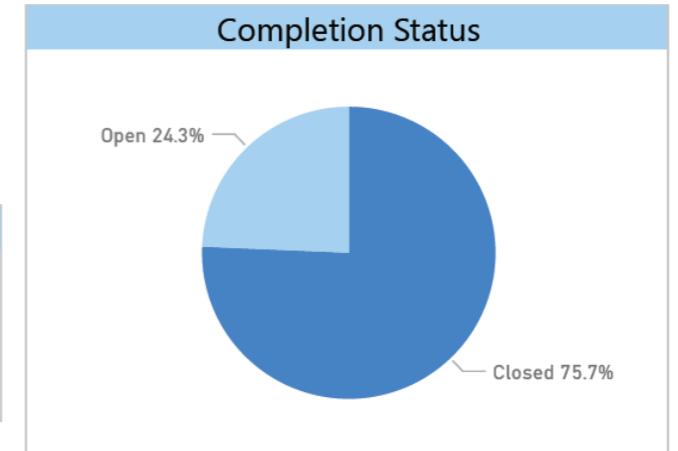
Status against Target Date

- Closed
- Acons on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



OPEN
9

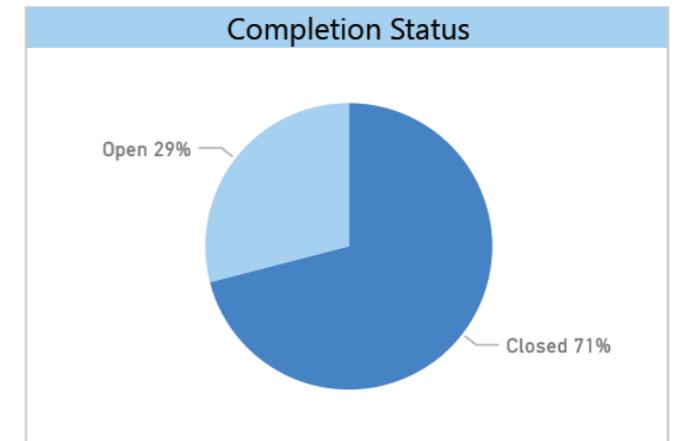
CLOSED
28



Priority for DCN

OPEN
9

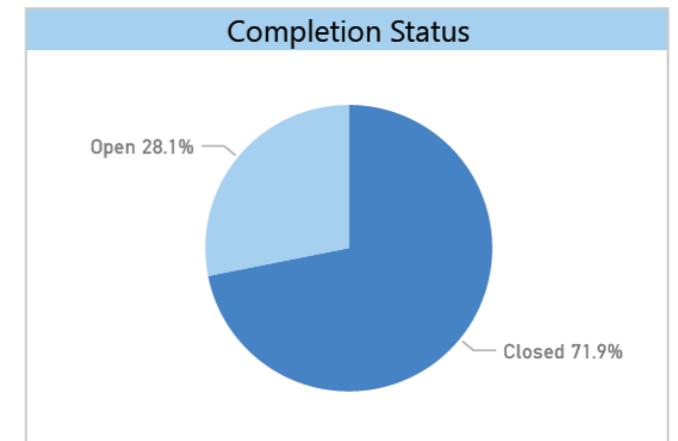
CLOSED
22



Priority for RHCYP

OPEN
9

CLOSED
23



RHCYP + DCN

Water Safety Action Log

Revised Date: 21/02/2020

Current Date for tracking: 21/02/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/Closed	Priority to RHCYP	Priority to DCN
W2	There is no temporary or permanent site specific water management plan	5	Management: Written confirmation that the actions detailed in the Callidus report have been satisfactorily resolved.	IHSL	11/09/2019	06/12/2019	GS has issued IHSL's response to BC and MM. NHSL to confirm by 13/11/19 whether Callidus has confirmed actions are closed. NHSL/IHSL/BYES to meet to progress uploading the actions to the Callidus Portal as a matter of urgency	OPEN	Yes	Yes
		8	The Legionella Risk assessment Feb 2019 identified a range of actions. The Action Tracker does not demonstrate that the issues raised have been resolved or a timeline provided for resolution. Record rectification of actions. The risk assessment is heavily focussed on Legionella and not taking into account other organisms in line with patient type that will occupy the building. Broaden to reflect system contamination in general. Develop analysis categorisation of patient type and consideration to susceptibility for each area.	HFS/NHSL	11/09/2019	06/12/2019	In augmented care there is already enhanced measures as part of Pseudomonas control. Without formal guidance on methodology and how to interpret the results and with a lack of accredited laboratories to test the samples NHSL proposal is no testing for fungal or mould subject to approval at the OSB. The full paper was discussed at ESG on 10/02, a short covering paper is being issued to the ESG on 17/02/20 and OSB on 20/02/20. GC has a paper in draft that will be shared with LG/DK/DI to define the operational threshold, location and number of samples. LG to confirm when this will be available and taken to the Water Safety Group. BYES are to investigate how trend analysis will be provided to the Board with a witness statement.	OPEN	Yes	Yes
W4	Guidance outstanding from NSS	1	HFS via Tim Wafer will advise on the outcome of the additional microbiological testing conducted on their behalf. It was agreed that the actions discussed for inclusion in the water safety plan (flushing, remedial action etc.) would address the presence of other organisms. In the absence of any clinical infections the purpose of this exercise remains unclear. No information about the expectation about testing regimes going forwards was discussed. It was highlighted again interpretation of this additional testing may be challenging in the absence of validated testing methodology.	HFS	TBC - Date of QEUH report	06/12/2019	Without formal guidance on methodology and how to interpret the results and with a lack of accredited laboratories to test the samples NHSL proposal is no additional testing subject to approval at the OSB. The full paper was discussed at ESG on 10/02, a short covering paper is being issued to the ESG on 17/02/20 and OSB on 20/02/20.	OPEN	Yes	Yes
W9	Lessons learned for QEUH that may apply in RHCYP+DCN	1	As a result of potential issues identified elsewhere after construction of RHCYP & DCN, the following items should be replaced in the system and handed over to Water Solutions Group (they should be in attendance when items are removed to facilitate transportation to laboratory). - One expansion vessel bladder (flow through) - One expansion vessel - One TMT cartridge from augmented care before disinfection/cleaning - Two TMT strainers from augmented care - One system pressure reducing valve - One water meter - One system non-return valve - Two cold water pipe crimp joints - One end-of-line dump valve - Two Kemper venturi valves.	BYES	11/09/2019	06/12/2019	Following a review of the paper and discussions with HFS 13/01/20 it has been concluded that, due to the risk of introducing contaminants to the water system by undertaking and intrusive investigation, there will be no removal of component parts for testing. BYES to confirm current PPM and if required Board will issue a change for an update to PPM methodology to include corrosion monitoring of strainers. - Subject to approval from OSB for the principal. BYES will provide a work list when the corrosion footnote is added but formal PPM is required. BYES have confirmed they will take a 6 monthly sample for ferrous testing. There was discussion around when water chemistry would be requested. BYES are to provide a flowchart outlining the process for monitoring, exceptions reporting and actions required when trigger levels are exceeded from the following: 1. Corrosion identified in the PPM; 2. High TVC in water quality sampling; 3. Patient monitoring. It is noted that this flowchart will be progressed via the Local Water Safety Group.	OPEN	Yes	Yes
W10	Positive Pseudomonas results	1	Pseudomonas found in taps, in Paediatric Medical Inpatients and DCN Inpatients . (SHTM 04-01 Part A published in July 2014)	BYES	29/07/2019	30/09/2019	BYES have received the sample results for day 0 and day 3 and have 13 positives - 10 showers and 3 taps.	OPEN	Yes	Yes
		3	Testing has found some fungal / mould contamination and high total viable counts. Given a number of indicators the water system should be disinfected and re-tested. BYES required to seek advice from the manufacturer of the valves on the strongest medium that would ensure a high level of disinfection of the whole system including the removal of bio film if present.	BYES	11/09/2019	31/10/2019	The water system will be disinfected and tested prior to occupation by DCN in line with LVC 086. Full system disinfection to address TVC: • Sanisol proposed but manufacturer unwilling to confirm compatibility with component parts. BYES/Project Co are to provide a statement confirming the medium to be used. • The disinfection will be completed prior to triggering the move - DG will provide Full System disinfection to address fungal/mould: Without formal guidance on methodology and how to interpret the results and with a lack of accredited laboratories to test the samples NHSL proposal is no additional testing subject to approval at the OSB. The paper is being taken to the OSB for consideration.	OPEN	Yes	Yes

W12	Shower hose lengths do not comply	1	Shower hose lengths do not comply with Scottish Water by-laws and guidance in SHTM 04-01 Water safety for healthcare premises. Shorten hose length, or add retaining ring, to ensure that shower head cannot reach WC or drain. Disinfect showers, hose and drain after rectification.	NHSL	11/09/2019	30/09/2019	<p>In order to achieve compliance with SW Byelaws the following actions have been agreed:</p> <ol style="list-style-type: none"> 1. Board to be provided, by BYES, a sample of welded version of shower head. LG noted that, on basis of review of the non welded shower head, if the head is secure and cannot be tampered with, IPCT have no further comments on the proposed solution. 2. Agreement needed over length of the hose 1.25m is standard shower length and RMCD need to be considered 3. BYES needs to install a 10% sample of the shower head for SW to review. Board will recommend a ward for the sample to be installed. 4. BYES will provide a programme for installing the disposable showerheads. It was agreed this would be after disinfection of system. DCN to be installed prior to DCN and RHCYP to be fitted prior to RHCYP move in but so as to avoid having to replace prior to moves. 	OPEN	Yes	Yes
W14	Instant Boil Taps and Rise and Fall Baths were found to be contaminated	1	Representatives from ZIP and ARJO to attend the site to provide specific maintenance and decontamination guidance for these products. It was proposed, subject to further discussion with the AE (Water) for Lothian and HFS, that the ARJO baths in Paediatric Oncology and Burns dressing clinic/ward care areas are removed and replaced with a suitable alternative. All other baths are to be reviewed, maintained and tested in line with the manufacturer s guidance. to demonstrate safe water delivery as per SHTM 04-01 Water safety for healthcare premises.	IHSL	29/07/2019	14/02/2020	<ul style="list-style-type: none"> • Zip tap dealt with above in W4.2 – all augmented care areas now being included. NHSL to confirm and update change. • ARJO recommendations are: <ul style="list-style-type: none"> - ARJO samples have now been tested and results are awaited by the Board. - BYES confirmed that ARJO use a lab called 2030 based in England. LG has requested confirmation of the method for transportation. - BYES had H&V sample concurrently with ARJO and have advised that 7 of the 9 baths are still positive. ARJO have confirmed that these 7 Baths will be replaced. Currently waiting on Programme for replacement. - outstanding ARJO clarification on instructions for use and cleaning. LG to review SOP. 	OPEN	Yes	Yes
W16	Bottle traps - There would appear to be an inconsistency of installation and potential of back-feed from trap to drain.	1	The bottle traps should be the subject of regular planned maintenance and disinfected with a suitable agent to prevent the build-up of biofilm.	IHSL		06/12/2019	<p>Subject to approval of paper at OsB.</p> <p>The paper proposes that there will be no routine additional disinfection or removal and inspection as there is currently no industry standard. Additionally the risk to the water system is deemed higher if frequently accessing the traps. Current guidance notes that if there was back flow odour then bottle trap would be removed.</p>	OPEN	Yes	Yes

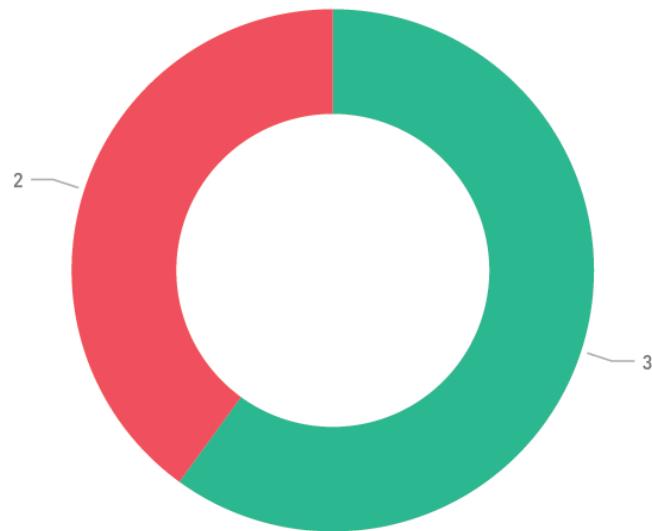
RHCYP+DCN - Fire Acon Log Dashboard

21/02/2020

Actions closed since last dashboard : 0

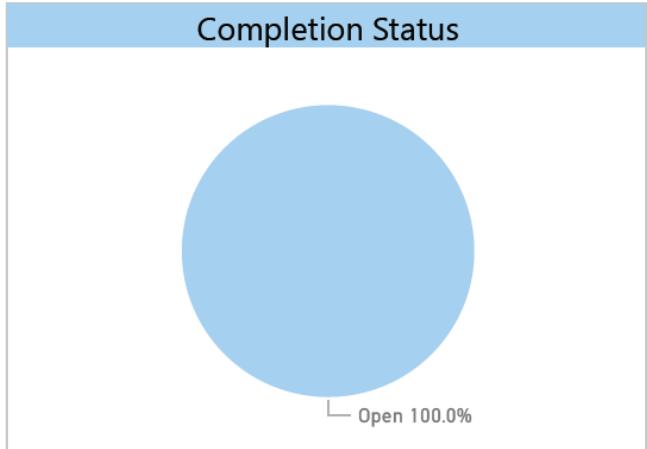
Status against Target Date

- Due Status**
- Closed
 - Acons on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



OPEN
5

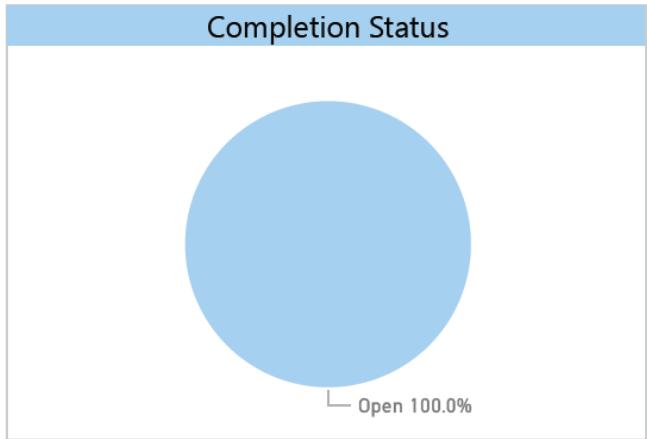
CLOSED
0



Priority for DCN

OPEN
5

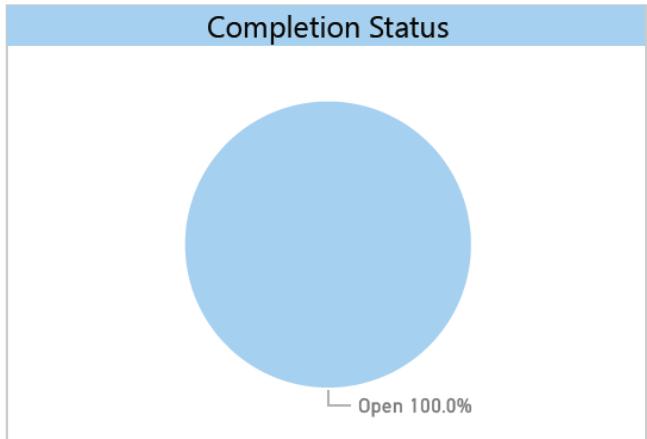
CLOSED
0



Priority for RHCYP

OPEN
5

CLOSED
0



RHCYP + DCN

Fire Action Log

Revised Date: 21/02/2020

Current Date for tracking: 21/02/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to Close	Open/Closed	Priority To RHCYP	Priority To DCN
F4	A number of remedial snagging and housekeeping issues were identified; damage to fire doors, seals and workmanship; penetrations in compartment walls; delineation of rooftop escape.	1	A number of the items have already been identified and logged by NHS Lothian via the helpdesk process. NHS Lothian and IHSL should ensure all works are undertaken prior to occupation. Procedures should be adopted to ensure rooftop escape remains clear.	IHSL	30/10/2019	24/12/2019	This work is in progress and will be completed and/or in place prior to occupation. Confirmation for completion of the 'Snagging' and identification of the business as usual process for onward management. Awaiting IT report	OPEN	YES	YES
F5	It is noted that there is not fire barriers in the vertical risers and we have been advised that the risers area single fire compartment.	1	Confirmation is required that the Board has a contingency plan is in place in the unlikely event that a fire takes out the majority of an individual riser.	MPX		31/01/2020	As per electrical items - Resilience and planned management to be detailed to close the item.	OPEN	YES	YES

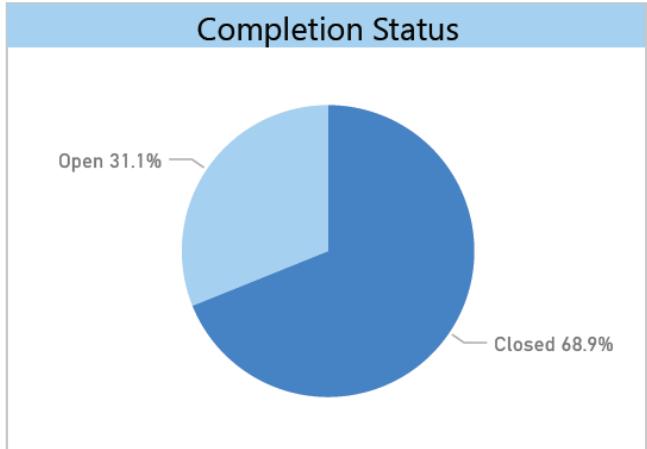
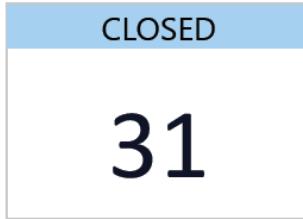
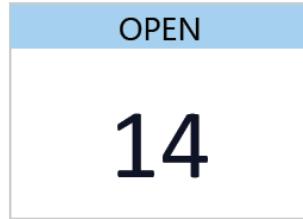
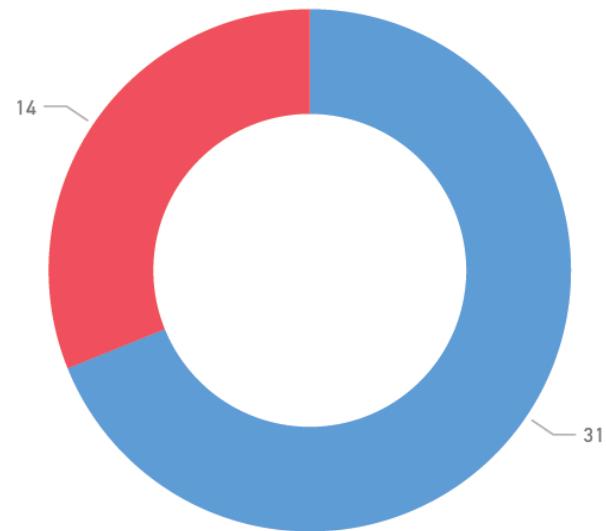
RHCYP+DCN - Electrical Acon Log Dashboard

21/02/2020

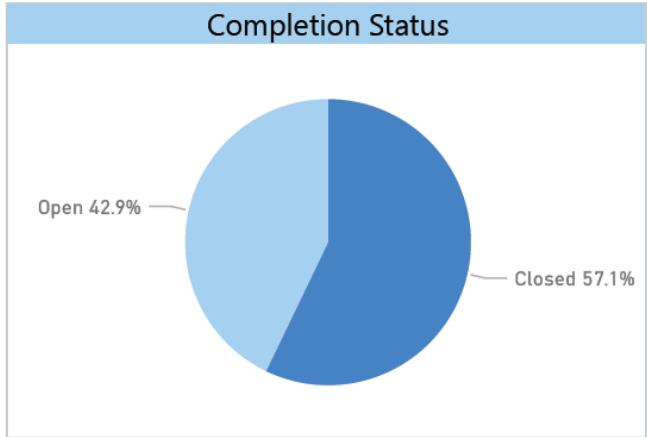
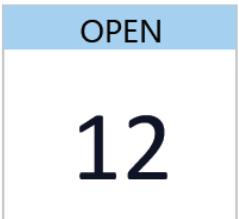
Actions closed since last dashboard : 0

Status against Target Date

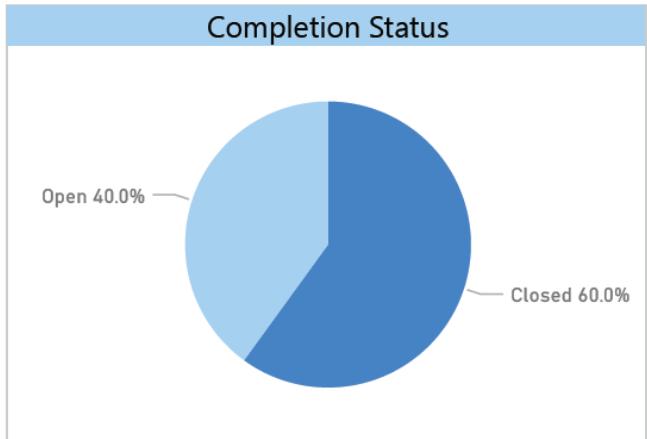
- Closed
- Acons on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP



RHCYP + DCN

Electrical Action Log

Revised Date: 21/02/2020

Current Date for tracking: 21/02/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to Close	Open / Closed	Priority To RHCYP	Priority To DCN
E7	HV and LV Switch room escape lighting	1	Ensure that escape lighting and signage in HV and LV switch rooms has been provided to BS 5266 and the Health and Safety (Safety Signs and Signals) Regulations 1996	BYES	06/11/2019	24/12/2019	HFS confirmed that no information has been received. The email of 14-02-20 containing the HV/LV audit does not address emergency lighting. BYES to provide information.	OPEN	YES	YES
E8	The HV switch room has some specific installation issues which require to be addressed	1	Fire separation as per SHTM 06-01 7.18	IHSL/MPX	06/11/2019	31/01/2020	MPX to provide statement. Information is contained in pages 5-8 of the Access and Maintenance Strategy document attached on Aconex MPX-GC-030661, however, HFS have confirmed the access strategy document does not address the issue.	OPEN	YES	YES
		2	Routing of LV ladder as per SHTM 06-01 7.24	MPX / NHSL / HFS	06/11/2019	31/01/2020	MPX to provide statement. Information is contained in pages 5-8 of the Access and Maintenance Strategy document attached on Aconex MPX-GC-030661, however, HFS have confirmed the access strategy document does not address the issue.	OPEN	YES	YES
		3	Limited access above transformer	MPX / NHSL / HFS	06/11/2019	31/01/2020	MPX responded as per MPX-GC-030661.- The access strategy document does not address the issue. Page 2 of Section 7,0 notes the access for the plant but does not address limited/restricted height access. IHSL to provide statement.	OPEN	YES	YES

E13	The UPS and output switchboards are a significant distance from the point of load. From this point there is no alternative supply within the internal infrastructure thereby increasing the potential for a single point of failure contrary to clause 4.6 of SHTM 06-01.	2	NHS Lothian should require IHSL to provide agreed mitigation strategies to meet SHPN 00-07 and SHTM 06-01 to avoid internal failure of the single electrical supply to the critical electrical services such as Medical IT cabinets serving life support and other critical systems.	NHSL/HFS	30/10/2019	31/01/2020	HFS advised information contained within DSSR resilience report items 15. However no specific reference to Chapter 56 and 710 Of BS 7671. MPX have responded as per MPX-GC-030685 - Board to review.	OPEN	NO	NO
E15	Rising main bus bars are not sealed between floors.	1	There are at least two risks associated with this. One is resilience. If there is a fire or catastrophic event then this will traverse all floors and there is the potential for tools/material to drop to lower levels. Access to equipment is difficult with the risers and could be contrary to BS 7671 132.12 for accessibility inspection, testing and repair.	MPX	06/11/2019	31/01/2020	The information provided (NHSL-GC-004253 does not address the point raised. MPX to provide a statement.	OPEN	YES	YES
E16	Modular Wiring System	2	Tap off units are not secure on the side of the trunking	MPX	06/11/2019	24/12/2019	MPX have issued progress statement as per MPX-GC-030689 and have confirmed site works will be complete by 28.02.20.	OPEN	YES	YES
		3	Fire integrity is required to be checked and confirmed	NHSL	06/11/2019	24/12/2019	MPX have responded MPX-GC-030688. Board to review.	OPEN	YES	YES
		4	All missing parts to be fitted to prevent access to live parts	MPX	06/11/2019	24/12/2019	IHSL to provide statement to confirm identified items have been repaired and what other checks have been carried out. MPX have issued progress statement as per MPX-GC-030689. Site works will be complete by 28.02.20.	OPEN	YES	YES
		5	Confirmation that de-rating of cable has been applied due to excessive cable coils and connectors left in trunking	MPX	06/11/2019	24/12/2019	IHSL to provide statement to confirm identified items have been repaired and what other checks have been carried out. MPX have issued progress statement as per MPX-GC-030689. Site works will be complete by 28.02.20.	OPEN	YES	YES
		6	Concern is raised that fixing bolts/screws could damage the single core cables in the trunking.	MPX	06/11/2019	24/12/2019	IHSL to provide statement to confirm identified items have been repaired and what other checks have been carried out. MPX have issued progress statement as per MPX-GC-030689. Site works will be complete by 28.02.20.	OPEN	YES	YES

E17	Earth Bonding Bars (EBB) A number of EBB have been installed incorrectly posing a potential infection control risk.	1	A "circuit chart" should be provided for all EBB and the conductors should be checked to ensure they have individual labels.	MPX	06/11/2019	24/12/2019	MPX issued progress statement as per MPX-GC-030686. MPX have advised the following: Schematics all uploaded to Zutec. Site progress has been reported as 50% complete, remaining mounting of schematics / mastic sealing to be complete by 28.02.20. Once works are complete RH will undertake a sample witnessing and confirm to HFS.	OPEN	NO	NO
		3	EBB fitted above ceilings cannot be easily/adequately accessed for testing and inspection.	HFS	06/11/2019	24/12/2019	MPX issued closing statement as per MPX-GC-030692. - HFS to review.	OPEN	YES	YES
E18	Medical IT Systems	5	Medical IT system cables are considered essential and covered by BS 7671 chapter 56, however this does not appear to be the case in the installation as they are not fire rated or segregated from other cables.	MPX	06/11/2019	24/12/2019	HFS have advised the resilience report does not address this question, as it concentrates on the mains and sub-mains distribution infrastructure.	OPEN	YES	YES



Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 12 March 2020, 8:00 – 9:30am

Venue: Room 8&9, Waverley Gate, EH1 3EG

AGENDA

1.	Chair's Welcome and Introductions	FMc	v
	Apologies: Alex McMahon		
2.	Minutes of previous meeting for approval: 27 February 2020	FMc	*
3.	Matters Arising	FMc	v
3.1	Response to queries on the draft terms of reference for the public inquiry	CH	v
4.	Senior Programme Director's Reports	MM	
	4.1 Workstreams report		*
	4.2 Highlight report		*
5.	Progress with Ventilation Remedials to Paediatric Critical Care and Ventilation Enhancements to Haematology + Oncology – paper to follow	BC	*
6.	Emergency Department Ventilation & High Consequence Infectious Diseases in RHCYP	TG	*
7.	Service Continuity on Existing RHSC & DCN Sites	TG	*
8.	Communications		
	8.1 Proposed Communications	JM	v
9.	Any Other Competent Business		
10.	Date of Next Meeting		
	Thursday 26 th March 2020, 8am, Room 8&9, Waverley Gate		

* = paper attached

v = verbal report

p = presentation

= paper to follow

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 27 February 2020 in Meeting Room 6&7, Waverley Gate, Edinburgh.

Present: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Miss T. Gillies, Medical Director, NHS Lothian; Professor A. McMahon, Nurse Director NHS Lothian and Mr C. Henderson, Scottish Government.

Present by Telephone: Mr C. Sinclair, Chief Executive, NHS National Services Scotland and Mr G. Archibald, Joint Staff Side Representative;

In Attendance: Ms M. Morgan, Senior Programme Director; Mr B. Currie, Project Director, NHS Lothian; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Ms J. Mackay, NHS Lothian Director of Communications; Mrs E. Robertson, Interim Chair, NHS Lothian; Mr I. Graham, Director of Capital Planning and Projects and Mr C. Graham, Corporate Governance Team (minutes).

In Attendance by Telephone: Mr G. James, Director of Facilities, Health Facilities Scotland; Mr J. Miller, Health Facilities Scotland and Mrs L. Imrie, Interim Lead Consultant for Healthcare Associated Infection (HAI), Antimicrobial Resistance and Infection Prevention and Control, Health Protection Scotland

Apologies: Mrs S. Goldsmith, Director of Finance, NHS Lothian; Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side); Prof J. Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work; Mr P. Reekie, Chief Executive, Scottish Futures Trust and Ms S. Cosens, Capital Programme Business Manager, NHS Lothian

1. Minutes of previous meeting – 20 February 2020

1.1 The minutes of the meeting held on 29 January 2020 were accepted.

2. Matters Arising

2.1 Negative Pressure isolation room (In-patients) Briefing: *Confirmation of the ventilation/management requirements for source isolation of high consequence infectious disease*

- Noted that this issue relates to inpatients critical care and the determination of how easy or difficult this work would be.
- Following discussions with HFS/HPS on 25/02/2020 – a clear outline has been provided to IHSL and Imtech to report on any adverse impact this work may have on programme timeline or costs. Early discussions remain positive and work should be possible within the programme timeline, confirmation around impacts was awaited.
- Important to note that the recommendation for this work came from 2016 NICE Guidance.

3. Senior Programme Director's Report

- Noted that due to the frequency of meetings it was challenging to provide the most up to date written information.
- The format of the report and actions trackers to be reviewed and would change moving forward. With a focus more on exception reporting to make it easier to provide a more up-to-date position. (Expected change 12th March 2020)

MM

- Noted that by 12/03/2020 oversight board a position should be reached which would demonstrate significant progress against the outstanding 45 actions.
- Assurance received of good progress against all actions, whilst recognising that of the 45 actions, some cannot be completed until a move in date is known, for example total disinfection of site water system.
- Noted that there had been a positive meeting between IHSL, NHSL and funders on 20/02/2020. Funders remained supportive of the timelines and progress.
- High Value Change work continues with the concept design version 2 awaited. IHSL remain confident work is on track to reach Supplementary Agreement 2.
- NHSL Finance and Resources Committee (26/02/2020) confirmed a positive position about owning the dates and outline programme as reported. Dates working towards were supported – DCN move end May 2020 and RHCYP move end November 2020. Noted that there remains a lot of work and risk associated with this.
- Discussion on Go, No Go dates. For DCN assurance works this would be around 10/04/2020. RHCYP awaiting programme.
- Noted that an IHSL liaison meeting and MacRoberts discussion on commercials for SA2 were scheduled for 27/02/2020.
- Recognised risk around coronavirus and potential for impact on construction workers
- Noted that NHSGGC had published its MPX summons. Potential to complicate NHSL commercial discussions, although NHSL/MPX relationship in a good position.
- Discussion on reputational risk not just for NHSL but other contractors. Noted that IHSL Supply Chain aware of the need to get on with work following some teething problems with some sub-contractors.
- Noted that strategic partnerships were now being used rather than backing into contracts.

4. HCID facility in the RHCYP ED report (SBAR for Information)

- Noted that following previous oversight board discussion there had been meeting held with colleagues on 24/02 and 25/02/2020, with a further workshop on a NHSL solution to be held on 03/03/2020.
- Noted that IHSL had not been approached yet about timelines for any work in relation to this.
- A report from the 03/03/2020 workshop would be taken back to the executive steering group and then come back to the oversight board on 12 March 2020.

AMcM

5. Programme Designs (Update on major activities)

- IHSL starting paediatric ventilation works which should have no impact on DCN once in situ. Impact and any disruption to be confirmed once final design is received.
- Air Handling Units remedial works to be finished week ending 28/02/2020. Monitoring and validation was moving along well.
- DCN linked board changes relating to power operated doors, access control to staircases etc. to be completed end of March 2020.
- Medium Value Changes relating to Fire Enhancements going well with documentation about to be signed. Noted that this was below Supplementary Agreement threshold.
- Work on mechanical door closers, fire doors and combined smoke and fire dampers ahead of programme.
- Concept design report v1 for ventilation works currently being reviewed. Report to come back to 12/03/2020 oversight board. Detailed programme awaited.
- Noted that the executive steering group meeting would move back to weekly meetings as part of providing assurance on emerging risks.

6. Public Inquiry Terms of Reference

- Terms of reference document noted. The Chair and TG had discussed with Central Legal Office (CLO).
- CLO had established office support for both Glasgow and Edinburgh Public Inquiries.
- Noted that the name of the hospital in the terms of reference was inaccurate and did not refer to DCN or CAMHS.
- Noted that the invitation to comment was only for families, patients and groups in relation to children's hospital and that this should be open to families for DCN.
- It was also noted that the use of language such as 'failures of individuals' may not be appropriate language.
- Oversight board agreed that these points should be taken forward. It was also requested that a check be made in relation to NHSL having the chance to comment on the Terms of Reference.

CH

7. Technical Reviews progress

- Noted that all trackers should be closed down in the next couple of weeks as the move towards a steady state position around works continues.
- Noted that some items require more work but this should not impact the DCN move.
- The good news story around water was recognised. The 57 contaminated outlets were close to resolution and Arjobaths were being replaced and would be certified once plumbed in.
- Noted that the shower hose solution was due to be signed off in relation to Scottish Water Bylaws and showerheads would not be fitted until the final move.
- The Executive Steering Group to receive a monthly update from the Water Safety Group as part of business as usual. Whilst appreciating that there were still be outlets with contamination that would be dealt with as part of route business of running a hospital.
- A report outlining the scrutiny work and evidence actions taken to resolve water safety issues to come to a future oversight board meeting as part of the closing off process.

MM

7.1 Ventilation
7.2 Water Quality
7.3 Fire Safety
7.4 Electrical Safety

- Nothing further added until items 7.1 – 7.4

8. Service Continuity on Existing RHSC & DCN Sites

- No new issues reported.
- Noted that the unscheduled care activity level at the Western General Hospital remained very high which had meant having to use empty beds in DCN which it had been hoped to avoid.
- Existing RHSC site dealing with proportionate corona virus activity with testing taking place out with the hospital as part of RIDU protection.

9. Communications

9.1 Proposed Communications

- Noted that an updated had been given to Lothian Partnership Forum on 25/02/2020, this had been well received.
- Noted that a comprehensive newsletter update would be produced once the final detailed design and programme are known.

10. Any Other Competent Business

10.1 CAMHS – Noted that there had been initial conversations with constructors on the complexities of some of the CAMHS work. The work had now been divided into two Medium Value Changes around fire dampers works and doors. There would be a separate piece of work brought back in relation to doors, service implications and issues.

10.2 Imtech presentation – Noted that Imtech might be presenting to the executive steering group on 16/03/2020. There was the possibility of opening the presentation up to oversight board members if they would wish to attend. Arrangements remain to be confirmed but those interested should hold the date for the moment.

MM

10.3 HFS focus – Noted that in the coming weeks critical care ventilation and negative pressure rooms would be the key focus for HFS/HPS.

11. Date of Next Meeting

11.1 Thursday 12th March 2020, 8am, Room 5, Waverley Gate.

RHCYP & DCN - Senior Programme Director's Report (Workstreams)

Report Date	09/03/2020	Programme RAG Status (now)	G
Submitted by	Mary Morgan	Programme RAG Status (previous Oversight Board)	R

General Update		<p>The purpose of this report is to provide a more comprehensive status on the workstream action logs and progress against actions therein.</p> <p>A workshop to close out/re assign all actions was held on Wednesday 4th March 2020. Actions were closed or reassigned to BAU mechanisms (eg local water safety group or local fire safety group) or to Commissioning Action plans. The intention is to move to Services Migration action trackers by 20/03/2020. The workstream report describes these activities in more detail and makes recommendations for future management where appropriate. Beyond 20/03/2020, where there are outstanding workstream actions, these will be collated to a single report.</p>
-----------------------	--	--

Project Workstreams	RAG Status	Comments
Ventilation	G	<p>Workstream Status changed to green due to agreement of planning assumption timelines that permit the clinical migration plan to fall within autumn time frame. HVC 107 design solution forms a substantive item on meeting agenda. The workstream action tracker is attached.</p> <p>Excellent progress against outstanding actions has been made, most notably with theatre, anaesthetic and scrub extract requirements.</p>
Water Safety	G	<p>Workstream status changed to green in response to the progress made against all actions.</p> <p>The review group has closed actions appropriately and has reassigned the following actions to the Local Water Safety Group (BAU):</p> <p>Re- Pseudomonas findings (W10): 68 of 57 (+14) colonised outlets have been tested as "clear". There are 3 remaining outlets to be "cleared" and this is expected. Given the timing of PPM water testing, this action has been reassigned to LWSG.</p> <p>Replacement of Arjo baths and pre occupation disinfection of the water system have been reassigned to respective services migration plans.</p> <p>A solution has been identified to address shower hose compliance and will be rolled out in line with the recommissioning plans. Formal acceptance by Scottish Water is expected in the near future. However, this action remains outstanding until compliance is confirmed.</p> <p>The PD recommends that this workstream be closed on the receipt of shower hose compliance on the basis that any outstanding items are business as usual/PPM or commissioning activities. National Guidance is awaited for recommended extended testing regimes.</p>
Drainage	B	Workstream closed.
Fire Safety	G	<p>The MVC 112 for DCN fire enhancements works has been agreed and submitted in final form to IHSL. Good progress has been made already against these works. It is expected that these works for DCN will complete by 7 May 2020 latest.</p> <p>The MVC 131 (CAMHS) and MVC126 (RHCYP) fire enhancements works have been submitted in final form to IHSL. A programme for these works has been requested in anticipation of formulating a migration plan that may see CAMHS relocation ahead of RHCYP. RHCYP fire enhancements will be delivered in line with HVC 107 timeline.</p> <p>These programme activities have been reassigned to respective services migration plans and will be reported through exception in future PD reports. The PD recommends that this workstream tracker is therefore closed.</p>
Electrical	G	<p>Excellent progress has been made in this area, with evidence or statements of status expected by 13/03/2020.</p> <p>The PD seeks approval to close this workstream upon receipt of the evidence required to do so.</p>
Medical gases	B	Workstream closed (Oversight Board 27th November 2019)
Management	G	<p>Management actions have been closed or reassigned to BAU processes. The Responsibility Matrix remains a dynamic and live document that will be reviewed and maintained monthly along with the monthly FM contract report. The PD recommends that this tracker therefore be closed.</p>

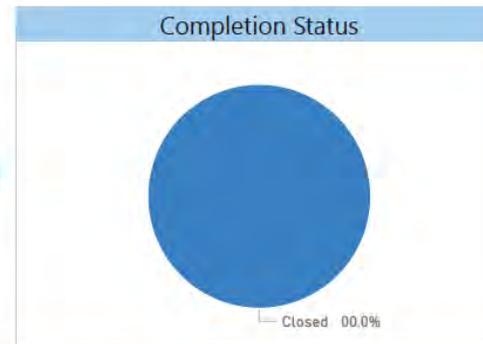
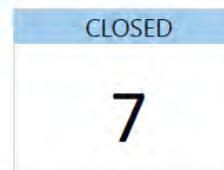
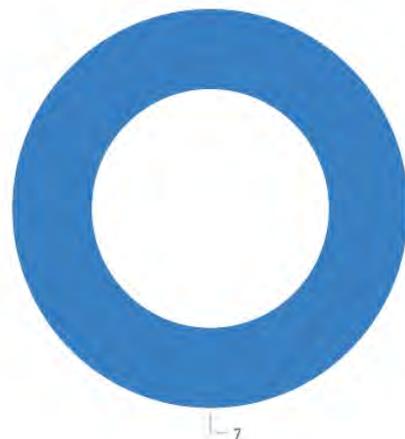
RHCYP+DCN - Management Action Log Dashboard

06/03/2020

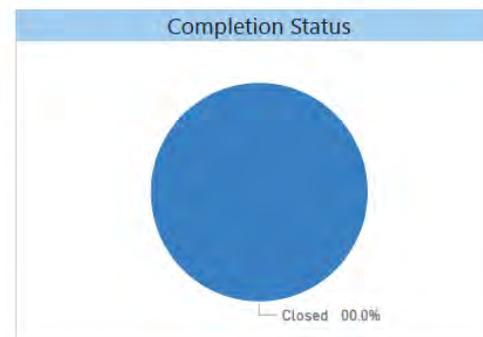
Actions closed since last dashboard : 5

Status against Target Date

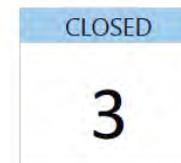
- Closed
- Actions on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP



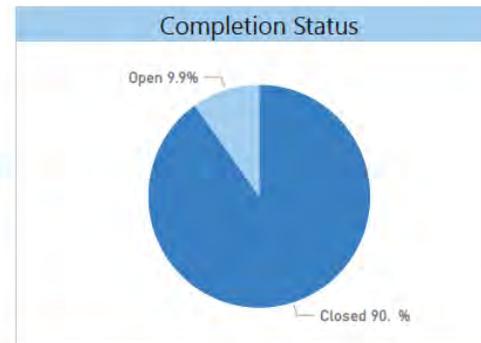
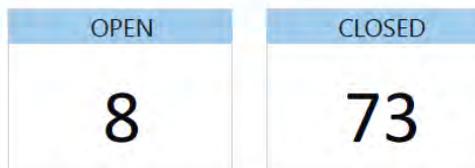
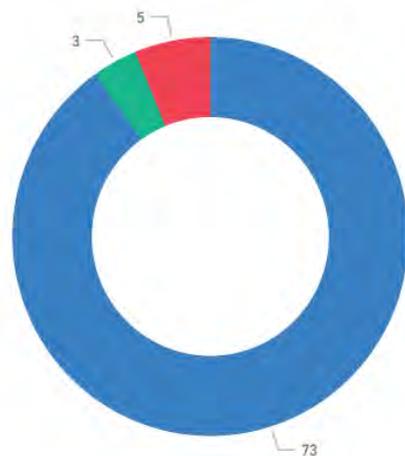
RHCYP+DCN - Ventilation Action Log Dashboard

06/03/2020

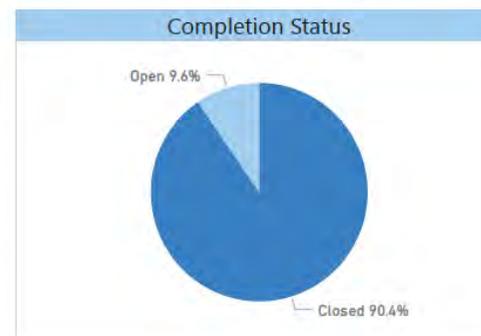
Actions closed since last dashboard : 9

Status against Target Date

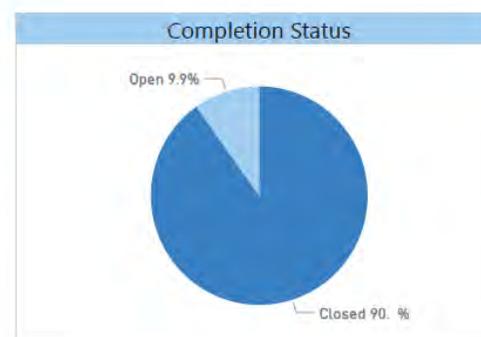
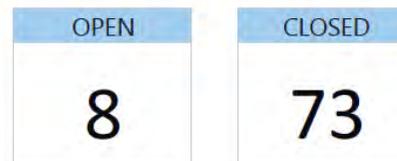
- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP



RHCYP + DCN

Ventilation Action Log

Revised Date:

04/03/2020

Current Date for tracking:

06/03/2020

Issue No.	Item	Action Number	Requirements	Owner	Start Date	Target Date	Action to Close	Open /Closed	Priority to RHCYP	Priority to DCN
V3	Recommissioning of ventilation system.	1	Confirmation is required that all ventilation systems have been balanced and re-commissioned to meet the requirements of the environmental matrix	IHSL / MPX	11/09/2019	31/01/2020	<p>MPX are recommissioning every system, DCN is complete and returned to the normal set points.</p> <p>IOM to confirm revalidation of the ventilation in DCN. IOM are carrying out validation in DCN areas. Inspections note 1 no. dirty extract is ramping down multiple times and causing measuring issues. MPX to investigate in Schneider.</p> <p>IOM to confirm revalidation of the ventilation in RHCYP.</p> <p>BYES are awaiting commissioning and validation certification from MPX to return AHU's to full service. (Duplicate for item 41 - 74)</p> <p>Due to ongoing issues with AHU being switched off, IHSL to coordinate all parties and confirm when systems are available for validating.</p> <p>NOTE: Environmental Matrix is not the correct reference point (i.e. still refers to 4ac/h for Critical Care). Mandatory contract conditions are.</p>	OPEN	YES	YES
V6	Some areas are not completed and ready for handover. E.g. ceiling tiles still missing	1	CT & Fluoroscopy only areas still affected due to Turnkey works	MPX	25/06/2019	31/01/2020	<p>MPX confirmed works complete and awaiting confirmation after theatre works (V30/V33) have been finished (Theatre 36). NHSL noted that area requiring testing is provided by another AHU system and can be commissioned by MPX. MPX confirmed IOM can carry out validation on Thursday 5th March.</p> <p>BYES can assist putting tiles in place where necessary if these are identified as works complete above ceilings.</p>	OPEN	YES	YES
V12	Very limited extract in theatre corridors. Corridors are not at 0 absolute pressure and do not meet required 7 ach/hr (SHTM03-01 part A appendix 2 Table A2). No escape for surplus air. Could impact on open door protection. Pressure in corridors is pushing fire doors open.	1	To be reviewed by IPCT, All pressure Cascades are compliant.	MPX		11/01/2020	<p>MPX have submitted further design information and NHSL have provided comments. NHSL requested/escalated outstanding TUV-SUD response to NHSL comments. - MPX are progressing with the work on the basis that the design meets criteria.</p> <p>MPX confirmed works complete. MPX H&V will carry out commissioning after 2nd March, NHSL reaffirmed the corridor is to be provided 7 ACH balanced. . IOM to consider full revalidation of theatres with all parties present. MPX to confirm to BYES when commissioning certificates have been uploaded to Zutec.</p> <p>Confirmed in meeting 4/3/20 that works have not been successful</p>	OPEN	YES	YES

V33	Scrub areas which are narrow and deep are unlikely to be scavenged effectively by theatre air changes and require an alternative means of achieving removal of contaminants as per SHTM 03-01. The efficacy of the high level extract to achieve sufficient dilution of contaminants or entrainment of heavier than air water droplets is not in accordance with the requirements of SHTM 03-01 and has not demonstrated as equivalent.	1	The ability of the single high level extract provided in deep plan scrub areas to effectively prevent contaminants being dispersed into theatres should be demonstrated and/or additional low level ventilation provided.	NHSL/IOM	11/09/2019	31/01/2020	<p>IOM have issued report to NHSL/MPX for MPX to progress through supply chain. TUV SUD provided response on IOM report. No Board change required.</p> <p>MPX have confirmed works complete with the expectation of minor repainting. MPX recommends end of February for IOM to validate. NHSL asked MPX to work commissioning and validation in tandem with IOM, MPX to confirm.</p>	OPEN	YES	YES
V38	The "maintenance by-pass" associated with the AHU requires to be fully detailed and proven.	1	<p>Details required include -</p> <ul style="list-style-type: none"> - Full written details for each system - Identification of systems which do not have a secondary source of ventilation. - Identification of all spaces which will have no mechanical ventilation when by-pass is initiated. - The minimum and maximum estimated times for a maintenance by-pass and for recovery of a major fault. - The impact of these arrangements on the fire strategy. - The strategy for advising clinical staff in the areas affected. - Commissioning and validation certificates for the changeover system, all associated controls, revised room volumes and pressures. - The clinical service plan should reflect the operational procedures in the event of failure of an air handling unit. 	MPX	11/09/2019	30/12/2019	<p>04-08 and 04-09 work in bypass and a risk assessment is required for only having 50% of air changes in clinical rooms in bypass mode however, in bypass mode isolation rooms achieve required pressure cascade.</p> <p>04-07 are being tested this week, however, these AHU units fall under the works in HVC 107 and will be replaced. To review position following this weeks test.</p> <p>MPX issued report on By-pass arrangement on 17/10/19. NHSL provided comments on 4/11/19. Overall report is unsatisfactory, works to critical care and haematology / oncology will resolve some items but not Level 3.</p> <ul style="list-style-type: none"> - MPX will provide training to BYES. BYES confirmed control side demonstrated, physical side not demonstrated. - MPX to provide additional damper control. (Estimated end of February) - BYES issued details on frequency and duration of planned PPM downtimes on 13/1/19. BYES to update inline with Board comments. - BYES have drafted an SOP awaiting final demonstration to complete. - MPX to identify impact to air change rates on a per room basis. - NHSL/BYES want a full demonstration with H&V to measure to inform the clinical risk assessment. <p>Following confirmation of the above NHSL to review the clinical risk assessment for impact in bypass mode and in total failure mode and develop a plan for maintenance downtime.</p> <p>Demonstration planned on 26th February on all bypass systems. NHSL to contact IOM to identify impact. BYES noted H&V may be on site as well.</p>	OPEN	YES	YES

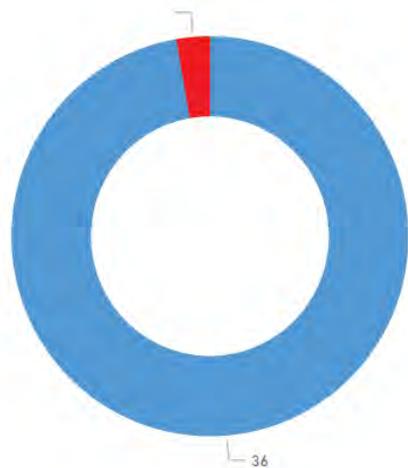
RHCYP+DCN - Water Safety Action Log Dashboard

06/03/2020

Actions closed since last dashboard : 8

Status against Target Date

- Due Status
- Closed
- Actions on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



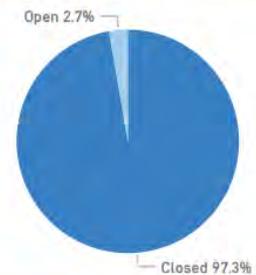
OPEN

1

CLOSED

36

Completion Status



Priority for DCN

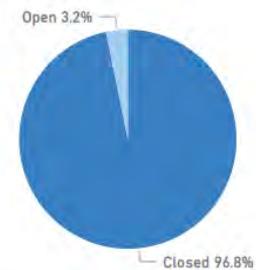
OPEN

1

CLOSED

30

Completion Status



Priority for RHCYP

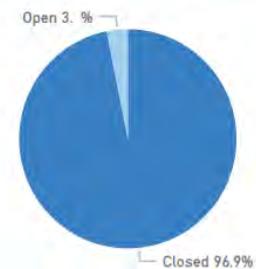
OPEN

1

CLOSED

31

Completion Status



RHCYP + DCN

Water Safety Action Log

Revised Date: 04/03/2020

Current Date for tracking: 06/03/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/Closed	Priority to RHCYP	Priority to DCN
W12	Shower hose lengths do not comply	1	Shower hose lengths do not comply with Scottish Water by-laws and guidance in SHTM 04-01 Water safety for healthcare premises. Shorten hose length or add retaining ring to ensure that shower head cannot reach WC or drain. Disinfect showers hose and drain after rectification.	NHSL	11/09/2019	06/03/2020	<p>in order to achieve compliance with SW Byelaws the following actions have been agreed:</p> <ol style="list-style-type: none"> The welded shower head is to be installed. Dunvegan to be fitted for review from SW (including the confirmed positive). The remainder of the showerheads to be replaced in line with migration programmes. BYES to provide an SOP (LWSG issue). DG to confirm the date for installing in Dunvegan by 28/2/20. Once delivery date has been confirmed DH will arrange a date for review with SW. Hose length to be installed as per current length in Dunvegan. BYES needs to install a 10% sample of the shower head for SW to review. Board will recommend a ward for the sample to be installed. <p>To be actioned through the LWSG:</p> <p>Following approval from SW BYES will provide a programme for installing the disposable showerheads. NHSL need to advise what areas / departments needs to be changed first. It was agreed this would be after disinfection of system. DCN to be installed prior to DCN and RHCYP to be fitted prior to RHCYP move in but so as to avoid having to replace prior to moves.</p> <p>sampling - currently retest for 3 days, 3 -yes then weekly samples for 4 weeks and 4 - samples, 3 monthly samples following that but no guidance how to go back to 6 months. LG/DK to confirm if no positives after 3, then none for weekly for 4 weeks then return to 6 month sampling rather than continue 3 months. DK to confirm comfortable with this action.</p>	OPEN	Yes	Yes

RHCYP+DCN - Fire Action Log Dashboard

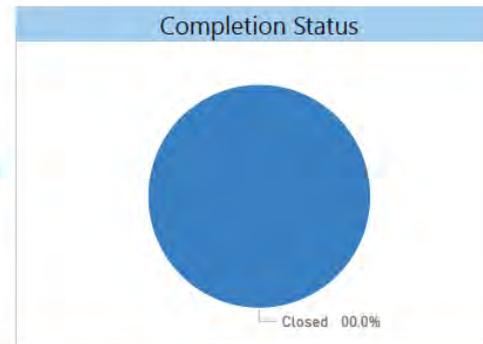
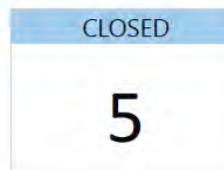
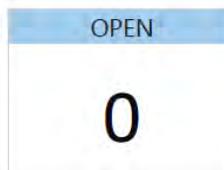
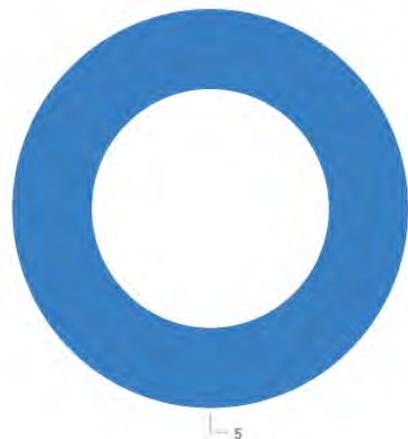
06/03/2020

Actions closed since last dashboard : 5

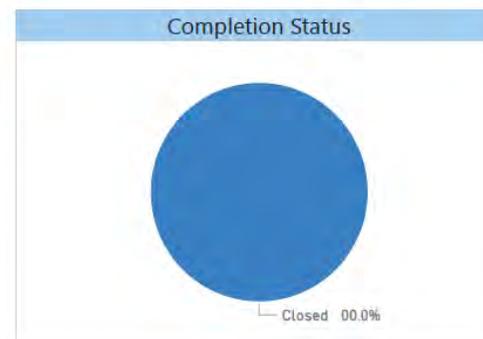
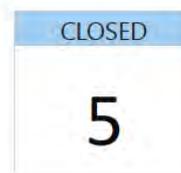
Status against Target Date

Due Status

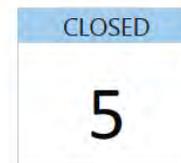
- Closed
- Actions on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP



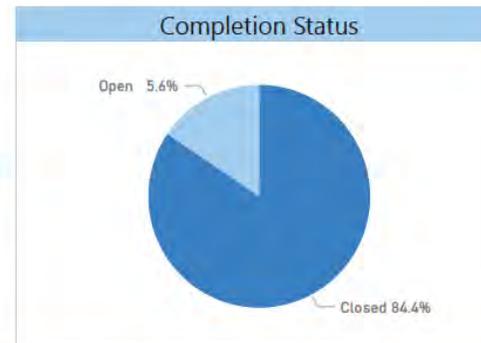
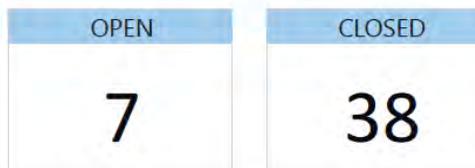
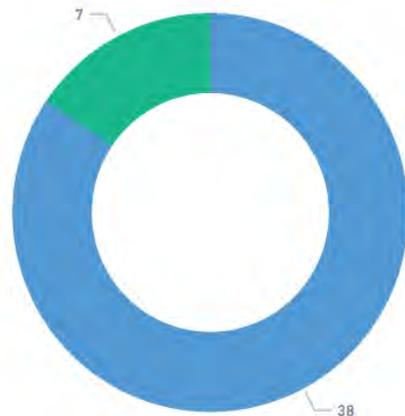
RHCYP+DCN - Electrical Action Log Dashboard

06/03/2020

Actions closed since last dashboard : 7

Status against Target Date

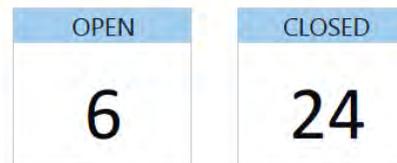
- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



Priority for DCN



Priority for RHCYP



Senior Programme Director's Report

DCN/RHCYP Project (Draft v1)



HIGHLIGHT REPORT

Date 09/03/2020

Senior Programme Director | Mary Morgan

Overall Status / Update	RAG
This is the first report representing a transition from system workstreams' reports to delivery against services migration timelines. The programme has been set to green status as this is the first report submission and milestones are on track for delivery of the planning assumptions. Explanatory notes, where required, are provided in the "exceptions" section of the report.	Green

Milestone	Planned Completion Date	RAG
Transition from system workstreams to service migration activity	20/03/2020	Green
Confirmation of impact on DCN of HVC 107 works	20/3/2020	White
"Go – No Go" decision for DCN migration	09/04/2020	White
Completion of MVC 112 DCN Fire Enhancement works	07/05/2020	Green
Completion of DCN LVCs and minor works	07/05/2020	Green
DCN Migration	31/05/2020	White
Completion of MVC (tbc) CAMHS Fire Enhancement Works	tbc	White
Completion of MVC (tbc) CAMHS LVCs and minor works	tbc	White
"Go – No Go" decision for CAMHS migration	tbc	White
CAMHS Migration	tbc	White
Supplementary Agreement 2 (SA2) agreed	18/03/2020	Green
HVC 107 Air Handling Units ordered	20/03/2020	White
Completion of HVC 107 construction works	03/09/2020	White
Completion of contractor's commissioning and validation HVC107	23/11/2020	White
Completion of MVC (tbc) RHCYP Fire Enhancement works	tbc	White
Completion of RHCYP LVCs and minor works	tbc	White
Clinical Scoping/Risk Assessment of Emergency Dept works for HCID	20/03/2020	Green
Submission of change notification to IHSL	tbc	White
"Go – No Go" decision for RHCYP migration	03/10/2020	White
RHCYP Migration	tbc	White

Exception to	Planned End Date	RAG	Cause	Consequences	Recommendation
CAMHS completion dates	tbc	white	Programme awaited from IHSL	Minimal	Accept. Current verbal timeline is reported by IHSL as in line with MVC 107 works
RHCYP fire enhancements and LVC changes dates	tbc	white	Programme awaited from IHSL	Minimal	Accept. Current verbal timeline is reported by IHSL as in line with MVC 107 works
HCID ED works	tbc	white	Decision to progress works required.	Likely impact on overall migration programme for RHCYP	Accept on basis of risks associated with clinical environment of not progressing
RHCYP Migration date	tbc	white	Too many "unknowns" to form basis for date	Unable to set planning assumptions	Accept pending HCID ED works clarity and more detailed HVC 107 commissioning detail

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Reputational impact on NHSL caused by delay, adverse media reports and opinion of internal and external stakeholders	Executive Steering Group meets weekly and is attended by NHSL Communications Director. Ongoing engagement with stakeholders formally and informally Engagement with Cabinet Secretary	Very High	
R	Performance of Project Co & Supply Chain (Hard FM) - Project Co. fail to meet Service Level Specification (Post Completion).	Standard form payment mechanism to hold Project Co. to account is agreed. Contracts Manager in post to monitor and measure performance. Additional support for Programme from HFS, SFT and NHSL. Additional input and support at every level given to Contractor.	Very High	
R	Coronavirus outbreak adversely impacts programme delivery: Sickness absence of project team and contractors or diversion of project team and or project resources.	Circulation of information throughout NHS. Continue to monitor and escalate any concerns.	High	-
R	Proceeding with DCN move without certainty on any adverse implications on day to day DCN operations arising from Ventilation Works. Either the DCN move is postponed very late or issues emerge post move.	Impact survey ongoing anticipated by end of March 2020. Ongoing monitoring of key services over installation period. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management. Experience in Project Team and Contractors of working in live clinical environments. Weekly Meetings of relevant parties	High	

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
		Daily safety briefs Channels of communication including Stop Protocol		
R	Delay in remedial and enhancement works delays transfer of RHSC & DCN into the building	Experience gained from late postponement of previous move. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management. Weekly meetings: Internal with Project Team and Operational Management and Technical Meeting with Design Team and Contractor. Validation activities run concurrently with Commissioning Activities. Expanded NHSL Facilities Commissioning Team.	High	
I	Delay in completion of the programme has generated additional costs.	Some costs are known and others are being collated. Eg aborted move, costs to services in maintaining and operating in existing accommodation, Remedial works costs Scottish Government have made provision for funding.	High	
R	Reprovision of critical care ventilation requires full design, construction and commissioning within programme identified timelines.	Design Group established to oversee and deliver. Critical Care and IPCT Clinical Representation on Group High Value Change submitted detailing NHSL requirements.	High	
R	Provision of enhanced Haematology & Oncology Department ventilation requires full design, construction and commissioning within programme identified timelines.	High Value Change submitted detailing NHSL requirements. SBAR & Risk Assessment completed involving Clinicians & IPCT. Design Team and contractors appointed. IHSL have agreed to undertake.	High	
R	Operational Board Changes (DCN Priority) These essential Board Changes may not be implemented in time to enable migration of DCN.	NHSL Project Team continue to monitor delivery of these works through IHSL and their Hard FM Contractor, BYES. BYES have a schedule of implementation. Reviewed weekly.	High	
R	Potential impact of Helipad use: fumes and downdraft affecting services on campus.	Trial flights by Bristows and Babcock being planned Feb/Mar 2020. Helicopters limited to 9tn maximum weight. Helipad is 25m ² , limits size of helicopters that can utilise. Various reports commissioned into potential impact. SOP developed and relevant action cards.	High	

RAG Description Key (Time Status)	
WHITE	Activity has yet to commence
RED	Key milestones will be or have been delivered outside tolerance to agreed baseline
AMBER	Forecasting that there is a significant risk that key milestones will be delivered outside tolerance on agreed baseline
GREEN	All milestones forecast to be on time or early
BLUE	Task Complete

COMMERCIAL IN CONFIDENCE

RHCYP + DCN Oversight Board

12 March 2020

Project Director, NHS Lothian

RHCYP + DCN, LITTLE FRANCE

HVC 107 – High Value Change - Ventilation Remedials to Paediatric Critical Care and Ventilation Enhancements to Haematology + Oncology

IHSL Concept Design Report

1 Purpose of the Report

- 1.1 The purpose of this report is to ask the Oversight Board to consider and agree the next steps on the design proposal prepared by IHSL in response to HVC Notice 107 and RFIs agreed up to date of the finalisation of SA2 (Appendix 1).

2 Recommendations

The Committee is invited to:

- 2.1 Recognise that commentary provided by key stakeholders does not provide NHS Lothian with formal sign off to the design included in the Supplemental Agreement because of the stage of design.
- 2.2 Consider the adequacy of the Concept Design Report and level of design information available to the Board at Tuesday 10th March, 2020 as a satisfactory response to the Board's stated requirements and note the level of design work which remains to be undertaken to more fully describe IHSL's design response.
- 2.3 Consider whether NHS Lothian should be asked to adopt the Concept Design report as the 'scope' within the Supplemental Agreement 2 with IHSL and the NEC4 Contract between IHSL and their supply chain, whilst recognising that the design will develop through subsequent design dialogue and agreement and be recorded as such.
- 2.4 Consider the risks in not approving the Concept Design Report.

3 Discussions of Key Issues

3.1 Context and History

Following an Initial Engagement Agreement between the Board and IHSL, dated 12 December 2019 and signed on 16th and 17th of December 2019, IHSL and their supply chain began a series of design workshops with the Board's Project Team and Key Stakeholders in mid January, 2020.

COMMERCIAL IN CONFIDENCE

This collaborative process of discussion and debate through five such workshops resulted in IHSL issuing to the Board on 20th February, 2020 a MEP Engineering Concept Design Report (Revision 01 – 19 February 2020). These workshops continue weekly and the Project Team note that IHSL have moved into the detailed design phase. IHSL have advised that no pause in design work can be tolerated if the handover date of 23rd November, 2020 illustrated in their draft delivery programme is to be maintained (IESS-SKH-Draft Delivery 001, Rev 002, Rev Date 09/01/2020).

The Concept Design Report and it's appendices is intended to form what is known as the "scope" of works as defined in the NEC 4 contract between IHSL and their supply chain and the Supplemental Agreement (SA2) between the Board and IHSL, currently under negotiation. Given the value of the change in question, over £500,000, a Supplemental Agreement is required to adjust the Project Agreement.

This "scope" can be adjusted and developed in agreement between the contracting parties at any time and it is anticipated that this will very likely be the case as further information and detailed design options become available. A formal contractual process to log these developments will be utilised.

3.2 Key Stakeholders

The following key stakeholders participated in the workshops preceding the issue of the Concept Design Report. Commentary received from three parties (*) is appended (Appendix 3).

- *Turner Professional Engineering Services (Authorising Engineer)
- *Mott MacDonald (Board's Technical Adviser)
- *Principal Engineer – Health Facilities Scotland
- Nurse Consultant – IPCT – Health Protection Scotland
- Health and Safety Adviser – NHSL Health + Safety Services
- Lead IPCT Nurse – NHSL
- Consultant Microbiologist – NHSL
- Hard FM Commissioning Manager RHCYP + DCN - NHSL
- RHCYP Commissioning Manager – NHSL
- Theatres + Critical Care Commissioning Manager – NHSL
- Project Director RHCYP + DCN - NHSL

Clinical input was also provided on 14th January, 2020 to RFI's 001 and 003 by:

- Julie Freeman (Consultant Paediatric Anaesthetics)

COMMERCIAL IN CONFIDENCE

- Jillian McFadzean (Consultant Paediatric Anaesthetics)
- Laura Reilly (Clinical Nurse Manager Paediatric Critical Care)
- Ann Cairney (Charge Nurse Ward 2)

3.3 Residual Design Information

Although all comments received from the Board's Authorising Engineer, Technical Adviser and Health Facilities Scotland, Principal Engineer will be passed to IHSL for discussion and hopefully resolution at forthcoming design workshops, it is recommended that the following particular points form the basis of any qualified Concept Design Report response to IHSL:

- a. IHSL to clarify impact of works on day to day DCN operations
- b. AHU specification – Board's comments of 2nd March, 2020 to be incorporated.
- c. Services coordination and integration remains to be fully considered by IHSL.
- d. Final AHU dimensions will allow installation within existing plant room remains to be confirmed by IHSL.
- e. Confirmation that adequate space exists in service routes to facilitate design proposals.
- f. IHSL to remove the statement *"Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention"* and stated completion criteria from their Concept Design Report.
- g. Confirmation of adequacy of existing structure to accommodate external AHU's to be demonstrated by IHSL.
- h. Acoustic Study to be concluded by IHSL.
- i. Construction + Commissioning Methodology to be developed by IHSL.
- j. Programme to be updated by IHSL.
- k. IHSL to finalise their Environmental Matrix.
- l. Key design information requires to be consolidated by IHSL for Board review.
- m. "scope" includes specific reference to relevant NHS Requirements.

4. Review by NHS Lothian Executive Steering Group

- 4.1 As this is not the final detailed design, the process of sign off does not allow for the "triple lock" required by NHS Lothian. Statements, in the form of emails, from Turner, the Authorising Engineer, and Health Facilities Scotland did not give NHS

COMMERCIAL IN CONFIDENCE

Lothian's Executive Steering Group the assurance required that the stage of design to be included in the Supplemental Agreement will conclusively deliver SHTM03-01.

- 4.2 The Completion Criteria to be included in the Supplemental Agreement should provide an additional layer of assurance but is currently not finalised to be considered alongside the Concept Design.
- 4.3 The Completion Criteria will also 'require formal sign off by all parties, and this will need to be factored in to the signing of the Supplemental Agreement.

5. Key Risks

5.1 Residual design issues cannot be resolved to the satisfaction of all parties.

It is envisaged that any such issues will be in relation to how IHSL deliver the Board's requirements not meeting the requirements. Given that design responsibility rests with IHSL this is not considered a significant risk and that IHSL must be given a degree of design autonomy inherent within the design and build contract.

The extent of IHSL's / Imtech's design responsibility can be summarised as follows:-

- With the exception of Part A of the Scope (on which see below), IHSL / Imtech design the whole of the Works and accept sole and exclusive responsibility for the design of the works and for the selection and standards of all materials, goods and workmanship forming part of the works.
- IHSL warrant and undertake that once the works are completed they will meet the performance specification set out in Part A of the Scope and that the works have been and shall be carried out in accordance with Good Industry Practice.
- IHSL shall design the works in compliance with the "scope", the Laws, the consents, Good Industry Practice and the other requirements of the contract.

The "scope" does not include the full suite of BCRs nor PCPs prepared for the PA but rather a bespoke general work scope for the ventilation works.

It is proposed that the Scope will be in two sections: Part A (which will comprise HVC 107 and the RFIs); and Part B (which will comprise IHSL's design which will be further developed via the review procedure as the design evolves).

IHSL are entitled to rely upon Part A of the Scope (including the HVC and RFIs) which amounts to confirmation by NHSL to IHSL of what IHSL/Imtech are obliged to design, construct and service and the performance requirements for the ventilation. Accordingly if there is wrong / inaccurate information in Part A of the Scope that could entitle IHSL / Imtech to additional time and money and NHSL will be responsible for any failure of Part A to accurately specify the Board's requirements. NHSL therefore need to be satisfied that Part A fully documents their requirements and appreciate that they accept full responsibility for its terms and any ambiguities within it.

COMMERCIAL IN CONFIDENCE

There is a design review process similar to the design review procedure in the PA in terms of which IHSL/Imtech submit Reviewable Design for approval by the Board and the Board approve the design in accordance with that review procedure. Approval of the design does not exclude, limit or otherwise diminish IHSL's/Imtech's responsibility to provide the works nor their liability for the design. However, clearly if there is any derogation / clarification approved by NHSL during the design review procedure from Part A of the Scope that will compromise the Board's rights to the extent of that derogation / clarification.

5.2 The current draft IHSL programme for delivery of the works will not be achieved.

The nature of the contract with IHSL is such that programme certainty cannot be given but all indications to date and approach by IHSL would suggest that they are sufficiently motivated to ensure as early a completion as possible.

5.3 The current target cost of £4.175m exc VAT will be exceeded.

The contract with IHSL is "cost plus or reimbursable" and it is doubtful whether the construction market would participate on any other basis. The Board's external cost adviser, Thomson Gray, will review all payment claims in conjunction with IHSL's Project Manager, Faithful and Gould to ensure value for money.

Thomson Gray have reviewed the current target cost and confirmed that "*overall their [IHSL] indicative cost of £4,175,000 [exc VAT] compares favourably with our initial figure of £4,600,000 [exc VAT] given the amount of design development undertaken to date*". (Appendix 3)

5.4 Design and procurement activities are halted by IHSL pending the Board's acceptance of their Concept Design Report and subsequently SA2 remains at large to the detriment of the programme.

Although IHSL continue with these activities "at their risk" they are unlikely to do so should SA2 not be agreed on 18th March, 2020. The Board may wish to consider underwriting the purchase of all necessary Air Handling Units to mitigate against such loss of momentum.

6. Resource Implications

- 6.1 In order to meet the programme expectations and assurance requirements there is a range of parties who require to "sign off" at all stages. It is proposed that the parties maintain the current collaborative engagement moving from the current design stages through procurement to the construction and commissioning/validation phases.

Brian Currie Project Director
RHCYP + DCN – Little France
6th March 2020

COMMERCIAL IN CONFIDENCE

List of Appendices

The following Appendices are attached:

Appendix 1:

HVC 107 and all RFI's agreed to date of signing of SA2 (currently 001 – 010)

Appendix 2:

Turner Professional Engineering Services (Authorising Engineer)

Mott MacDonald (Board's Technical Adviser)

Principal Engineer – Health Facilities Scotland

Appendix 3:

Thomson Gray email

Appendix 4:

Mott MacDonald Advisory Note

COMMERCIAL IN CONFIDENCE

Appendix 1

High Value Change Notice

Project:	RHCYP + DCN – Little France Edinburgh
-----------------	--

1 – Issue of Change Notice to Project Co

Title:	Paediatric Critical Care and Haematology / Oncology Ventilation
---------------	--

Reference No: 0107	Date: 5 th December, 2019
---------------------------	---

Target Cost Capital: £4.6m	Target Cost Revenue: TBA
-----------------------------------	---------------------------------

High Value Change Requirements (Schedule Part 16, Section 4, Clause 2.1.3)

Single bedrooms and Multi-bedrooms in Paediatric Critical Care

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems which will deliver **10 air changes/hour at +10pa** as per SHTM 03-01, Appendix 1, Table A1 to the following rooms at the Facilities:

Room Number	Room Type
1-B1-065	Neo Natal 3 cot area including 1-B1-022 – Corridor, 1-B1-069 – Staff Base, 1-B1-066 – Clean Utility and 1- B1-071 – Resus Bay which are all open to 1-B1-065. This area does not contain an en-suite.
1-B1-075	Single cot cubicle neo natal including 1-B1-074 en-suite
1-B1-063	Open plan bay 4 bed This area does not contain an en-suite.
1-B1-037	Single bed cubicle This area does not contain an en-suite.
1-B1-031	Open plan bay 4 bed This area does not contain an en-suite.
1-B1-021	Single bed cubicle This area does not contain an en-suite.
1-B1-020	Single bed cubicle This area does not contain an en-suite.
1-B1-019	Single bed cubicle This area does not contain an en-suite.
1-B1-009	Open plan bay 4 bed This area does not contain an en-suite.

Isolation Rooms in Paediatric Critical Care

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems for a positive pressure ventilated lobby PPVL Single Bedroom Isolation Suite with a lobby air supply terminal with a HEPA filter, as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1, to the following rooms at the Facilities.

Project Co may utilise the supply and extract ventilation system description in SHPN 04-01, Supplement 1, Clause 4.5 for a dedicated ventilation system per Suite or SHPN 04-01, Supplement 1, Clause 4.8 for a common ventilation system to multiple Suites as the basis of their design. If Clause 4.8 is selected as the basis of design, a duplicate air handling / supply unit is considered necessary. A combination of both methods may be used provided Project Co, as far as is reasonably practical, reuse the existing ventilation installations. Regardless of option chosen, all aspects of the design and installation must be technically compliant with all relevant guidance.

NHSL require to remove or significantly reduce the risk of losing all isolations rooms due to a single point of failure. Ideally each isolation room would benefit from its own supply and extract, however, NHSL appreciate this may not be possible or practical due to other constraints e.g. space. Therefore, Project Co are requested to provide their best practical solution to reduce the risk as low as possible but maintaining guidance criteria as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1.

Room Number	Room Type
1-B1-016	Isolation Bedroom This area does not contain an en-suite.
1-B1-017	Isolation Bedroom This area does not contain an en-suite.
1-B1-026	Isolation Bedroom This area does not contain an en-suite.
1-B1-036	Isolation Bedroom This area does not contain an en-suite.

COMMERCIAL IN CONFIDENCE

Single bedrooms and Multi-bedrooms in Haematology and Oncology

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems which will deliver **10 air changes/hour at +10pa** as per SHTM 03-01, Appendix 1, Table A1 and fit Hepa filters (H12 grade) to the air inlets to the following rooms at the Facilities:

Room Number	Room Type
3-C1.4-059	Single Bedroom including 3-C1.4-060 en-suite
3-C1.4-057	Single Bedroom including 3-C1.4-058 en-suite
3-C1.4-055	Single Bedroom including 3-C1.4-056 en-suite
3-C1.4-046	Single Bedroom including 3-C1.4-047 en-suite
3-C1.4-032	Single Bedroom including 3-C1.4-033 en-suite
3-C1.4-018	Single Bedroom including 3-C1.4-019 en-suite
3-C1.4-016	Single Bedroom including 3-C1.4-017 en-suite
3-C1.4-013	Single Bedroom including 3-C1.4-014 en-suite
3-C1.4-010	Single Bedroom including 3-C1.4-009 en-suite
3-C1.4-074	Single Bedroom including 3-C1.4-075 en-suite
3-C1.4-076	Single Bedroom including 3-C1.4-077 en-suite
3-C1.4-078	Single Bedroom including 3-C1.4-079 en-suite
3-C1.4-084	Multi-Bed (3) Day Care including 3-C1.4-085 en-suite
3-C1.4-061	Multi-Bed (6) Day Care including 3-C1.4-062 en-suite

Isolation Rooms in Haematology and Oncology

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems for a positive pressure ventilated lobby PPVL Single Bedroom Isolation Suite with a lobby air supply terminal with a HEPA filter, as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1, to the following rooms at the Facilities.

Project Co may utilise the supply and extract ventilation system description in SHPN 04-01, Supplement 1, Clause 4.5 for a dedicated ventilation system per Suite or SHPN 04-01, Supplement 1, Clause 4.8 for a common ventilation system to multiple Suites as the basis of their design. If Clause 4.8 is selected as the basis of design, a duplicate air handling / supply unit is considered necessary. A combination of both methods may be used provided Project Co, as far as is reasonably practical, reuse the existing ventilation installations. Regardless of option chosen, all aspects of the design and installation must be technically compliant with all relevant guidance.

NHSL require to remove or significantly reduce the risk of losing all isolation rooms due to a single point of failure. Ideally each isolation room would benefit from its own supply and extract, however, NHSL appreciate this may not be possible or practical due to other constraints e.g. space. Therefore, Project Co are requested to provide their best practical solution to reduce the risk as low as possible but maintaining guidance criteria as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1.

Room Number	Room Type
3-C1.4-040	Isolation Bedroom including 3-C1.4-041 en-suite
3-C1.4-043	Isolation Bedroom including 3-C1.4-042 en-suite
3-C1.4-049	Isolation Bedroom including 3-C1.4-050 en-suite
3-C1.4-052	Isolation Bedroom including 3-C1.4-051 en-suite
3-C1.4-072	Isolation Bedroom including 3-C1.4-073 en-suite

(the "Ventilation Works and Services").

COMMERCIAL IN CONFIDENCE

All environmental requirements for all spaces in the Facilities served by or affected by the Ventilation Works and Services systems shall be met and maintained – including but not limited to, ventilation, temperature and control, lighting levels, noise, and humidity. These should be consistent to the agreed parameters throughout the Facilities to meet the specific clinical and operational needs for each space in the Facilities.

The Ventilation Works and Services shall fully comply with SHTM 03-01 requirements which includes, without limitation, implementation of the Ventilation Works and Services so that the system installation, finishes and maintenance regime shall be in accordance with SHTM 03-01 requirements, together with the clinical and operational constraints identified below:

1. All Ventilation Works and Services shall be carried out and monitored after and with reference to a collaborative full Stage 3 HAI SCRIBE assessment being approved by the Board.
2. The fire strategy and systems agreed for the Facilities will be maintained throughout the Ventilation Works and Services and the Operational Term and such that the ventilation systems will integrate with the fire strategy and systems and all other building management systems comprised in the Facilities.
3. The location of the installation within the rooms, external areas, route across such spaces and the take out of any windows, etc, will enable the current operational functionality and safety policies and procedures to be maintained.
4. The design, layouts, finishes and other details etc for the Ventilation Works and Services, at all stages (including during the design development stages), will require to be agreed with the Board's Representative (and in turn the clinical service and related stakeholders and Project Co recognises that in order to achieve agreement from the Board's Representative's the Board's Representative will seek input from the Board and all appropriate stakeholders.
5. Design must provide resilience in compliance with SHTM 03-01 to ensure performance of ventilation to rooms during maintenance downtime.

The Board will, in consultation with Project Co, continue to review costs as the design develops and at other stages. In order for the Board to assess whether the High Value Change Stage 2 Submission offers it value for money the submission shall include as a minimum the following information:

- A detailed and fully quantified pricing schedule for the construction works
- A detailed breakdown of all Preliminaries and general cost items
- Construction issue drawings and specification
- Proposed, construction and commissioning/testing programme
- Construction phase method statement

Date by which parties are required to meet to review the High Value Change Notice and agree the content for the High Value Change Proposal (Schedule Part 16, Section 4, Clause 2.3.1)

13th December, 2019

To: **IHS Lothian**

We require the Change described above.

Please advise when Project Co will submit a High Value Change Proposal for the above.

Signed on behalf of NHS Lothian:

Name of Signatory (type or print):Brian Currie – Board Rep – NHS Lothian.....

Date: 5th December, 2019

COMMERCIAL IN CONFIDENCE

The Hub, East Gateway
Beancross Road, Grangemouth
FK3 8WH
Tel [REDACTED]

RFI Reference	001
Job Ref.	P1600009

Customer / Main Contractor	IHSL						
Project	SICK KIDS						
Issued to	NHS Lothian						
FAO	Ronnie Henderson						
Company	NHS Lothian						
Information Required		Action Required		Confirmation	x		
Description: There is an additional isolation room on Level 1 which is not detailed on HVC 107, please confirm this has to be added to scope?							
		Signed	<i>Darran Forbes</i>			Issue Date	13/01/2020
Internal Circulation							

WE AWAIT YOUR RESPONSE BEFORE TAKING FURTHER ACTION

RESPONSE :-			
The Isolation Room located in H2 Clinical Research Facility (1-H2-018, 1-H2-021, 1-H2-023) is to be excluded from the scope of HVC 107.			
In addition, the isolation room in C1.3 Borthwick 3-C1.3-007, 3-C1.3-008 and 3-C1.3-009 (adjacent to Haematology and Oncology) is also to be excluded from the scope of HVC 107.			
Signed	[REDACTED]	Date	16/01/2020
On Behalf Of	NHS Lothian		
Customer / Main Contractor	Customer		

COMMERCIAL IN CONFIDENCE

The Hub, East Gateway
Beancross Road, Grangemouth
FK3 8WH
Tel [REDACTED]

RFI Reference	002
Job Ref.	P1600009

Customer / Main Contractor	IHSL						
Project	SICK KIDS						
Issued to	NHS Lothian						
FAO	Ronnie Henderson						
Company	NHS Lothian						
Information Required		Action Required		Confirmation			X
Description: Confirmation that all room type selections in the environmental matrix are correct?							
		Signed	<i>Darren Forbes</i>			Issue Date	13/01/2020
Internal Circulation							

WE AWAIT YOUR RESPONSE BEFORE TAKING FURTHER ACTION

RESPONSE :-			
Please refer to sheet "RFI 002 attachment" that contains an extract from the Imtech Environmental Matrix and mark up of the room classification.			
In addition to the rooms within "RFI 002 attachment" the Board also notes that no ensembles have been included for C1.4 single and multi beds.			
This RFI 002 should be read in conjunction with RFI 003.			
Signed	[REDACTED]	Date	24/01/2020
On Behalf Of	NHS Lothian		
Customer / Main Contractor	Customer		

COMMERCIAL IN CONFIDENCE

The Hub, East Gateway
Beancross Road, Grangemouth
FK3 8WH
Tel [REDACTED]

RFI Reference	003
Job Ref.	P1600009

Customer / Main Contractor	IHSL						
Project	SICK KIDS						
Issued to	NHS Lothian						
FAO	Ronnie Henderson						
Company	NHS Lothian						
Information Required		Action Required		Confirmation	x		
Description: Difference in temperature between original environmental matrix and SHTM-03-01. Original has temperature range of 18 to 28 against SHTM 18 - 25 in critical care areas and 21 to 28 against 18 to 28 in SHTM for Isolation rooms. What temperature range is required?							
		Signed	<i>Darren Forbes</i>			Issue Date	13/01/2020
Internal Circulation							

WE AWAIT YOUR RESPONSE BEFORE TAKING FURTHER ACTION

RESPONSE :-			
<p>B1 Critical Care - In addition to compliance with SHTM 03-01 Appendix 1 Table A1 'Critical Care Areas', due to the range of paediatric patients that will be cared for, Critical Care requires an enhanced temperature range of 18-28 DegC in each Isolation Room, Single Room and Multibed. Please note this will also be addressed in the response to CLAR 2 with a comment the SHTM03-01 Appendix A Table 1 Classification would be Ward Isolation Room with Critical Care plus environmental requirements.</p> <p>Please also note, as required in the SHTM, each Isolation Room, Single Room and Multibed room in Critical Care should have the ability to rapidly control the temperature in the each room.</p> <p>C1.4 Haematology and Oncology - In addition to compliance with SHTM 03-01 Appendix 1 Table A1 'Neutropenic Patient Ward', due to the range of paediatric patients that will be cared for, an enhanced control is required for the temperature in each Isolation Room, Single Room and Multibedroom, sufficient to allow the rapid warming or cooling of the patients environment. Please note this will also be addressed in the response to CLAR 2 with a comment the SHTM03-01 Appendix A Table 1 Classification would be Ward Isolation Room with Neutropenic Patient Ward plus environmental requirements.</p> <p>Please also note, as required in the SHTM, each Isolation Room, Single Room and Multibedroom in Haematology and Oncology require a temperature range of 18-28 DegC.</p>			
Signed	[REDACTED]	Date	16/01/2020
On Behalf Of	NHS Lothian		
Customer / Main Contractor	Customer		

COMMERCIAL IN CONFIDENCE

The Hub, East Gateway
Beancross Road, Grangemouth
FK3 8WH
Tel [REDACTED]

RFI Reference	004
Job Ref.	P1600009

Customer / Main Contractor	IHSL						
Project	SICK KIDS						
Issued to	NHS Lothian						
FAO	Ronnie Henderson						
Company	NHS Lothian						
Information Required		Action Required		Confirmation			x
Description: SHPN04 shows two options for isolation rooms, both having en-suites. Confirmation required that en-suites will not be added to 4 isolation rooms in level 1.							
		Signed	<i>Darran Forbes</i>			Issue Date	13/01/2020
Internal Circulation							

WE AWAIT YOUR RESPONSE BEFORE TAKING FURTHER ACTION

RESPONSE :-			
The Board do not require en-suites to be added to 4 No. isolation rooms located within B1 Critical Care (1-B1-016, 1-B1-017, 1-B1-026 & 1-B1-036).			
Signed	[REDACTED]	Date	16/01/2020
On Behalf Of	NHS Lothian		
Customer / Main Contractor	Customer		

COMMERCIAL IN CONFIDENCE

The Hub, East Gateway
 Beancross Road, Grangemouth
 FK3 8WH
 Tel [REDACTED]

RFI Reference	005
Job Ref.	P1600009

Customer / Main Contractor	IHSL						
Project	SICK KIDS						
Issued to	NHS Lothian						
FAO	Ronnie Henderson						
Company	NHS Lothian						
Information Required		Action Required	x	Confirmation		x	
Description: The dirty extract system appears to serve areas outwith scope area. NHS to advise as this potentially cause issue with DCN							
		Signed	<i>Darron Forbes</i>			Issue Date	13/01/2020
Internal Circulation							

WE AWAIT YOUR RESPONSE BEFORE TAKING FURTHER ACTION

RESPONSE :-			
The Board require the dirty extract in DCN to remain live for the duration of the works.			
In addition, Project Co should confirm all services serving DCN remain live and unaffected for the duration of the works, noting as an example there appears to be a live Isolation Extract Fan ductwork from Critical Care to DCN.			
Signed	[REDACTED]	Date	16/01/2020
On Behalf Of	NHS Lothian		
Customer / Main Contractor	Customer		

COMMERCIAL IN CONFIDENCE

The Hub, East Gateway
Beancross Road, Grangemouth
FK3 8WH
Tel: [REDACTED]

RFI Reference	006
Job Ref.	P1600009

Customer / Main Contractor	IHSL				
Project	SICK KIDS				
Issued to	NHS LOTHIAN				
FAO	Ronnie Henderson				
Company	NHS LOTHIAN				
Information Required	<input checked="" type="checkbox"/>	Action Required	<input checked="" type="checkbox"/>	Confirmation	
Description: It has been mentioned that the downdraught from Helicopters could have an effect on the ventilation. Please provide details for this.					
		Signed	<i>Derron Forbes</i>	Issue Date	13/01/2020
Internal Circulation					

WE AWAIT YOUR RESPONSE BEFORE TAKING FURTHER ACTION

RESPONSE :-	
The Board directs Project Co (Imtech) to Aconex Ref MPX-GC-019523 for the latest version of the Project Co Helicopter Downwash Study known to the Board. Appreciating this is a Project Co document, the Board suggest Project Co (Imtech) confirm with Project Co that this is the latest / complete version of the information.	
Please also note that the Board are currently planning a test flight in February / March 2020 (date to be confirmed). Appreciating Project Co are already involved in the test flight, the Board would encourage Project Co (Imtech) to take this opportunity to undertake any tests that may support the development of HVC 107.	
Signed	[REDACTED] Date 21/01/2020
On Behalf Of	[REDACTED]
Customer / Main Contractor	Customer

COMMERCIAL IN CONFIDENCE

COMMERCIAL IN CONFIDENCE

The Hub, East Gateway
Beancross Road, Grangemouth
FK3 8WH
Tel [REDACTED]

RFI Reference	007
Job Ref.	P1600009

Customer / Main Contractor	IHSL						
Project	RHCYP & DCN						
Issued to	NHS Lothian						
FAO	Ronnie Henderson						
Company	NHS Lothian						
Information Required	x	Action Required	x	Confirmation			
Description: Concept design proposal for review and sign off							
		Signed	<i>Darren Forbes</i>			Issue Date	24/01/2020
Internal Circulation							

WE AWAIT YOUR RESPONSE BEFORE TAKING FURTHER ACTION

RESPONSE :-				
<p>The Board are of the view that the " Concept Proposals" document issued by IHSL is insufficiently developed to constitute a Concept Design Report to RIBA Stage 2. As discussed at the recent "Technical Appraisal of Potential Solutions" meeting held at 11.00am on 28th January, 2020, minuted in Item 5, IHSL are to address this shortcoming and resubmit.</p> <p>The Board also note that a number of related tasks need to be progressed including (but not limited to):</p> <ul style="list-style-type: none"> Capex and Opex Cost Information Construction Strategy Commissioning Strategy inc witnessing and testing methodology Equipment Strategy Quality Plans Completion Criteria + Independent Validation Maintenance and Operational Strategy Health + Safety Strategy Project Execution Plan Design / Construction / Commissioning Programmes Risk Register RDD Schedule (dependent on level of design development) <p>The Board note the good progress made to date and the positive engagement between all stakeholders and acknowledge the following key principles which apply to both Paediatric Critical Care and Haematology and Oncology:</p> <ul style="list-style-type: none"> Individual Air Handling Units are proposed to serve Isolation Rooms Existing Air Handling Units will be replaced with a larger AHU capable of delivering the uplift in air volume required 				
	<table border="1"> <tr> <td></td> <td>Date</td> <td>03 / 02 / 2020</td> </tr> </table>		Date	03 / 02 / 2020
	Date	03 / 02 / 2020		
On Behalf Of	[REDACTED]			

COMMERCIAL IN CONFIDENCE

The Hub, East Gateway
Beancross Road, Grangemouth
FK3 8WH
Tel 0 [REDACTED]

RFI Reference	008
Job Ref.	P1600009

Customer / Main Contractor	IHSL						
Project	RHCYP & DCN						
Issued to	NHS Lothian						
FAO	Ronnie Henderson						
Company	NHS Lothian						
Information Required	x	Action Required	x	Confirmation			
Description: Imtech / Hoare Lea require a copy of the latest commissioning report for AHU 04-07							
		Signed	<i>Darren Forbes</i>			Issue Date	24/01/2020
Internal Circulation							

WE AWAIT YOUR RESPONSE BEFORE TAKING FURTHER ACTION

RESPONSE :-	
The Board directs Project Co (Imtech) to the Zutec screen dump in sheet "RFI 008 Attachment" for the latest version of the Project Co "commissioning report for AHU 04-07" known to the Board.	
Appreciating this is a Project Co document, the Board suggest Project Co (Imtech) confirm with Project Co that this is the latest / complete version of the information.	
Signed	[REDACTED] Date 30/01/2020
On Behalf Of	NHS Lothian
Customer / Main Contractor	

COMMERCIAL IN CONFIDENCE

The Hub, East Gateway
Beancross Road, Grangemouth
FK3 8WH
Tel [REDACTED]

RFI Reference	009
Job Ref.	P1600009

Customer / Main Contractor		IHSL					
Project	RHCYP & DCN						
Issued to	NHS LOTHIAN						
FAO	Ronnie Henderson						
Company	NHS LOTHIAN						
Information Required	x	Action Required	x	Confirmation			
Description: We require a copy of AHU 04-07 schedule as it can not be located on Zutec							
		Signed	<i>Darren Forbes</i>			Issue Date	24/01/2020
Internal Circulation							

WE AWAIT YOUR RESPONSE BEFORE TAKING FURTHER ACTION

RESPONSE :-	
<p>The Board directs Project Co (Imtech) to the following document numbers that can be located on Aconex;</p> <ul style="list-style-type: none"> - MER-XX-SL-TS-127 – Technical Submittal H8.1 for AHU 04-07 & AHU 04-09, and - ME-XX-04-DC-S660-530 – AHU 04-07 Function Design Specification <p>These are the latest versions of the Project Co "AHU 04-07 schedule" known to the Board. Appreciating this is a Project Co document, the Board suggest Project Co (Imtech) confirm with Project Co that this is the latest / complete version of the information.</p>	
Signed	[REDACTED] Date <i>30/01/2020</i>
On Behalf Of	<i>NHS LOTHIAN</i>
Customer / Main Contractor	

COMMERCIAL IN CONFIDENCE

The Hub, East Gateway
Beancross Road, Grangemouth
FK3 8WH
Tel [REDACTED]

RFI Reference	010
Job Ref.	P1600009

Customer / Main Contractor	IHSL						
Project	RHCYP & DCN						
Issued to	NHS Lothian						
FAO	Ronnie Henderson						
Company	NHS Lothian						
Information Required		Action Required		x	Confirmation		x
<p>Description: During the design workshop 10/02/2020 it was discussed that the NHS Board would like the temperatures in the environmental matrix updated for replacement & new AHU's so that the external temperatures of 28°C(db)/22°C(wb) are achieved vs current design of 26°C(db)/20°C(wb). This relates to climate change where temperature are like to increase in the future and therefore additional cooling will be required. For the isolation room units this is straight forward as new chillers are being provided however; there will be implications for AHU04-06 & 04-07. Currently the Chilled water pipework at AHU's 04-06 & 04-07 is suitably sized but to achieve 28°C(db)/22°C(wb) we would need to upgrade the system which would involve system drain down, increased pipe sizes, increased valve sizes, increased pump sizes, refilling and re-commissioning system. This will have Programme implications which will not be understood until a full design review is carried out.</p> <p>Please can the NHS board advise how we are to proceed?</p>							
		Signed	<i>Darron Forbes</i>			Issue Date	18/02/2020
Internal Circulation							

WE AWAIT YOUR RESPONSE BEFORE TAKING FURTHER ACTION

RESPONSE :-	
<p>Further to the HVC 107 meeting on 25th Feb 20 between Project Co and the Board, the Board are content that Project Co progress with their design at 28°C(db)/22°C(wb), this is on the understanding of the following;</p> <ol style="list-style-type: none"> 1. There are no programme implications, 2. There are no consequential impacts on the Project Co design / performance criteria, 3. There are no pipework implications, 4. The drain down would be local to the pumps, <p>In addition, as the design develops, could Project Co please provide the following;</p> <ol style="list-style-type: none"> 1. A list of Chilled Water System additions (kW & kg/s) due to the 28db/22wb degc summertime design temperature 2. A list of Chilled Water System deletions (kW & kg/s) due to the removal of the isolation rooms on Level 1 3. A summary of the final Chilled Water System changes (kW & kg/s) so the overall impact is understood. <p>Can we also please discuss at the next HVC Tuesday meeting the following;</p> <ul style="list-style-type: none"> • Whether Project Co need to undertake a full summertime overheating analysis of the "white spaces" to determine if the Departments still comply with the overheating requirements as listed in the BCR & SHTM03-01. • The weather year Project Co are going to adopt e.g. CIBSE DSY with the location, year and risk percentile identified. 	
Signed	[REDACTED] Date 05/03/2020
On Behalf Of	NHS Lothian

COMMERCIAL IN CONFIDENCE

Appendix 2

Turner Professional Engineering Services (Authorising Engineer)

Dear Brian,

As you have requested I have studied the Concept Design papers Revision 1, dated 19 Feb 20 which were provided by Hoare Lee. I have also checked various other documents – minutes of meetings, presentations, etc. produced as part of the Ventilation Project for the Paediatric Critical Care and Haematology/Oncology departments of the new RHCYP & DCN.

I am satisfied that the current design process meets the detailed performance requirements of the NHS Lothian Board High Value Change (HVC) 107 which is dated 5 Dec 19. I consider that subject to satisfactory agreement and further design development the full Board requirements will be met. I am also satisfied that there is a satisfactory mechanism in place to correct any minor issues that currently exist or which may arise in the future.

Please don't hesitate to contact me if you need any further details.

John

Eur Ing John M Rayner, BSc (Eng), CEng, FIHEEM, FCMI, MIMechE, MEI, MIET, MSVHSoc, TechIOSH
Authorising Engineer

TURNER PROFESSIONAL ENGINEERING SERVICES

TURNER 

Energy + Utilities + Assets + Compliance

Ecoliving Ltd | Optimum Technical Services Ltd | Turner Property Services

65 Craigton Rd, Glasgow, G51 3EQ | T: [REDACTED] | M: [REDACTED] | E: [REDACTED]



A member of the Turner Group of Companies
Registered Scotland 267753 at 65 Craigton Road, Glasgow, G51 3EQ

This email, together with any attachments, is for the exclusive and confidential use of the addressee(s). Any other distribution, use or reproduction without the sender's prior consent is unauthorised and strictly prohibited. If you have received this message in error, please notify the sender by email immediately and delete the message from your computer without making any copies.

COMMERCIAL IN CONFIDENCE

Mott MacDonald (Board's Technical Adviser)

Brian,

As requested, please find attached our Advisory Services note on Project Co's Concept Design, we have provided the attached note in line with our proposed methodology (issued 18 Feb).

We would draw your attention in particular to the summary section of our advisory note.

We consider that good progress has continued to be made by Project Co (Imtech) and the direction of travel in terms of concept design is satisfactory, with no significant 'red flags' identified at this stage which would prevent the development of the detailed design. We now await the submittal of the detailed design by Project Co (Imtech) that integrates where necessary our attached observations / comments.

In terms of priority items, we would suggest that in addition to the development of Project Co's detailed design, Project Co should be directed towards the following;

1. The incorporation of the Board's consolidated comments on the AHU specification (issued under separate cover attached fyi) and comments in the attached relative to AHU's – noting the AHU's are long lead items and critical to the mechanical design.
2. The development of the construction and commissioning methodology – noting preliminary works have already started on site, it is important that roles, responsibilities and methodologies are developed, understood and implemented. With respect to Health and Safety, there is currently limited information provided for review.
3. The development of an updated programme.
4. Finalisation of comments on the EM.
5. Presentation of key design information could be consolidated by Project Co to assist with the Boards reviews.
6. Clarification from Project Co on any services affected by the HVC 107 works that could impact DCN.
7. Services co-ordination and integration has yet to be fully considered by Project Co such that feasibility at this stage of the design can be demonstrated. This represents a key risk until further exploratory and associated design works have been undertaken by Project Co.

As discussed in the HVC 107 ventilation workshop this morning, we note the Board's intention is to use the Concept Design submission as the Scope in the NEC 4 contract. Given the level of development and presentation of the Concept Design (e.g. all Hoare Lea drawings contain the phrase "Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention"), we would not advise a straight insertion of Project Co's current Concept Design into the contract. A review of the risks and potential mitigations of using Project Co's work in this way we suggest would be beneficial.

Kind Regards
Graeme

Graeme Greer
Associate

██████████ ██████████
██████████

M
M
MOTT
MACDONALD

Mott MacDonald
St Vincent Plaza
319 St Vincent Street
Glasgow G2 5LD
United Kingdom

[Website](#) | [Twitter](#) | [LinkedIn](#) | [Facebook](#) | [Instagram](#) | [YouTube](#)

Mott MacDonald Limited. Registered in England and Wales no. 1243967. Registered office: Mott MacDonald House, 8-10 Sydenham Road, Croydon CR0 2EE, United Kingdom

The information contained in this e-mail is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. If you are not the intended recipient of this e-mail, the use of this information or any disclosure, copying or distribution is prohibited and may be unlawful. If you received this in error, please contact the sender and delete the material from any computer.

COMMERCIAL IN CONFIDENCE

Principal Engineer – Health Facilities Scotland

Brian

Sorry that I could not attend today's meeting, as I indicated I am currently trapped in the complexities of Jury Service. I was in court all morning today then sent away but may have to return tomorrow.

In terms of the works which are currently instructed under HVC 107, I can make the following observations.

1. The direction of travel of the design should be able to provide a solution which would meet the needs of the instruction.
2. A significant risk exists at present, however, in that the ability for the roof to accommodate the new plant has not yet been established. If this was a stumbling block it is not clear what the alternative might be. An investigation and report by a Structural Engineer should clarify if this risk is relevant. The solution for maintaining the roof, once the new plantroom is fitted over it, has also still to be developed.
3. Another risk at a similar level is that the use of existing ductwork (at higher velocities than normal) could require the AHUs to be larger than currently envisaged. This can be necessary to achieve the limitation on power consumption which is dictated by Building Regulations. Larger AHUs, if they were required, may not easily fit into the same footprint for the plantroom. The alternative to using larger AHUs, should the ductwork resistance be too high, would be to replace the ductwork. It has already been indicated that removal of section of the existing ductwork would significantly impact on other installed services. Calculation of the ductwork resistance should quickly indicate if this problem exists.
4. A smaller risk exists around the space available in the service routes. Hopefully a solution can be accommodated in all locations.
5. The results of their acoustic study may impact on elements of the design. The level of impact, if any, cannot be established until their study is completed.

Regards

David

David McNeill CEng MCIBSE

Principal Engineer - Health Facilities Scotland
Procurement, Commissioning and Facilities

NHS National Services Scotland

3rd Floor
Meridian Court
5 Cadogan Street
Glasgow
G2 6QE

[REDACTED]
[REDACTED]
[REDACTED]

COMMERCIAL IN CONFIDENCE

Brian

Our further comments are included below.

Concept Design Report

Document ref	Comment ref	Comment
Concept report	CR 01	The efficiency figures given in the Non-domestic Building Services Compliance Guide for Scotland for plant and equipment shall apply to all new items
Concept report	CR 02	What checks are being carried out to ensure that there is adequate capacity in the existing LTHW and chilled water networks to accommodate the load changes.
Concept report	CR 03	Can a description be provided of the individual actions which would require downtime, together with an estimate of the duration of the downtime.
Concept report	CR 04	Refer to comments on AHUs in regard to the schedules and specification.
Concept report	CR 05	A full acoustic analysis must be carried out to establish all measures required to combat higher than normal ductwork velocities. The impact of these on the specific fan powers must be assessed. This could have an impact on the AHU sizes if the ductwork resistance was much higher than you have assumed at present.
Concept report	CR 06	Confirm that the ESP for the systems does not exceed that for the ductwork classification.
Concept report	CR 07	Chilled water systems must not use brass fittings or valves.
Concept report	CR 08	It is assumed that the rooms which are not shown to have a dedicated heater battery are those which are not requested to have individual temperature control via the air supply condition.
Concept report	CR 09	Notes about the locations of plant for each level should be reviewed for accuracy.
Concept report	CR 10	Site pressure testing of the flat pack AHUs must be carried out and the efficacy of the seals on the site assembled plate heat exchangers demonstrated.
Concept report	CR 11	Some details are different from those shown on the AHU schedule, please check and confirm. (e.g. thickness of panels, height of support base channel)
Concept report	CR 12	AHUs to clearly identify the area served in accordance with SHTM 03-01 Part A.
Concept report	CR 13	AHU supply volumes must contain the allowances for room and door leakage volumes and for ductwork leakage before the % is applied for future air flow increases.
Concept report	CR 14	Conflicting statements about the use of glycol should be clarified.
Concept report	CR 15	Heating coil temperature shown as 18 oC should be higher.
Concept report	CR 16	It is unlikely that there will be no VCDs in the ductwork even if they are not shown on the drawings. The impact of VCDs on the acoustic study should be considered.
Concept report	CR 17	Once the correct acoustic data is obtained from manufacturers, the calculations should be run to determine what amendments, if any, are needed to achieve the noise levels required by SHTM 08-01.
Concept report	CR 18	Can the rooms which may suffer from cross talk noise problems be identified.
Concept report	CR 19	Leak trays and leak detection should be installed below each new duct mounted heater battery in line with SHTM 03-01.
Concept report	CR 20	We would prefer that no ductwork is buried below ground level.

COMMERCIAL IN CONFIDENCE

Programme

Document ref	Comment ref	Comment
Programme	P-01	A number of dates have moved, i.e. not achieved or confirmed as later than shown for future programme. An updated programme would be needed to understand the current position.

Regards

David

David McNeill CEng MCIBSE

Principal Engineer - Health Facilities Scotland
Procurement, Commissioning and Facilities

NHS National Services Scotland

3rd Floor
Meridian Court
5 Cadogan Street
Glasgow
G2 6QE

████████████████████
████████████████████
████████████████████

COMMERCIAL IN CONFIDENCE

From: MCNEILL, David (NHS NATIONAL SERVICES SCOTLAND)

Sent: 24 February 2020 16:14

To: 'Currie, Brian' [REDACTED] >; Henderson Ronnie (NHS Lothian)

[REDACTED]; Hanley, Dorothy [REDACTED] >; Hull Ashley (NHS Lothian) [REDACTED] >; STORRAR, Ian (NHS NATIONAL SERVICES SCOTLAND)

[REDACTED]; RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND) [REDACTED]; 'Jerry

Slann' [REDACTED]; 'John Rayner' [REDACTED]; Inverarity Donald (NHS Lothian) [REDACTED]; Guthrie Lindsay (NHS Lothian)

<[REDACTED] [REDACTED] Douglas, Brian

[REDACTED]; Greer, Graeme [REDACTED]; 'Brodie, Ian S'

[REDACTED]; Drennan Eric (NHS Lothian) [REDACTED] >

Cc: [REDACTED]; MORGAN, Mary (NHS NATIONAL SERVICES SCOTLAND) [REDACTED]

Subject: RE: RHCYP = DCN - Little France - HVC 107 - Concept Design Report

Brian

My provisional comments are as shown below. The remaining comments will be supplied by Friday.

Drawings

Document ref	Comment ref	Comment
Chilled water schematic	CHWS 01	Are the primary pumps inside of the chillers and are they equipped with VSDs
Chilled water schematic	CHWS 02	How is the minimum pump flow achieved upon low load.
Chilled water schematic	CHWS 03	Is the PICV on the return and will it have an isolating valve on either side of it to allow maintenance.
Chilled water schematic	CHWS 04	Comments regarding the AHUs will be made from specific AHU drawings.
Chilled water schematic	CHWS 05	Facilities will be required for both dynamic flushing of the system and for manual hose flushing of the AHU coils and of the chiller units.
Chilled water schematic	CHWS 06	Please clarify the use and control of the two port control valves at each chiller unit.
Chilled water schematic	CHWS 07	Is a vacuum degasser to be fitted.
LTHW Energy Centre ground floor sketch	LTHWECCG 01	Please ensure that calculations for pumps include cavitation risk assessment.
LTHW Energy Centre ground floor sketch	LTHWECCG 02	Has the extra capacity required been verified as available from the boilers.
LTHW Energy Centre mezzanine floor sketch	LTHWECCM 01	Please ensure that calculations for pumps include cavitation risk assessment.
LTHW Energy Centre mezzanine floor sketch	LTHWECCM 02	IVs are likely to be needed at the connections to existing.
LTHW Energy Centre mezzanine floor sketch	LTHWECCM 03	Facilities will be required for both dynamic flushing of the new sections of the system and for manual hose flushing of the AHU coils and of the chiller units.
Ventilation sketch level 01 paediatric critical care	Vent PCC L1 01	Greater detail will be required for the AHU enclosure.
Ventilation sketch level 01 paediatric critical care	Vent PCC L1 02	Comments regarding the AHUs will be made from specific AHU drawings.
Ventilation sketch level 01 paediatric critical care	Vent PCC L1 03	Are the air flow rates matching the existing flow rates exactly.
Ventilation sketch level 01 paediatric critical care	Vent PCC L1 04	Has the capacity of the existing extract fans been checked against the new ductwork arrangement.
Ventilation sketch level 01 paediatric critical care	Vent PCC L1 05	Is all of the ductwork system fire rated.
Ventilation sketch level 03 haematology and oncology	Vent H&O L3 01	Are the air flow rates matching the existing flow rates exactly.
Ventilation sketch level 03 haematology and oncology	Vent H&O L3 02	Has the capacity of the existing extract fans been checked against the new ductwork arrangement.
Ventilation sketch level 03 haematology and oncology	Vent H&O L3 03	Is all of the ductwork system fire rated.
Ventilation sketch level 03 haematology and oncology	Vent H&O L3 04	Greater detail will be required for the AHU enclosure.
Ventilation sketch level 03 haematology and oncology	Vent H&O L3 05	Comments regarding the AHUs will be made from specific AHU drawings.
Vent & chiller strategy level	V&C EP L2	Are there any possible clashes with existing services.

COMMERCIAL IN CONFIDENCE

02 External plant area	01	
Vent & chiller strategy level 02 External plant area	V&C EP L2 02	Space for external plantroom looks tight, please check.
Vent & chiller strategy level 02 External plant area	V&C EP L2 03	Can the supply ducts enter the second floor plantroom at low level.
Vent & chiller strategy level 02 External plant area	V&C EP L2 04	Have the structural load checks been completed and verified as safe.
Vent & chiller strategy level 02 External plant area	V&C EP L2 05	What are the support details for plant and ductwork.
Vent & chiller strategy level 02 External plant area	V&C EP L2 06	Are the full clearances required by the chiller manufacturer available.
Vent Strategy Haematology & Oncology level 03	VS H&O L3 01	Add ductwork arrangement to drawing with heater battery locations shown.
Vent Strategy Paediatric Critical Care level 01	VS PCC L1 01	Add ductwork arrangement to drawing with heater battery locations shown.
Vent & chiller strategy level 01 Energy centre	V&C EC L1 01	Are there any possible clashes with existing services.
Vent & chiller strategy level 01 Energy centre	V&C EC L1 02	Space for external plantroom looks tight, please check.
Vent & chiller strategy level 01 Energy centre	V&C EC L1 03	Can the supply ducts enter the second floor plantroom at low level.
Vent & chiller strategy level 01 Energy centre	V&C EC L1 04	Have the structural load checks been completed and verified as safe.
Vent & chiller strategy level 01 Energy centre	V&C EC L1 05	What are the support details for plant and ductwork.
Vent & chiller strategy level 01 Energy centre	V&C EC L1 06	Are the full clearances required by the chiller manufacturer available.
Vent & chiller strategy level 01 Energy centre	V&C EC L1 07	Provide details of external trench and how the ductwork will be protected.
Vent & chiller strategy level 01 Energy centre	V&C EC L1 08	On site review required as to how the entry point at 1-B1-020 will be installed.
LV Distribution level 3 isolation rooms	LVD IS L3 01	Primary and secondary DBs seem to be shown as external to the building. Can they not be mounted in an internal space.
LV Distribution level 3 isolation rooms	LVD IS L3 01	Explain single supply to chiller.
LV Distribution level 1 isolation rooms	LVD IS L1 01	The information on plan is not self-evident. More explanation required.
General	G01	Details of acoustic considerations to be supplied and confirmation of how the systems will comply with guidance are required
General	G02	How are the spill over air flows being accommodated by the existing systems where only supply ventilation is being provided.
General	G03	Method of control for heating/cooling to critical care rooms to be agreed.

AHU Schedules

Document ref	Comment ref	Comment
AHU 01-ISO-01 to 04 & AHU 03-ISO-01 to 05	01-ISO-01 A	Is the 300mm base channel high enough to accommodate the drainage trap and the required fall on the drain.
AHU 01-ISO-01 to 04 & AHU 03-ISO-01 to 05	01-ISO-01 B	Is the ESP a true calculated value for the duct network.
AHU 01-ISO-01 to 04 & AHU 03-ISO-01 to 05	01-ISO-01 C	Cooling coil, off coil temperature does not look low enough to maintain any of the rooms at 18 oC when there are heat gains.
AHU 01-ISO-01 to 04 & AHU 03-ISO-01 to 05	01-ISO-01 D	Ensure that filters are fitted to ensure that the air flow assists the sealing of the filter to the filter frame.
AHU 01-ISO-01 to 04 & AHU 03-ISO-01 to 05	01-ISO-01 E	Internal wiring must be kept to that which is essential only to connect to the electrical components. It should be contained within containment which is easily cleaned, corrosion proof, sealed and does not penetrate the air seals in the internal components of the AHU.
AHU 01-ISO-01 to 04 & AHU 03-ISO-01 to 05	01-ISO-01 F	A drawing of the AHU must be submitted for approval before manufacture.
AHU 01-ISO-01 to 04 & AHU 03-ISO-01 to 05	01-ISO-01 G	The off coil temperature for the heating coil would not be high enough to heat the rooms to the required maximum set point.
AHU 01-ISO-01 to 04 &	01-ISO-01 H	The acoustic performance of the units and the ductwork must ensure that

COMMERCIAL IN CONFIDENCE

AHU 03-ISO-01 to 05		the conditions required by the SHTMs are not exceeded.
AHU 01-ISO-01 to 04 & AHU 03-ISO-01 to 05	01-ISO-01 I	Check cooling coil capacity.
AHU 01-ISO-01 to 04 & AHU 03-ISO-01 to 05	01-ISO-01 J	Confirm that the air flows have been calculated to include leakage flow rates from the room and doors.
AHU 01-ISO-01 to 04 & AHU 03-ISO-01 to 05	01-ISO-01 K	Check AHU dimensions.
AHU 01-ISO-01 to 04 & AHU 03-ISO-01 to 05	01-ISO-01 L	Summer on coil conditions should be 28 oC db and 22 oC wb.
AHU 04-06 & 07	04-06 A	Is the 300mm base channel high enough to accommodate the drainage trap and the required fall on the drain.
AHU 04-06 & 07	04-06 B	Is the ESP a true calculated value for the duct network.
AHU 04-06 & 07	04-06 C	Cooling coil, off coil temperature does not look low enough to maintain any of the rooms at 18 oC when there are heat gains.
AHU 04-06 & 07	04-06 D	Ensure that filters are fitted to ensure that the air flow assists the sealing of the filter to the filter frame.
AHU 04-06 & 07	04-06 E	Internal wiring must be kept to that which is essential only to connect to the electrical components. It should be contained within containment which is easily cleaned, corrosion proof, sealed and does not penetrate the air seals in the internal components of the AHU.
AHU 04-06 & 07	04-06 F	A drawing of the AHU must be submitted for approval before manufacture.
AHU 04-06 & 07	04-06 G	The off coil temperature for the heating coil would not be high enough to heat the rooms to the required maximum set point.
AHU 04-06 & 07	04-06 H	The acoustic performance of the units and the ductwork must ensure that the conditions required by the SHTMs are not exceeded.
AHU 04-06 & 07	04-06 I	Check cooling coil capacity.
AHU 04-06 & 07	04-06 J	Confirm that the air flows have been calculated to include leakage flow rates from the room and doors.
AHU 04-06 & 07	04-06 K	Check AHU dimensions.
AHU 04-06 & 07	04-06 L	All access sections shall be 600mm long.

AHU Specification

Document ref	Comment ref	Comment
Y40	Y40-01	Dampers on room side of Isolation Room units to be gas tight.
Y40	Y40-02	Control scenarios described are generic and do not all suit this installation.
Y40	Y40-03	Confirm that all of the AHUs will be to the Healthcare standard described in the specification.
Y40	Y40-01	Confirm the fan types to be used.
Y42	Y42-01	Air quality should be SUP 01.
Y42	Y42-02	Filters must be installed with bags or pleats mounted vertically
Y43	Y43-01	Headers for coils shall be either stainless steel or copper.
Y43	Y43-02	Coils shall be copper tube and fins.
Y43	Y43-03	Condensate drains to be gravity drained.
Y45	Y45-01	Acoustics to comply with SHTM requirements.
Y45	Y45-02	Where attenuators are mounted between the final filter and the room, they must have a suitable lining on the acoustic material to prevent fibres from entering the air stream.
General	GAHU-01	Access doors shall be installed on both sides of all coils and heat recovery devices and on the upstream side of all filters.

COMMERCIAL IN CONFIDENCE

Environmental Matrix

Document ref	Comment ref	Comment
Environmental matrix	EM-01	Please confirm that our comments from 27 January have been incorporated.

Regards

David

David McNeill CEng MCIBSE

Principal Engineer - Health Facilities Scotland
Procurement, Commissioning and Facilities

NHS National Services Scotland

3rd Floor
Meridian Court
5 Cadogan Street
Glasgow
G2 6QE

████████████████████
████████████████████
████████████████████

COMMERCIAL IN CONFIDENCE

Appendix 3 – Thomson Gray Note on Target Cost

Brian

Having reviewed the indicative costs contained in the Concept Design Report and compared with our original budget estimate I can advise as follows.

Overall their indicative cost of £4,175,000 compares favourably with our initial figure of £4,600,000 given the amount of design development undertaken to date.

The main areas of difference are the prelims / management allowance where IHSL had allowed significantly more (+£400k), probably due to their management input which we would not have taken full account of in the initial estimate.

In terms of the works themselves it is difficult for us to split down into individual trades but overall we had allowed approximately £600k more than Imtech, albeit based on very limited information.

The final item to consider is the contingency where Imtech have only allowed £200k which approximates to 5%, which we feel is on the light side for this stage of design development on a relatively complex installation. However, if you increase it to £400k (10%) as we had allowed, the final figure is still an acceptable £4.4m.

I trust this is of assistance but if you have any queries please let me know.

Regards

Rod



Rod Shaw
Senior Associate

E: [REDACTED]

T: [REDACTED]

EDINBURGH: Prospect House, 5 Thistle Street, Edinburgh, EH2 1DF

www.thomsongray.com

EDINBURGH / GLASGOW / MELROSE / INVERNESS / ABERDEEN

COMMERCIAL IN CONFIDENCE

Appendix 4
**RHCYP + DCN
 Project Co Concept Design HVC 107
 MML Advisory services note**

Project:	RHYCP + DCN		
Our reference:	290961	Your reference:	RHCYP + DCN
Prepared by:	Andrew Scott	Date:	03/03/2020
Approved by:	Richard Peace	Checked by:	Graeme Greer
Subject:	Advisory Services Note on Project Co HVC 107 Concept Design Submission		

Introduction

Further to a request from NHS Lothian, Project Co has submitted for review, the Concept Design for the works comprising HVC 107 and the associated RFIs. The information was received by MML on 20 February 20 and is listed at Appendix A.

The following advisory note has been developed on the basis of the remit outlined in G Greer e-mail to B Currie on 18 Feb 20 and is issued pursuant to the terms and conditions of the consultancy agreement of October 2011 between the Lothian Health Board and Mott MacDonald Limited.

The areas considered are as follows and covered in this report in the order listed:

- Mechanical Building Services Engineering,
- Electrical Engineering,
- Fire,
- Construction.

COMMERCIAL IN CONFIDENCE

Observations and Comments

Ref	Source	Observation	Comment
Mechanical Engineering			
M1.	AHU Technical Schedules, Revision 01	AHU information submitted needs to be supplemented	<p>Provide photographs and manufacturers technical selection data including;</p> <ul style="list-style-type: none"> • Isolation Room AHU - dimensioned general layout drawings for a typical external roof location and • Department AHU- typical internal plantroom location including the proposed service access corridor and external finish. <p>The manufacturers data to include all components, duties, dimensions, weights, materials, SHTM03-01 components, BSEN 1886 classifications, efficiencies, materials, SFPint & SFP calculations and filter selections.</p>
M2.	AHU Technical Schedules, Revision 01	Further clarification of proposals required.	<p>Based on Project Co's REV01 Technical Schedules, confirm;</p> <ol style="list-style-type: none"> 1. AHU reheat coil, off coil temp of only 18degc - how does this heat the room to 28degc? 2. AHU reheat coil, off coil temp of only 18degc - How does this heat the room to 18degc? This does not appear to be aligned with the psychometrics presented in the Concept Report. 3. Filter specifications appears incomplete. Project Co to confirm they meet ISO standards. Do filters match the SUP01 filter requirements in healthcare as SVH Society recommendations? 4. Confirm if fans are centrifugal or plug type fans? It is not clear from the schedules. 5. SFP figures required for each AHU; the figures provided appear to be generic 1.8W/l/s. Project Co to confirm if there are allowances for supply only, supply & extract, HEPA filters, refurbishment, return filters, heating & cooling and heat recovery. A summary table may assist with the breakdown of the base figure and additional allowances provided to allow cross checking with the Non-Domestic Building Services Compliance Guide which accompanies Section 6 Energy in the Building Standards. 6. Confirm AHU margins are as agreed with NHS for individual Isolation Room AHU's and common Department AHU; AHU04-06 & AHU04-07. A summary table may assist that includes a breakdown of flowrate, pressure, SHTM & NHSL margins. 7. AHU's are Leakage classification L1.

COMMERCIAL IN CONFIDENCE

Ref	Source	Observation	Comment
			<p>Confirmation required - do the manufacturers standard units exceed the AHU Specification by default or is this due to the higher final filter classification?</p> <p>8. AHU04-06 is noted as an Isolation Room unit not a Departmental unit – to be confirmed</p> <p>9. AHU Specification comments given separately</p> <p>10. Project Co to confirm that AHU04-06 & AHU04-07 are fan arrays - 3nr fans at 50% each?</p> <p>11. NHSL has confirmed existing CHW has 0% glycol. Clarification required where 30% glycol is proposed (i.e. for the new chiller CHW circuit only). Has trace heating been considered where 0% glycol pipework circuits are routed externally.</p> <p>12. If glycol is included, has the correction factor for CHW specific heat capacity been addressed.</p> <p>13. Confirmation required that damper materials are compliant with SHTM03-01 and Hoare Lea AHU specification. Appreciate some of the above comments were resolved during the Technical Submission Rev 2 presentation of the 25/02/20, however, issued above for completeness.</p>
M3.	Concept Design Report	Details of the loadings used for determining any additional LTHW or CHW demands are not clear.	The following is required for clarification - Individual Room and Departmental sensible, latent and total heating & cooling loads, together with assumptions for internal equipment, lighting, small power, IT/computing, fresh air, occupancy and fabric & infiltration heat gains & heat losses; provided with an assessment of existing circuit capacity to establish any additional LTHW or CHW demands
M4.	Concept Design Report	Cooling coil alternative coil position energy comparison for AHU	Project Co to provide a cooling coil alternative coil position energy comparison for AHU positioned central cooling coil, with reheat versus zonal cooling coils. This clarification is required so that if a change in methodology is adopted the impact on programme can be assessed, Noted that this may be used to demonstrate system energy efficiency & carbon emissions v clinical requirements at a future date.
M5.	272164-HLEA-XX-XX-SK-M-570-0002 Rev C1	The source of figures used in the schematic for existing extract fans have not been identified.	Commissioning details required where existing equipment e.g. LEV fans are to be reused.
M6.	Concept Design Report	<p>There is no coordinated presentation of the design that identifies all the key elements on a room by room basis to demonstrate compliance with the proposed Environmental Matrix at</p> <ul style="list-style-type: none"> • Level 1 CCU Isolation Rooms, • Level 1 CCU Single Rooms, • Level 1 CCU Multi-bay Rooms, • Level 3 Oncology / Haematology Isolation Rooms, 	To provide verification and demonstrate that the design is coordinated and integrated, consideration should be given to preparing a schematic drawing detailing each of the listed room types. It is suggested that this includes; achr & flowrate, room pressure with respect to adjacencies, room volume, door leakage, room leakage, grille positions, filter type, door protection air flows, hierarchy of cleanliness, air pressure

COMMERCIAL IN CONFIDENCE

Ref	Source	Observation	Comment
		<ul style="list-style-type: none"> Level 3 Oncology / Haematology Single rooms, Level 3 Oncology / Haematology Multi-bay Rooms. 	<p>stabiliser location, CSFD positions, pressure gauges etc.</p> <p>It is also suggested that it should include total airflow requirements cross referenced against the schematic drawings & AHU Technical Schedules. Any HTM and/or SHTM references and assumptions made should be noted.</p>
M7.	Concept Design Report	Air leakage allowances have not been sufficiently identified and Fabric integrity / permeability testing not identified.	<p>Project Co to clarify room and existing door set air leakage allowances assumptions.</p> <p>Project Co to identify on the programme when the fabric integrity / permeability testing will be carried out.</p>
M8.	Concept Design Report	The location of acoustic design proposals is unclear.	Project Co to provide details of cross talk attenuator locations and where acoustic ceiling and/or acoustic ductwork wrap insulation is anticipated.
M9.	Concept Design Report	Departmental air flow cascades have not been sufficiently identified.	Demonstrate and indicate on schematic & layout drawings full Department air flow cascade and any assumptions made for door airflow protection volumes, air transfer paths, door access interlocking and interfaces to crash routes.
M10.	Concept Design Report	The location of proposed air pressure stabiliser selections and specifications has not been identified.	Details required of the air pressure stabiliser selection for each room type.
M11.	Concept Design Report	There is no Technical Schedule for the Chiller specifications.	Details required of chiller specification including, refrigerant, dimensions, weights & redundancy N + 1 and/or single/dual circuit, glycol %, trace heating, winter design temperature, soft-start, PFC, Blygold or equal coil coatings, acoustic packages, power requirements, number of power supplies and hydronic components.
M12.	Concept Design Report	There are no Departmental ventilation schematics for AHU's AHU04-06 & AHU04-07 (as provided for the Isolation Rooms.)	Provide Departmental ventilation schematics for AHU's AHU04-06 & AHU04-07.
M13.	Concept Design Report	Operational energy impact assessment does not include information relevant to the annual consumptions of electricity, LTHW and CHW.	Operational energy impact assessment to be developed
M14.	Concept Design Report	No information provided to confirm is ground / route is suitable for proposed Underground Ductwork Route.	Project Co to confirm if ground conditions and existing service routes have been confirmed as suitable for the proposed ductwork route.
M15.	Concept Design Report	No indication of the ceiling specifications that meet the required criteria for the Department and Isolation rooms	Project Co to identify preliminary ceiling specifications for the overall Department and Isolation rooms with pressure requirements including details of air permeability and access arrangements identified.
M16.	Concept Design Report	Negative Pressure Isolation Room	If a negative pressure Isolation Room is included in the final agreed scope of works consideration should be given to providing a unique identification to the LEV ductwork & HEPA filter following discussion with NHSL Estates.
M17.	Concept Design Report	No information relating to the Heating and Cooling Load sizing methodology.	Project Co to confirm the methods of heating & cooling load sizing IES DSM, CIBSE steady state.
M18.	Concept Design Report	No indication that Overheating in EM 'white cell spaces' has been	Project Co to confirm if any overheating analysis has been carried out for the

COMMERCIAL IN CONFIDENCE

Ref	Source	Observation	Comment
		considered,	white cell spaces in the Environmental Matrix in accordance with the original BCR requirements - due to the consequential changes imposed on the Departments by the revised HVAC strategy.
M19.	Concept Design Report	Weather file information not provided	Project Co to confirm which weather file has been used (i.e. ASHRAE EWY, CIBSE TRY, CIBSE DSY) with details of the location, year & percentile band applied, and the 'purpose' of the file used.
M20.	Concept Design Report	There are sections for Level 01 and Level 02 works (Section 3.1.1 (Level 1) and 4.1.1 (Level 3)) however, no drawing of the Level 4 plant room has been provided.	Project Co to provide Level 4 plants room layout drawing.
M21.	Drawings 2164-HLE-ZZ-ZZ-SK-M-570-0002 Rev C1 and 272164-HLE-ZZ-ZZ-SM-M-570-0002 Rev C1	Biohazard risks have not been identified on the drawings	All Biohazards to be noted as health & safety risks on the drawings Cross reference to Room Schematic for airflows suggested.
M22.	Drawing 272164-HLE-Z3-02-DR-M-590-001 RevC1	Layout - further information required	Project Co to show additional details including; existing Imaging Suite chillers, connections for future chillers and future chiller layout to determine available space required Project Co to confirm if any further information is required on future provision from NHSL associated with future Imaging chillers. Has a craneage lifting plan been considered for this area? Will there be a need to lift over the live DCN building? LTHW Heating pipework, trace heating to be considered on external pipework
M23.	Drawing 272164-HLEA-Z4-01-DR-M-590-001 Rev C1	Underground ductwork & layout – further information required.	Clarification of how underground ductwork will be accessed, inspected, cleaned, protected, waterproofed & insulated. Has an alternative option been considered? Project Co to confirm the underground ductwork is compliant with current guidance, noting a design risk assessment will be required; also whether this design has been previously adopted. Is the underground ductwork material to be UPVC? One of the supply ducts appears to run out with the plantroom unnecessarily. Detail required of how the plant is anticipated to be arranged at the Energy Centre. Have any consequential impacts on existing louvres etc. been considered? LTHW Heating pipework, trace heating to be considered on external pipework
M24.	Drawing 272164-HLEA-XX-XX-SM-M550-001 Rev C1	Buffer tank location, MWS, chillers, IV and PICV	Project Co to confirm the buffer tank location. Will the proposed location potentially act as a mixing header? How is MWS pipework protected from CAT5 hazard with an RPZ or is the water from a CAT 5 supply? Do chillers have integral hydronic

COMMERCIAL IN CONFIDENCE

Ref	Source	Observation	Comment
			<p>pumps etc.?</p> <p>Confirm if the Chillers are providing N+1 capacity and the purpose of the 2-Port valves; are they providing a change-over control function?</p> <p>There appears to be no IV upstream of the PICV in the typical detail to allow control valve removal for maintenance. There are 2 symbols for PICV in the Legend, please clarify.</p> <p>Noted there is no commissioning set at AHU connection detail.</p> <p>Project Co to confirm if consideration will be given to a commissioning feasibility and a water treatment review undertaken by a specialist contractor at Stage 4, to show flushing bypass's, flushing tee's etc?</p>
M25.	Drawing 272-HLEA-XX-XX-SM-M-560-001 Rev C1 & 002 Rev C1	LTHW – existing and proposed; Identification of valves and pumps; availability of existing connections; CHW distribution circuits.	<p>Project Co to provide a summary of the LTHW heating circuit flowrates identifying the current commissioned and proposed flowrates available to identify whether it meets the water requirements?</p> <p>Is it possible for the valve and pumps to be identified in a key?</p> <p>Are there existing spare connections that can be utilised in the headers?</p> <p>Is a similar drawing for the existing CHW distribution circuits available?</p>
M26.	<p>Drawings</p> <p>272164-HLEA-Z3-03-DR-M-570-0001 rev C1 Ventilation strategy.</p> <p>272164-HLEA-Z3-03-DR-M-570-0001 rev C1 Ventilation. Existing ductwork layout.</p> <p>272164-HLEA-Z3-03-DR-M-570-0002 rev C1 Ventilation. Existing ductwork layout.</p>	<p>Level 3</p> <p>No comment drawings</p>	<p>Suggest the two existing ductwork layout drawings (last two opposite) should be 590 to follow level 1 drawings protocol. Otherwise no comment</p>
M27. Other Observations			
<p>Clarification required on subsequent Reviewable Design Data [RDD] that will be submitted through RIBA Work Stage 3 Developed Design & Stage 4 Technical Design.</p> <p>Both generic design & coordinated specific design parts and the programme date when the AHU's are potentially going to be pre-ordered are required, to ensure there is a coordinated architectural (including Planning), builders work, civil & structural, MEP (including Building Warrant) & acoustic design. Specific items include as per BSRIA BG6:2018:</p> <ul style="list-style-type: none"> • Stage 3 – Developed Design. Location and sizing of horizontal and vertical service routes within risers, ceiling voids. Developed Schematic. Sizes of plant and distribution systems to show feasibility of spatial allocation. Relative positions of all plant, fittings and equipment (valves, dampers, gauges, control sensors and circuits) to make the system work. Diameters of pipes, approximate dimensions of ductwork. Flowrates and pressures. • Stage 4 [feasible-generic design] – Technical Design. Accurate sizing for ducts, pipes, electrical containment, risers. Layout of plant within plantrooms. Double line drawings of ductwork. Positions of all plant, equipment and fittings • Stage 4 [coordinated specific design]. - Horizontal and vertical layout of components to avoid all clashes, including for insulation and space for fixing, commissioning and maintenance. Critical dimensions. Double line drawings of pipework. Sections showing individual and sized pipes, ducts and electrical containment and distribution within allocated zones. Access panels shown at correct size, in correct locations. Fixing points shown where significant to the structural design. 			

COMMERCIAL IN CONFIDENCE

Ref	Source	Observation	Comment
Electrical Engineering			
E1.	Concept Design Report	Not clear whether what standards are being applied.	Confirm the new electrical works are being completed to the 18 th Edition of the IET Wiring Regulations BS7671?
E2.	Concept Design Report	1.19 Design Risks	If risk assessments have been prepared, do they cover the risk of commissioning results not aligning with design values for air flow and the potential impact on the existing ventilation and power requirements?
E3.	Concept Design Report	CDM	Has the existing health and safety file been reviewed to demonstrate how these proposals relate to the H&S issues of the existing facility?
E4.	Concept Design Report	Capacity of sub mains cables.	Is the remaining capacity on the submain cables for the section boards supplying the new AHU Plant known?
E5.	Concept Design Report	Section / Distribution Boards	Advise if there are sufficient spare ways on the section boards and how many spare ways will remain following the installation?
E6.	Concept Design Report	BS7671 Section 442.4	Have the requirements of BS7671 Section 443.4 been considered for the impact on over voltage control strategy?
E7.	Concept Design Report	Details of additional plant rooms	Will they be provided with full building services fit-out?
E8.	Concept Design Report	Plant Room Ancillary Supplies	Indication required of where plant room general lighting and power supplies will be sourced from. Only AHU and chiller supplies seem to be identified.
E9.	Concept Design Report	External Lighting	Advise if any new external lighting or alterations to existing external lighting will be required to meet required lighting standards?
E10.	Concept Design Report	CCTV	Advise if any new external CCTV or alterations to existing external CCTV will be required to meet required views?
E11.	Concept Design Report	Section Board Load Assessments	From Technical Workshop 6 it was advised that Project Co were load monitoring the section boards they were going to connect to. Can Project Co advise how the loads in the assessments will be used given that the building is not fully operational?
E12.	Drawing 2727164-HLEA-XX-XX-SM-E-610-0001 Rev P1	Confirmation of As Built information.	Project Co to advise if a site survey of the connection section boards has been undertaken to check that as built drawing aligns with the as installed installation and calculations reflect the installation.
E13.	Drawing 2727164-HLEA-XX-XX-SM-E-610-0002 Rev P1	Confirmation of As Built information.	Project Co to advise if a site survey of the connection section boards has been undertaken to check that as built

COMMERCIAL IN CONFIDENCE

Ref	Source	Observation	Comment
			drawing aligns with the as installed installation.
E14.	Drawing 2727164-HLEA-Z3-02-DR-E-620-001 Rev P1	Primary and Secondary DBs	Has consideration been given to swapping the locations of the Primary and Secondary DBs to reduce the diverse cable routes?
E15.	Drawing 2727164-HLEA-Z3-02-DR-E-620-001 Rev P1	Metering	Note are Project Co proposing to install new meters on existing section boards PE3/2 and PE4/2? Are there not existing meters at these section boards?
E16.	Drawing 2727164-HLEA-Z3-02-DR-E-620-001 Rev P1	General Lighting and Power in AHU Enclosure	For the new AHU enclosure, what are the proposals for the general lighting and power supplies and where will these connections be made.
E17.	Drawing 2727164-HLEA-Z3-02-DR-E-620-001 Rev P1	Location of AHU 01 to 05 and chillers.	Location of AHU 01 to 05 and chillers to be identified.
E18.	Drawing 2727164-HLEA-Z3-02-DR-E-620-001 Rev P1	Chillers	Secondary supply only indicated for chillers.
E19.	Drawing 2727164-HLEA-Z4-04-DR-E-620-001 Rev P1	Metering	Noted that Project Co proposing to install new meters on existing section boards 3/4 and 2/4? Are there not existing meters at these section boards?
E20.	Drawing 2727164-HLEA-Z4-04-DR-E-620-001 Rev P1	AHU Locations	Location of AHU 04:06 and AHU 04:07 to be identified.
E21.	Drawing 2727164-HLEA-Z5-01-DR-E-620-001 Rev P1	Metering	Noted Project Co proposing to install new meters on existing section boards EC/1 and EC/2? Are there not existing meters at these section boards?
E22.	Drawing 2727164-HLEA-Z5-01-DR-E-620-001 Rev P1	General Lighting and Power in AHU Enclosure	For the new AHU enclosure, what are the proposals for the general lighting and power supplies and where will these connections be made.
E23.	General Comment – Cable Routes	Primary and Secondary Cable routes	Where primary and secondary cable routes are being indicated they need to be clearly identified in red or green for their full extent from section board to equipment (in accordance with relevant guidance).
E24.	General Comment – Split Distribution Boards	AHU Split Boards	Please explain the philosophy behind the use of split boards for the feeds to the AHU's?
E25.	General Comment – Split Distribution Boards	AHU Split Boards	Please confirm the arrangement of the split boards in terms of isolations and potential discrimination?
E26.	General Comment – Cable Calculations	Existing Cable Trays	Where new cables are being run on existing cable trays please confirm that the effects of grouping factor will be accounted for in the calculation of the new cable?
E27.	General Comment – Cable Calculations	Existing Cable Trays	Where new cables are being run on existing cable trays what impact will this have on the rating of existing cables? Will this be reviewed?

COMMERCIAL IN CONFIDENCE

Ref	Source	Observation	Comment
E28. Other Observations			
<p>There are significant changes to the electrical schematics between the last set of construction issue / RDD drawings and the as built information drawings that Project Co have used to prepare their proposals. For example the section boards where Project Co are taking their supplies from have had equipment added and removed (Section Boards EC1, EC2 and PE3/4). It is also not known if Project Co updated their electrical calculations to reflect the changes to the drawings.</p> <p>Project Co to confirm that they have validated the as built information against the installed equipment. Construction drawing numbers: WW-XX-XX-SC-530-002 Rev L and WW-XX-XX-SC-530-003 Rev L. As Built drawing numbers: ME-XX-XX-SC-530-002 Rev Z2 and ME-XX-XX-SC-530-003 Rev Z1.</p>			

COMMERCIAL IN CONFIDENCE

Fire			
Ref	Source	Observation	Comment
F1.	Concept Design Report Section 1.7.4	Fire suppression systems	Reference is made to suppression systems. It should be noted that there are non-provided in these areas based on the WSP fire strategy.
F2.	Concept Design Report Section 7	WSP Fire Strategy	<p>Reference is made that fire and smoke measures will be installed in line with the WSP fire strategy document.</p> <p>Since the drafting of the original Fire Strategy, a number of changes /enhancements have been discussed / proposed / agreed.</p> <p>We advise that the original strategy should be updated by Project Co to the required level of detail, including all subsequently agreed changes / enhancements, and to ensure that the ownership of this strategy remains intact with Project Co.</p> <p>This should then be made available to all relevant stakeholder for their agreement, and subsequent use to brief clinical teams for example.</p> <p>Also, the updated strategy should be issued to the MEP engineers such that they can understand what the agreed requirements are for damper positions and damper times in various areas, and specifically where ductwork passes through walls separating bedrooms and corridors.</p>

COMMERCIAL IN CONFIDENCE

Construction			
Ref	Source	Observation	Comment
C1.	Concept Design Report	Client and for CDM purposes not clear.	Assume Project Co, however Project Co to confirm.
C2.	Drawings	CDM design risk register referenced on the drawing but not including within the Concept Design Pack.	Project Co to confirm Design Risk Register has / will be completed, shared with the Board and that Principal Designer has reviewed.
C3.	Concept Design Report	No note of CDM Principal Designer having been appointed / named.	Project Co to confirm Principal Designer.
C4.	Concept Design Report	No reference to F10 Form having been submitted to HSE.	Confirmation required of F10 status.
C5.	Concept Design Report	Noted Imtech to be Principal Contractor.	How will this relate to role of Construction Contractor still to be appointed / named.
C6.	Concept Design Report	No mention of Construction Health and Safety Plan.	Project Co to confirm Construction Health and Safety Plan has / will be completed, shared with the Board and that Principal Designer has reviewed.
C7.	Concept Design Report	1.7.1 – 1.7.8 relates to an extract of the draft Completion Criteria.	Project Co to provide their comments on the draft Completion Criteria. These sections have not been reviewed in detail pending the revised Completion Criteria drafting.
C8.	Concept Design Report	Reference to Construction and Commissioning methodology in 1.7.3.	Project Co advise when the Construction and Commissioning Methodologies be available.
C9.	Concept Design Report	Statement that advantage will be taken of adopting off site manufacture.	Programme and Cost benefits to this are welcome. Project Co to provide further details in due course.
C10.	Programme IESS-SKH-Draftdelivery-001 Issued 09 Jan 20 Rev 002	General observations of activities as follows: The programme needs to reflect the current dates / delays. There is no activity indicated for tendering (see general observation below) the builder / construction works. No allowance to reflect the agreement / review times that will be required by the Construction Contractor. There are no dependencies shown to Activity No 14 – Planning / Building Warrant Approval	Programme to be reviewed. Review periods by third parties will need to be agreed with NHSL.
C11.	Concept Design Report	No indication of temporary works required in connection with installation.	Consideration to be given to scaffolding, temporary power, welfare facilities, storage, traffic management, fire plan, evacuation plan, hot working permits, security, dilapidations survey and record.
C12.	Concept Design Report	Statement at Section 1.7 that the "HVC107 Works are reinstated in accordance with the As Built drawings" and in relation to the Equipment.	May require further consideration given that the accuracy of the As Built Drawings may need to be checked.

COMMERCIAL IN CONFIDENCE

C13.	Appendix 4 - C - BSRIA allocation of design responsibilities	BG 6-2018 Appendix A – Allocating Design Responsibility Noted that Contractor is “as-yet unknown team member” and that no responsibilities have been allocated. Noted that Refs 2.1.3, 2.1.5, 2.2.5, 2.2.8 and 2.9.15 are unallocated.	Matrix being updated for next submission?
C14.	Concept Design Report	Builderswork in connection with Services.	Details will be required of any architectural and builderswork required in connection with the services installation. Also are details of the provisional main builder work entry/exit points at the Departments, internal plantrooms, external plant spaces and the Energy Centre available?
C15.	Concept Design Report	Item 9.1, 3.1 & 4.1	There is no drawing provided for the Level 04 AHU Plantroom indicating the new positions of AHU04-06 & AHU04-07.
C16. Other Observations			
<p>Mixed used of the terms Project Co, Imtech, Principal Contractor, Contractors etc. Clarity required from the Board whether terms require to align with the SA drafting.</p> <p>Whilst this exercise is primarily considered as programme driver, it remains important to the Board to ensure that value for money is also achieved and demonstrated, further comments required from cost advisor.</p> <p>Site works have already commenced, however this is not reflected on the programme, and we are unsure that all of the required CDM processes, construction methodologies, risk assessments, water management etc have been progressed and agreed to the appropriate level with Project Co, Project Co parties, and the Board stakeholders.</p> <p>Appreciating that this work is very programme sensitive, and the Board understandably requires the works to be completed in the shortest possible practical timescales, we consider that the design development and submission comment times allowed in the programme are insufficient to allow the Board time required to fully assure themselves of compliance with the Scope.</p> <p>With respect to the submission of the Detailed Design pack, whilst the overall review time is shown as 2 weeks, in reality the final design information will only be issued 1 week into this 2 week period, furthermore no time has been allowed for any design iterations to be undertaken as a result of any comments or concerns raised.</p>			

COMMERCIAL IN CONFIDENCE

Summary

The comments included in the table above cover a range of different issues relating to various levels of design development. Some of the comments raised we expect to be satisfactorily dealt with during subsequent design phases, however they are raised now for completeness.

In terms of our overall impression of the concept design, and in line with the scope of our review, our summary comments are as follows;

- The concept design has been progressed in general to a satisfactory level of detail to gain an understanding of the proposals at this stage, however there are elements that would merit further consideration. See tables above for a non-exhaustive list.
- It is Project Co's intention to develop a design consistent with the requirements of HVC 107, and any subsequent clarifications in the RFI process. We consider that good progress has continued to be made by Project Co (Imtech) and the direction of travel in terms of concept design is satisfactory, with no significant 'red flags' identified at this stage which would prevent the development of the detailed design. We now await the submittal of the detailed design by Project Co (Imtech) that integrates where necessary our attached observations / comments.
- Services co-ordination and integration has yet to be fully considered by Project Co such that feasibility at this stage of the design can be demonstrated. This is to some degree inevitable given the tight timescales, however it continues to represent a key risk at this stage until further exploratory and associated design works have been undertaken by Project Co.
- In terms of Project Co's proposed programme, noting the time critical nature of the works, the front end design programme looks particularly tight, and whilst Project Co have made good progress, they have not been able to keep up with the programmed issue dates so far. The time allowed for Board review and subsequent iterations by Project Co seems, to us, insufficient.
- It is apparent that there a number of Project Co parties involved in the design development, e.g. Hoare Lea have originators, checkers and approvers on their drawings. However, it is not apparent how the overall design co-ordination is being handled within Project Co, e.g. general note 3 on Hoare Lea drawings states - *"Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention"*. It is not clear who is to bring these errors to Hoare Lea's attention, and therefore where the overall design risk sits.
- We believe the Board's level of confidence of Project Co's design and installation being able to meet their needs would be enhanced if a fully completed Environmental Matrix taking on board all comments from all Board stakeholders was in place. We understand this is work in progress.
- As raised in the table above, we believe the Board could gain a further level of confidence with respect to the concept design if Project Co can succinctly demonstrate the key design elements by room with associated room adjacencies. This could be achieved by preparing schematic drawings detailing each of the listed room types against information such as (but not limited to) achr & flowrate, room pressure with respect to adjacencies, room volume, door leakage, room leakage, grille positions, filter type, door protection air flows, hierarchy of cleanliness, air pressure stabiliser location, CSFD positions, pressure gauges etc.
- In accordance with our non-exhaustive comments in the table above, we are in the process of further querying the design methodologies that have been applied by Project Co and will continue to do so through their design process.
- We cannot ascertain from the information submitted in the concept design whether Project Co has considered all spaces in the facilities served by or affected by the ventilation and fire works and services systems, in accordance with the following extract from HVC 107; *"All environmental requirements for all spaces in the Facilities served by or affected by the Ventilation Works and Services systems shall be met and maintained – including but not limited to, ventilation, temperature and control, lighting levels, noise, and humidity. These should be consistent to the agreed parameters throughout the Facilities to meet the specific clinical and operational needs for each space in the Facilities"*. Bearing in mind this is early stage concept design where detail is necessarily limited, we advise the Board to seek a positive confirming statement from Project Co that their developed work will be fully compliant with this requirement in particular.
- We understand that the Board has advised Project Co that they are no longer required to comply with the broader BCR's contained in the Project Agreement.

COMMERCIAL IN CONFIDENCE

Appendix A : Concept Design Contents

Title	Document No.	Rev	Title
Concept Design - Report	REP-2727164-08-SV-20200207-Concept Design-Rev01	1	MEP ENGINEERING CONCEPT DESIGN REPORT
Concept Design - Appendix 1 MEP drawings	2727164-HLEA-XX-XX-SM-M-570-0001	C1	ISOLATION ROOM VENTILATION SCHEMATIC LEVEL 01
	2727164-HLEA-XX-XX-SM-M-570-0002	C1	ISOLATION ROOM VENTILATION SCHEMATIC LEVEL 03
	2727164-HLEA-XX-XX-SM-M-560-0001	C1	LOW TEMPERATURE HOT WATER WATER ENERGY CENTRE MODIFCATIONS
	2727164-HLEA-XX-XX-SM-M-560-0002	C1	LOW TEMPERATURE HOT WATER WATER ENERGY CENTRE MODIFCATIONS
	2727164-HLEA-XX-XX-SM-M-550-0001	C1	CHILLED WATER SCHEMATIC
	2727164-HLEA-Z4-01-DR-M-570-0001	C1	VENTILATION STRATEGY
	2727164-HLEA-Z4-01-DR-M-590-0001	C1	MECHANICAL SERVICES STRATEGY - ENERGY CENTRE PLANT AREA
	2727164-HLEA-Z4-01-DR-M-570-0001	C1	EXISTING DUCTWORK LAYOUT
	2727164-HLEA-Z3-03-DR-M-570-0002	C1	EXISTING DUCTWORK LAYOUT - RIGHT WING
	2727164-HLEA-Z3-03-DR-M-570-0001	C1	EXISTING DUCTWORK LAYOUT - LEFT WING
	2727164-HLEA-Z3-03-DR-M-570-0001	C1	VENTILATION STRATEGY
	2727164-HLEA-Z3-02-DR-M-590-0001	C1	MECHANICAL SERVICES STRATEGY - EXTERNAL PLANT AREA
	2727164-HLEA-XX-XX-SM-E-610-001	C1	LV DISTRIBUTION SCHEMATIC SUB-STATION NO.1
	2727164-HLEA-XX-XX-SM-E-610-002	C1	LV DISTRIBUTION SCHEMATIC SUB-STATION NO.2
	2727164-HLEA-Z3-02-DR-E-620-001	C1	LV DISTRIBUTION
	2727164-HLEA-Z5-01-DR-E-620-0001	C1	LV DISTRIBUTION
	2727164-HLEA-Z4-04-DR-E-620-001	C1	LV DISTRIBUTION
Concept Design - Appendix 2 Programme	IESS-SKH-Draft Delivery-001	2	200109 Edinburgh Royal Hospital for Sick Children Ventilation Works Vari....
Concept Design - Appendix 3 Environmental Matrix	SCH-2727164-08-PW-20200110	C	Environmental Matrix-REV C
Concept Design - Appendix 4 Responsibilities Matrix	N/A	-	C - BSRIA allocation of design responsibilities - BG 6-2018 Concept design-2
Concept Design - Appendix 5 AHU Specification	SP-2727164-9B-SV-03022020	P1	HVC 107 Air Handling Unit Specification

COMMERCIAL IN CONFIDENCE

Title	Document No.	Rev	Title
Concept Design - Appendix 6 AHU Schedule	SCH-2727164-Y40-AHU-01-ISO-01	-	Air Handling Unit Schedule
	SCH-2727164-Y40-AHU-01-ISO-02	-	AHU-01-ISO-02
	SCH-2727164-Y40-AHU-01-ISO-03	-	AHU-01-ISO-03
	SCH-2727164-Y40-AHU-01-ISO-04	-	AHU-01-ISO-04
	SCH-2727164-Y40-AHU-03-ISO-01	-	AHU-03-ISO-01
	SCH-2727164-Y40-AHU-03-ISO-02	-	AHU-03-ISO-02
	SCH-2727164-Y40-AHU-03-ISO-03	-	AHU-03-ISO-03
	SCH-2727164-Y40-AHU-03-ISO-04	-	AHU-03-ISO-04
	SCH-2727164-Y40-AHU-03-ISO-05	-	AHU-03-ISO-05
	SCH-2727164-Y40-AHU-04-06	-	AHU-04-06
	SCH-2727164-Y40-AHU-04-07	-	AHU-04-07
Concept Design - Appendix 7 Technical Workshop Presentation	PRE-2727164-08-PW-09012020	-	Technical Workshop1 Presentation
	PRE-2727164-08-PW-20012020	-	Technical Workshop 2 Presentation
	PRE-2727164-08-PW-04022020	-	Technical Workshop 4 Presentation
	PRE-2727164-08-PW-27012020	-	Technical Workshop 3 Presentation
	PRE-2727164-08-PW-11022020	-	Technical Workshop 5 Presentation

This Report has been prepared solely for use by the party which commissioned it (the 'Client') in connection with the captioned project. It should not be used for any other purpose. No person other than the Client or any party who has expressly agreed terms of reliance with us (the 'Recipient(s)') may rely on the content, information or any views expressed in the Report. This Report is confidential and contains proprietary intellectual property and we accept no duty of care, responsibility or liability to any other recipient of this Report. No representation, warranty or undertaking, express or implied, is made and no responsibility or liability is accepted by us to any party other than the Client or any Recipient(s), as to the accuracy or completeness of the information contained in this Report. For the avoidance of doubt this Report does not in any way purport to include any legal, insurance or financial advice or opinion.

We disclaim all and any liability whether arising in tort, contract or otherwise which we might otherwise have to any party other than the Client or the Recipient(s), in respect of this Report, or any information contained in it. We accept no responsibility for any error or omission in the Report which is due to an error or omission in data, information or statements supplied to us by other parties including the Client (the 'Data'). We have not independently verified the Data or otherwise examined it to determine the accuracy, completeness, sufficiency for any purpose or feasibility for any particular outcome including financial.

Forecasts presented in this document were prepared using the Data and the Report is dependent or based on the Data. Inevitably, some of the assumptions used to develop the forecasts will not be realised and unanticipated events and circumstances may occur. Consequently, we do not guarantee or warrant the conclusions contained in the Report as there are likely to be differences between the forecasts and the actual results and those differences may be material. While we consider that the information and opinions given in this Report are sound all parties must rely on their own skill and judgement when making use of it.

Information and opinions are current only as of the date of the Report and we accept no responsibility for updating such information or opinion. It should, therefore, not be assumed that any such information or opinion continues to be accurate subsequent to the date of the Report. Under no circumstances may this Report or any extract or summary thereof be used in connection with any public or private securities offering including any related memorandum or prospectus for any securities offering or stock exchange listing or announcement.

By acceptance of this Report you agree to be bound by this disclaimer. This disclaimer and any issues, disputes or claims arising out of or in connection with it (whether contractual or non-contractual in nature such as claims in tort, from breach of statute or regulation or otherwise) shall be governed by, and construed in accordance with, the laws of England and Wales to the exclusion of all conflict of laws principles and rules. All disputes or claims arising out of or relating to this disclaimer shall be subject to the exclusive jurisdiction of the English and Welsh courts to which the parties irrevocably submit.

SBAR – Emergency Department Ventilation & High Consequence Infectious Diseases (HCID) RHCYP**4th March 2020****Lindsay Guthrie & Dr Donald Inverarity (Infection Prevention & Control), Dorothy Hanley & Ronnie Henderson (NHS Project Commissioning Managers for Clinical & Hard FM) Paul Leonard, Clinical Director ED, Peter Campbell, Associate Nurse Director, Children's Services****Situation:**

As part of NHS Lothian preparedness response for Novel Coronavirus (2019 n-CoV) it was identified that the area in the ED at RCHYP previously identified for the quarantine and assessment of patients with HCID room currently provides 10 air changes at positive pressure to the adjacent department.

The ED triage room at RHCYP is designed to, and performs as, a treatment room - 10 air changes on positive pressure.

This means that both rooms as currently configured, are not safe or appropriate for the triage or quarantine of paediatric patients with a HCID, particularly those spread by aerosol or droplet transmission (e.g. 2019 nCo-V).

The risk to other patients, staff and the wider public increases if any aerosol generating procedures are performed - e.g. open suctioning; intubation.

At design stage the modelling anticipated that patient attendances would rise incrementally year on year and so additional capacity was included. In the intervening period patient the number of attendances at RHSC now exceed the forecast and so at the point of opening the department will already be operating at full capacity and clinical space at a premium

Background:

The lack of availability of compliant (negative pressure) isolation rooms in ED and other front door services to respond to patient admission with HCID is not restricted to RHYCP DCN site. In January 2020, it was identified on review that that none of the EDs across NHS Lothian have a compliant negative pressure isolation room with lobby available. The rooms identified in HCID patient pathways at SJH and RIE were also found to have a positive pressure cascade, having been designed as treatment rooms.

The minimum requirement currently required by national guidance is negative pressure isolation room **OR** an ensuite single room which is at balanced pressure to the adjoining spaces.

Assessment:

The RHCYP project team, Clinical team and IPCT discussed the following options for consideration:

- 1. Status quo – continue to use the rooms previously identified and agreed with the ED clinical team; that is**
 - a. G-A1-008 (Wash down Room Dirty Utility) - to be used as the lobby
 - b. G-A1-012 (Treatment Room Bay 5) - for patient treatment/isolation

- c. G-A1-014 (Treatment Room Bay 6) - for patient treatment/isolation OR store/prep area

The risk associated with this option is that high consequence infectious diseases spread by droplet or airborne transmission may not be effectively contained and support transmission of these infections in the hospital environment. This could represent a significant public health risk for other patients, staff and visitors. Rooms G-A1-012 and G-A1-014 provide 10 air changes at positive pressure, in line with design requirement for treatment rooms. There is no impact on timescale for patient occupation by RHCYP.

Current risk level of Option 1

(likely/ extreme)

V High 20

2. **Turn off the air supply to the rooms 5 & 6 (to be achieved through closing the dampers) rendering the treatment space at balanced or slightly negative pressure to the adjoining corridor. Provide negative extract ventilation via new transfer grilles in the doors between rooms 6, 5 and the wash down room. Provide a HEPA filter on extract in the wash down room.**

From an engineering perspective, this provides pressure cascade reliant on the existing extract, so minimal reconfiguration or building work to achieve this solution. However closing the damper would be reliant on BYES being advised of the need to close the dampers to the room. This would be a new service level agreement to be reached with BYES. Patients are likely to self present at ED and therefore no prior notice is likely to be given in most cases.

This solution would probably fall within a low to medium value change. The impact on programme for occupation is unclear until final design for this option confirmed.

There would be clinical risks associated with setting these rooms permanently in extract only mode, not least a reduced clinical capacity leading to overcrowding and treatment delays impacting on morbidity outcomes and patient experience.

In this setting, a further calculation would be required to demonstrate that adequate air change rates were achieved to meet minimum legislative requirements. It must also be noted that the Vacuum system in the corridor outside these rooms is likely to pull air from the rooms into the corridor outside presenting a risk to persons outside the room.

There would require to be a clear SOP restricting any invasive clinical work or similar which requires treatment room ventilation (10 a/c positive) in both rooms 5 and 6.

Current risk level of Option 2

(likely/ extreme)

V High 20

3. Commission a fully compliant type 1 negative pressure room to be provided in ED.

The risks associated with this are that this would be a complex and disruptive piece of work requiring a high value change (similar to the critical care ventilation change) and would most likely require a new air handling unit to be installed. There would be significant costs and a detrimental impact on the existing project timescale for full transition of clinical services.

There is no space available within the current footprint of the department to develop this type of room as an additional space and so it would require conversion of an existing room.

Although useful for segregation of infective patients on the occasions that full isolation was required, the impact on day to day patient pathways and activity would be significant as the clinical space could not be used for any patient attending the department requiring clinical intervention. The reduced clinical capacity would lead to overcrowding and treatment delays impacting on morbidity outcomes and patient experience.

As in option 2, a clear SOP would need to be developed restricting any invasive clinical work or similar which requires treatment room ventilation (10 a/c positive)

Current risk level of Option 3

(almost certain/ moderate)

V High 20

4. Provide new switchable negative pressure extract system with HEPA filtration in rooms 5 and 6 (G-A1-012 and G-A1-014.) This will involve the provision of additional ducting, and ancillary services.

The risk associated with this option is largely operational in that it increases the scope of work requested of Imtech/Hoare Lea in relation to critical care and haematology oncology ventilation to provide a safe and compliant system. It will have additional costs, and any impact on the overall timeline to complete is unclear at this stage however retrospectively converting the space after opening would be extremely disruptive to the Service.

There are potential clinical risks associated with having a switchable system, however the team feel that it is possible to mitigate these risks via a combination of SOPs, and technical measures (see supplementary risk assessment) and are outweighed by the benefit of making a negative pressure room available on the occasion it is required for HCID, but ensures the clinical spaces can be used as treatment rooms at all other times and therefore protecting activity.

Current risk level of Option 4

(possible/ moderate)

Medium 9

- 5. Convert the viewing room and relative rooms (bereavement suite) in ED into a clinical treatment space, including provision of medical gases and hand wash sink. Structural work would be required. This area currently has extract ventilation and negative pressure cascades to adjoining spaces.**

The risk associated with this option is that there are significant costs and timescales associated with any planned work, which may impact on timeline for occupation as above. The rooms are too small to deliver clinical care, the toilet would need to be accessed through the sitting room (which after furniture removed would become the lobby) and layout within the viewing room would preclude its use for anything but a very temporary holding area and would require removal of furniture at short notice. The disruption intermittent use of the suite for this purpose is likely to impact on patient family experience and there are risks associate with setting up the space at short notice and preventing access to outside by families left in this suite

In addition, an alternative location will have to be found to provide an appropriate bereavement suite within ED, which would also have to be provided with extract ventilation (odour control and comfort).

Current risk level of Option 5

High 15

- 6. Identify an alternative clinical space as the designated quarantine/isolation room for ED e.g. a single ensuite bedroom in Castle Mey (PARU). This could provide a suitable clinical treatment room meeting the minimal requirements of current guidance**

The risks associated with this option are that the clinical safety and acceptability of this would have to be agreed by ED clinicians. The room would be on the periphery of the ED and there may be risks associated with access to resuscitation or other clinical support, isolation of staff, reduction in Castle Mey room capacity to create a safe 'zone' and transfer pathway to the room. Also potential for delay in getting patient to the room if already occupied by another patient with infection (transfer of inpatient to alternate area, full deep clean, dry and set up of space

Single en-suite bedrooms are currently provided at balanced pressure to the corridor, however there is no additional door protection or lobby meaning there is a small risk of air movement from room to corridor with the door open. This risk would increase if there was any issue with the extract ventilation provided in the en-suite. The extract ventilation forms part of a common extract duct and is not HEPA filtered. This means that there is a small risk that if the extract ventilation was sub optimal/not functioning that contaminated air could spill into other patient bedrooms served off the same common extract. Use of the cubicle/ observation beds within Castle Mey ward could impact on capacity within the RHCYP Acute Receiving Ward and may mean there was no access to observation spaces and so increased pressure on ED throughput/ overcrowding

Current risk level of Option 6

V High 20

Recommendations:

1. The authors suggest that the preferred option would be to proceed with Option 4, acknowledging the potential risks of a switchable system, but identifying and implementing the associated mitigations and controls.
2. The view of their Authorising Engineer (Ventilation) should be sought with regards the options outlined above – to support the Board to identify a safe and acceptable solution.
3. The Executive Steering Group to discuss the NHS Lothian preferred approach with the Oversight Board.

Likelihood	Consequences / impact				
	Negligible	Minor	Moderate	Major	Extreme
Almost certain	Medium 5	High 10	High 15	V High 20	V High 25
Likely	Medium 4	Medium 8	High 12	High 16	V High 20
Possible	Low 3	Medium 6	Medium 9	High 12	High 15
Unlikely	Low 2	Medium 4	Medium 6	Medium 8	High 10
Rare	Low 1	Low 2	Low 3	Medium 4	Medium 5

Descriptor	Rare	Unlikely	Possible	Likely	Almost Certain
Probability	Can't believe this event would happen – will only happen in exceptional circumstances	Not expected to happen, but definite potential exists – unlikely to occur	May occur occasionally, has happened before on occasions – reasonable chance of occurring	Strong possibility that this could occur – likely to occur	This is expected to occur frequently/ in most circumstances – more likely to occur than not

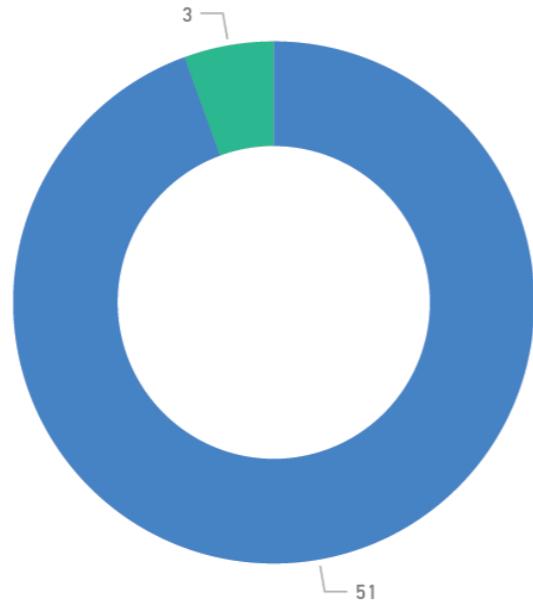
RHCYP+DCN - Continuity of Services on Existing Sites Action Log Dashboard

10/03/2020

Actions closed since last dashboard : 3

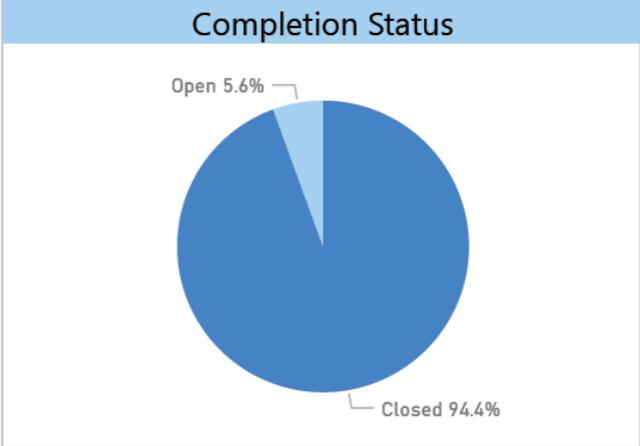
Status against Target Date

- Due Status**
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



OPEN
3

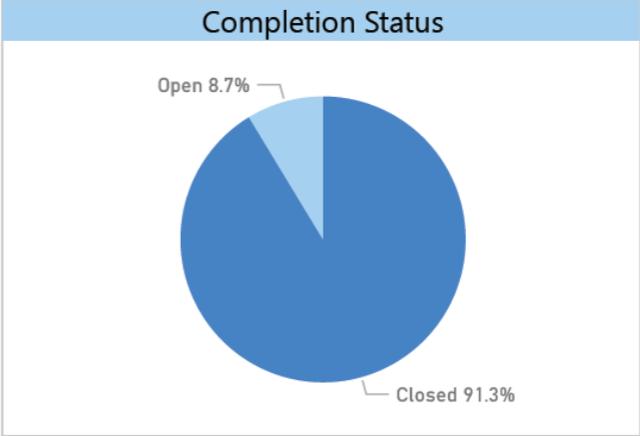
CLOSED
51



Actions for DCN at WGH site

OPEN
2

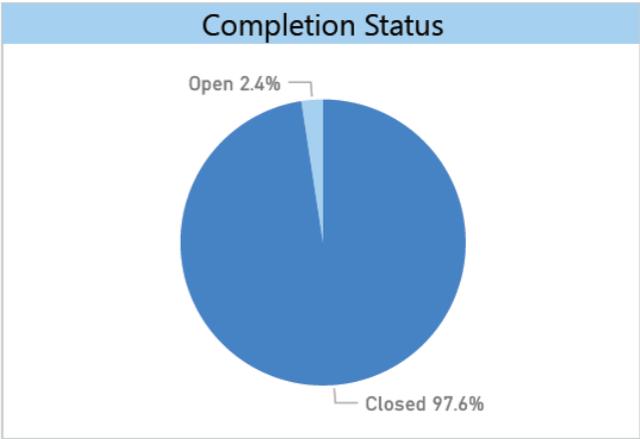
CLOSED
21



Actions for RHSC Sciennes site

OPEN
1

CLOSED
40



RHCYP + DCN

Continuity of service provision on current DCN and RHSC sites

Revision Date: 09/03/2020

Current date for tracking: 10/03/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/ Closed	DCN	RHSC	Source of info	Funding
Capacity												
1	Winter planning	1.1	RHSC: Increase in ED capacity to maintain flow	F Mitchell	05/07/2019	30/11/2019	Increased OPD capacity, 3 RBT opening. All equipment and IT in place, going live Tuesday 17 December.	CLOSED	No	Yes	Peter Campbell 09/12/2019	Service sustainability
		1.2	RHSC: increase medical beds and cubicles	F Mitchell	05/07/2019	30/11/2019	Ward 4 and PIU have now relocated. 2 shower trolleys moved to RHSC from RHCYP.	CLOSED	No	Yes		Service sustainability
		1.3	RHSC: Additional 15 winter B5 posts advertised and shortlisted, to supplement medical nurse staffing. 6 additional B2 posts will be sought from the staff bank on a guaranteed shift basis for night duty staffing on ward 4 (medical). Additional nursing posts approved in June 2019 for an increase in year-round nurse staffing levels in the ED, particularly to support evening and night activity pressures. Most posts now recruited to for Phase 1 of this expansion, including an Advanced Nurse Practitioner for the ED team.	F Mitchell	05/07/2019	30/11/2019	B5 Winter posts - first round of interviews held 2 October. Closing date for second round 18th October; 1 applicant shortlisted. Advertised again closing 15th November 2019. Second round of Winter staff recruitment disappointing- going back out to recruitment again. Extra winter beds being staffed mainly by core ward staffing. Band 2 Winter Posts - Bank Requests from November onwards. Additional permanent ED posts - ENP job descriptions being finalised for recruitment end Oct. onwards. Advert for winter post closed again with 1 applicant. Gone out to advert again. Able to cope with core staffing at the moment.	CLOSED	No	Yes		Service sustainability
		1.4	RHSC: Increase haem/onc day care beds by 3	F Mitchell	05/07/2019	30/11/2019	This can be closed as the Ward moves have taken place.	CLOSED	No	Yes	Fiona Mitchell 02/12/2019	Service sustainability
		1.5	Sleep service expanded staffing for new hospital but there is no extra capacity in old RHSC and winter pressures can lead to sleep studies being cancelled. Look at potential for services at home being expanded to address waiting list?	F Mitchell	05/07/2019	07/10/2019	Home sleep studies have now started.	CLOSED	No	Yes	On the list shared by Calum Henderson following CabSec's visit.	Service sustainability
		1.6	Winter Planning adult acute services	M Pearson	05/07/2019		Due to ongoing bed closures and pseudomonas in water, DCN is currently not accessed by the WGH site for boarding. Bed pressures in down stream facilities may affect DCN; managed through operational site and capacity management. CLOSED in relation to cancelled DCN moves.	CLOSED	Yes	No		Service sustainability
2	Paediatrics at St John's	2.1	Consideration of increasing Services at SJH to reduce pressure of RHSC and enhance care closer to home for West Lothian children.	F Mitchell	05/07/2019	31/03/2020	Royal College of Paediatrics and Child Health have confirmed that they will carry out their review visit on 11 and 12 February. The RCPCH visited as planned on 11 and 12 February, draft report expected end March.	OPEN	No	Yes	Fiona Mitchell 20/02/2020	Service sustainability
3	Medical equipment	3.1	Interventional Neuroradiology provision: increased demand (due to service delivery issues in Glasgow) for ageing and increasingly unreliable interventional neuroradiology equipment at DCN.	M Carr	09/07/2019	04/02/2020	Confirmation was received on 29/10/19 that the Cabinet Secretary was content the Board proceeds with the recommendation to purchase the additional equipment for DCN. • Works started 14th Jan. Completion date now 5th Feb - 1 day slippage • Clinical contingency plan has worked well and will cease on 5th Feb • Capital cost is £1.5K over spent (estimate was £40K) due to the need to remove railings in the car park to allow delivery of equipment Clinical service commenced 06/02/20. DCN x-ray corridor to be painted mid January after bi-plane removal and install	CLOSED	Yes	No	Emma Lally 04/02/2020	N/A - no additional expenditure anticipated.
		3.2	Theatre lights in four of the operating theatres at RHSC Sciennes are old and unreliable, with no replacement parts available. New lights required.	F Mitchell	09/07/2019	15/02/2020	All the required theatre lights have been ordered and are due for delivery shortly, with the programme of works to install timetable for week commencing 10 February, to coincide with schools half term holiday. We do not expect to lose any activity over and above the normal reduction during half term holidays. The new Theatre Lights installation has been completed to plan.	CLOSED	No	Yes	Fiona Mitchell 20/02/2020	Additional - cost of maintaining existing sites.
		3.3	General x-ray equipment that had been installed in RHCYP required again at RHSC	F Mitchell/M Carr	09/07/2019	08/11/2019	New equipment arrived on site 14/10/19 and installation underway. This equipment will be moved elsewhere on closure of RHSC. On schedule to go live on target date of 8/11/19. Room is finished and is now back in full clinical use.	CLOSED	No	Yes	Update from S Evans, Radiology 7/11/19	Additional - cost of maintaining existing sites.
		3.4	Extension of maintenance contracts for elderly equipment at Sciennes and DCN.	F Mitchell/M Carr	09/07/2019	19/09/2019	Contracts and maintenance plans now in place. Will be updated on a quarterly basis.	CLOSED	Yes	Yes	S Evans, Radiology	Service sustainability
		3.5	Additional scope storage is required for theatres at RHSC Sciennes as two cabinets were moved to RHCYP. Currently one is on loan, with rental charges due from October 2019.	F Mitchell/M Carr	09/07/2019	30/11/2019	Scope Cabinets up and functioning according to plan.	CLOSED	No	Yes	Fiona Mitchell 02/12/2019	Additional - cost of maintaining existing sites.
		3.6	Replacement tube for CT scanner at RHSC	F Mitchell/M Carr	09/07/2019	31/07/2019	Tube replaced - COMPLETE	CLOSED	No	Yes	S Evans, Radiology	Additional - cost of maintaining existing sites.
		3.7	Videotelemetry: access to VTEM beds has been reduced in DCN since April 2019 with the reconfiguration of wards and restrictions on admissions due to positive testing for pseudomonas aeruginosa. Delaying moves to Spring 2020 extends the limited capacity and impact on waiting times. Use of portable equipment at one bed has enabled some VTEM admissions since August, but a hardwired bed with full VTEM capability and monitoring is required.	M Pearson	01/08/2019	12/11/2019	Install hardwired VTEM into ward 33. Utilise portable equipment for appropriate waiting list patients at home. Remedial electric works required prior to moving the equipment. An external contractor has been on site to look at the work - Estates to confirm date and cost. Optima will come after the electric works, £7k signed off. Complete from Estates side they just require some IT connection. Then Ward 33 will open up to 16 beds.	CLOSED	Yes	No	Michael Pearson/Hester Niven	Additional - cost of maintaining existing sites.
Clinical Support Services												
4	Pharmacy	4.1	Inadequate staffing to maintain opening hours for dispensary on 2 sites since in organisational change 1 dispensary manager was redeployed to another core service effective July 2019 when integration was meant to occur	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 7 dispensary manager resource required to allow provision of medicines on RIE and RHSC sites to prevent impact upon patient experience while RHSC remains open; and minimise impact of stress on staff health and wellbeing. 1.0wte band 7 Pharmacy Technician = £43,500	CLOSED	No	Yes	2 x SBAR reports	Additional fixed term, long term service sustainability
		4.2	Inadequate pharmacy support workers (PSW) staffing to deliver an integrated medicines distribution hub for RHCYP/RIE with required staff still working on RHSC site to maintain dispensary service	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 2 and 3 PSW resource required to prevent impact upon availability of medicines on RHSC site, and minimise impact of stress on staff health and wellbeing. 1.0wte band 2 PSW plus 2.0wte band 3 PSW = £77,192	CLOSED	No	Yes		Additional fixed term, long term service sustainability
		4.3	Pump-prime funding for staff resource to deliver the One Stop model has ceased, which is the backbone of medicines supply to patients to underpin management of capacity and flow at the new hospital site	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Funding for pharmacy technician resource must be reinstated to continue this model to be delivered. To address 3.4 and 3.5: 1.0wte band 4 Pharmacy Technician = £29,985	CLOSED	No	Yes		Additional fixed term, long term service sustainability

		4.4	Extended opening hours and weekend working rotas of the integrated pharmacy department at RIE was implemented in June 2019 in readiness for move of the RHSC in July 2019. To avoid lone staff working the full staff complement was needed on one site to full fill this rota. With pharmacy staff members remaining on RHSC the late	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Additional Band 4 pharmacy technician resource needed to ensure extended pharmacy opening hours at RIE not put at risk, which would affect capacity and flow on RIE site See 5.3 above	CLOSED	No	Yes		Additional fixed term, long term service sustainability			
		4.5	One Site Lead Pharmacist redeployed to another post during organisational change to integrate the 2 pharmacy departments leaving 1 Site Lead Pharmacist to manage teams across 2 sites without a deputy to support operational day-to-day management or change management of the teams	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Deputy pharmacist (Band 8a) required to support site lead pharmacist for RIE/RHSC until integration of the 2 departments is complete, which will help minimise impact of stress on site lead pharmacist health and wellbeing 1.0wte Band 8a Pharmacist = £65,625	CLOSED	No	Yes		Additional fixed term, long term service sustainability			
		4.6	Cross site transport of medicines 7 days a week is needed but the ad hoc arrangements currently in place (e.g. Blood bikes, taxi runs) is not suitable for the extended duration that off-site daily delivery of medicines will be needed until RHSC move. This is especially an issue for delivery of intrathecal chemotherapy agents that have unique transport requirements under CEL30 (i.e. anyone transporting these medicines must be trained and named on the intrathecal register as competent to undertake the task allocated to them including transport)	A Timoney	23/09/2019	18/10/2019	Recruitment authorised for Funding to NHS transport and portering services for 1.0wte dedicated driver(s) (to be trained in CEL 30 requirements) to transport medicines between 09:00 to 17:30 Monday to Friday and 10:00 to 14 00 Saturday. 1.0wte Band 2 = £24,370	CLOSED	No	Yes		Additional fixed term, long term service sustainability			
5	Laboratories	5.1	Minor changes were made to on-site Blood Science laboratory hours with the announcement of the delay in July 2019, with agreement that provision would remain under constant monitoring/ review.	M Grey	09/07/2019	31/07/2019	The NHSL Blood Science laboratory service at RHSC will continue with no alteration to service but service delivery/ performance will be monitored/ kept under continuous review in order to ensure that a robust and sustainable service continues to be provided to RHSC users and their patients.	CLOSED	No	Yes	Blood Science SBAR: Impact of Delay to Move from RHSC to RHCYP 24/09/19	Service sustainability			
Facilities Management															
6	Catering	6.1	Extend canteen opening times and preparation of meals on RHSC site - for better utilisation of staffing and reduction in waste.	G Curley	23/09/2019	14/10/2019	Chef now on site. Collation of menus and standard ordering.	CLOSED	No	Yes		Additional - cost of maintaining existing sites.			
		6.2	Procurement of two fridges for RHSC facility.		23/09/2019	14/10/2019	Order placed	CLOSED	No	Yes					
		6.3	Communication with catering staff about sites and rosters.		23/09/2019	08/10/2019	Chef now on site; communication with catering staff underway.	CLOSED	No	Yes					
		6.4	Improved signage and marketing for RHSC service		23/09/2019	14/10/2019	Communication in place on site	CLOSED	No	Yes					
		6.5	HACCP		23/09/2019	08/10/2019	Chef now on site: completion of HACCP	CLOSED	No	Yes					
		6.6	Explore options for third party support for catering		23/09/2019	18/11/2019	Discuss with Edinburgh Childrens Hospital Charity - Waiting for feedback from patients and visitors (4 week trial). Explored with charities, no takers.	CLOSED	No	Yes					
		6.7	Replace dining room furniture		21/10/2019	31/10/2019	Ordered for delivery w/c 28/10/19 - DELIVERED	CLOSED	No	Yes					
7	Parent accommodation	7.1	Improve environment of parents accommodation	G Curley	23/09/2019	02/10/2019	Thorough clean of parents accommodation, and enhanced cleaning within domestic services schedule.	CLOSED	No	Yes					
		7.2			23/09/2019	31/10/2019	Parent accommodation reviewed. Refurbishment and new furniture requirements identified.	CLOSED	No	Yes					
		7.3			23/09/2019	30/09/2019	Improve communication between FM team and Family Support re use of and care for parent accommodation. Protocol agreed	CLOSED	No	Yes					
8	Domestics	8.1	Domestic services, including increased pressure on staff to make existing environment as good as it can be.	G Curley	23/09/2019	30/09/2019	Review current provision with a view to providing enhanced service to compensate for condition of the environment.	CLOSED	YES	Yes					
		8.2			23/09/2019	10/10/2019	Ensure all staff only areas are in receipt of full staffing levels.	CLOSED	YES	Yes					
		8.3			23/09/2019	30/09/2019	Complete analysis of Facilities Monitoring Tool.	CLOSED	YES	Yes					
					23/09/2019	30/09/2019	Transfer of new equipment from RHCYP to RHSC/DCN	CLOSED	YES	Yes					
		8.4			21/10/2019	01/12/2019	Moved to disposable mops to avoid double dipping from 20/12/19. Note: laundry of mops does not remove C Dif.	CLOSED	YES	Yes					
9	Logistics	9.1	Logistics services	G Curley	23/09/2019	06/01/2020	Contract with G4s has ceased, and this is now the responsibility of NHSL Logistic Services.	CLOSED	No	Yes	Sasha Hill 19/12/19				
		9.2			23/09/2019	30/09/2019	Secondment opportunity for supervisor vacancy now being progressed.	CLOSED	No	Yes	Sasha Hill 10/01/2020				
10	General estate	10.1	DCN - General state of facilities; walkround and identification of works	G Curley	23/09/2019	05/10/2019	(these do not work in Ward 33 due to lack of pressure) This has NOT had any adverse effect	CLOSED	Yes	No					
			23/09/2019		30/11/2019	DCN ward 33 has 2 showers out of use, leaving only one shower available, so 6 beds closed. Ward 33 capped at 10-12 patients (depending on mobility).	CLOSED	Yes	No	Update James Picken 16/12/19					
			23/09/2019		30/11/2019	Ward 32- Painting completed. Flooring patches no date yet still to be confirmed.	CLOSED	Yes	No	Update James Picken 16/12/19					
			23/09/2019		11/11/2019	Neurophysiology - Consultant office painted. Senior physiologist office to be painted w/b 4/11/19. Carpet due to be replaced on 9/11/19. DCN Admin corridor and Directorate Asst office carpet to be replaced 9/11/19.	CLOSED	Yes	No						
			25/10/2019		06/01/2020	Upgrade/replacement to DCN Fire System commenced with ward 33 in November. 4-6 weeks further work anticipated from 06/01/20. To date Alarm System installed on Level 4 & 3. Panel installed on Ground Floor DCN Entrance and Floor 3&4 have been connected. Ward 32, Lvl 2 started 4/2/20. All floors to be completed and connected by 03/04/20. DCN incorporated in updated Fire Alarm Test Programme and Sounder Levels being monitored in all areas. Fire Safety/Estates working with Contractors re Programme for Doors and Surveys for Fire Stopping. DCN Fire alarm work on Schedule Floors 3 & 4 complete tested and connected they are 30% complete in Ward 32 Actions Complete	CLOSED	YES		Update Fiona Mitchell / Peter Campbell 09/03/2020					
			23/09/2019		30/11/2019	DCN OPD painting and disabled toilet upgrade due to complete 20/12/19.	CLOSED	Yes	No	Update James Picken 06/01/20					
			23/09/2019		04/02/2020	DCN x-ray corridor to be painted mid January after bi-plane removal and install (3.1 above)	CLOSED	Yes	No	Update Fiona Mitchell / Peter Campbell 09/03/2020					
			23/09/2019		31/10/2019	Actions Complete	CLOSED	No	Yes						
						RHSC - General state of facilities; walkround and identification of works									
						Equipment transferred from new RHCYP to existing site to benefit patient care/experience.	P Campbell	01/10/2019	31/12/2019	Equipment transferred included patient easy chairs, Mon900, Dia900, trolleys, fridge, freezers, shower trolleys, wheelchairs, bracket table and sedation tubing. Lot of work around transferring back top up items and various high tariff/specialist order sundries.	CLOSED	Yes	No	Peter Campbell	
		Unannounced HEI inspection of RHSC and DCN took place 22/10/19-24/10/19.	A McMahon	22/10/2019	15/01/2020	The HIS Report following the unannounced HEI inspection was published on 15 January. At RHSC, the Requirements and Recommendations are in our Action plan which is being managed through the RSHC Infection Control Committee and also being overseen by our Site Liaison Committee, in terms of the requirement to ensure the fabric of the building is maintained. Most actions to be completed by 28/02/20 Actions Complete	CLOSED	Yes	Yes	Update Fiona Mitchell / Peter Campbell 09/03/2020					
		Fire and Rescue Service (F&RS) Audit of RHSC Sciennes premises	F Mitchell	20/11/2019	18/12/2019	CA - Ref SFRS Audit (Nov 19 above) subsequent Action Plan was completed in conjunction with Site Management, Estates Services and Local Staff, timescales were agreed and completed and action Plan was passed to SFRS. The SFRS Letter was FSA02 and was not requiring an Action Plan to be passed to SFRS however due to the "Operations Notification Form" being placed on the Basement Level (Rescinded following work bring completed by Fire Safety / Estates Services) SFRS were sent Action Plan to ensure works completion. - Fire Safety Update Follow up Audit of Basement undertaken with SFRS 21/01/2020, Site Fire Adviser Billy Hamilton and Jamie Ramsey, SFRS visit to ensure that works that had been undertaken resulting in the lifting of the Action Plan/Notice was maintained. FM - The Scottish Fire and Rescue Service revisited RHSC on Tuesday 14 January, to inspect the Basement Corridor and have confirmed that they are satisfied that the required remedial action has been completed.	CLOSED	No	Yes	Fiona Mitchell 24/01/2020 Clive Armstrong 24/01/2020	Update	Service sustainability			

Staff												
11	Communication with staff	11.1	General staff communications, including annual leave, pay, expenses, car parking, delaying retirement.	J Butler	23/09/2019	10/07/2019	Frequently asked questions updated and published on intranet 10/07/19	CLOSED	Yes	Yes	On the list shared by Calum Henderson following CabSec's visit.	Service sustainability
12	Staff wellbeing	12.1	Supporting staff wellbeing	J Butler	23/09/2019	18/11/2019	Regular Exec Team/Senior Team Walkarounds are established. Improvements to facilities and environment in RHSC and DCN have been warmly welcomed by staff. As has the reinstatement of the dining room at RHSC. The local staff health and wellbeing programmes continue on both sites as well as access to the wider corporate staff wellbeing programmes. There is good Partnership support from the trades unions. The Employee Director and Site Directors agree that this action can now be closed, with support for staff wellbeing being business as usual. We will be having a massage therapist in DCN for the next 3 weeks, and in January are going to have yoga breathing coaches and a stress relief workshop.	CLOSED	Yes	Yes	Closed 02/12/2019	Service sustainability
13	DCN staffing	13.1	In light of nursing staff leaving DCN in anticipation of the move to RIE, the workforce has been reduced. There is a need to ensure we retain current staff, and quickly fill vacancies.	G McAuley / M Pearson	07/10/2019	31/03/2020	Ongoing action. Over 50% of vacancies in nursing (band 5 and 2) and administration have been filled - offers made and start dates confirmed. There are 9 x BS vacancies and mat leave. Fire safety works ongoing on Wards 31/32/33. Then they will move to DCN Xray and	OPEN	Yes	No	Hester Niven 18/02/2020	Service sustainability
		13.2	Anaesthetic out of hours rota cover for DCN. Provision of robust out of hours anaesthetic rotas for the ~6-9month period between DCN team moving and Paediatric team moving to the RIE site. Originally plan was for paediatric and neuro trainee rota to combine.	M Carr	25/11/2019	01/04/2020	9 applications received for Clinical Fellow posts which were shortlisted on 17th January. Interview's now confirmed for 11th February 2020. Interviews held last week and 4 clinical fellows appointed. Start dates TBC	OPEN	Yes	No	Kirsten Burns 19/02/2020	Service sustainability
Patients and public												
14	Patient appointments and communications	14.1	Inform patients of any changes to appointments	J Campbell	09/07/2019	31/07/2019	All patients with appointment in July and August were contact by phone to reschedule to the old sites. All further appointments have been notified by letter.	CLOSED	Yes	Yes	On the list shared by Calum Henderson following CabSec's visit, specifically re some DCN patients attending RIE	Service sustainability

From: [Cosens, Sorrel](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Chief Medical Officer](#); [Henderson C \(Calum\)](#); [Colin Sinclair](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); [Gordon James](#); [Graham, Chris](#); [Jacqui Reilly](#); [Jim Miller](#); [Joyce, Alex](#); [Judith Mackay](#); [McMahon, Alex](#); [Morgan, Mary](#); [Peter Reekie](#)
Cc: [Roxanne Gallacher](#); [Trotter, Audrey](#); [Walker, Anna](#); [Murray, Fiona](#); [Nicol, Nadine](#); [Little, Kerryann](#)
Subject: RHCYP & DCN Oversight Board - 26th March 2020 - 8am
Date: 24 March 2020 16:54:03
Attachments: [RHCYP DCN Oversight Board 260320.pdf](#)

Dear All

Please find attached the papers for Thursday morning's meeting. This will be a virtual meeting and the dial-in details will be circulated as soon as possible.

Best wishes,
Sorrel

Sorrel Cosens
Capital Programme Business Manager
NHS Lothian



The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service. For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 26 March 2020, 8:00 – 9:30am

Venue: Dial-in details to be confirmed

AGENDA

1.	Chair's Welcome and Introductions	FMc	v
	Apologies:		
2.	Minutes of previous meeting for approval: 12 March 2020	FMc	*
3.	Matters Arising	FMc	V
4.	Senior Programme Director's Reports		
	4.1 Highlight report	MM	*
	4.2 Progress with outstanding review actions	MM	*
5.	Facility Availability		
	5.1 DCN Readiness for Occupation	MM	*
	5.2 DCN Service Migration	TG	V
6.	Progress with Ventilation Remedials and Fire Enhancements		
	6.1 Design progress	BC	V
	6.2 Commercial update to NHS Lothian Finance & Resources	SG	*
7.	Emergency Department Ventilation & High Consequence Infectious Diseases in RHCYP		
	7.1 Feasibility study update	BC	V
	7.2 NSS Review of Isolation Room in RHCYP&DCN ED	JR/GJ	*
8.	Service Continuity on Existing RHSC & DCN Sites	TG	*
9.	Communications	JM	
10.	Any Other Competent Business		
	10.1 Impact of Covid-19	FMc	
11.	Date of Next Meeting		
	Thursday 9 th April 2020, 8am		

* = paper attached

v = verbal report

p = presentation

= paper to follow

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 12 March 2020 in Meeting Room 6&7, Waverley Gate, Edinburgh.

Present: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Miss T. Gillies, Medical Director, NHS Lothian (until 9am); Mrs S. Goldsmith, Director of Finance, NHS Lothian; Mr C. Henderson, Scottish Government and Mr G. Archibald, Joint Staff Side Representative.

Present by Telephone: Mr C. Sinclair, Chief Executive, NHS National Services Scotland

In Attendance: Ms M. Morgan, Senior Programme Director; Mr B. Currie, Project Director, NHS Lothian; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Mr P. Reekie, Chief Executive, Scottish Futures Trust; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

In Attendance by Telephone: Ms J. Mackay, NHS Lothian Director of Communications and Mr I. Storrar, Health Facilities Scotland

Apologies: Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side); Prof J. Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work; Professor A. McMahon, Nurse Director NHS Lothian; Mr G. James, Director of Facilities, Health Facilities Scotland and Mr J. Miller, Health Facilities Scotland.

1. Minutes of previous meeting – 27 February 2020

1.1 The minutes of the meeting held on 27 February 2020 were accepted.

2. Matters Arising

2.1 Response to queries on the draft terms of reference for the public inquiry - Noted that comments, including hospital name, had been fed back. Terms of reference were still being worked through and consulted on with families. Consultation closes on 13/03/20 and would then work its way through the parliamentary process. The final terms of reference should be clearer in the next couple of weeks.

3. Senior Programme Director's Report

3.1 Workstreams Report

- Noted that there were a number of approvals required.
- Considerable progress with actions since the last update and a workshop had been held to cover what could now be closed out and disposed of.
- Progressed actions had included theatres, anaesthetics and scrub extract and air pressure balancing in relation to corridor doors. Also included the progress with the final validation of air handling units.
- Plan was to now move to migration planning and reporting process away from workstreams, any residual actions would then be consolidated into a single tracker.

Water Safety

- Substantial progress made and actions redesigned or disposed of to other groups. Moving towards business as usual mechanisms including testing of outlets.
- There are processes in place to demonstrate control and assurance. The local water safety group was meeting weekly, reporting through NHSL and monthly to ESG
- Remains outstanding actions in relation to Arjo baths and Shower Hoses. Arjo bath actions have been moved to DCN, Children's and CAMHS migration plans as the baths would be replaced and disinfected just prior to service occupation. For shower hoses, compliance sign off from Scottish Water was expected in the near future.
- The Oversight Board approved the mechanisms in place in terms of water and agreed to closing off the water safety workstream action tracker once the shower hose compliance was confirmed.

Fire Safety

- Noted that the MVC works in DCN were underway.
- Changes for CAMHS and Children's had been submitted to IHSL and the programmes were awaited.
- It was agreed that remaining fire enhancements would now be moved over to service migration plans, to be in place prior to occupation.
- Reporting on Fire Safety would now be by exception only.

Electrical

- Excellent progress made and noted that evidence statement was expected this month. Noted that the expected evidence statements from IHSL were confirmatory and that there were no major items remaining outstanding.
- Noted that the MPX authorising engineer was currently absent due to ill health. Alternative arrangements for sign off may be necessary to avoid administrative delay.
- Agreed that the electrical workstream could be closed off upon receipt and appropriate certification of evidence statements by the MPX authorising engineer.

Management Actions

- Agreed to move any remaining management actions over to business as usual mechanism and close action tracker.

3.2 Highlight Report (New Format)

- The new format report with critical paths and exception reporting sections was noted.
- It was agreed that Coronavirus Risk should be moved to 'very high' due to the certain impact this will have on the project, putting pressure on timelines.
- Noted that migration date for children's remains unclear at this time and unable to be confirmed, part of this was around the unknowns involved with possible HCID ED works.
- Due to Coronavirus pressures at WGH site, expediting of DCN works to be investigated.
- Noted that Helipad day/night practice flights would take place on 17/03/20, would then know if this was a high risk or not.
- Noted that migration and commissioning plans would now be submitted to the Oversight Board as appropriate.
- Noted that SA2 would be agreed (not signed) by 18/03/20; go to NHSL Finance and Resources Committee on 25/03/20; then come to the Oversight Board meeting on 26/03/20.

4. Progress with Ventilation Remedials to Paediatric Critical Care and Ventilation Enhancements to Haematology + Oncology

- Noted that paper went to ESG on 09/03/20 – this version was slightly behind design now, as had been based on the concept design report of 20/02. The paper reflected requirements set out in the HVC and the responding requests for information; this would be used to insert into the NEC4 contract scope.
- Workshop started with IHSL and supply chain in January 2020, have had 5 meetings up to the production of the concept design report and now meeting weekly as the move into detailed design phase progresses.
- Noted that there was potential for the scope to be adjusted going forward – RFIs were part of the scope.
- Noted that ESG had felt unable to support moving forward based on the summary position from the key stakeholders – Concept design report did not give assurance that they could safely say that their response would deliver NHSL requirements.
- In relation to costs there was now firmer indications of falling within the range anticipated, going forward.
- Noted that key issue for progressing work onsite was the ordering of the air handling units. This was anticipated to be at the end of the month. A mitigation measure would be to do the placing of the order through a letter of intent. Appreciated that there would be no difficulty in agreeing to order the units as long as this has technical advisers' agreement
- Noted that ESG had received a presentation on Monday on the Imtech works. The teams were working and collaborating well, recognised that there were some significant points of uncertainty but positive progress being made.
- Other piece of work that needed to be pulled through this is the agreement on completion criteria as this would provide further assurance.
- It was agreed that the proposed completion criteria come back to Oversight Board with appropriate sign off from those required.
- Noted that SA2 needed to be signed off before works starts

5. Emergency Department Ventilation & High Consequence Infectious Diseases in RHCYP

- Noted that the report reworks and expands on the previously discussed SBAR and sets out the challenges around ED room design; the pressure regime within ED that allows for spaces to be used as treatment rooms where possible and issues around when negative pressure is required.
- Noted that there was potential for impact on cost and project timeline
- Noted that the preferred option was Option 4 – **“Provide new switchable negative pressure extract system with HEPA filtration in rooms 5 and 6 (G-A1-012 and G-A1-014.) This will involve the provision of additional ducting, and ancillary services.”** This would require a significant piece of work. Added into this would be the challenge from coronavirus, which would also affect the timeline.
- Noted that HPS/HFS colleagues are not supportive of switchable pressure cascades as international guidance is against this.
- Clarified that the risk this work would address will be clinical and departmental, however the impact would be on project delivery. It was for the Oversight Board to consider this separate piece.

- Currently there was no idea of what this work would entail and a MVC would be required to take forward the plan for a solution.
- Clarified that current RHSC site does have suitable arrangements in place as building note advised that EDs should have positive pressure.
- IHSL to be asked to scope out LVC works, noted that the earliest work could start would be upon completion of HVC107 work and any coronavirus impact remained unknown.
- The Oversight Board noted the preferred option and current position, further information was requested for the next meeting. To include reference to:
 - Risks and consequences against the solutions
 - Implications of doing the work post-entry
 - Mitigation against COSH consequences
 - Describe the basis of the low value changes and possible impact on the programme

6. Service Continuity on Existing RHSC & DCN Sites

6.1 Action Log Dashboard was noted.

7. Communications

7.1 Proposed Communications

- Noted that the Government inspired question would be at 2.30pm today and that the letter to the Health and Sport Committee along with NHSL letter to staff on DCN timing would all go out at the same time.
- The Oversight Board noted the hard work by colleagues to get this point in terms of moving forward.

8. Any Other Competent Business

8.1 None.

9. Date of Next Meeting

9.1 Thursday 26th March 2020, 8am, Room 5, Waverley Gate.

Senior Programme Director's Report

DCN/RHCYP Project (Draft v1)



HIGHLIGHT REPORT

Date 20/03/2020

Senior Programme Director | Mary Morgan

Overall Status / Update	RAG
This is the second report representing a transition from system workstreams' reports to delivery against services migration timelines. The programme has been set to green status as this is the milestones are on track for delivery of the overall planning assumptions. Outstanding workstream actions continue to be delivered – tracker attached	Green

Milestone	Planned Completion Date	RAG
Transition from system workstreams to service migration activity	20/03/2020	Green
Confirmation of impact on DCN of HVC 107 works	20/3/2020	Blue
"Go – No Go" decision for DCN migration	09/04/2020	White
Completion of MVC 112 DCN Fire Enhancement works	07/05/2020	Green
Completion of DCN LVCs and minor works	07/05/2020	Green
DCN Migration	31/05/2020	White
Completion of MVC (tbc) CAMHS Fire Enhancement Works	tbc	White
Completion of MVC (tbc) CAMHS LVCs and minor works	tbc	White
"Go – No Go" decision for CAMHS migration	tbc	White
CAMHS Migration	tbc	White
Supplementary Agreement 2 (SA2) agreed	18/03/2020	Amber
HVC 107 Air Handling Units ordered	20/03/2020	Amber
Completion of HVC 107 construction works	03/09/2020	White
Completion of contractor's commissioning and validation HVC107	23/11/2020	White
Completion of MVC (tbc) RHCYP Fire Enhancement works	tbc	White
Completion of RHCYP LVCs and minor works	tbc	White
Clinical Scoping/Risk Assessment of Emergency Dept works for HCID	20/03/2020	Green
Submission of change notification to IHSL	tbc	White
"Go – No Go" decision for RHCYP migration	03/10/2020	White
RHCYP Migration	tbc	White

Exception to	Planned End Date	RAG	Cause	Consequences	Recommendation
Supplementary Agreement 2 (SA2) agreed	18/03/2020	Amber	Ongoing negotiation relating to contractual requirements and readiness of technical scope documents	Potential overall programme delay	Accept delay to ensure risk mitigation.
HVC 107 Air Handling Units ordered	20/03/2020	Amber	Design submission and review delay	Minimal impact on programme provided new date achieved	Accept change to planned date of 27/03/20. Vesting agreement in process.

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Reputational impact on NHSL caused by delay, adverse media reports and opinion of internal and external stakeholders	Executive Steering Group meets weekly and is attended by NHSL Communications Director. Ongoing engagement with stakeholders formally and informally Engagement with Cabinet Secretary	Very High	Very High
R	Performance of Project Co & Supply Chain (Hard FM) - Project Co. fail to meet Service Level Specification (Post Completion).	Standard form payment mechanism to hold Project Co. to account is agreed. Contracts Manager in post to monitor and measure performance. Additional support for Programme from HFS, SFT and NHSL. Additional input and support at every level given to Contractor.	Very High	Very High
R	Coronavirus outbreak adversely impacts programme delivery: Sickness absence of project team and contractors or diversion of project team and or project resources.	Circulation of information throughout NHS. Continue to monitor and escalate any concerns.	Very High	High
R	Proceeding with DCN move without certainty on any adverse implications on day to day DCN operations arising from Ventilation Works. Either the DCN move is postponed very late or issues emerge post move.	Impact survey ongoing anticipated by end of March 2020. Ongoing monitoring of key services over installation period. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management. Experience in Project Team and Contractors of working in live clinical environments. Weekly Meetings of relevant parties Daily safety briefs Channels of communication including Stop Protocol	High	High
R	Delay in remedial and enhancement works delays transfer of RHSC & DCN into the building	Experience gained from late postponement of previous move. Engagement between Project Co, Contractor,	High	High

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
		NHSL Project Team and Operational Management. Weekly meetings: Internal with Project Team and Operational Management and Technical Meeting with Design Team and Contractor. Validation activities run concurrently with Commissioning Activities. Expanded NHSL Facilities Commissioning Team.		
I	Delay in completion of the programme has generated additional costs.	Some costs are known and others are being collated. Eg aborted move, costs to services in maintaining and operating in existing accommodation, Remedial works costs Scottish Government have made provision for funding.	High	High
R	Reprovision of critical care ventilation requires full design, construction and commissioning within programme identified timelines.	Design Group established to oversee and deliver. Critical Care and IPCT Clinical Representation on Group High Value Change submitted detailing NHSL requirements.	High	High
R	Provision of enhanced Haematology & Oncology Department ventilation requires full design, construction and commissioning within programme identified timelines.	High Value Change submitted detailing NHSL requirements. SBAR & Risk Assessment completed involving Clinicians & IPCT. Design Team and contractors appointed. IHSL have agreed to undertake.	High	High
R	Operational Board Changes (DCN Priority) These essential Board Changes may not be implemented in time to enable migration of DCN.	NHSL Project Team continue to monitor delivery of these works through IHSL and their Hard FM Contractor, BYES. BYES have a schedule of implementation. Reviewed weekly.	High	High
R	Potential impact of Helipad use: fumes and downdraft affecting services on campus.	Trial flights by Bristows and Babcock being planned Feb/Mar 2020. Helicopters limited to 9tn maximum weight. Helipad is 25m ² , limits size of helicopters that can utilise. Various reports commissioned into potential impact. SOP developed and relevant action cards.	High	High

RAG Description Key (Time Status)	
WHITE	Activity has yet to commence
RED	Key milestones will be or have been delivered outside tolerance to agreed baseline

AMBER	Forecasting that there is a significant risk that key milestones will be delivered outside tolerance on agreed baseline
GREEN	All milestones forecast to be on time or early
BLUE	Task Complete

RHCYP+DCN - Action Log Dashboard

20/03/2020

Actions closed since last dashboard : 3

Status against Target Date

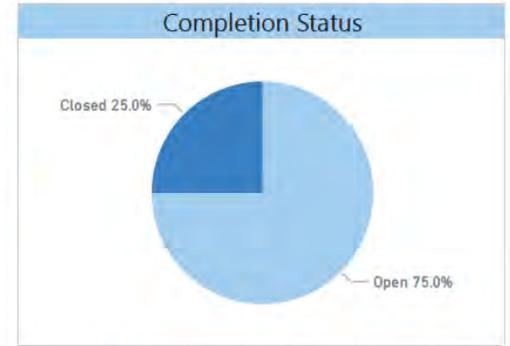
Due Status

- Closed
- Actions on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



OPEN
12

CLOSED
4



Water

OPEN
0

CLOSED
1



Ventilation

OPEN
5

CLOSED
3



Electrical

OPEN
7

CLOSED
0



RHCYP + DCN

Collated Outstanding Actions

Revised Date: 20/03/2029

Current Date for tracking: 20/03/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to Close	Open / Closed	Priority to RHCYP	Priority to DCN
Ventilation										
V3	Recommissioning of ventilation system.	1	Confirmation is required that all ventilation systems have been balanced and re-commissioned to meet the requirements of the environmental matrix.	NHSL / IOM	11/09/2019	31/03/2020	<p>MPX are recommissioning every system, DCN is complete and returned to the normal set points.</p> <p>IOM to confirm revalidation of the ventilation in DCN. IOM DCN re-validation complete with the exception of OPD on the ground floor. To be completed 25/3/20.</p> <p>IOM to confirm revalidation of the ventilation in RHCYP.</p> <p>BYES are awaiting commissioning and validation certification from MPX to return AHU's to full service. (Duplicate for item 41 - 74)</p> <p>Due to ongoing issues with AHU being switched off, IHSL to coordinate all parties and confirm when systems are available for validating.</p> <p>NOTE Environmental Matrix is not the correct reference point (i.e. still refers to 4ac/h for Critical Care). Mandatory contract conditions are.</p>	OPEN	YES	YES
V6	Some areas are not completed and ready for handover. E.g. ceiling tiles still missing	1	CT & Fluoroscopy only areas still affected due to Turnkey works	NHSL / IOM	25/06/2019	31/03/2020	<p>MPX confirmed works complete and awaiting confirmation after theatre works (V30/V33) have been finished (Theatre 36). NHSL noted that area requiring testing is provided by another AHU system and can be commissioned by MPX. IOM revalidating next week (wc 23/3/20) and aiming to have the action closed by 27/3/20.</p> <p>BYES can assist putting tiles in place where necessary if these are identified as works complete above ceilings.</p>	OPEN	YES	YES
V12	Very limited extract in theatre corridors. Corridors are not at 0 absolute pressure and do not meet required 7 ach/hr (SHTM03-01 part A appendix 2 Table A2). No escape for surplus air. Could impact on open door protection. Pressure in corridors is pushing fire doors open.	1	To be reviewed by IPCT, All pressure Cascades are compliant.	MPX		31/03/2020	<p>MPX have submitted further design information and NHSL have provided comments. NHSL requested/escalated outstanding TUV-SUD response to NHSL comments. - MPX are progressing with the work on the basis that the design meets criteria.</p> <p>MPX confirmed works complete. MPX H&V will carry out commissioning after 2nd March, NHSL reaffirmed the corridor is to be provided 7 ACH balanced. IOM to consider full revalidation of theatres with all parties present. MPX to confirm to BYES when commissioning certificates have been uploaded to Zutec.</p> <p>Confirmed in meeting 4/3/20 that works have not been successful. MPX are reviewing ventilation rates and initial works are looking positive however further physical works within the corridor may be required. For review 27/03/20.</p>	OPEN	YES	YES

V38	The "maintenance by-pass" associated with the AHU requires to be fully detailed and proven.	1	<p>Details required include -</p> <ul style="list-style-type: none"> - Full written details for each system - Identification of systems which do not have a secondary source of ventilation. - Identification of all spaces which will have no mechanical ventilation when by-pass is initiated. - The minimum and maximum estimated times for a maintenance by-pass and for recovery of a major fault. - The impact of these arrangements on the fire strategy. - The strategy for advising clinical staff in the areas affected. - Commissioning and validation certificates for the changeover system, all associated controls, revised room volumes and pressures. - The clinical service plan should reflect the operational procedures in the event of failure of an air handling unit. 	MPX	11/09/2019	24/11/2019	<p>04-08 and 04-09 work in bypass and a risk assessment is required for only having 50% of air changes in clinical rooms in bypass mode, however, in bypass mode isolation rooms achieve required pressure cascade.</p> <p>04-06 and 04-07 bypass has been tested and MPX are to confirm the results. To review position following review of the test results.</p> <p>MPX issued report on By-pass arrangement on 17/10/19. NHSL provided comments on 4/11/19. Overall report is unsatisfactory, works to critical care and haematology / oncology will resolve some items but not Level 3.</p> <ul style="list-style-type: none"> - BYES to review SOP. - MPX to identify impact to air change rates on a per room basis. <p>Following confirmation of the above NHSL to review the clinical risk assessment for impact in bypass mode and in total failure mode and develop a plan for maintenance downtime.</p>	OPEN	YES	YES
V41	The AHU require to be compliant with healthcare guidance,	1	Light switches to be at an accessible height.	IHSL	11/09/2019	06/04/2020	<p>Remedial works started w/c 12/10/11.</p> <p>AHU snagging review started on the 10th March with 11 being reviewed. These 11 have passed with minor snagging comments to resolve. The next review is planned for 24th March and a further review is planned for 31st March.</p> <p>BYES will request AE for Ventilation attends to fully inspect each AHU. Manufacturers certification and updated GA's etc. Are required.</p> <p>NHSL asked BYES to complete a clean of all AHU's. BYES confirmed and prioritising DCN AHU's but all AHU's for theatres will be postponed until IOM have validated the theatre corridor ventilation.</p> <p>THIS APPLIES TO ISSUE NO'S V41 TO V74 WITH EXCEPTION OF V64.</p> <p>Item confirmed to be closed subject to verification after all AHU remedial works undertaken. Acknowledged by all meeting members (Please refer to 04/10/19 Ventilation Meeting Minutes).</p>	OPEN	YES	YES
Electrical										
E7	HV and LV Switch room escape lighting	1	Ensure that escape lighting and signage in HV and LV switch rooms has been provided to BS 5266 and the Health and Safety (Safety Signs and Signals) Regulations 1996	HFS	06/11/2019	13/03/2020	MPX provided a statement on 4/3/20 (MPX-GC-030715. HFS are currently reviewing	OPEN	YES	YES
E8	The HV switch room has some specific installation issues which require to be addressed	1	Fire separation as per SHTM 06-01 7.18	HFS	06/11/2019	13/03/2020	MPX provided a statement on 5/3/20 (MPX-GC-030717). HFS are currently reviewing	OPEN	YES	YES
E13	The UPS and output switchboards are a significant distance from the point of load. From this point there is no alternative supply within the internal infrastructure thereby increasing the potential for a single point of failure contrary to clause 4.6 of SHTM 06-01.	2	NHS Lothian should require IHSL to provide agreed mitigation strategies to meet SHPN 00-07 and SHTM 06-01 to avoid internal failure of the single electrical supply to the critical electrical services such as Medical IT cabinets serving life support and other critical systems.	HFS	30/10/2019	13/03/2020	MPX provided a statement on 6/3/20 (MPX-GC-030718). HFS are currently reviewing	OPEN	NO	NO
E15	Rising main bus bars are not sealed between floors.	1	There are at least two risks associated with this. One is resilience. If there is a fire or catastrophic event then this will traverse all floors and there is the potential for tools/material to drop to lower levels. Access to equipment is difficult with the risers and could be contrary to BS 7671 132.12 for accessibility inspection, testing and repair.	MPX / BYES	06/11/2019	13/03/2020	<p>The information provided (NHSL-GC-004253) does not address the point raised. IHSL have not provided a statement.</p> <p>A resilience statement is required from MPX.</p> <p>BYES have confirmed there have been no issues identified over the 12 months of FM service with regards to planned maintenance activities.</p>	OPEN	YES	YES

E16	Modular Wiring System	3	Fire integrity is required to be checked and confirmed	HFS	06/11/2019	13/03/2020	MPX provided a statement on 6/3/20 (MPX-GC-030719). HFS are currently reviewing	OPEN	YES	YES
E16	Modular Wiring System	6	Concern is raised that fixing bolts/screws could damage the single core cables in the trunking.	MPX	06/11/2019	13/03/2020	MPX to confirm there is no damage to single core cables and fixing methods used will not effect the cables. BYES have provided a statement the AV/LV Authorising Engineer did not raise any concerns during the audit in Jan 2020.	OPEN	YES	YES
E18	Medical IT Systems	5	Medical IT system cables are considered essential and covered by BS 7671 chapter 56, however this does not appear to be the case in the installation as they are not fire rated or segregated from other cables.	MPX	06/11/2019	13/03/2020	MPX will obtain a closing statement from the designer and circulate upon receipt.	OPEN	YES	YES

DCN/RHCYP Project

DCN Readiness for Occupation

Introduction

The extant planning assumptions for DCN migration are as follows:

Confirmation of impact on DCN of HVC 107 works	20/3/2020	Blue
“Go – No Go” decision for DCN migration	09/04/2020	White
Completion of MVC 112 DCN Fire Enhancement works	07/05/2020	Green
Completion of DCN LVCs and minor works	07/05/2020	Green
DCN Migration	31/05/2020	White

However, the Senior Programme Director asked IHSL if the works for required for occupation readiness could be completed earlier than planned due to the potential impact of Covid19 either in terms of delay to the programme plan or in order to expedite readiness for occupation sooner than anticipated.

Construction Response – MVC 112 and DCN LVCs

In response, IHSL have liaised with contractors and have advised as follows:

Completion of MVC 112 DCN Fire Enhancement construction works	17/04/2020
Completion of MVC 112 DCN Fire Enhancement validation and testing	24/04/2020
Completion of DCN LVCs and minor works	17/04/2020

The intention is that NHSL project team will arrange for IOM (ventilation) and Oakleaf (Fire) validation to occur slightly behind the construction validation and testing and to complete 27/04/2020.

Water

The water workstream has been moved to “business as usual”, minimal numbers (3) of outlets remaining colonised.

A full bore flushing of the water system to remove particles will be complete by 27/03/2020. The full system disinfection will follow directly thereafter, allowing a full programme set of testing results to be available by 24/04 2020. Any identified colonisation would be managed through business as usual procedures and processes.

Scottish Water formally approved the solution for shower hoses as complaint on 20/03/2020.

Medical Gases

Medical Gases are to be recommissioned prior to occupation. This can be timetabled by NHSL Project Team prior to 24/04/2020.

Confirmation of impact of HVC Critical Care and Haemato-oncology works on DCN.

The following statement which accords with the ongoing design activities has been received from IHSL:

Further to our recent discussions I am able to confirm that, to the best of our knowledge, the planned work within Paediatric Critical Care and Haematology/Oncology (as described within HVC 107 and the associated RFI's issued to date) will not impact the DCN inpatient area.

Gordon Morrison (17/03/2020)

Other Ventilation Works

IOM validation of the environmental matrices across DCN (incl theatres) has an imminent expected completion date of 03/04/2020. There is no indication of any reason that the building cannot be occupied.

The helicopter test landings proceeded uneventfully.

Any Outstanding Issues

A process of room by room appraisal and "snagging" identification will be undertaken by the project team to ensure that any snagging rectifications can be completed by 24/04/2020. It is expected that there will be some minor works (such as minor blemishes on walls) that are outstanding – this would be the case at any point of occupation. It is not expected that any of these would prevent DCN occupation.

Recommendation

The Senior Programme Director recommends that NHSL agree the building readiness revised timelines and prepares a migration and mobilisation plan to align with the options for occupation that this presents.

Mary Morgan

Senior Programme Director

20/03/2020

NHS Lothian

Finance and Resources Committee
25 March 2020

Director of Finance

**THE ROYAL HOSPITAL FOR CHILDREN & YOUNG PEOPLE, DEPARTMENT OF
CLINICAL NEUROSCIENCES, CHILD & ADOLESCENT MENTAL HEALTH SERVICES –
BUSINESS CASE ADDENDUM - SUPPLEMENTAL AGREEMENT 2**

1 Purpose of the Report

- 1.1 The purpose of this report is to provide Committee members with an update on the current position on completion of the new facility and commercial arrangements with IHSL, and to seek approval from the Committee to the commitment of a capital sum of £6 million to be funded by an additional Board capital allocation from Scottish Government.
- 1.2 Such a commitment will cover the amount that will become payable to IHSL as a result of the implementation of Changes under the Project Agreement to address the ventilation and fire enhancement issues, and upon entering into a Supplemental Agreement (SA2) that sets out the commercial terms between the Board and IHSL that will govern the Changes. These together will allow implementation of the works required to facilitate the opening of the new RHCYP/DCN facility to patients during the course of 2020 and represent a correction to the project outturn cost set out in the already approved Full Business Case.
- 1.3 Any member wishing additional information should contact the Executive Lead in advance of the meeting.

2 Recommendations

- 2.1 The Committee is recommended to approve the commitment of the sums set out in this paper.
- 2.2 The Committee is asked to note the current commercial position.
- 2.3 The Committee is asked to accept the risks set out in section 3 and in the appendix, and support the commercial approach adopted and the assurance processes and mitigation strategies put in place to manage these risks as being appropriate.

3 Discussion of Key Issues

Current Governance Position

- 3.1 Since the report to the Committee meeting of 26 February 2020, the Board has moved forward with finalisation of SA2 and anticipates being in a position to progress to signature of the agreement by late March or early April.
- 3.2 Signature of SA2 will legally commit the Board to providing the necessary funding to IHSL to deliver the requirements of SA2, a value of £4.175 million. At the same time, a commitment of £1.27 million is required to enact the Medium Value Changes (MVCs) that support the enhancements to fire systems. Such funding represents a call of the Board's capital budget of £6 million, including a suitable contingency in addition to the above figures. This sum coincides with the value reported to the Oversight Board and

Scottish Government, forming part of the reported additional cost of delay of £16 million.

- 3.3 The Outline Business Case for the new facility was approved by NHS Lothian Board on 25 January 2012 for submission to the Scottish Government. Their approval was announced by Alex Neil, Cabinet Secretary for Health and Wellbeing, on a visit to the RHSC on 19 September 2012.
- 3.4 The Full Business Case and addendum was approved by the Scottish Government and NHS Lothian in April 2015. The additional expenditure required under SA2 and the associated Changes represent a further correction to the outturn cost of the project that requires a second addendum to be approved. This paper represents that addendum and will, if approved, augment the Full Business Case and allow the final outturn cost to be identified. The sum involved is within the Board's delegated limit of £10 million.

Investment Requirement – Fire Safety

- 3.5 The first element of required investment covered in this paper relates to fire enhancements. The strategy for enhancements to fire safety systems was discussed and agreed at the Oversight Board in October 2019. The NSS review considered whilst not essential, there was an opportunity to enhance fire safety prior to occupation of the facility. Consequently, the Oversight Board accepted recommendations in December 2019 to proceed through the change process to implement the NSS recommendations and enhance the fire systems.
- 3.6 This element will be delivered via three Medium Value Changes, one for each part of the new facility (MVCs 112, 126 and 131), that will be taken forward via the normal Project Agreement processes and consequently do not form part of SA2. However, they require significant capital investment and are included in this paper to provide appropriate governance around the Board's commitments. MVC 112 in relation to DCN with a target value of £499,000; and MVC 126 in relation to RHCYP with a value of £450,000 and MVC 131 in relation to CAMHS with a value of £325,000 were issued to IHSL on 3rd and 4th March 2020. The fire safety element, therefore, carries a value of £1.27m.
- 3.7 This work is programmed to allow completion and validation of the DCN element to be completed to allow for end-May patient transfer, subject to approval to go ahead with the transfer by Cabinet Secretary.

Investment Requirement – Ventilation

- 3.8 The second element of work is the High Value Change (HVC107) for RHCYP – Ventilation and associated fire enhancements, with a capital value of £4.175 million. It is this element that is the principal subject of SA2 and that carries the most significant investment need.
- 3.9 Addressing the ventilation issue identified in the NSS report is a key objective of Scottish Government and the Board, and an essential precursor to allowing full occupation of the facility.
- 3.10 The Board intend to implement the recommendations of the NSS review and the content of SA2 via the implementation of HVC 107 issued to IHSL by the Board that requests amendment to the specification to be delivered by IHSL. The Project Agreement governing the relationship between the Board and IHSL provides for a

clearly laid out process that allows such changes to be requested and implemented, with the precise process differing depending on the value of the requested change.

- 3.11 Because of the unusual set of circumstances present and the interrelationship between the changes requested, which impact the risk allocation between Board and IHSL, the change process is governed by SA2, which details the commercial arrangements that will underpin the implementation of the Change.
- 3.12 A collaborative process has been undertaken through a series of workshops, resulting in IHSL issuing to the Board, on 20th February 2020, a Concept Design Report. This Report will be developed into a Detailed Design Report that will form the basis of a Scope of Works as defined in the NEC 4 contract that will be let between IHSL and their supply chain, and implemented via SA2. These workshops continue weekly, with IHSL having now moved into the detailed design phase.

Assurance Processes

- 3.13 The works will be subject to a rigorous assurance process, both on an ongoing basis during the works as they reach defined milestones and at final sign-off stage.
- 3.14 The table below sets out the parties involved in this process and their responsibilities for delivering the requirement and for providing assurance that the work delivered meets those requirements. All of these parties are working collaboratively as the process moves from the current design stages to the construction phase and into commissioning.

Party	Ventilation works role	Fire Safety MVC role	Responsibility
IHSL			
IHSL	Client for supply chain members, delivery of Change requirements	Client for supply chain members, delivery of Change requirements	Contractor to NHS Lothian under Project Agreement and SA2
George Street Asset Management	Management of IHSL's supply chain and assurance of work undertaken	Management of IHSL's supply chain and assurance of work undertaken	Sub-contractor to IHSL
Pinsent Mason	Legal advisor	Legal advisor	Consultancy appointment by IHSL
Faithful and Gould	NEC4 contract manager and administrator	NEC4 contract manager and administrator	Consultancy appointment by IHSL
Watermans	NEC4 supervisor, responsible for quality of work, tests and inspections required by the Scope	n/a	Consultancy appointment by IHSL
Imtech	NEC4 contractor delivering the works in the Scope and under the MVCs	NEC4 contractor delivering the works in the Scope and under the MVCs	Sub-contractor to IHSL (also principal contractor and principal designer under CDM Regs).
Hoare Lee	MEP design and consulting engineers	MEP design and consulting engineers	Sub-contractor to Imtech
Oberlanders	Architect	n/a	Sub-contractor to Imtech

Party	Ventilation works role	Fire Safety MVC role	Responsibility
Curtins	Structural Engineer	n/a	Sub-contractor to Imtech
NHS Lothian			
NHS Lothian	IHSL's client in delivery of contractual obligations under PA/SA2	IHSL's client in delivery of contractual obligations under PA	Oversight Board and Scottish Government
NHS Lothian internal stakeholders	Internal testing and assurance by project team, clinical and service leads, IPCT, Fire Advisers, Facilities	internal testing and assurance by project team, clinical and service leads, IPCT, Fire Advisers, Facilities	Co-ordinated by NHS Lothian programme management
NSS	Assurance by HFS/HPS	Assurance by HFS/HPS	Scottish Government
Macroberts LLP	Legal advisor	Legal advisor	NHS Lothian
Mott Macdonald	Technical advisor	Technical advisor	NHS Lothian
Thomson Gray	Cost advisor and secondary review of open book construction costs	Cost advisor and secondary review of open book construction costs	NHS Lothian
IOM	Ventilation verifier and validation engineer	Ventilation verifier and validation engineer (interface between fire and ventilation systems)	NHS Lothian
Oakleaf	Fire enhancement verifier	Fire enhancement verifier	NHS Lothian
Turner Professional Services	Authorising engineer	Authorising engineer	NHS Lothian
Other Parties			
Arcadis	Independent tester to provide final sign off that works are compliant with PA/SA2	n/a	Joint appointment by IHSL and NHS Lothian
Hogan Lovell, Currie and Brown	Diligence input	Diligence input	Funder legal and technical advisors
City of Edinburgh Council			Building control and planning

SA2 – Key Issues and Risks

- 3.15 As part of the negotiations with IHSL, the Board agreed that the ventilation works would be undertaken by Imtech on behalf of IHSL using the industry standard form NEC4 Engineering and Construction Contract Option E (Cost Reimbursable) with certain amendments. Given the unique circumstances, there was a need to agree certain changes to the standard risk profile under the Project Agreement. To that end, it has

been negotiated that the NEC4 Subcontract would in effect be 'stepped up' to IHSL but with some changes made to reflect (i) the ongoing relationship between the Board and IHSL under the Project Agreement and, in particular, the need to provide Services to the Facilities (including the Ventilation works); and (ii) an amended risk profile on certain interface issues as documented in the indemnity arrangements.

- 3.16 There are, at the time of writing this paper, certain areas within SA2 that are not yet agreed, and so pose risks to the Board if lack of agreement persists or if the Board is unable to obtain its preferred position. Critically, the role of IHSL as client to Imtech, and the responsibilities and risk allocations that accompany this, has crystallised recently as a key concern with further negotiations anticipated. These risks and the measures put in place to mitigate them are highlighted in the appendix and a verbal update will be presented to the Committee.
- 3.17 The pass-down of service provision obligations to Bouygues is currently a critical issue, with no agreed position reflected in the SA. Operational Costs once works are completed are also at risk of increasing if Bouygues consider that the resulting new position requires additional maintenance and life cycle input. This effect is currently unquantified and requires engagement by Bouygues that has been largely absent to date.
- 3.18 The works to be carried out under SA2 are driven by a Scope that, if inaccurate, will place the burden of risk on the Board rather than IHSL.
- 3.19 The programme and costs of the works are on a target basis. There is limited information currently available in the SA and underlying NEC contract, creating a risk to both programme and cost certainty. This risk can be further mitigated, but not eliminated, by ensuring that the Detailed Design Report element of the Scope is developed as far as is reasonable at the time of agreement to ensure control over changes both in terms of time and cost. The submission of the Detailed Design Report is now being assessed by the project team and assurance stakeholders, with amendments being discussed with IHSL.
- 3.20 A range of Compensation Events exists under the SA that will allow IHSL more time or money if any of the events is realised.
- 3.21 The Board has taken on certain additional risk in connection with interface disputes between Imtech, Multiplex and Bouygues and also some additional risk associated with matters excluded from the NEC Contract in accordance with the indemnity provisions agreed in December when the Initial Engagement Letter was agreed. These are set out in more detail at Appendix 1.
- 3.22 Notwithstanding the above, if residual design issues cannot be resolved, or design and procurement activities are halted by IHSL pending the Board's acceptance of their Concept Design Report, SA2 may remain unsigned, to the detriment of the programme.

4 Key Risks

- 4.1 The following additional key risks have been identified in relation to the wider process.
- 4.2 The overlapping of construction, commissioning and validation processes that will take place in implementing SA2 and the Changes poses risks to ultimate sign-off if opinion differs as to compliance or the contractor fails to meet the standards required.

- 4.3 There will be a major impact on patients and staff if the publically announced move dates are not met.
- 4.4 Proceeding with the DCN move without certainty on the implications for day-to-day DCN operations arising from the works may cause an adverse impact. This risk is further heightened by the unknown impact on contractors and suppliers of COVID-19 contingency measures.
- 4.5 In order to mitigate programme slippage pending signing of SA2, it is likely that an advance order and / or payment for the new Air Handling Units will be required, as these have long lead times.

5 Risk Register

- 5.1 The above risks will be considered in detail by the project team as matters progress. Specific risks relating to SA2 are set out above. SA2 will not be signed unless these risks have either been eliminated or mitigated to an acceptable level. It should be recognised that the Board will be accepting some additional risks as a result of agreeing to the SA that will require management and mitigation during the implementation phase.

6 Impact on Inequality, Including Health Inequalities

- 6.1 Not relevant to this paper.

7 Duty to Inform, Engage and Consult People who use our Services

- 7.1 The Board will continue to implement the communications strategy it has adopted to keep staff, media and the public up to date on progress in relation to the delay in completion of the facility.

8 Resource Implications

- 8.1 Signature of SA2 and implementation of the various Changes described will commit the Board to a projected payment of £6 million.
- 8.2 Expenditure on the project team, professional fees and commissioning is funded through a revenue budget. While the facility remains incomplete, the Board continues to fund a Project Team and advisory support. The complexity of the process continues to take up a significant proportion of the time of several senior Board staff. The total cost of this is difficult to quantify, however, directly incurred additional costs are tracked.

Michael Pryor
Business Partner (Innovation)
March 2020

Appendix 1 – List of Issues in SA2

Appendix 1 – List of Issues in SA2

Issue	Proposed Approach, Risks and Precedents
Role of Client	We are still in discussion as to how we document the obligations IHSL are passing on to Imtech under the NEC4 Contract. We anticipate that an appropriate work around involving IHSL “ensuring” they undertake their obligations as client under the NEC4 Contract will be agreed but this remains subject to discussion.
Design (and copyright to use design) and construction standards	<p>There remain some issues for discussion with IHSL, but it is intended that, IHSL/Imtech design the whole of the Ventilation Works (“VW”) and accept sole and exclusive responsibility for design and for the selection and standards of all materials, goods and workmanship.</p> <p>Once the VW are completed, IHSL warrant that they will meet the performance specification set out in the Scope of Works and that the VW have been carried out in accordance with Good Industry Practice. They will also design the works in compliance with the Scope, the Laws, the consents, Good Industry Practice and the other requirements of the contract. The Scope does not include the full suite of BCRs nor PCPs prepared for the PA but rather a bespoke general work scope for the VW.</p> <p>It is proposed that the Scope will be in two sections: Part A (which will comprise HVC 107 and the RFIs); and Part B (which will comprise IHSL’s design which will be further developed via the review procedure as the design evolves).</p> <p>IHSL is entitled to rely upon Part A of the Scope, which amounts to confirmation by the Board to IHSL of what IHSL/Imtech are obliged to design, construct and service and the performance requirements for the ventilation. Accordingly, if there is wrong or inaccurate information in Part A of the Scope, that could entitle IHSL to additional time and money and the Board will be responsible for any failure of Part A to accurately specify the Board’s requirements. The Board therefore needs to be satisfied that Part A fully documents their requirements and appreciate that they accept full responsibility for its terms and any ambiguities within it.</p> <p>Copyright to use the design has been provided so that if Board require to step-in to the NEC4 Subcontract and/or self-deliver the design copyright is available.</p>
Design Review	There is a design review process similar to the design review procedure in the PA in terms of which IHSL submit Reviewable Design (i.e. design which has not been advanced by the date of signing SA2) for approval by the Board and the Board approve the design in accordance with that review procedure.
Right of access to the works, inspection, monitoring and ‘opening up’ and working with others and	<p>During the course of construction the Board and the Independent Tester and parties who will validate the VW (e.g. IOM) propose to inspect the works to ensure they are progressing correctly in line with the finally agreed Scope.</p> <p>Other “opening up” rights and the ability of the Board to “stop” the VW in appropriate circumstances remain subject to discussion. There is also an</p>

Issue	Proposed Approach, Risks and Precedents
Site restrictions	Access Protocol which will be agreed and included in the Scope.
Programme	<p>An agreed programme (which complies with the NEC4 Subcontract requirements) including start date, target completion date and a Longstop Date for Board rights of step-in has been agreed in principle. The programme is a target programme only and the target completion date and consequentially the Longstop Date, will be subject to change for 'compensation events' (on which see below).</p> <p>In the event that completion is not achieved within ten weeks of the target completion date, we are still discussing with IHSL the consequences of that. The Board's preferred approach is that the Board have the right to either (i) step-in to the NEC4 Subcontract and have the VW delivered by Imtech; or (ii) self-deliver the VW (subject to the Board requiring to undertake the VW in accordance with Good Industry Practice and grant IHSL an Excusing Cause while the Board are delivering the VW). IHSL have proposed that where the self-delivery route is adopted new terms for that should be negotiated. The Board have significant concerns about the uncertainty that creates. It also waters down NHSL's current rights under the PA (the Board's proposed approach is entirely in line with the existing PA risk profile).</p>
Extension of time and money events ('compensation events' or 'CE')	<p>A CE is an event which entitles IHSL (and Imtech) to additional time and money. The Longstop Date is moved out where any CEs are granted. In effect where any event occurs which is not IHSL's fault a CE will be granted, including:-</p> <ul style="list-style-type: none"> • changes to Scope; • COVID – 19 (subject to IHSL acknowledging this is a healthcare critical project); • lack of access or a failure by the Board to comply with their other obligations under SA2; • any instructions by the Board Representative or Project Manager to stop or not start work or change any key dates; • the Board's Representative, Project Manager or Supervisor do not reply to a communication within the required period; • the Project Manager or the Supervisor changes a decision previously communicated to Imtech; • a test or inspection done by the Supervisor under the NEC4 Subcontract causes unnecessary delay; • unexpected physical conditions; • adverse weather.
Payment	<p>It has been agreed that the Board will capital fund the ventilation works and that payment will be made on a monthly basis. The requirements for open book accounting will be included in the Scope. Payments are certified by the Project Manager (rather than the Board's QS) albeit the Board is entitled to make representations to the Project Manager about the applications for payment.</p> <p>Full details of the cost remain unclear because there are no details of prices in the NEC4 subcontract and Imtech is not obliged to provide subcontract pricing information to the Board.</p>

Issue	Proposed Approach, Risks and Precedents
Commissioning, tests and inspections prior to and at completion, and deliverables on completion	<p>The following process for certification of the VW has been agreed albeit this is not currently reflected in the NEC4 subcontract:</p> <ul style="list-style-type: none"> • As the VW progress there will be test and inspections by the Supervisor under the NEC4 Subcontract other relevant stakeholders (including IOM) will be allowed to witness to ensure that the VW are progressing as anticipated, albeit there will be no specific contractual obligations regarding notification or attendance of stakeholders at these tests and inspection; it will be the subject of a site protocol. Provided witnessing takes place, early comfort or warning as appropriate as to the progress of the VW will be obtained. The frequency / requirements of these tests and inspections will be detailed in the Scope. • Once the VW are completed, Imtech will undertake a series of commissioning tests or inspections and these will be signed off by the Project Manager as appropriate under the NEC4 Subcontract. • Any additional tests required by the PM pursuant to the NEC4 Subcontract required to ensure the Completion Criteria have been successfully met will be undertaken. • The Project Manager will confirm to the IT that it considers the VW have achieved completion. • The IT, when satisfied that the Completion Criteria have been achieved (having witnessed or tested as appropriate) will issue a Completion Certificate. • The Board has appointed IOM and Oakleaf to undertake independent validation of the fire and ventilation systems. This will be undertaken post completion and certification of the VW by the Independent Tester. <p>There is no provision for snagging. However, in the event that defects arise, these will be addressed in accordance with the defect correction provisions in SA2 which reflect the NEC4 Subcontract (see below) and the associated indemnity provisions (see below). This will include any defects identified by the IOM and Oakleaf validation (subject to the exclusion of Part A of the Scope from IHSL / Imtech's responsibility).</p>
Early Warning Register and progress meetings	<p>Regular progress meetings will be held and an Early Warning Register created to discuss issues which may affect progress.</p>
Defects correction and rectification times	<p>This remains the subject of discussion with IHSL but note our comments below regarding the indemnity arrangements and the service provision.</p>
Delay Damages	<p>Delay Damages of £5,000 have been applied in the NEC4 Subcontract. It is proposed that to the extent IHSL recover any delay damages from Imtech these will be passed on to the Board. It should be noted that delay damages will only apply when the works are not completed by the target completion date (as the same may be extended by any of the Compensation Events).</p>
Caps or	<p>The time period during which the caps are to apply remains the subject of</p>

Issue	Proposed Approach, Risks and Precedents
exclusions of liability	<p>discussion with IHSL. The Board considers these should apply for five years only (in line with the indemnity) following which the PA should apply. During the five year period (or other period agreed), IHSL's liability is, without limiting any recovery available via insurances, capped in the following manner (any exclusions to be agreed):-</p> <ul style="list-style-type: none"> • IHSL's liability for indirect or consequential loss arising under or in connection with the VW is limited to £5,000,000 • For any one event, the liability of IHSL for loss of or damage to the Board's property arising under or in connection with the VW is limited to £5,000,000 • Project Co's liability to the Board for Ventilation Works Defects due to design which are not listed on the Defects Certificate is limited to £5,000,000 • IHSL's total liability to the Board for all matters arising under or in connection with the VW is limited to 100% final contract price.
Termination	<p>These provisions are still the subject of discussion with IHSL. The Board propose that SA2 terminates automatically if there is a termination of the PA. In those circumstances, the existing PA provisions on compensation on termination apply. The PA does not terminate as a result of IHSL carrying out the VW in accordance with SA2.</p> <p>The Board may terminate SA2 at its discretion if the VW are not completed by the Longstop Date. This is subject to clarification as IHSL had suggested either party could terminate if works not completed by the Longstop Date; IHSL's proposed approach cuts across their obligation to deliver the Change so this should be a matter for the Board's discretion only.</p> <p>If SA2 terminates as a result of an act or omission by IHSL then the Board will only recover the costs of completion the VW to the extent that IHSL recover those from Imtech.</p>
Service Provision	<p>This is a critical issue and IHSL are being heavily pushed for clarity and transparency on its negotiations with BYES. No drafting dealing with his issue is yet available. The Board require:</p> <ul style="list-style-type: none"> • Confirmation on proposed changes to the Services Specification to reflect VW (including proposed rectification times (on which see comments above regarding defect correction)); • Confirmation of any other changes required to the Services Specification as a result of the associated enhancements, eg Availability criteria given changes to temperature controls; • OPEX costs. <p>SA2 cannot be signed until it reflects the pass down of service provision to BYES.</p>
Indemnity	<p>Time limited to 5 years. Provides a full indemnity for all direct losses (which includes all damage,</p>

Issue	Proposed Approach, Risks and Precedents
	<p>losses, liabilities, claims, actions, costs, expenses (including the cost of legal or professional services, legal costs being on an agent/client, client paying basis), proceedings, demands and charges) in connection with:-</p> <p>(i) Additional Works Interface Issues (being a matter which arises as a result of undertaking the additional ventilation works and fire safety works for which MPX, BYES or Imtech are not liable in accordance with their respective contracts);</p> <p>(ii) Additional Works Excluded Liabilities (being matters which Imtech would have been liable for, but which Imtech have not accepted the risk for under the NEC4 Subcontract); and</p> <p>(iii) Imtech insolvency risk.</p> <p>Provides interim indemnity relief (i.e. cashflow relief) from the application of Deductions and rectification costs in relation to any Additional Works Interface Dispute (being a dispute between MPX and / or BYES and / or Imtech in relation to which party is responsible for a failure of the VW at the Facilities).</p> <p>In relation to both the full indemnity and interim indemnity relief there are controls / limits on the indemnity including:-</p> <p>(i) an obligation on IHSL to pursue any alternative rights of recourse available to them under any other project document (including the contracts with BYES, MPX and Imtech, any relevant insurances and any relevant security packages);</p> <p>(ii) an obligation on IHSL to mitigate their costs and losses;</p> <p>(iii) notification provisions;</p> <p>(iv) IHSL cannot claim indemnity relief for its own negligence, omission, default</p> <p>In relation to the interim indemnity relief (ie cash flow relief above) there are also provisions for repayment to Board (potentially less IHSL costs) following determination of liability to the extent that IHSL are successful in any DRP in passing liability on to MPX and / or BYES and / or Imtech.</p> <p>The indemnity is subject to IHSL confirming compliance at all times with their obligation to provide the services and respond to any failures within the contractual timeframes stipulated. The indemnity includes provisions for temporary repairs to be undertaken to ensure continuity of service (where possible) or where continuity of service is not possible there are provisions for IHSL to ensure a permanent repair is undertaken as swiftly as possible and there are provisions to ensure appropriate incentivisation for IHSL to do so.</p> <p>The important point to note in relation to the indemnity is that although the provisions have not changed from those agreed for the IEA the Boar now has greater visibility on the Additional Works Excluded Liabilities. These include deductions and Reserved Rights in relation to Title Deeds/ land matters for which Imtech have not taken on liability.</p>
Insolvency	The position agreed for the IEA is reflected in SA2 which represents a shared risk profile for Imtech insolvency.
Consultant Appointments	In order to avoid fettering the PM and Supervisor's discretion under the NEC4 Subcontract between Imtech and IHSL it is proposed that there is no requirement for Board Representative approval for the PM / Supervisor (as appropriate) to agree changes to the Scope, Programme, approval of

Issue	Proposed Approach, Risks and Precedents
	CEs. However, the Board have insisted that these controls are included in the Consultant's appointment and IHSL's confirmation that they agree to this approach is awaited.



NSS review of isolation provision within emergency department (ED) Royal hospital children and young people (RHCYP) for patients presenting with suspected or confirmed High Consequence Infections Disease (HCID)



Contents

Background	3
Options Reviewed (As described within the NHSL SBAR):	3
1: Triage room:.....	3
2: Bereavement (Traquair) suite:	3
3: Treatment rooms in the “majors” area:.....	4
4: Medical assessment/short stay ward area:	5
5. Alternative Options (Not considered in the NHSL SBAR)	6
Summary	6
Appendix 1: Source isolation and protective isolation: Guidance Extracts	8



Background

National Antimicrobial Resistance Healthcare Associated Infection (ARHAI) Scotland visited RHCYP Emergency Department (ED) on 3rd March 2020 to support NHS Lothian (NHSL) with patient placement considerations when assessing/treating/holding High Consequence Infectious Disease (HCID) (category 4) patients prior to onward transfer as per NHS Lothian care pathway.

Following the visit and subsequent discussion with Health Facilities Scotland (HFS), NSS have appraised a number of options including the options proposed by NHS Lothian in their paper “SBAR – Emergency Department Ventilation & High Consequences Infectious Diseases (HCID) RHCYP” dated 4th March 2020.

The pressure regimes discussed in this paper are based on discussions with NHS Lothian and have not been verified by NSS.

Whilst other potential solutions from an engineering and infection prevention and control (IPC) perspective are considered below consideration should be given to an independent review from an architect and a building services designer to verify the feasibility of the options proposed and identification of any further options within the current footprint which will provide a long-term solution.

Options Reviewed (As described within the NHSL SBAR):

1: Triage room:

This room has immediate access from the waiting area and sufficient facilities to hold/immediately treat the patient for a short time. The area is at positive pressure ventilation to the corridor. There are two doors for access: one direct access from the waiting area and one into the ED staff access corridor.

Potential Considerations:

- There is a potential for air egress to the corridor given the positive pressure. This would therefore require redesign/reconfiguration.
- There are no ensuite toilet facilities or a separate area for donning/doffing and disposal of PPE.
- This will remove triage facilities from the ED for the duration as there is one triage room.

2: Bereavement (Traquair) suite:

There is space to convert into an ante room, treatment room and ensuite.

Potential Considerations:

- There are no medical facilities (including medical gases) within this area.

2020-03-16 HCID ED NHSL

Final

Isolation Facilities for ED



- A review of the ventilation requirement would need to be undertaken.
- It is also recognised that this is a purpose built area which is frequently used with no suitable alternative.

3: Treatment rooms in the “majors” area:

There are currently 2 rooms within the “majors” area, which although are two distinct areas have a lockable interconnecting door. The doors will remain locked when the rooms are functioning as separate treatment rooms however may be unlocked if utilised as an isolation suite. There is an adjoining wet room (currently with an Arjo bath) in one room. These rooms are currently all at positive pressure to the corridor.

Subject to survey there are two options available for consideration:

Option 3.A: Convert the 3 rooms into a negative pressure isolation suite (with ensuite). This will limit the use of the rooms and not considered a viable option by the clinical team for the day to day running of the department

Option 3.B: Leave room 1 at positive pressure (ensure at +10Pa to the corridor), room 2 neutral/balanced pressure and wet room becomes ensuite. This will allow room 1 (for day to day business) to function as planned. Room 2 may require slight deviation from use as is no longer positive but neutral pressure. Wet room will become ensuite.

Potential Considerations:

- Arjo bath may require to be relocated: and depends on drainage connections to allow ensuite/toilet.
- Review of current ventilation system including the ability to install a new system within the physical constraints and timescale.
- There would be building work required to ensure no fabric leaks and consideration is required to whether the existing system can take room one to +10Pa.
- In addition, the extracts may require to be separate from those currently in existence.

Option 3.C: Switchable ventilation in rooms 1 and 2 (external switch which will allow the rooms to be negative/positive pressure).

This option is a proposal by NHS Lothian and not one which NSS would support. NSS would advise strongly against this option. Furthermore, this approach is not recommended in any existing national and international guidance and may subject the board to scrutiny/concern from external agencies such as the Health and Safety Executive (HSE).



([Appendix 1](#)) Switchable rooms are not permitted in the USA and not recommended in UK or Australia, irrespective of a number of control measures or SOP being applied. This is as a result of a number of incidents associated with switchable rooms including those linked to human error, staff training, misunderstanding of procedures, failure of compliance with SOP, failure of monitoring equipment, incorrect wiring of indicators/fans.

It is recognised that NHS Lothian has switchable rooms in other areas across NHS Lothian. Whilst isolation rooms with ventilations systems that are switchable are not allowed in new installations. In existing installations, where older switchable systems still exist, there must be a strict Standard Operating Procedure prepared to advise staff of their use. It would also be prudent to plan for their future replacement with a safer solution.

4: Medical assessment/short stay ward area:

This ward is directly off the main ED waiting area, with direct access from this area through the staff corridor and doubles doors. Rooms 1 and 2 are adjacent to ED and are single ensuite rooms and may be at neutral balanced pressure (this will require to be confirmed).

Potential Considerations:

- Creating (lockable) access between rooms which will allow an area for donning/doffing, direct access to the patient room and an ensuite facility, this would also isolate the corridors from both ED and Short Stay areas. or
- Alternatively creating access to the ensuite via the corridor, utilising the ensuite area as the donning/doffing area and only adjusting one room.
- Additional floor marking to designate the area could also be considered (this is currently in place outside the two rooms in majors described above).
- This option may require some consideration on staffing allocation should a patient require short term isolation in this area.

This solution would not have a direct effect on the ED department and *may* allow for works to be completed post opening.



5. Alternative Options (Not considered in the NHSL SBAR)

5A: Equipment and supplies store

There may be an option to convert the Equipment & Supplies Store and the adjacent shower/WC areas. An alternative location for them would need to be established.

5B: External construction

Further options may be considered such as the construction of an additional ground floor room which opens into the existing building as a purpose made isolation facility or installation of a prefabricated purpose built suite adjacent to the emergency department.

5C: Isolator

Consideration could be given to the utilisation of a Trexler type isolator which may be used within an existing treatment room. Should NHSL consider this option worthy of further scope, NSS will provide support on options available.

Summary

It should be noted that all above options are for temporary holding of patients suspected/confirmed with High Consequence Infectious Disease (HCID) prior to the patient being nursed within an area as part of the agreed patient care pathway and in line with [appendix 11 of the national infection prevention and control manual](#):

Appendix 11 recommends:

- High level isolation unit
- or
- Negative pressure and ante room within an infectious disease unit
- or
- Isolation room/suite

It is accepted that the above are where the patient will be nursed and whilst there is a proposal for RHCYP to convert a PPVL room to a negative pressure room within critical care, this is not an ID unit and therefore the patient will be transferred elsewhere. Given there will be a holding period within ED for the patient awaiting transfer (which may be for a number of hours if SORT ambulance transfer is required). Therefore, the requirement will be an isolation room/suite.

NSS advises against the NHSL proposed option (3:C within this paper) of switchable ventilation in rooms 1 and 2 (external switch which will allow the rooms to be negative/positive pressure). This is on the basis that it is explicitly not recommended



in guidance both within NHSS, UK and Internationally due to the potential patient and staff risk factors and associated incidents. Consideration should be given to quickly instructing an independent healthcare architectural/design review to verify the feasibility of the options proposed and identification of any further options which will ensure a long term viable solution.



Appendix 1: Source isolation and protective isolation: Guidance Extracts

USA guidance (from article):

Combination All/PE rooms. In the past, some isolation rooms were designed to be switchable between negative and positive isolation; however, this type of isolation room is no longer allowed. To address the need to protect an immunocompromised patient with a known infectious disease, ASHRAE 170 now includes guidelines for a combination All/PE room. Unlike separate All and PE isolation rooms, the combination isolation room must be used with an anteroom.

Supply air for the room must be located in the ceiling above the patient bed, with return air taken from the ceiling near the patient room door similar to a standard PE isolation room. The pressure relationship for the anteroom shall either be positive in relation to the All/PE room and corridor or negative in relationship to the All/PE room and corridor.

In addition, ASHRAE 170 requires two separate permanently installed visual devices or mechanisms to constantly monitor the air pressure differential. One device monitors the pressure relationship between the anteroom and All/PE room and the second checks the pressure relationship between the anteroom and corridor. The exhaust from the combination All/PE room, associated anteroom and associated toilet room must be discharged directly to the outdoors without mixing with exhaust from any non-All rooms.

SHTM 04-01 Supplement 1

2.3 The provision of isolation rooms which are switchable from positive to negative air pressure is no longer recommended because of the risk of cross contamination in the event of the setting being incorrect.

2.10 The positive pressure lobby ensures that air from the corridor does not enter the isolation room, and that air from the room does not escape into the corridor. This simple design enables the suite to be used for both source and protective isolation without the need for switchable ventilation or special training for staff. It also provides safe isolation for patients whose exact condition is unknown.

HBN 04-01

1.4 The provision of isolation rooms that are switchable from positive to negative air pressure is not recommended because of the risk to people inside and outside the room in the event of the setting being incorrect.



Guidelines for the classification and design of isolation rooms in health care facilities; Victorian Advisory Committee on Infection Control (Australia, 2007)

2.4 Class A—Alternating pressure (negative/positive pressure) Rooms with reversible airflow mechanisms enabling the room to be either negative or positive pressure are not recommended. (7) Problems with such rooms include the difficulty of configuring appropriate airflow for two fundamentally different purposes (see section 5.4), the risk of operator error, complex engineering and fail safe mechanisms.

Reference is: 7 The American Institute of Architects Academy of Architecture for Health 1996, Guidelines for Design and Construction of Hospital and Health Care Facilities, 1996–97, The American Institute of Architects Press, Washington.

CDC Guidelines for Environmental Infection Control (2003)

iv. Pressurization

Positive and negative pressures refer to a pressure differential between two adjacent air spaces (e.g., rooms and hallways). Air flows away from areas or rooms with positive pressure (pressurized), while air flows into areas with negative pressure (depressurized). All rooms are set at negative pressure to prevent airborne microorganisms in the room from entering hallways and corridors. PE rooms housing severely neutropenic patients are set at positive pressure to keep airborne pathogens in adjacent spaces or corridors from coming into and contaminating the airspace occupied by such high-risk patients. Self-closing doors are mandatory for both of these areas to help maintain the correct pressure differential.^{4, 6, 120} Older health-care facilities may have variable pressure rooms (i.e., rooms in which the ventilation can be manually switched between positive and negative pressure). These rooms are no longer permitted in the construction of new facilities or in renovated areas of the facility,¹²⁰ and their use in existing facilities has been discouraged because of difficulties in assuring the proper pressure differential, especially for the negative pressure setting, and because of the potential for error associated with switching the pressure differentials for the room. Continued use of existing variable pressure rooms depends on a partnership between engineering and infection control. Both positive- and negative-pressure rooms should be maintained according to specific engineering specifications (Table 6).

International Health Facility Guidelines Part B: Version 5 (2017)

4.7 Class A - Alternating Pressure Rooms with reversible airflow mechanisms, which enable the room to have either negative or positive pressure, should NOT be used. This is due to difficulties in configuring the appropriate airflow, associated complex engineering, and the high risk of error during operational use for two fundamentally different purposes. Placing a patient requiring airborne isolation requiring negative pressure isolation in a positive pressure room could have catastrophic infection control results.

2020-03-16 HCID ED NHSL

Final

Isolation Facilities for ED



Australasian Health Facility Guidelines (2017)

Alternating pressure in isolation rooms must not be used (i.e. rooms that can be switched between positive and negative pressure). In addition to clinical risks, the cost of ongoing maintenance and special equipment will outweigh any perceived benefit of flexibility.

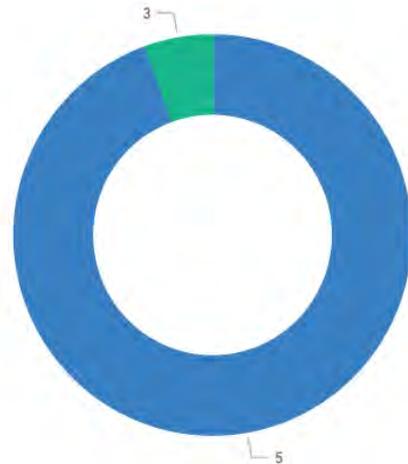
RHCYP+DCN - Continuity of Services on Existing Sites Action Log Dashboard

10/03/2020

Actions closed since last dashboard : 3

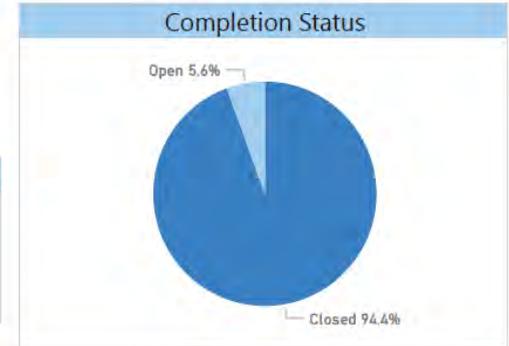
Status against Target Date

- Due Status
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



OPEN
3

CLOSED
51



Actions for DCN at WGH site

OPEN
2

CLOSED
21



Actions for RHSC Sciennes site

OPEN
1

CLOSED
40



RHCYP + DCN

Continuity of service provision on current DCN and RHSC sites

Revision Date: 09/03/2020

Current date for tracking: 13/03/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/ Closed	DCN	RHSC
2	Paediatrics at St John's	2.1	Consideration of increasing Services at SJH to reduce pressure of RHSC and enhance care closer to home for West Lothian children.	F Mitchell	05/07/2019	31/03/2020	Royal College of Paediatrics and Child Health have confirmed that they will carry out their review visit on 11 and 12 February. The RCPCH visited as planned on 11 and 12 February, draft report expected end March.	OPEN	No	Yes
13	DCN staffing	13.1	In light of nursing staff leaving DCN in anticipation of the move to RIE, the workforce has been reduced. There is a need to ensure we retain current staff, and quickly fill vacancies.	G McAuley / M Pearson	07/10/2019	31/03/2020	Ongoing action. Over 50% of vacancies in nursing (band 5 and 2) and administration have been filled - offers made and start dates confirmed. There are 9 x B5 vacancies and mat leave.	OPEN	Yes	No
		13.2	Anaesthetic out of hours rota cover for DCN. Provision of robust out of hours anaesthetic rotas for the ~6-9month period between DCN team moving and Paediatric team moving to the RIE site. Originally plan was for paediatric and neuro trainee rota	M Carr	25/11/2019	01/04/2020	9 applications received for Clinical Fellow posts which were shortlisted on 17th January. Interview's now confirmed for 11th February 2020. Interviews held last week and 4 clinical fellows appointed. Start dates TBC	OPEN	Yes	No

From: [Graham, Chris](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Henderson C \(Calum\)](#); [Colin Sinclair](#); [Cosens, Sorrel](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); [Gordon James](#); [Graham, Chris](#); [Graham, Iain](#); [Smith G \(Gregor\)](#); [Jacqui Reilly](#); [Jim Miller](#); [Joyce, Alex](#); [Judith Mackay](#); [Little, Kerryann](#); [McMahon, Alex](#); [Morgan, Mary](#); [Murray, Fiona](#); [Nicoll, Nadine](#); [Peter Reekie](#); [Roxanne Gallacher \(Jim Miller PA\)](#); [Trotter, Audrey](#); [Walker, Anna](#)
Cc: [Roxanne Gallacher](#); [Trotter, Audrey](#); [Walker, Anna](#); [Murray, Fiona](#); [Nicoll, Nadine](#); [Little, Kerryann](#)
Subject: RHCYP & DCN Oversight Board - 9th April 2020 - 8am
Date: 08 April 2020 07:35:44
Attachments: [RHCYP-DCN OSB Papers 09-04-2020.pdf](#)
Importance: High

Dear All

Please find attached the papers for Thursday morning’s meeting. This will be a MS Teams meeting:

MS TEAMS: RHCYP,DCN, CAMHS Oversight Board

Kind regards
Chris

Chris Graham
Secretariat Manager



The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service. For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 9 April 2020, 8:00 – 9:30am

Venue: MS TEAMS: RHCYP,DCN, CAMHS Oversight Board

AGENDA

1.	Chair's Welcome and Introductions	FMc	v
	Apologies:		
2.	Minutes of previous meeting for approval: 26 March 2020	FMc	*
3.	Matters Arising		
	3.1 NHS Lothian Covid-19 planning	TG	V
	3.2 HCID management at RHCYP front door - NSS proposal - timescale for feasibility study	GJ / JR MM	V V
4.	Senior Programme Director's Reports		
	4.1 Highlight report	MM	*
	4.2 Progress with outstanding review actions	MM	*
5.	DCN Service Migration	TG	V
6.	Progress with Ventilation Remedials and Fire Enhancements		
	6.1 Supplemental Agreement to NHS Lothian Board 8 April 2020	SG	*
	6.2 Design development and sign off	MM	V
7.	Readiness of Bouygues to move to full operational status	SG	*
8.	Proposal for advance opening of Ronald McDonald House	SC	*
9.	Service Continuity on Existing RHSC & DCN sites	TG	*
10.	Communications	JM	V
	10.1 Response to RHSC Family Council recommendations	SC	*
11.	Any Other Competent Business		
11.	Date of Next Meeting		
	Thursday 23 rd April 2020, 8am		

* = paper attached

v = verbal report

p = presentation

= paper to follow

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 26 March 2020 in Meeting Room 6&7, Waverley Gate, Edinburgh.

Present by Telephone: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Miss T. Gillies, Medical Director, NHS Lothian (until 9am); Mrs S. Goldsmith, Director of Finance, NHS Lothian; Professor A. McMahon, Nurse Director NHS Lothian; Mr C. Henderson, Scottish Government; Mr P. Reekie, Chief Executive, Scottish Futures Trust and Mr G. Archibald, Joint Staff Side Representative.

In Attendance by telephone: Ms M. Morgan, Senior Programme Director; Mr B. Currie, Project Director, NHS Lothian; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Prof J. Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work; Mr G. James, Director of Facilities, Health Facilities Scotland and Mr J. Miller, Health Facilities Scotland; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian; Ms J. Mackay, NHS Lothian Director of Communications and Mr C. Graham, Corporate Governance Team (minutes).

Apologies: Mr C. Sinclair, Chief Executive, NHS National Services Scotland and Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side).

1. Minutes of previous meeting – 12 March 2020

1.1 The minutes of the meeting held on 12 March 2020 were accepted.

2. Matters Arising

2.1 Social Distancing measures – Building Work RHCYP & DCN

- Letter received from Malcolm Wright on continuing construction of RHCYP & DCN
- Industry standards to be observed
- Construction team and colleagues working hard to keep on timeline
- Contractors now have staff passes and letters confirming NHS key workers
- PR confirmed that Scottish Future's Trust are working with Scottish Government on policy around construction sites – contact PR if need any assistance resolving anything
- Project Team practicing social distancing within office

3. Senior Programme Director's Reports

- Remain in a good place – continuing to actively progressing different workstreams
- Timeline for works in DCN progressing to plan
- Works focus then moving from DCN to CAMHS
- Behind with commercial agreement for RHCYP ventilation – need technical details confirmed before agreeing to Supplemental Agreement 2
- Air Handling Units will be ordered ahead of SA2 signing

- Currently no impact on programme from COVID19 – potential for staff, supplies impact – although Air Handling Units are sourced in UK many parts come from elsewhere in the world

4. Facility Availability – DCN mobilisation

- DCN should be able to move in a short time frame as much of the 6 weeks had been made up of stepping down elective activity, outpatients and inpatients at the old site then rebooking at new hospital – Impact of COVID19 has now means all that activity has ceased
- Moving of DCN would maximise the WGH's space to care for COVID19 positive patients
- Go / no go date for DCN move would be 09/04 but would aim for early occupation if possible – needs Cabinet Secretary approval to occupy
- Oversight Board supportive of plans to proceed with DCN move - FM to appraise Cabinet Secretary of plan
- Move would still require a period of orientation for staff, looking at a more graduated move that previously planned given COVID19 situation

5. Progress with Ventilation Remedials and Fire Enhancements

5.1 Design progress

- Detailed design report for Lochranza and Critical Care HVC received last week – not moved on much
- Air Handling Units (AHUs) cannot be ordered until certainty around the correct specification and design – further meeting on 31/03 to keep things moving
- Not received everything NHSL needs to be assured around requirements
- 27 April is drop dead date to ask Cabinet Secretary to proceed with works
- Discussion on possibility of using facility for COVID19 related works to be taken forward by NHS Lothian

AM/TG

5.2 Commercial update to NHS Lothian Finance & Resources

- Discussions to progress SA 2 continue
- F&RC on 20 March approved the costs set out in the paper

6. Emergency Department Ventilation & High Consequence Infectious Diseases in RHCYP

- NHSL position and recommendations presented in the paper.
- IHSL have been pursued for their feasibility timeline – no response yet.
- Noted NSS does not support switchable pressure room. The paper highlights other potentials to be considered.
- Two weeks needed for HFS to consider feasibility plans with architect and designer
- This will be in parallel with NHSL progressing the low values change for IHSL to look at feasibility and impact.
- Need for more understanding before looking at any recommendation
- Position statement requested for next Oversight Board

GJ/JR

7. Service Continuity on Existing RHSC & DCN Sites

- RHSC activity level reduced
- Some DCN/WGH resources stretched with COVID19

8. Communications

- Next steps to present DCN migration proposal to NHSL Board 8 April and then Oversight Board on 9 April
- NHSL preparing for staff communications post Cabinet Secretary decision

9. Any Other Competent Business

9.1 Impact of Covid-19

- Covered in previous discussions

10. Date of Next Meeting

10.1 Thursday 9th April 2020, 8am

Senior Programme Director's Report

DCN/RHCYP Project



HIGHLIGHT REPORT

Date 06/04/2020

Senior Programme Director

Mary Morgan

Overall Status / Update	RAG
The programme has been set to green status as critical milestones are on track for delivery of the overall planning assumptions. DCN accommodation on track with revised dates. A range of supply chain challenges are being presented by the Covid 19 emergence. Outstanding workstream actions continue to be delivered. Electrical actions are slowed due to Coronavirus response and other sickness absence – tracker attached. None outstanding impacts upon DCN occupation.	Green

Milestone	Planned Completion Date	RAG
Transition from system workstreams to service migration activity	20/03/2020	Amber
Confirmation of impact on DCN of HVC 107 works	20/3/2020	Blue
“Go – No Go” decision for DCN migration	09/04/2020	White
Completion of MVC 112 DCN Fire Enhancement works	07/05/2020 24/04/2020	Green
Completion of DCN LVCs and minor works	07/05/2020 24/04/2020	Green
DCN Migration	31/05/2020 11/05/2020	Green
Completion of MVC (131) CAMHS Fire Enhancement Works	30/10/2020	Green
Completion of MVC (127) CAMHS LVCs and minor works	30/10/2020	Green
“Go – No Go” decision for CAMHS migration	tbc	White
CAMHS Migration	tbc	White
Supplementary Agreement 2 (SA2) agreed	18/03/2020	Amber
HVC 107 Air Handling Units ordered	20/03/2020 27/03/2020	Amber
Completion of HVC 107 construction works	03/09/2020	Green
Completion of contractor's commissioning and validation HVC107	23/11/2020	Green
Completion of MVC (126) RHCYP Fire Enhancement works	27/07/2020	White
Completion of RHCYP LVCs and minor works	tbc	White
Clinical Scoping/Risk Assessment of Emergency Dept works for HCID	20/03/2020	Blue
Feasibility/options appraisal of ED HCID solutions	tbc	Amber
Submission of change notification to IHSL	tbc	White
“Go – No Go” decision for RHCYP migration	03/10/2020	White

Milestone	Planned Completion Date	RAG
RHCYP Migration	tbc	White

Exception to	Planned End Date	RAG	Cause	Consequences	Recommendation
Transition from system workstreams to service migration activity	20/03/2020	Amber	Sickness absence of MPX Electrical AE & Covid response	Delay to fully closing workstream tracker – Nil critical for DCN migration	Accept and monitor. Continue to progress actions.
Feasibility/options appraisal of ED HCID solutions	tbc	Amber	No date for completion of feasibility from IHSL	Uncertain impact to overall programme	Accept and monitor
Supplementary Agreement 2 (SA2) agreed	18/03/2020	Amber	Negotiation of outstanding contractual points complete – awaiting services spec and finalisation of scope	Potential overall programme delay	Accept delay to ensure risk mitigation. Target date for signing 16/04/2020 but expect further slippage
HVC 107 Air Handling Units ordered	20/03/2020	Amber	Design submission and review delay	Minimal impact on programme provided new date achieved	Accept change to planned date of 10/04/20. Vesting agreement in process.

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Reputational impact on NHSL caused by delay, adverse media reports and opinion of internal and external stakeholders	Executive Steering Group meets weekly and is attended by NHSL Communications Director. Ongoing engagement with stakeholders formally and informally Engagement with Cabinet Secretary	Very High	Very High
R	Performance of Project Co & Supply Chain (Hard FM) - Project Co. fail to meet Service Level Specification (Post Completion).	Standard form payment mechanism to hold Project Co. to account is agreed. Contracts Manager in post to monitor and measure performance. Additional support for Programme from HFS, SFT and NHSL. Additional input and support at every level given to Contractor.	Very High	Very High
R	Coronavirus outbreak adversely impacts programme delivery: Sickness absence of project team and contractors or diversion of project team and or project resources.	Circulation of information throughout NHS. Continue to monitor and escalate any concerns.	Very High	High

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Proceeding with DCN move without certainty on any adverse implications on day to day DCN operations arising from Ventilation Works. Either the DCN move is postponed very late or issues emerge post move.	Impact survey ongoing anticipated by end of March 2020. Ongoing monitoring of key services over installation period. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management. Experience in Project Team and Contractors of working in live clinical environments. Weekly Meetings of relevant parties Daily safety briefs Channels of communication including Stop Protocol	High	High
R	Delay in remedial and enhancement works delays transfer of RHSC & DCN into the building	Experience gained from late postponement of previous move. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management. Weekly meetings: Internal with Project Team and Operational Management and Technical Meeting with Design Team and Contractor. Validation activities run concurrently with Commissioning Activities. Expanded NHSL Facilities Commissioning Team.	High	High
I	Delay in completion of the programme has generated additional costs.	Some costs are known and others are being collated. Eg aborted move, costs to services in maintaining and operating in existing accommodation, Remedial works costs Scottish Government have made provision for funding.	High	High
R	Reprovision of critical care ventilation requires full design, construction and commissioning within programme identified timelines.	Design Group established to oversee and deliver. Critical Care and IPCT Clinical Representation on Group High Value Change submitted detailing NHSL requirements.	High	High
R	Provision of enhanced Haematology & Oncology Department ventilation requires full design, construction and commissioning within programme identified timelines.	High Value Change submitted detailing NHSL requirements. SBAR & Risk Assessment completed involving Clinicians & IPCT. Design Team and contractors appointed. IHSL have agreed to undertake.	High	High
R	Operational Board Changes (DCN Priority) These essential Board Changes may not be implemented in time to enable migration of DCN.	NHSL Project Team continue to monitor delivery of these works through IHSL and their Hard FM Contractor, BYES. BYES have a schedule of implementation. Reviewed weekly.	High	High

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Potential impact of Helipad use: fumes and downdraft affecting services on campus.	<p>Trial flights by Bristows and Babcock being planned Feb/Mar 2020.</p> <p>Helicopters limited to 9tn maximum weight. Helipad is 25m², limits size of helicopters that can utilise.</p> <p>Various reports commissioned into potential impact.</p> <p>SOP developed and relevant action cards.</p>	High	High

RAG Description Key (Time Status)	
WHITE	Activity has yet to commence
RED	Key milestones will be or have been delivered outside tolerance to agreed baseline
AMBER	Forecasting that there is a significant risk that key milestones will be delivered outside tolerance on agreed baseline
GREEN	All milestones forecast to be on time or early
BLUE	Task Complete

RHCYP+DCN - Action Log Dashboard

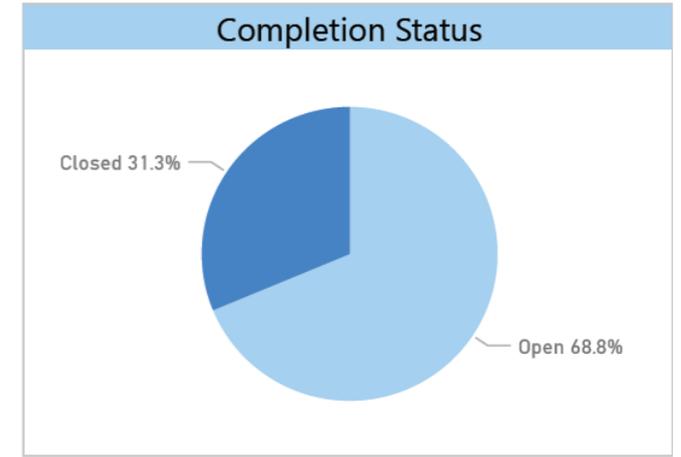
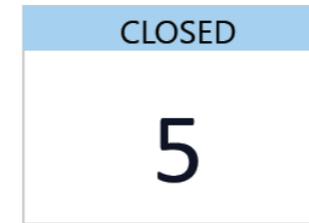
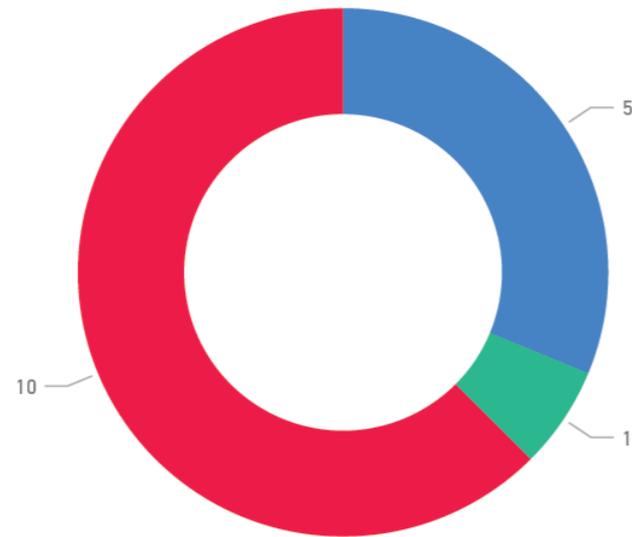
03/04/2020

Actions closed since last dashboard : 1

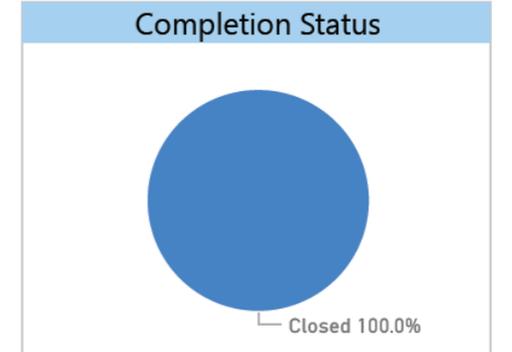
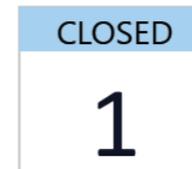
Status against Target Date

Due Status

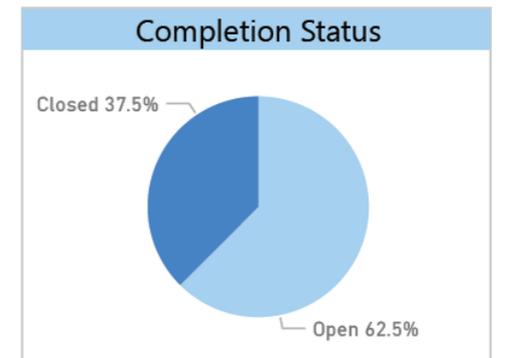
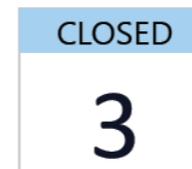
- Closed
- Actions on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



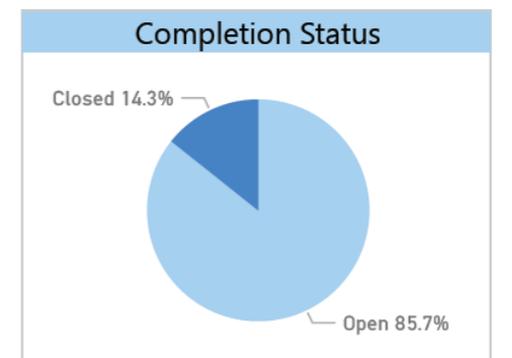
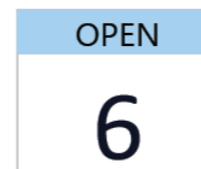
Water



Ventilation



Electrical



RHCYP + DCN

Collated Outstanding Actions

Revised Date: 27/03/2020

Current Date for tracking: 03/04/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to Close	Open / Closed	Priority to RHCYP	Priority to DCN
V3	Recommissioning of ventilation system.	1	Confirmation is required that all ventilation systems have been balanced and re-commissioned to meet the requirements of the environmental matrix	NHSL / IOM	11/09/2019	31/01/2020	<p>MPX are recommissioning every system, DCN is complete and returned to the normal set points.</p> <p>IOM to confirm revalidation of the ventilation in DCN. IOM DCN re-validation complete with the exception of OPD on the ground floor. To be completed 02/04/20.</p> <p>IOM to confirm revalidation of the ventilation in RHCYP.</p> <p>BYES are awaiting commissioning and validation certification from MPX to return AHU's to full service. (Duplicate for item 41 - 74)</p> <p>Due to ongoing issues with AHU being switched off, IHSL to coordinate all parties and confirm when systems are available for validating.</p> <p>NOTE: Environmental Matrix is not the correct reference point (i.e. still refers to 4ac/h for Critical Care). Mandatory contract conditions are.</p>	OPEN	YES	YES
V6	Some areas are not completed and ready for handover. E.g. ceiling tiles still missing	1	CT & Fluoroscopy only areas still affected due to Turnkey works	NHSL / IOM	25/06/2019	31/01/2020	<p>MPX confirmed works complete and awaiting confirmation after theatre works (V30/V33) have been finished (Theatre 36). NHSL noted that area requiring testing is provided by another AHU system and can be commissioned by MPX. IOM have re-validated and noted the pressure change between MRI and Theatre doors is higher than expected. Clinical staff to review to confirm if this is an issue.</p>	OPEN	YES	YES
V12	Very limited extract in theatre corridors. Corridors are not at 0 absolute pressure and do not meet required 7 ach/hr (SHTM03-01 part A appendix 2 Table A2). No escape for surplus air. Could impact on open door protection. Pressure in corridors is pushing fire doors open.	1	To be reviewed by IPCT, All pressure Cascades are compliant.	MPX		31/01/2020	<p>MPX have submitted further design information and NHSL have provided comments. NHSL requested/escalated outstanding TUV-SUD response to NHSL comments. - MPX are progressing with the work on the basis that the design meets criteria.</p> <p>MPX confirmed works complete. MPX H&V will carry out commissioning after 2nd March, NHSL reaffirmed the corridor is to be provided 7 ACH balanced. . IOM to consider full revalidation of theatres with all parties present. MPX to confirm to BYES when commissioning certificates have been uploaded to Zutec.</p> <p>Confirmed in meeting 4/3/20 that works have not been successful. MPX are reviewing ventilation rates and initial works are looking positive however further physical works within the corridor may be required.</p>	OPEN	YES	YES

V38	The "maintenance by-pass" associated with the AHU requires to be fully detailed and proven.	1	<p>Details required include: -</p> <ul style="list-style-type: none"> Full written details for each system Identification of systems which do not have a secondary source of ventilation. Identification of all spaces which will have no mechanical ventilation when by-pass is initiated. The minimum and maximum estimated times for a maintenance by-pass and for recovery of a major fault. The impact of these arrangements on the fire strategy. The strategy for advising clinical staff in the areas affected. Commissioning and validation certificates for the changeover system, all associated controls, revised room volumes and pressures. The clinical service plan should reflect the operational procedures in the event of failure of an air handling unit. 	MPX	11/09/2019	24/12/2019	<p>04-08 and 04-09 work in bypass and a risk assessment is required for only having 50% of air changes in clinical rooms in bypass mode, however, in bypass mode isolation rooms achieve required pressure cascade.</p> <p>04-06 and 04-07 bypass has been tested and MPX are to confirm the results. To review position following review of the test results.</p> <p>MPX issued report on By-pass arrangement on 17/10/19. NHSL provided comments on 4/11/19. Overall report is unsatisfactory, works to critical care and haematology / oncology will resolve some items but not Level 3.</p> <p>- BYES to review SOP.</p> <p>- MPX to identify impact to air change rates on a per room basis.</p> <p>Following confirmation of the above NHSL to review the clinical risk assessment for impact in bypass mode and in total failure mode and develop a plan for maintenance downtime.</p>	OPEN	YES	YES
V41	The AHU require to be compliant with healthcare guidance,	1	Light switches to be at an accessible height.	IHSL	11/09/2019	06/04/2020	<p>Remedial works started w/c 12/10/11.</p> <p>AHU snagging review started on the 10th March with 36 passes with minor comments. The next review is planned for 31st March.</p> <p>BYES will request AE for Ventilation attends to fully inspect each AHU. Manufacturers certification and updated GA's etc. Are required.</p> <p>NHSL asked BYES to complete a clean of all AHU's. BYES confirmed and prioritising DCN AHU's but all AHU's for theatres will be postponed until IOM have validated the theatre corridor ventilation.</p> <p>THIS APPLIES TO ISSUE NO'S V41 TO V74 WITH EXCEPTION OF V64.</p> <p>Item confirmed to be closed subject to verification after all AHU remedial works undertaken. Acknowledged by all meeting members (Please refer to 04/10/19 Ventilation Meeting Minutes).</p>	OPEN	YES	YES
E7	HV and LV Switch room escape lighting	1	Ensure that escape lighting and signage in HV and LV switch rooms has been provided to BS 5266 and the Health and Safety (Safety Signs and Signals) Regulations 1996	HFS	06/11/2019	13/03/2020	MPX provided a statement on 4/3/20 (MPX-GC-030715). HFS are currently reviewing	OPEN	YES	YES
E8	The HV switch room has some specific installation issues which require to be addressed	1	Fire separation as per SHTM 06-01 7.18	HFS	06/11/2019	13/03/2020	MPX provided a statement on 5/3/20 (MPX-GC-030717). HFS are currently reviewing	OPEN	YES	YES
E13	The UPS and output switchboards are a significant distance from the point of load. From this point there is no alternative supply within the internal infrastructure thereby increasing the potential for a single point of failure contrary to clause 4.6 of SHTM 06-01.	2	NHS Lothian should require IHSL to provide agreed mitigation strategies to meet SHPN 00-07 and SHTM 06-01 to avoid internal failure of the single electrical supply to the critical electrical services such as Medical IT cabinets serving life support and other critical systems.	HFS	30/10/2019	13/03/2020	MPX provided a statement on 6/3/20 (MPX-GC-030718). HFS are currently reviewing	OPEN	NO	NO
E16	Modular Wiring System	3	Fire integrity is required to be checked and confirmed	HFS	06/11/2019	13/03/2020	MPX provided a statement on 6/3/20 (MPX-GC-030719). HFS are currently reviewing	OPEN	YES	YES
E16	Modular Wiring System	6	Concern is raised that fixing bolts/screws could damage the single core cables in the trunking.	HFS	06/11/2019	13/03/2020	<p>MPX provided statement on 21/3/20 (MPX-GC-030728) - HFS to review.</p> <p>BYES have provided a statement the AV/LV Authorising Engineer did not raise any concerns during the audit in Jan 2020.</p>	OPEN	YES	YES

E18	Medical IT Systems	5	Medical IT system cables are considered essential and covered by BS 7671 chapter 56, however this does not appear to be the case in the installation as they are not fire rated or segregated from other cables.	HFS	06/11/2019	13/03/2020	MPX provided statement on 21/3/20 (MPX-GC-030729) - HFS to review.	OPEN	YES	YES
-----	--------------------	---	--	-----	------------	------------	--	------	-----	-----

NHS Lothian

RHCYP & DCN Oversight Board
9 April 2020

Director of Finance

SUPPLEMENTAL AGREEMENT FOR VENTILATION REMEDIALS AND FIRE ENHANCEMENTS

1 Purpose of the Report

- 1.1 The purpose of this report is to seek approval of the Supplemental Agreement 2 for the RHSC & DCN contract with IHS Lothian.

Any member wishing additional information should contact the Project Director in advance of the meeting.

2 Recommendations

The Oversight Board is recommended to support the principles and position outlined in the attached paper, due to be considered by NHS Lothian's Board in Private Session on 8th April.

3 Discussion of Key Issues

- 3.1 On 1st April the Commercial Sub-group of the Oversight Board endorsed the approach put forward for the final stages of negotiations with IHS.
- 3.2 The terms agreed have been conveyed back to the group and support provided.
- 3.3 The Oversight Board will be updated on the discussion that took place at NHS Lothian Board meeting on 8th April.

4 Key Risks

- 4.1 As outlined in the attached Board paper.

5 Resource Implications

- 5.1 As outlined in the attached Board paper.

Iain Graham
Director of Capital Planning and Projects

NHS Lothian

NHS Lothian Board – Private Board Meeting
8 April 2020

Director of Finance

**THE ROYAL HOSPITAL FOR CHILDREN & YOUNG PEOPLE, DEPARTMENT OF
CLINICAL NEUROSCIENCES, CHILD & ADOLESCENT MENTAL HEALTH SERVICES –
BUSINESS CASE ADDENDUM - SUPPLEMENTAL AGREEMENT 2**

1 Purpose of the Report

- 1.1 The purpose of this report is to provide Board members with an update on the current position on completion of the new facility and commercial arrangements with IHSL.
- 1.2 These commercial arrangements comprise the implementation of Changes under the Project Agreement to address the ventilation and fire enhancement issues, and entering into a Supplemental Agreement (SA2) that sets out the commercial terms between the Board and IHSL that will govern the Changes. These together will allow implementation of the works required to facilitate the opening of the new RHCYP/DCN facility to patients during the course of 2020.
- 1.3 Any member wishing additional information should contact the Executive Lead in advance of the meeting.

2 Recommendations

- 2.1 The Board is asked to note the current commercial position.
- 2.2 The Board is asked to accept the risks set out in section 3 and in the appendix, and support the commercial approach adopted and the assurance processes and mitigation strategies put in place to manage these risks as being appropriate.
- 2.3 The Board is asked to note that the DCN element of the new facility will be available for occupation by patients and staff in the week commencing 11th May 2020.

3 Discussion of Key Issues**Current Governance Position**

- 3.1 The Board has moved forward with finalisation of SA2 and, following finalisation of all associated documentation, is in a position to move to signature of the Agreement.
- 3.2 Signature of SA2 will legally commit the Board to bearing the risks allocated to it under the Agreement, and to providing the necessary funding to IHSL to deliver the requirements of SA2, a value of £4.175 million. At the same time, a commitment of £1.27 million is required to enact the Medium Value Changes (MVCs) that support the enhancements to fire systems. The Finance and Resources Committee have received and approved a business case supporting this financial commitment at the Committee's 26 March meeting.

Fire Safety

- 3.3 The first element of required investment covered in this paper relates to fire enhancements. The strategy for enhancements to fire safety systems was discussed and agreed at the Oversight Board in October 2019. The NSS review considered whilst not essential, there was an opportunity to enhance fire safety prior to occupation of the facility. Consequently, the Oversight Board accepted recommendations in December 2019 to proceed through the change process to implement the NSS recommendations and enhance the fire systems.
- 3.4 This element will be delivered via three Medium Value Changes, one for each part of the new facility, using the normal Project Agreement processes, and so do not form part of SA2.
- 3.5 This work is programmed to allow completion and validation of the DCN element to be concluded to allow for the 11th May patient transfer announced by Cabinet Secretary.

Ventilation

- 3.6 The second element of work is the High Value Change (HVC107) for RHCYP – Ventilation and associated fire enhancements, with a capital value of £4.175 million. This element is the principal subject of SA2. Addressing the ventilation issue identified in the NSS report is a key objective of Scottish Government and the Board, and an essential precursor to allowing full occupation of the facility.
- 3.7 The Board intend to implement the recommendations of the NSS review and the content of SA2 via the implementation of HVC 107 issued to IHSL by the Board that requests amendment to the specification to be delivered by IHSL. The Project Agreement governing the relationship between the Board and IHSL provides for a clearly laid out process that allows such changes to be requested and implemented, with the precise process differing depending on the value of the requested change.
- 3.8 Because of the unusual set of circumstances present and the interrelationship between the changes requested, which impact the risk allocation between Board and IHSL, the change process is governed by SA2, which details the commercial arrangements that will underpin the implementation of the Change.
- 3.9 A collaborative process has been undertaken through a series of workshops, resulting in IHSL issuing to the Board, on 19th March 2020, a Detailed Design Report that forms the basis of a Scope of Works as defined in the NEC 4 contract that will be let between IHSL and their supply chain, and implemented via SA2.
- 3.10 The Board's Project Team has reviewed the Report and requested clarifications and rectification of certain omissions and technical assurance has been obtained from Mott Macdonald and NSS. Completion criteria have been incorporated into SA2 to reflect the testing and compliance regime to be implemented, as outlined below in the Assurance Processes section.

Assurance Processes

- 3.11 The works will be subject to a rigorous assurance process, both on an ongoing basis during the works as they reach defined milestones and at final sign-off stage.

- 3.12 The table below sets out the parties involved in this process and their responsibilities for delivering the requirement and for providing assurance that the work delivered meets those requirements. All of these parties are working collaboratively as the process moves from the current design stages to the construction phase and into commissioning.

Party	Ventilation works role	Fire Safety MVC role	Responsibility
IHSL			
IHSL	Client for supply chain members, delivery of Change requirements	Client for supply chain members, delivery of Change requirements	Contractor to NHS Lothian under Project Agreement and SA2
George Street Asset Management	Management of IHSL's supply chain and assurance of work undertaken	Management of IHSL's supply chain and assurance of work undertaken	Sub-contractor to IHSL
Pinsent Mason	Legal advisor	Legal advisor	Consultancy appointment by IHSL
Faithful and Gould	NEC4 contract manager and administrator	NEC4 contract manager and administrator	Consultancy appointment by IHSL
Watermans	NEC4 supervisor, responsible for quality of work, tests and inspections required by the Scope	n/a	Consultancy appointment by IHSL
Imtech	NEC4 contractor delivering the works in the Scope and under the MVCs	NEC4 contractor delivering the works in the Scope and under the MVCs	Sub-contractor to IHSL (also principal contractor and principal designer under CDM Regs).
Hoare Lee	MEP design and consulting engineers	MEP design and consulting engineers	Sub-contractor to Imtech
Oberlanders	Architect	n/a	Sub-contractor to Imtech
Curtins	Structural Engineer	n/a	Sub-contractor to Imtech
NHS Lothian			
NHS Lothian	IHSL's client in delivery of contractual obligations under PA/SA2	IHSL's client in delivery of contractual obligations under PA	Oversight Board and Scottish Government

Party	Ventilation works role	Fire Safety MVC role	Responsibility
NHS Lothian internal stakeholders	Internal testing and assurance by project team, clinical and service leads, IPCT, Fire Advisers, Facilities	internal testing and assurance by project team, clinical and service leads, IPCT, Fire Advisers, Facilities	Co-ordinated by NHS Lothian programme management
NSS	Assurance by HFS/HPS	Assurance by HFS/HPS	Scottish Government
Macroberts LLP	Legal advisor	Legal advisor	NHS Lothian
Mott Macdonald	Technical advisor	Technical advisor	NHS Lothian
Thomson Gray	Cost advisor and secondary review of open book construction costs	Cost advisor and secondary review of open book construction costs	NHS Lothian
IOM	Ventilation verifier and validation engineer	Ventilation verifier and validation engineer (interface between fire and ventilation systems)	NHS Lothian
Oakleaf	Fire enhancement verifier	Fire enhancement verifier	NHS Lothian
Turner Professional Services	Authorising engineer	Authorising engineer	NHS Lothian
Other Parties			
Arcadis	Independent tester to provide final sign off that works are compliant with PA/SA2	n/a	Joint appointment by IHSL and NHS Lothian
Hogan Lovell, Currie and Brown	Diligence input	Diligence input	Funder legal and technical advisors
City of Edinburgh Council			Building control and planning

SA2 – Key Issues and Risks

- 3.13 As part of the negotiations with IHSL, the Board agreed that the ventilation works would be undertaken by Imtech on behalf of IHSL using the industry standard form NEC4 Engineering and Construction Contract Option E (Cost Reimbursable) with certain amendments. Given the unique circumstances, there was a need to agree certain changes to the standard risk profile under the Project Agreement. To that end, it has been negotiated that the NEC4 Subcontract would in effect be 'stepped up' to IHSL but with some changes made to reflect the ongoing relationship between the Board and IHSL under the Project Agreement. In particular, this includes the need to provide Services to

the Facilities (including the Ventilation works); and an amended risk profile on certain interface issues as documented in the indemnity arrangements.

- 3.14 These risks and the measures put in place to mitigate them are highlighted in Appendix 1, but are summarised below.
- 3.15 The pass-down of service provision obligations to Bouygues is currently an area where risk remains. Operational Costs once works are completed will vary if Bouygues consider that the resulting new position requires additional maintenance and life cycle input. This effect is currently unquantified, with indicative costings expected on 9 April. Like the capital cost element, these costings will remain in indicative form until works are complete. The Board will need to put in place well-resourced and experienced contract management capability to manage this complex risk during the operational phase. Such risks arise at some point in all PPP-type contracts, but it is unusual for such a risk to be borne from a point before normal operations have even begun.
- 3.16 The works to be carried out under SA2 are driven by a Scope that, if inaccurate, will place the burden of risk on the Board rather than IHSL.
- 3.17 The programme and costs of the works are on a target basis. There is limited information currently available in the SA and underlying NEC contract, creating a risk to both programme and cost certainty. This risk can be further mitigated, but not eliminated, by ensuring that the Detailed Design Report element of the Scope is developed as far as is reasonable at the time of agreement to ensure control over changes in terms of both time and cost. The submission of the Detailed Design Report is now being assessed by the project team and assurance stakeholders, with amendments being discussed with IHSL.
- 3.18 A range of Compensation Events exists under the SA that will allow IHSL more time or money if any of the events is realised.
- 3.19 The Board has taken on certain additional risks in connection with interface disputes between Imtech, Multiplex and Bouygues and some additional risk associated with matters excluded from the NEC Contract in accordance with the indemnity provisions agreed in December when the Initial Engagement Letter was agreed.

4 Key Risks

- 4.1 The following additional key risks have been identified in relation to the wider process.
- 4.2 The overlapping of construction, commissioning and validation processes that will take place in implementing SA2 and the Changes poses risks to ultimate sign-off if opinion differs as to compliance or the contractor fails to meet the standards required.
- 4.3 Proceeding with the DCN move without certainty on the implications for day-to-day DCN operations arising from the works presents a risk, which is further heightened by the unknown impact on contractors and suppliers of COVID-19 contingency measures.
- 4.4 In order to mitigate programme slippage pending signing of SA2, it is likely that an advance order and / or payment for the new Air Handling Units will be required, as these have long lead times. In addition, ongoing financial cover for the contractor and the supply chain is required during the period of Covid-19 restrictions.

5 Risk Register

- 5.1 The above risks will be considered in detail by the project team as matters progress. Specific risks relating to SA2 are set out above. SA2 will not be signed unless these risks have either been eliminated or mitigated to an acceptable level. It should be recognised that the Board will be accepting some additional risks as a result of agreeing to the SA that will require management and mitigation during the implementation phase.

6 Impact on Inequality, Including Health Inequalities

- 6.1 Not relevant to this paper.

7 Duty to Inform, Engage and Consult People who use our Services

- 7.1 The Board will continue to implement the communications strategy it has adopted to keep staff, media and the public up to date on progress in relation to the delay in completion of the facility.

8 Resource Implications

- 8.1 Signature of SA2 and implementation of the various Changes described will commit the Board to a projected payment of £6 million.
- 8.2 Expenditure on the project team, professional fees and commissioning is funded through a revenue budget. While the facility remains incomplete, the Board continues to fund a Project Team and advisory support. The complexity of the process continues to take up a significant proportion of the time of several senior Board staff. The total cost of this is difficult to quantify, however, directly incurred additional costs are tracked.

Michael Pryor
Business Partner (Innovation)
April 2020

Appendix 1 – List of Issues in SA2

Appendix 1 – List of Issues in SA2

Issue	Proposed Approach, Risks and Precedents
<p>Ensure Imtech, the Project Manager, the Supervisor and BYES perform their obligations under their respective contracts</p>	<p>The Board require comfort that IHSL will act properly and responsibly in managing their contracts with Imtech, the PM, Supervisor and BYES and will use all remedies available to them to secure the performance of their contracting counter-parties. This has been achieved by IHSL taking on the following obligations:</p> <ul style="list-style-type: none"> • to exercise their obligations as client under the respective contracts; • to use reasonable endeavours to secure the performance of their contracting counter parties. <p>In relation to the second point, the Board would have preferred a higher test, obliging IHSL to use “best endeavours” to secure performance but this proved not to be achievable.</p>
<p>Design (and copyright to use design) and construction standards</p>	<p>It is proposed that the Scope will be in two sections: Part A (which will comprise HVC 107 and supplementary information); and Part B (which will comprise IHSL’s design which will be further developed via the review procedure as the design evolves).</p> <p>IHSL is entitled to rely on Part A of the Scope, which amounts to confirmation by the Board to IHSL of what IHSL/Imtech are obliged to design, construct and service, and the performance requirements for the ventilation. Accordingly, if there is wrong or inaccurate information in Part A of the Scope, this could entitle IHSL to additional time and money. The Board will be responsible for any failure of Part A to specify the Board’s requirements accurately. The Board therefore needs to be satisfied that Part A fully documents their requirements and appreciate that they accept full responsibility for its terms and any ambiguities within it.</p> <p>Furthermore, in respect of Part B of the Scope IHSL, have insisted that the Board provide assurance that they are content that the current design in Part B will meet the requirements of Part A. This, in effect, amounts to the Board (via their technical advisers) taking on a degree of design risk and if there is an error in the design the Board’s rights to pursue IHSL and their supply chain are extremely limited.</p> <p>Once the Ventilation Works (“VW”) are completed, IHSL warrant that they will meet the performance specification set out in the Scope of Works and that the VW have been carried out in accordance with Good Industry Practice.</p> <p>Copyright to use the design has been provided so that if the Board steps in to the NEC4 Subcontract and/or self-delivers the design, copyright is available.</p>
<p>Design Review</p>	<p>There is a design review process similar to the procedure in the PA by which IHSL submits a Reviewable Design (i.e. design that has not been advanced by the date of signing SA2) for approval by the Board and the Board approves the design in accordance with that review procedure.</p>

Issue	Proposed Approach, Risks and Precedents
Right of access to the works, inspection, monitoring and ‘opening up’ and working with others and Site restrictions	<p>During the course of construction, the Board and the Independent Tester and parties who will validate the VW (for example, IOM) propose to inspect the works to ensure they are progressing correctly in line with the Scope.</p> <p>Other “opening up” rights and the ability of the Board to “stop” the VW in appropriate circumstances have also been agreed. There is also an Access Protocol that will be agreed and included in the Scope.</p>
Programme	<p>An agreed programme (which complies with the NEC4 Subcontract requirements) including start date, target completion date and a Longstop Date for Board rights of step-in has been agreed in principle. The programme is a target programme only and the target completion date and consequentially the Longstop Date, will be subject to change for ‘compensation events’ (on which see below).</p>
Extension of time and money events (‘compensation events’ or ‘CE’)	<p>A CE is an event that entitles IHSL (and Imtech) to additional time and money. The Longstop Date is moved out where any CEs are granted. In effect where any event occurs which is not IHSL’s fault a CE will be granted, including:</p> <ul style="list-style-type: none"> • changes to Scope; • COVID – 19 (subject to IHSL acknowledging this is a healthcare critical project); • lack of access or a failure by the Board to comply with their other obligations under SA2; • any instructions by the Board Representative or Project Manager to stop or not start work or change any key dates; • the Board’s Representative, Project Manager or Supervisor do not reply to a communication within the required period; • the Project Manager or the Supervisor changes a decision previously communicated to Imtech; • a test or inspection done by the Supervisor under the NEC4 Subcontract causes unnecessary delay; • unexpected physical conditions; • adverse weather.
Payment	<p>It has been agreed that the Board will fund the ventilation works and that payment will be made on a monthly basis. The requirements for open book accounting will be included in the Scope. Payments are certified by the Project Manager (rather than the Board’s QS) although the Board is entitled to make representations to the Project Manager about the applications for payment.</p> <p>Full details of the cost remain unclear because there are no details of prices in the NEC4 subcontract and Imtech is not obliged to provide subcontract pricing information to the Board.</p>
Commissioning, tests and inspections prior to and at	<p>The following process for certification of the VW has been agreed, although this is not currently reflected in the NEC4 subcontract:</p>

Issue	Proposed Approach, Risks and Precedents
completion, and deliverables on completion	<ul style="list-style-type: none"> • As the VW progress, there will be test and inspections by the Supervisor under the NEC4 Subcontract other relevant stakeholders (including IOM) will be allowed to witness to ensure that the VW are progressing as anticipated. Although there will be no specific contractual obligations regarding notification or attendance of stakeholders at these tests and inspection; this will be the subject of a site protocol. Provided witnessing takes place, early comfort or warning as appropriate as to the progress of the VW will be obtained. The frequency and requirements of these tests and inspections will be detailed in the Scope. • Once the VW are completed, Imtech will undertake a series of commissioning tests or inspections and these will be signed off by the Project Manager as appropriate under the NEC4 Subcontract. • Any additional tests required by the PM pursuant to the NEC4 Subcontract required to ensure the Completion Criteria have been successfully met will be undertaken. • The Project Manager will confirm to the IT that it considers the VW have achieved completion. • The IT, when satisfied that the Completion Criteria have been achieved (having witnessed or tested as appropriate) will issue a Completion Certificate. • The Board has appointed IOM and Oakleaf to undertake independent validation of the fire and ventilation systems. This will be undertaken post completion and certification of the VW by the Independent Tester. <p>There is no provision for snagging. However, in the event that defects arise, these will be addressed in accordance with the defect correction provisions in SA2 that reflect the NEC4 Subcontract (see below) and the associated indemnity provisions (see below). This will include any defects identified by the IOM and Oakleaf validation (subject to the exclusion of Part A of the Scope from IHSL / Imtech's responsibility).</p>
Early Warning Register and progress meetings	Regular progress meetings will be held and an Early Warning Register created to discuss issues that may affect progress.
Defects correction and rectification times	This remains the subject of discussion with IHSL as it will form part of the Services Contract but note our comments below regarding the indemnity arrangements and the service provision.
Delay Damages	Delay Damages of £5,000 have been applied in the NEC4 Subcontract. It is proposed that to the extent IHSL recover any delay damages from Imtech these will be passed on to the Board. It should be noted that delay damages would only apply when the works are not completed by the target completion date (as the same may be extended by any of the Compensation Events).
Caps or exclusions of liability	The limitations on liability apply in full for five years (in line with the indemnity) following which the PA applies (subject to IHSL's liability for rectification of any defect in the VW being limited to the liability of Imtech under the NEC Contract). During the five year period (or other period

Issue	Proposed Approach, Risks and Precedents
	<p>agreed), IHSL's liability is, without limiting any recovery available via insurances, capped in the following manner (any exclusions to be agreed):-</p> <ul style="list-style-type: none"> • IHSL's liability for indirect or consequential loss arising under or in connection with the VW is limited to £5,000,000 • For any one event, the liability of IHSL for loss of or damage to the Board's property arising under or in connection with the VW is limited to £5,000,000 • Project Co's liability to the Board for Ventilation Works Defects due to design which are not listed on the Defects Certificate is limited to £5,000,000 • IHSL's total liability to the Board for all matters arising under or in connection with the VW is limited to 100% final contract price. <p>Post 5 years, the PA applies and IHSL have full obligations to provide the Services (including services to the VW) in accordance with the Services Specification. However, if there is a defect in the VW, IHSL's liability in relation to the direct costs of rectification of the defect will be capped at the liability in the NEC Contract. IHSL will, however, remain liable in full for deductions post year 5.</p>
Termination	<p>In the event that completion is not achieved within ten weeks then IHSL have the ability to terminate the contract with Imtech and seek to deliver the VW through an alternative provider.</p> <p>In the event that completion is not achieved within sixteen weeks of the target completion date the Board have the right to either; (i) step-in to the NEC4 Subcontract and have the VW delivered by Imtech (on the assumption Imtech remain engaged); or (ii) self-deliver the VW (subject to the Board requiring to undertake the VW in accordance with Good Industry Practice and grant IHSL an Excusing Cause while the Board are delivering the VW). It is also open to IHSL to terminate SA2 at the sixteen-week longstop date, at which point they will no longer have an obligation to deliver the VW.</p> <p>If SA2 terminates because of an act or omission by IHSL then the Board will only recover the costs of completion the VW to the extent that IHSL recover those from Imtech.</p>
Service Provision	<p>This is a critical issue and IHSL are being heavily pushed for clarity and transparency on its negotiations with BYES. No drafting dealing with his issue is yet available. The Board require:</p> <ul style="list-style-type: none"> • Confirmation on proposed changes to the Services Specification to reflect VW (including proposed rectification times (on which see comments above regarding defect correction)); • Confirmation of any other changes required to the Services Specification as a result of the associated enhancements, such as Availability criteria given changes to temperature controls; • OPEX costs.

Issue	Proposed Approach, Risks and Precedents
	<p>SA2 cannot be signed until it reflects the pass down of service provision to BYES.</p>
Indemnity	<p>This is time limited to 5 years.</p> <p>It provides a full indemnity for all direct losses (which includes all damage, losses, liabilities, claims, actions, costs, expenses (including the cost of legal or professional services, legal costs being on an agent/client, client paying basis), proceedings, demands and charges) in connection with:</p> <ul style="list-style-type: none"> (i) Additional Works Interface Issues (being a matter which arises as a result of undertaking the additional ventilation works and fire safety works for which MPX, BYES or Imtech are not liable in accordance with their respective contracts); (ii) Additional Works Excluded Liabilities (being matters which Imtech would have been liable for, but which Imtech have not accepted the risk for under the NEC4 Subcontract); and (iii) Imtech insolvency risk. <p>It also provides interim indemnity relief (i.e. cash flow relief) from the application of Deductions and rectification costs in relation to any Additional Works Interface Dispute (being a dispute between MPX and / or BYES and / or Imtech in relation to which party is responsible for a failure of the VW at the Facilities).</p> <p>In relation to both the full indemnity and interim indemnity relief there are controls / limits on the indemnity including:</p> <ul style="list-style-type: none"> (i) an obligation on IHSL to pursue any alternative rights of recourse available to them under any other project document (including the contracts with BYES, MPX and Imtech, any relevant insurances and any relevant security packages); (ii) an obligation on IHSL to mitigate their costs and losses; (iii) notification provisions; (iv) IHSL cannot claim indemnity relief for its own negligence, omission, default. <p>In relation to the interim indemnity relief (that is, cash flow relief above) there are also provisions for repayment to Board (potentially less IHSL costs) following determination of liability to the extent that IHSL are successful in any DRP in passing liability on to MPX and / or BYES and / or Imtech.</p> <p>The indemnity is subject to IHSL confirming compliance at all times with their obligation to provide the services and respond to any failures within the contractual timeframes stipulated. The indemnity includes provisions for temporary repairs to be undertaken to ensure continuity of service (where possible) or where continuity of service is not possible there are provisions for IHSL to ensure a permanent repair is undertaken as swiftly as possible and there are provisions to ensure appropriate incentivisation for IHSL to do so.</p>

Issue	Proposed Approach, Risks and Precedents
	<p>The important point to note in relation to the indemnity is that although the provisions have not changed from those previously agreed in principle, the Board now have greater visibility on the Additional Works Excluded Liabilities. These include deductions and Reserved Rights in relation to Title Deeds and land matters for which Imtech have not taken on liability.</p>
Insolvency	<p>The position previously agreed in principle is reflected in SA2, which represents a shared risk profile for Imtech insolvency.</p>
Consultant Appointments	<p>In order to avoid fettering the PM and Supervisor's discretion under the NEC4 Subcontract between Imtech and IHSL, it is proposed that there is no requirement for Board Representative approval for the PM / Supervisor (as appropriate) to agree changes to the Scope, Programme, approval of CEs. However, the Board have insisted that these controls are included in the Consultant's appointment and IHSL's confirmation that they agree to this approach is awaited.</p>

RHCYP & DCN Oversight Board

9 April 2020

Director of Finance, NHS Lothian

READINESS OF BOUYGUES TO MOVE TO FULL OPERATIONAL STATUS - REVIEW FINDINGS

1. Overview

A review has been undertaken of Bouygues readiness to move to full operational status, that is, the point at which patients and staff move into the facility, commencing with DCN in the week commencing 11 May.

This note sets out the key findings of this initial high-level review and suggests actions that are recommended to assist in supporting Bouygues and providing the Board with the necessary assurance that patients will be moving into an appropriate environment.

2. Background

Bouygues have experienced low morale and significant senior staff turnover during the last few months, with challenges in sourcing the right calibre of staff in the Scottish FM market leading to new team members being deployed from south of the Border to strengthen Bouygues management capability.

With a more normal operational state now imminent, attention has turned to the 'steady state' and what this should look like in terms contract performance. However, before such a steady state can be reached, it is necessary to reach the point where performance has risen to a level that gives the Board the assurance it needs that the facility will be ready to accept patients.

3. Key Concerns

Bouygues have been under considerable pressure to deliver their contractual obligations and the Board has adopted an approach of strict application of the PA, with some exceptions. This has resulted in high levels of deductions being applied and considerable frustration and concern on the part of the Board that Bouygues may not be capable of delivering the required level of service once patients move in.

However, many Board staff are of the view that Bouygues are genuinely seeking to make improvements, have strengthened their team in response and have the ability to deliver what the Board needs. Bouygues would concede that they are not yet perfect and have some way to go to get to the level they would wish to be at for the 'steady state'.

However, from Bouygues point of view, similar levels of frustration are expressed with the Board's approach, which is seen as being inappropriate in an environment where:

- The Board's priorities are unclear, at least at an operational level, with conflicting messages being received relating to the focus that Bouygues should be applying.
- While Bouygues accept that their performance is far from perfect, the challenges of the past few months mean that 'perfection' is not a realistic target for DCN opening
- Bouygues are still trying to overcome the challenges they have faced in terms of morale and building and retaining the right team.

There are several actions that could be taken that could provide Bouygues with the support and clarity they need to make the best progress and thus improve the chance of the Board obtaining the assurance sought.

4. Behaviours

There must be a shared understanding that the focus of the next few weeks is to provide assurance that the DCN element of the facility is suitable for patient occupation. All parties must agree that this is the objective in the short term and work with each other accordingly. While this does not mean that seeking full contract compliance is not a key objective of the Board, the timing of achieving that objective should be revised and worked towards perhaps over the next 6-9 months as we move from the current position to a settled steady state.

Both teams need to be led during this period by senior staff willing to work constructively with each other, with a focus on customer service on the part of Bouygues and on clarity of objectives and facilitating Bouygues' ability to deliver against these on the part of NHSL.

5. Team structures

Bouygues do not have a clear view of what NHSL's contract management structure is or will be in future. Dealings with NHSL have been with a wide range of people, with no fixed idea of how the Board will manage the contract in future, or who is speaking for the Board and setting the priorities in the present.

It is recommended that the NHSL contract management and assurance structure be reviewed, with a steady state approach identified and an approach to transition put in place now so that consistency can be achieved and relationships built, with an appropriately resourced, experienced and suitably senior team occupying the key roles during transition and once steady state is reached. This should be carried out in a way that is consistent with ongoing work to review PPP contract management processes.

Thought should be given to the roles in the NHSL team and who is best placed to fill these given the change in nature of the relationship once steady state is achieved. It is clear that there are certain relationships between the teams that are not working and will be unlikely to assist in building longer-term partnership. These in particular will need to be assessed by both parties, with redeployment or a change in role considered.

NHSL should discuss with Bouygues the potential for additional resource to be deployed to work through low value changes and 'snagging' type items in the short to medium term to clear backlog. Bouygues will resist this in a situation where they are exposed to a high level of deduction, so it may be appropriate to revisit the Board's approach to this (see below).

One final area that the Board should address is the current location of the Bouygues team in the basement of the facility. It would be desirable in terms of improving communication and relationship building to provide Bouygues management with some workspace within easy reach of NHSL/NHSL offices. This arrangement would only be temporary, lasting for the period between now and RHCYP patient move-in while there is space available.

6. Priorities

There is a shared understanding among all parties that the priority must be to get DCN ready to accept patients. However, at the same time, Bouygues are being placed under considerable

pressure to deliver perfection, with 100% performance of their contractual obligations as the measure of what is acceptable.

Clearly, full performance of contractual obligations should be the overall target that Bouygues must meet. However, it is not realistic to expect this to be achieved in a timeline that coincides with DCN opening. The measure of whether DCN can be opened to patients does not need to be 100% contract performance. The focus of the coming weeks should be to ensure that the Board and Bouygues focus on the priorities and that conflicting messages are eliminated. The focus can turn once again to seeking full contract performance and compliance in the medium term.

To make progress, it will be essential that the Board interface with Bouygues, in terms of priority setting, progress review and monitoring, is through a single person who can thus ensure that priorities are addressed urgently and less crucial issues dealt with accordingly.

7. Payment mechanism

IHSL, and therefore Bouygues, continue to carry high levels of deduction. While these are not currently leading to the application of warning notices, they are clearly a factor in influencing Bouygues behaviour, although arguably not in a positive way. Bouygues perception is that they are now being punished rather than incentivised, and the financial burden being placed on them is arguably presenting a barrier to making the investment needed in the short to medium term to address the 'to do list'. It is recommended that NHSL should separate the performance management regime from the payment mechanism temporarily, continuing to measure performance without this leading to deductions, including deduction levels from recent months that have not yet been agreed. This will relieve the pressure on Bouygues to allow focus on priorities and freeing up funds to invest in additional resource to tackle the 'to do list'.

8. Summary of Recommendations

- Agree that the Board's key objective is a focus on readiness for DCN transfer, and full contract performance and compliance following on from this, with consistency of message to be delivered via a main Board representative
- Review the contract management function and interface with Bouygues, taking a different approach to management of less crucial issues so that they do not distract from the main objectives
- Adopt a facilitative and collaborative approach, with improved communication, including provision of office space nearer to NHSL/IHSL, and use of meetings and improved and focussed information to track progress
- Review the NHSL structure and the roles and resource within it, and begin building a contract management team ready for steady state, while at the same time being able to manage the transitional period
- Review the Board's approach to payment mechanism application with a view to restoring its incentivisation role, including suspension of deductions during the transition period

Michael Pryor

Business Partner (Innovation)

April 2020

RHCYP + DCN Oversight Board
9 April 2020

Proposal for advance opening of Ronald McDonald House for NHS staff accommodation

Situation

NHS Lothian is currently sourcing accommodation for staff in order to maintain frontline services.

The Ronald McDonald House Charity is making their family accommodation available to NHS Boards and Trusts across the UK for staff responding to the Covid-19 pandemic.

Background

The Ronald McDonald House is a hotel-standard facility in the new RHCYP, designed as a 'home from home' for families of young patients. There are 25 twin bedrooms with en-suite bathroom.

The RMH model is that the charity runs the House within the NHS facility, including House management and housekeeping / domestic staff. At present, there is a House Manager on site for core hours, but no domestic workforce will be recruited until later in the year.

The 'home from home' model differs from a hotel in that there is not a daily clean / turndown service in the bedrooms and bathrooms. Families are asked to clean their room and bathroom for the duration of their stay, with access to domestic appliances and supplies, and remove their waste to a shared disposal area.

The charity has also offered to make available to occupants the communal day lounge with television, fridge, microwave and toaster, and the family laundry for occupants to do their washing.

Bedding, bed linen, towels and cleaning supplies would need to be provided by NHSL and the separate house laundry, for laundering of linen and towels will be available to NHSL.

In an operational RHCYP, accommodation is allocated to families who meet agreed criteria. The offer that the charity has made is for staff who require accommodation to be able to work in the RIE, as identified by NHS Lothian.

Assessment

The Site Team at RIE have confirmed the need for access to additional, local accommodation to support staff in sustaining services. This was supported by the Medical and Nurse Director at the Executive Steering Group on 30th March 2020..

Fire Officers have confirmed that the RMH can be used overnight now, with the 24/7 NHSL security team carrying out a sweep of the House in the event of a fire alarm. Standard operating procedures for access, induction, health and safety and terms of occupation are being drafted. Any resident who does not sign in and out of the building at the main desk will have their accommodation cancelled.

NHSL Facilities are reviewing the cleaning specification for the House, to advise if / when they will be able to do an initial clean and then support daily cleaning of communal areas in the House. The preference would be for longer-term occupation to minimise the turnaround and cleaning of bedrooms.

The RMH manager is prepared to be on site for agreed core hours.

The NHSL Head of Volunteering has confirmed that a housekeeping role to assist with general running of the facility, allocation of keys, laundry and light cleaning of communal spaces is potentially attractive to the many new recruits who are wary of or less suited to a clinical environment. A role description is being drawn up.

ELHF have confirmed funding available for the NHS to equip the House with supplies and quotes obtained for bedding, bed linen and towels.

Supplies for tea and coffee can be provided in the communal kitchen. Residents are asked not to eat in their rooms. Limited catering at breakfast and lunchtime is available in the RHCYP & DCN Restaurant, which remains open to cater for NHSL staff and contractors on site. Other catering is nearby in the RIE.

The NHSL Travel Team have established a system for the allocation of hotel and other accommodation (paid or unpaid) on request. They are prepared to manage the allocation of these 25 rooms in the same way.

Recommendation

1. NHS Lothian to formally write to the RMH Charity to request the use of their facility, outlining the proposed arrangements.
2. To seek approval from the Oversight Board to open the Ronald McDonald House in RHCYP ahead of the clinical services moving from RHSC at Sciennes, once workforce and standard operating policies as outlined above are in place.

Sorrel Cosens
6 April 2020

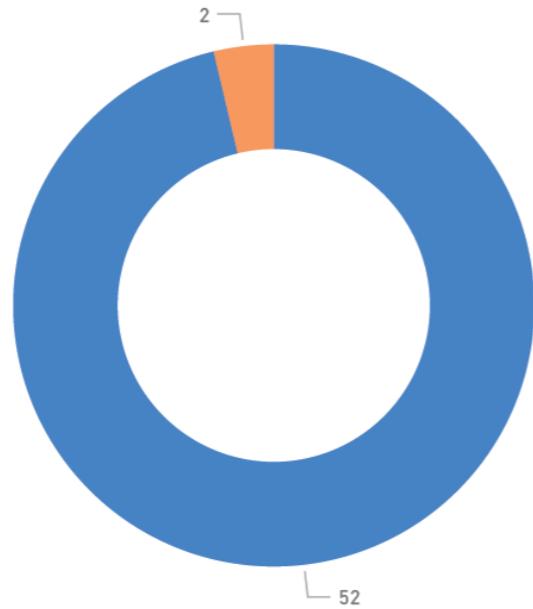
RHCYP+DCN - Continuity of Services on Existing Sites Action Log Dashboard

07/04/2020

Actions closed since last dashboard : 3

Status against Target Date

- Due Status**
- Closed
 - Actions on Target
 - Up to 2 Weeks Beyond Target Date
 - Over 2 Weeks Beyond Target Date



OPEN
2

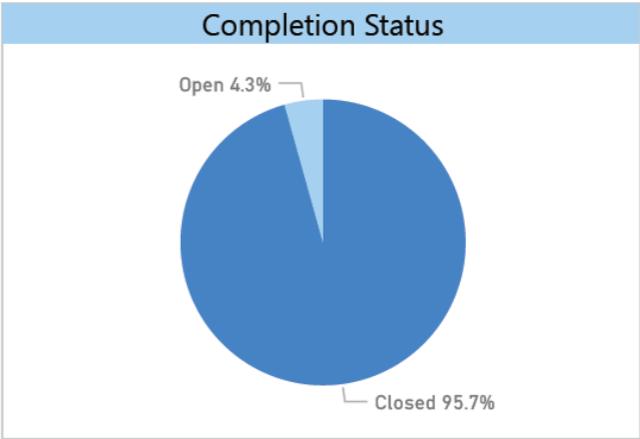
CLOSED
52



Actions for DCN at WGH sit

OPEN
1

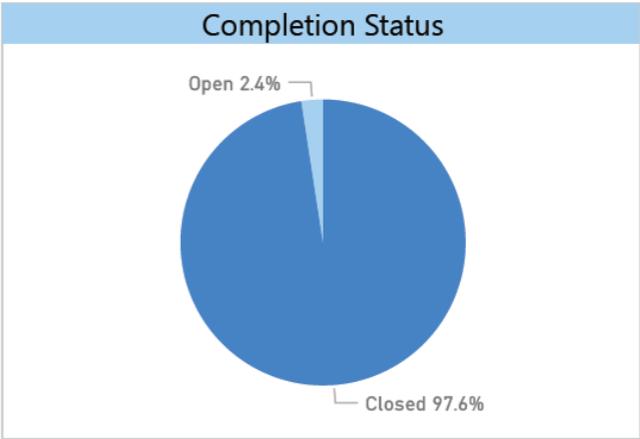
CLOSED
22



Actions for RHSC Sciennes site

OPEN
1

CLOSED
40



RHCYP + DCN

Continuity of service provision on current DCN and RHSC sites

Revision Date: 07/04/2020

Current date for tracking: 07/04/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to close	Open/ Closed	DCN	RHSC
2	Paediatrics at St John's	2.1	Consideration of increasing Services at SJH to reduce pressure of RHSC and enhance care closer to home for West Lothian children.	F Mitchell	05/07/2019	31/03/2020	The RCPCH visited as planned on 11 and 12 February, and advised the draft report would be provided by 03/04/20. Not received to date.	OPEN	No	Yes
13	DCN staffing	13.1	In light of nursing staff leaving DCN in anticipation of the move to RIE, the workforce has been reduced. There is a need to ensure we retain current staff, and quickly fill vacancies.	G McAuley / M Pearson	07/10/2019	31/03/2020	Recruitment efforts have seen sufficient vacancies filled to support the current service and move, and so this action is closed here. Recruitment is managed under business as usual, and certainty about the move and the improved environment in the new DCN will further improve recruitment and retention.	CLOSED	Yes	No
		13.2	Anaesthetic out of hours rota cover for DCN. Provision of robust out of hours anaesthetic rotas for the ~6-9month period between DCN team moving and Paediatric team moving to the RIE site. Originally the plan was for paediatric and neuro trainee rota to combine.	M Carr	25/11/2019	01/04/2020	Interviews held on 11th February 2020 and 4 clinical fellows appointed. Start dates TBC	OPEN	Yes	No

RHCYP + DCN Oversight Board
9 April 2020

Recommendations made by the Family Council to the Public Inquiry Team

Situation

In response to an invitation to comment on the draft terms of Reference for the public inquiry, the RHSC Family Council also made a number of recommendations, or requests, of NHS Lothian. Their submission is attached at Appendix 1. Although these have not been made directly to NHS Lothian at this stage, they have stated their intention to do so.

Background

NHS Lothian children's services and the project team have been keen to engage the Family Council over the course of the project, particularly at key points where they have been able to have meaningful dialogue and influence the re-provision. This included site options appraisals, the concept design statement, AEDET reviews of each bidder's submission in procurement, and design development, including the arts programme, once IHS Lothian were appointed. NHS Lothian are very grateful for the dedication of the volunteer members, and their willingness to share their experience in order to ensure the best environment for children and young people.

Assessment

The Family Council's recommendations cover three areas.

- 1. Communications following the July 2019 delay.** The Family Council continue to meet when either they or NHS Lothian request a meeting; they last met on 22 January 2020. In the same way that it has been difficult to provide staff with detailed progress updates as some of the commercial aspects of the delay have been worked through, this has not gone to our wider groups of stakeholders, or into the public domain. However, it is hoped that more regular communications to all stakeholders will be possible once the programme for ventilation works, and therefore opening, has been confirmed. The announcement of the DCN move, and the confirmation that RHCYP construction has been classed as essential to continue by the Scottish Government, has been forwarded to them.
- 2. Familiarisation and induction.** It has not been possible to have visitors on site in construction areas, and now Covid-19 prevents all such activities, however, NHS Lothian are preparing information for sharing with all stakeholders. A project is underway to update the Children's Services web pages ahead of the RHCYP opening. Internal photography of the routes around the building has been done, so that visitors can plan their visit and familiarise themselves with the facility in advance. This is in the development stages to be made available both on the NHS Lothian website and Google maps later this year.

3. **Access to restorative spaces.** The map of the new facility we have produced highlights resources such as the family support services, the sanctuary, the shop and catering outlets. These and the other spaces for families, such as courtyards, sitting rooms, changing places facilities, and infant feeding accommodation are clearly signed around the building, and parents and carers will be directed to the closest and most appropriate for each family. Information will be available on the web pages and on the electronic patient entertainment network at the bedside. Information on amenities and greenspace around the campus has not been collated.

Recommendation

Notwithstanding the current pressures of Covid-19, which are felt both by the service and the Family Council members, many of whom have children living with chronic conditions, NHS Lothian propose to set up a **virtual Family Council meeting in May 2020**. We would share the latest news on progress with the opening of RHCYP at that date, and the plans for the web pages and virtual tours in development.

In respect of visits, limited and controlled access to site can be requested. It would be useful to discuss with the Family Council what routes and areas that they would like to see, and how they could then share their learning with families in RHSC.

It is suggested that the Family Council, with children's services, look at resources already available or in development, and identify if there is any gap or specific information that could also be shared through the electronic patient entertainment system and website.

Fiona Mitchell, Director, Women's and Children's Services

Sorrel Cosens, Business Manager

6 April 2020

Appendix 1: Recommendations made by RHSC Family Council to the Public Inquiry Team

We have some recommendations to make, which we will share with the Family Council senior management members:

1. An impact of the delay is that families need more information and reassurance about what is happening. There is a risk that families' trust in the process is depleting ; this can be assuaged by keeping families 'in the loop' about the new hospital and the Inquiry.
2. As part of this, the additional time afforded by the delay may allow better 'induction' for families that use the hospital frequently, and they would welcome photographs and virtual tours and pre-visits of the new hospital when it's safe to do so. This will build confidence in the process and the new site.
3. As part of the delay, we would encourage good use of the time to pre-plan routes and access to restorative spaces for families to access – to replace the Meadows environment benefits they will miss.

We believe that these three recommendations will help with the transition to the new hospital and that parents, children and carers would welcome these measures. The delay to the move appears to have created challenges about how to communicate with families about the new hospital. From what we heard,, parents are not so much upset by the delay itself, but they would like information so that they can be prepared for the move, and would expect that the delay time allows for improved planning for using the new hospital.

Finally, we would like to thank the Senior Management team at RHSC for supporting Family Council. We believe that involving parents and carers will help to ensure that the new hospital will meet the needs of future families.

Sincerely,

John Greenhill
Abhishek Behl
Sophie Pilgrim
Nuala Gormley

And endorsed by Family Council parent members
Tracy Rendall
Thea McMillan

From: [Graham, Chris](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Henderson C \(Calum\)](#); ["Colin Sinclair"](#); [Cosens, Sorrel](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); ["Gordon James"](#); [Graham, Chris](#); [Graham, Iain](#); [Smith G \(Gregor\)](#); ["Jacqui Reilly"](#); [REDACTED]; [Joyce, Alex](#); ["Judith Mackay"](#); [Little, Kerryann](#); [McMahon, Alex](#); [Morgan, Mary](#); [Murray, Fiona](#); [Nicoll, Nadine](#); ["Peter Reekie"](#); [Roxanne Gallacher \(Jim Miller PA\)](#); [Trotter, Audrey](#); [Walker, Anna](#)
Cc: ["Roxanne Gallacher"](#); [Trotter, Audrey](#); [Walker, Anna](#); [Murray, Fiona](#); [Nicoll, Nadine](#); [Little, Kerryann](#)
Subject: RHCYP & DCN Oversight Board - 23rd April 2020 - 8am
Date: 22 April 2020 09:47:39
Attachments: [RHCYPDCN OSB Papers 23-04-20.pdf](#)
Importance: High

Dear All

Please find attached the papers for Thursday morning's meeting. This will be a MS Teams meeting:

MS TEAMS: RHCYP,DCN, CAMHS Oversight Board

Kind regards
Chris

Chris Graham
Secretariat Manager



The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service. For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 23 April 2020, 8:00 – 9:30am

Venue: MS TEAMS: RHCYP,DCN, CAMHS Oversight Board

AGENDA

1.	Chair's Welcome and Introductions	FMc	v
	Apologies:		
2.	Minutes of previous meeting for approval: 9 April 2020	FMc	*
3.	Matters Arising		
	3.1 Theatre corridor doors	TG	*
	3.2 DCN Migration	TG	V
4.	Senior Programme Director's Reports		
	4.1 Highlight report	MM	*
	4.2 RHCYP+DCN - Action Log Dashboard	MM	*
5.	DCN Service Migration	TG	V
6.	Progress with Ventilation Remedials and Fire Enhancements		
	6.1 Supplemental Agreement commercial sign-off	SG	V
	6.2 Design sign off	BC	*
8.	Communications	JM	V
9.	Any Other Competent Business		
10.	Date of Next Meeting		
	Thursday 7 th May 2020, 8am		

* = paper attached

v = verbal report

p = presentation

= paper to follow

OVERSIGHT BOARD**NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services**

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 9 April 2020 held via MS Teams

Present by Teams: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Miss T. Gillies, Medical Director, NHS Lothian; Mrs S. Goldsmith, Director of Finance, NHS Lothian; Professor A. McMahon, Nurse Director NHS Lothian; Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian; Mr C. Henderson, Scottish Government; Mr P. Reekie, Chief Executive, Scottish Futures Trust; Mr C. Sinclair, Chief Executive, NHS National Services Scotland and Mr G. Archibald, Joint Staff Side Representative.

In Attendance by Teams: Ms M. Morgan, Senior Programme Director; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Prof J. Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work; Mr E. McLaughlan, Assistant Director, Engineering, Environment and Decontamination, Health Facilities Scotland; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian; Ms J. Mackay, NHS Lothian Director of Communications and Mr C. Graham, Corporate Governance Team (minutes).

Apologies: Mr G. James, Director of Facilities, Health Facilities Scotland; Mr B. Currie, Project Director, NHS Lothian and Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side).

1. Minutes of previous meeting – 26 March 2020

1.1 The minutes of the meeting held on 26 March 2020 were accepted.

2. Matters Arising**2.1 NHS Lothian Covid-19 planning**

- Initially hoped that reduced Out Patient activity may help acceleration planning for DCN move
- Noted that due to COVID19 there has now been an acceleration in expansion plans of the WGH critical care footprint which has led to theatres and anaesthetics staff being pulled in to augment that footprint earlier than anticipated
- Staff currently unable to support the full implications of DCN move which would involve personnel swapping between sites
- Looking at split site approach to mitigate level of stress within critical care team. Noted that risk assessment has been done with teams
- Noted that COVID19 presents new challenges and important to remain sensitive to needs of clinicians and the wider patient group
- Need for ongoing dialogue, what this means practically and the best approach for the DCN move to the new building
- Potential for returners back from NES to help with resourcing of phased approach

2.2 HCID management at RHCYP front door

- NSS proposal
 - Proposal now received and options now with IHSL as part of feasibility study
- Timescale for feasibility study
 - Noted that IHSL unable to look this for at least next 2 weeks until they have the bandwidth to take on work
 - Noted that asking someone else to look at this would not be possible given complexities involved with drawings, build and contract and this will have to wait until IHSL have capability to do
 - Hope to get something back in the next 4 weeks in relation to design but recognised that at moment no firm date for IHSL to start looking at this

3. Senior Programme Director's Reports

Highlight report

- Good progress being made with workstreams
- Noted that DCN accommodation hand over ahead of time, on track to hand over by 20/04/2020
- Second Floor Fire Enhancement works complete and First floor work almost finished
- Noted that the first set of water testing following whole system disinfection had shown a low sign of pseudomonas in a single outlet
- Noted that IOM and Oakleaf to complete respective inspections of fire enhancements and air handling by 24/04/2020 – Accommodation would then be ready for handover and occupation which was very good news

CAMHS

- Completion of changes by 30 October 2020 – had hoped for July/August time but are complications give the nature of the unit and complexity around solid ceilings; ceiling hatches and bespoke door sets with 12-14 weeks lead time
- Noted that there is no decision around when CAMHS may open at the moment

Air Handling Units

- Date for decision moved from 10 April to end of next week

Delivery Group

- Overall programme had been discussed at the Delivery Group. Noted that there are a number of reasons delivery is hitting against the RHCYP delivery date of 23/11/2020:
 - Depth of scrutiny and evaluation of design process
 - Number of good ideas and creative solutions coming through
 - Finding it difficult to do works around COVID19 restrictions (social distancing, anxiety, absence)
 - SA2 Work
 - Construction will be taking a deserved Easter break
 - Currently have additional construction staff working but they may go back to other construction companies once COVID19 restrictions are lifted
 - Difficulties with supply chain

Exceptions in terms of report

- Good news – risk profile unchanged from previously
- Lot of good work undertaken – brilliant news for DCN and to be aware of progress towards RHCYP opening
- Confirmation that work on the negative pressure rooms (HVC107) will not adversely impact on programme. To be treated as variation to design and included in scope
- OSB considered potential reputational risk and focus on pushing the right parts of programme to completion. Important to remember at all times focus is on opening a safe and effective building and noted that the political risks around meeting the 23/11/2020 date maybe lesser given current COVID19 situation
- Noted that this was a complex piece of work which was now being overlaid with complex risks
- Noted possible staff psychological impact and impact on staff morale working to an unrealistic timescale for opening
- Agreed that the impact of COVID19 remained unknown and this had been identified as a major risk. The Programme would remain as it was at the moment with the risk seen as emergent, this can be reassessed following signing of SA2 an move in of DCN

Ventilation

- Recommissioning of ventilation systems now compete for all DCN areas, general areas to be complete in next 3 weeks
- V6 completed and closed, will be reflected in next report
- Outstanding issue around theatre corridor doors with air coming in greater than air extracted out leading to doors blowing. Solution is to hold doors open and introduce automatic door closers to improve air flow
- MPX looking to introduce solution but this is not a long term solution as doors open in for beds on way to theatre but in the event of a fire would have to be manually opened to go the other way. National Fire Officer is content with this approach, Lothian Fire Officer is not content, no other safety concerns have been raised.
- Noted that this will need to go through TG as Executive Lead for Health and Safety and be taken back for local discussion to come to a clearer view. This would then come back to the next OSB for endorsement - **TG**
- V38 – maintenance bypass – this has now been demonstrated on all Air Handling Units being retained and the documentation was being awaited for the 2 units being removed under HVC107 works
- Air Handling Units now compliant with healthcare guidance – all repaired, inspected and no outstanding issues, now waiting on sign off from Authorising Engineers for what had been a major task

Electrical

- All actions reviewed – some statements outstanding and with IHSL for confirmation at moment then these would be resubmitted to HFS for close off
- For next OSB all items will be closed off with new items as part of HVC107 to continue

Decision

- Noted that there was a need to take the decision to mobilise the DCN move or not to allow notice to be given to the service, ambulance service and moving company.
- Noted that documented delays do not impact on DCN move and the unpredictability of any COVID19 impact was also noted.
- **OSB were content to support NHSL in making preparations for transition of DCN into new building, whilst noting this was not agreement to full occupation of the building**

4. DCN Service Migration

- Already covered, nothing further to add.

5. Progress with Ventilation Remedials and Fire Enhancements

- Noted that paper had been taken to NHSL Private Board 08/04/2020
- NHSL Board were asked to accept SA2 remaining risk SA and to approve capital allocation as an addendum to the original RHCYP/DCN Business Case. The NHSL Board also noted that DCN would be available for occupation from w/c 11/05/2020
- Mr Bill McQueen, Non Executive Director, NHSL Board has requested that it be recorded that there was no direct contractual relationship between project manager and supervisor which left the risk with NHSL Board. Reassurance had been offered that IHSL had accepted the role and responsibilities of client, this gave some mitigation of risk and gave some rights and confidence around exercising of responsible due diligence. The Board had then accepted this proposal
- The OSB accepted the recommendation in the paper and supported the agreement of NHSL Board. It was noted that the original SA was notified and signed by the Cabinet Secretary, before the OSB was formed. However, it was agreed that this process should be consistent in relation to SA2 – **SG/FM**

6. Readiness of Bouygues to move to full operational status

- Paper received detailing that high-level review had been undertaken of Bouygues readiness to move to full operational status, that is, the point at which patients and staff move into the facility, commencing with DCN in the week commencing 11/05/2020.
- Paper sets out the key findings of this initial high-level review and suggests actions that are recommended to assist in supporting Bouygues and providing the Board with the necessary assurance that patients will be moving into an appropriate environment.
- Noted that as we head towards opening part of the building it would be important for the facilities management part of the contract to work well
- Working with IHSL and BYES to prioritise what is important in the contract as relates to DCN – some tests next few weeks BYES delivering – incentive is no deductions to payment mechanism for this period with a focus on performance management
- Important for OSB to be sighted on this as will mean not strictly following the contract management process
- Noted that SFT Team involved with this work
- OSB content with the proposed approach

7. Proposal for advance opening of Ronald McDonald House

- OSB happy to support proposal to provide 25 bed rooms for staff on RIE family hotel site and were grateful to the Charity for coming forward with the proposal.

8. Service Continuity on Existing RHSC & DCN Sites

- Nothing further to report.

9. Communications

- Noted that NHSL had not been included in the March Cabinet Secretary communication re DCN move and that this had made it difficult to stay in the loop and provide necessary reassurance to staff in a professional and choreographed manner.

9.1 Response to RHSC Family Council recommendations

- Response noted for information

10. Any Other Competent Business**10.1 Communications to Contractors**

- MM keen to send out a tweet to thank construction workers on site for work they are doing and risk taking. Seeking Scottish Government advice around this.
- FM to check on this internally and bring back – opportunity to do something for site toolbox talks and some more general messaging to contractors and NHS colleagues working at sites around Scotland, including RHCYP and NHS Louisa Jordan - **FM**

10.2 Identification for Contractors

- Noted that most contractors now have joint BYES/NHSL badges and critical worker letters should they be required

11. Date of Next Meeting

11.1 Thursday 23rd April 2020, 8am

RHCYP + DCN Oversight Board
23 April 2020

3.1

Medical Director, NHS Lothian

THEATRE CORRIDOR DOORS – RISK ASSESSMENT

The purpose of this report is to confirm that NHS Lothian Health and Safety Services have completed a review of the theatre corridor doors in RHCYP & DCN.- attached..

Cosens, Sorrel

From: Hull, Ashley
Sent: 20 April 2020 15:27
To: Cosens, Sorrel
Subject: FW: RHCYP/DCN theatre doors

[Please see below](#)

From: Drennan, Eric
Sent: 20 April 2020 15:21
To: Gillies, Tracey
Cc: Wilson, Ian; 'WILSON, Ian (NHS LOTHIAN)'; Leckie, Alastair; Hull, Ashley; Jones , Emma L
Subject: RE: RHCYP/DCN theatre doors

Hi,

I visited the theatre area today accompanied by members of the Project Team who very kindly showed me round the area where concerns had been raised and explained the background and remedial measures taken.

The original issue related to three doors located in the corridor areas within theatres and a fourth next to the reception desk, which were adversely affected by overpressure which was causing the doors to sit in a misaligned position at points depending of the air pressure cascade through the area as other doors were opened and closed. In effect the sequence of door openings had the potential to cause a slight rush of air and pressure build up that caused the doors to sit partially open.

To rectify this automatic door openers with motion sensors have been fitted to three out of the four doors already, with the fourth due soon.

The effect of the power closer is to apply pressure against the positive airflow direction and consequently this counteracts the overpressure effect, as witnessed today on the visit, meaning that the doors that have closers can now sit in a fully closed position.

Consequently it appears that the issue with respect to the overpressure issue has been largely resolved, with the exception of the reception door which is still to be addressed.

If there are any further concerns raised please don't hesitate to get in touch.

Kind regards
Eric

Eric P A Drennan
NHS Lothian Health and Safety Services

📞 Mobile: [REDACTED]

✉ Email [REDACTED]



From: Gillies, Tracey
Sent: 14 April 2020 14:08
To: Drennan, Eric

Senior Programme Director's Report

DCN/RHCYP Project



HIGHLIGHT REPORT

Date 21/04/2020

Senior Programme Director

Mary Morgan

Overall Status / Update	RAG
<p>The overall programme is green status as, despite delays to a number of milestones the overall programme for completion of works remains on date. DCN works completed 20/04/20, is being cleaned and final checks by IOM & Oakleaf 24/04/20 before "handing over" to service for clinical commissioning and occupation.</p> <p>A range of challenges are being presented by the Covid 19 emergency. – supply chain and industry guidance released on social distancing on construction sites. The impact will be considered in May.</p> <p>Ronald McDonald house has been opened for staff during the Covid19 emergency</p>	Green

Milestone	Planned Completion Date	RAG
Transition from system workstreams to service migration activity	20/03/2020 30/04/2020	Green
Confirmation of impact on DCN of HVC 107 works	20/3/2020	Blue
"Go – No Go" decision for DCN migration	09/04/2020	Blue
Completion of MVC 112 DCN Fire Enhancement works	07/05/2020 24/04/2020	Green
Completion of DCN LVCs and minor works	07/05/2020 24/04/2020	Green
DCN Migration	31/05/2020 11/05/2020	Green
Completion of MVC (131) CAMHS Fire Enhancement Works	30/10/2020	Green
Completion of MVC (127) CAMHS LVCs and minor works	30/10/2020	Green
"Go – No Go" decision for CAMHS migration	tbc	White
CAMHS Migration	tbc	White
Supplementary Agreement 2 (SA2) agreed	18/03/2020 04/05/2020	Red
HVC 107 Air Handling Units ordered	20/03/2020 27/03/2020 24/04/2020	Green
Completion of HVC 107 construction works	03/09/2020	Green
Completion of contractor's commissioning and validation HVC107	23/11/2020	Green
Completion of MVC (126) RHCYP Fire Enhancement works	27/07/2020	White
Completion of RHCYP LVCs and minor works	tbc	White
Clinical Scoping/Risk Assessment of Emergency Dept works for HCID	20/03/2020	Blue
Feasibility/options appraisal of ED HCID solutions	tbc	Amber
Submission of change notification to IHSL	tbc	White

Milestone	Planned Completion Date	RAG
"Go – No Go" decision for RHCYP migration	03/10/2020	White
RHCYP Migration	tbc	White

Exception to	Planned End Date	RAG	Cause	Consequences	Recommendation
Supplementary Agreement 2 (SA2) agreed	18/03/20	Red	Negotiation of outstanding contractual points complete – awaiting services spec and finalisation of scope. Legal drafting "toing & froing". IHSL require time for lender governance	Potential overall programme delay. Potential for breakdown in commercial relationship.	Accept delay to ensure risk mitigation. Target date for signing now 04/05/2020 but potential for further slippage
Feasibility/options appraisal of ED HCID solutions	tbc	Amber	No date for completion of feasibility from IHSL	Uncertain impact to overall programme	Accept and monitor

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Reputational impact on NHSL caused by delay, adverse media reports and opinion of internal and external stakeholders	Executive Steering Group meets weekly and is attended by NHSL Communications Director. Ongoing engagement with stakeholders formally and informally Engagement with Cabinet Secretary	High	Very High
R	Performance of Project Co & Supply Chain (Hard FM) - Project Co. fail to meet Service Level Specification (Post Completion).	Standard form payment mechanism to hold Project Co. to account is agreed. Contracts Manager in post to monitor and measure performance. Additional support for Programme from HFS, SFT and NHSL. Additional input and support at every level given to Contractor.	Very High	Very High
R	Coronavirus outbreak adversely impacts programme delivery: Sickness absence of project team and contractors or diversion of project team and or project resources.	Circulation of information throughout NHS. Continue to monitor and escalate any concerns.	Very High	Very High
R	Proceeding with DCN move without certainty on any adverse implications on day to day DCN operations arising from Ventilation Works. Either the DCN move is postponed very late or issues emerge post move.	Assurance of no impact obtained from IHSL/Imtech Ongoing monitoring of key services over installation period. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management.	Closed	High

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
		Experience in Project Team and Contractors of working in live clinical environments. Weekly Meetings of relevant parties Daily safety briefs Channels of communication including Stop Protocol		
R	Delay in remedial and enhancement works delays transfer of RHSC & DCN into the building	Experience gained from late postponement of previous move. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management. Weekly meetings: Internal with Project Team and Operational Management and Technical Meeting with Design Team and Contractor. Validation activities run concurrently with Commissioning Activities. Expanded NHSL Facilities Commissioning Team.	High	High
I	Delay in completion of the programme has generated additional costs.	Some costs are known and others are being collated. Eg aborted move, costs to services in maintaining and operating in existing accommodation, Remedial works costs Scottish Government have made provision for funding.	High	High
R	Reprovision of critical care ventilation requires full design, construction and commissioning within programme identified timelines.	Design Group established to oversee and deliver. Critical Care and IPCT Clinical Representation on Group High Value Change submitted detailing NHSL requirements.	High	High
R	Provision of enhanced Haematology & Oncology Department ventilation requires full design, construction and commissioning within programme identified timelines.	High Value Change submitted detailing NHSL requirements. SBAR & Risk Assessment completed involving Clinicians & IPCT. Design Team and contractors appointed. IHSL have agreed to undertake.	High	High
R	Operational Board Changes (DCN Priority) These essential Board Changes may not be implemented in time to enable migration of DCN.	NHSL Project Team continue to monitor delivery of these works through IHSL and their Hard FM Contractor, BYES. BYES have a schedule of implementation. Reviewed weekly.	High	High
R	Potential impact of Helipad use: fumes and downdraft affecting services on campus.	Trial flights by Bristows and Babcock occurred uneventfully Helicopters limited to 9tn maximum weight. Helipad is 25m ² , limits size of helicopters that can utilise. Various reports commissioned into potential impact. SOP developed and relevant action cards.	Closed	High

RAG Description Key (Time Status)	
WHITE	Activity has yet to commence
RED	Key milestones will be or have been delivered outside tolerance to agreed baseline
AMBER	Forecasting that there is a significant risk that key milestones will be delivered outside tolerance on agreed baseline
GREEN	All milestones forecast to be on time or early
BLUE	Task Complete

RHCYP+DCN - Action Log Dashboard

4.2

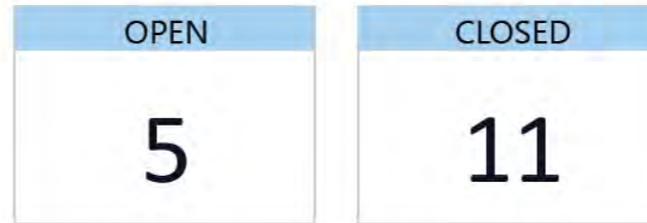
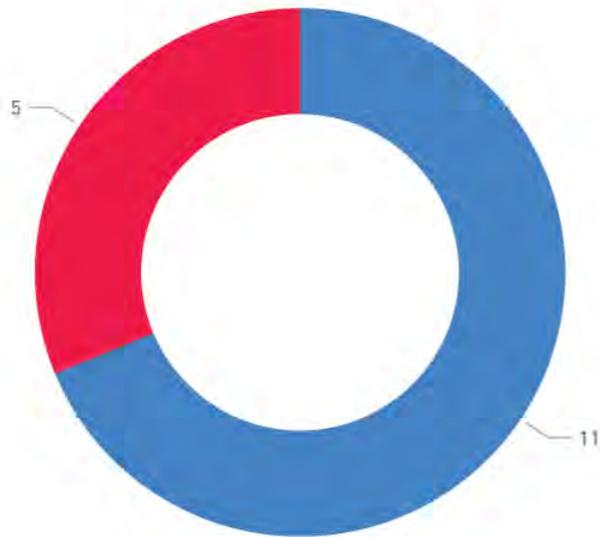
16/04/2020

Actions closed since last dashboard : 3

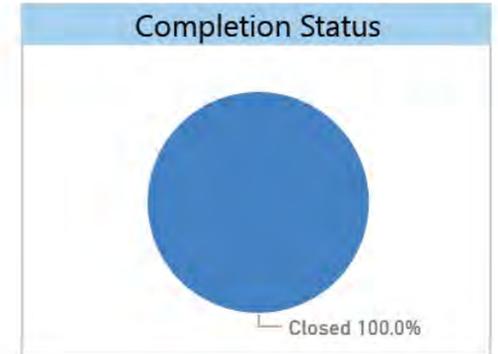
Status against Target Date

Due Status

- Closed
- Actions on Target
- Up to 2 Weeks Beyond Target Date
- Over 2 Weeks Beyond Target Date



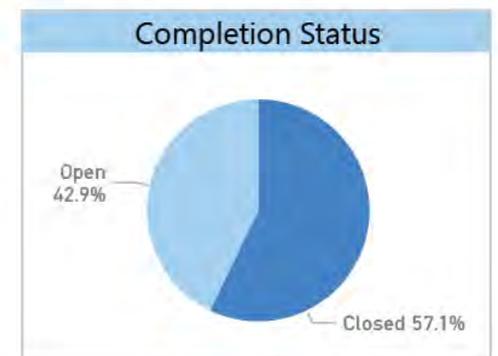
Water



Ventilation



Electrical



RHCYP + DCN

Collated Outstanding Actions

Revised Date: 16/04/2020

Current Date for tracking: 16/04/2020

Issue No.	Issue	Action Number	Requirements	Owner	Start Date	Target Date	Actions to Close	Open / Closed	Priority to RHCYP	Priority to DCN
V3	Recommissioning of ventilation system.	1	Confirmation is required that all ventilation systems have been balanced and re-commissioned to meet the requirements of the environmental matrix	NHSL / IOM	11/09/2019	31/01/2020	<p>MPX are recommissioning every system, DCN is complete and returned to the normal set points.</p> <p>IOM to confirm revalidation of the ventilation in DCN. IOM DCN re-validation complete.</p> <p>IOM to confirm revalidation of the ventilation in RHCYP. IOM RHCYP re-validation is largely complete.</p> <p>Evidence will be IOM's spreadsheet when complete.</p> <p>BYES are awaiting commissioning and validation certification from MPX to return AHU's to full service. (Duplicate for item 41 - 74)</p> <p>NOTE: Environmental Matrix is not the correct reference point (i.e. still refers to 4ac/h for Critical Care). Mandatory contract conditions are.</p>	OPEN	YES	YES
V12	Very limited extract in theatre corridors. Corridors are not at 0 absolute pressure and do not meet required 7 ach/hr (SHTM03-01 part A appendix 2 Table A2). No escape for surplus air. Could impact on open door protection. Pressure in corridors is pushing fire doors open.	1	To be reviewed by IPCT, All pressure Cascades are compliant.	MPX		31/01/2020	<p>MPX have submitted further design information and NHSL have provided comments. NHSL requested/escalated outstanding TUV-SUD response to NHSL comments. - MPX are progressing with the work on the basis that the design meets criteria.</p> <p>MPX have provided a potential solution, IHSL instructed MPX to proceed. MPX have confirmed WIP BOrd await supporting documentation.</p> <p>It has been confirmed that this is not a safety issue.</p>	OPEN	YES	YES
E13	The UPS and output switchboards are a significant distance from the point of load. From this point there is no alternative supply within the internal infrastructure thereby increasing the potential for a single point of failure contrary to clause 4.6 of SHTM 06-01.	2	NHS Lothian should require IHSL to provide agreed mitigation strategies to meet SHPN 00-07 and SHTM 06-01 to avoid internal failure of the single electrical supply to the critical electrical services such as Medical IT cabinets serving life support and other critical systems.	IHSL	30/10/2019	13/03/2020	<p>MPX provided a statement on 6/3/20 (MPX-GC-030718). HFS have advised "06-03-2020 does not address the question 03-04-20 Aconex NHSL-GC-004280 does not address despite being referred to in the text". IHSL to provide closing statement</p>	OPEN	NO	NO
E16	Modular Wiring System	3	Fire integrity is required to be checked and confirmed	IHSL	06/11/2019	13/03/2020	<p>MPX provided a statement on 6/3/20 (MPX-GC-030719). HFS have advised "Response provided in email of 06-03-2020 deals with installation. It does not address the question regarding repair and checks noted in the close out action." IHSL to provide closing statement</p>	OPEN	YES	YES
E18	Medical IT Systems	5	Medical IT system cables are considered essential and covered by BS 7671 chapter 56, however this does not appear to be the case in the installation as they are not fire rated or segregated from other cables.	HFS	06/11/2019	13/03/2020	<p>MPX provided statement on 21/3/20 (MPX-GC-030729) - HFS have advised "The Aconex NHSL-GC-004281 does not provide any further information." IHSL to provide closing statement</p>	OPEN	YES	YES

6.2

RHCYP + DCN Oversight Board
23 April 2020

Project Director, NHS Lothian

DESIGN SIGN-OFF FOR HVC107 VENTILATION

The purpose of this report is to share the advice received on the specification of air handling units to address the ventilation in critical care and Lochranza ward.

The Oversight Board is invited to:

- a) Accept the assurance from Mott MacDonald (Technical Advisors), Health Facilities Scotland (for NSS), and the Authorising Engineer that the specification for air handling units meets NHS Lothian's requirements for critical care and haematology-oncology.
- b) Approve sign off of the specification to allow IHSL and Imtech to procure the units.

Cosens, Sorrel

From: Currie, Brian
Sent: 21 April 2020 16:20
To: Cosens, Sorrel
Subject: FW: RHCYP + DCN - Little France - Final AHU selection, data sheets and AHU Statements document for HFS, Mott MacDonald and Authorising Engineer approval.

Importance: High

Sorrel

Email below from Mott's for inclusion in OSB papers as discussed.

Regards

Brian

Brian Currie
Project Director - NHS Lothian
RHCYP + DCN
4th Floor Management Suite
Little France Crescent
Edinburgh
EH16 4TJ



From: Greer, Graeme [REDACTED]
Sent: 21 April 2020 16:16
To: Currie, Brian; Henderson, Ronnie
Cc: Bain, Kelly J; Brodie, Ian S
Subject: RE: RHCYP + DCN - Little France - Final AHU selection, data sheets and AHU Statements document for HFS, Mott MacDonald and Authorising Engineer approval.

Brian,

In response to your original email of the 16th April for comments on the AHU information issued by Project Co on the 16th April, MML raised the queries in our emails below.

Further to Project Co's response to these queries including updated AHU schedules (issued to the Board on the 20th April), as requested in your email, we confirm (with minor amendments to your suggested text to reflect our work scope);

Currie, Brian

From: MCNEILL, David (NHS NATIONAL SERVICES SCOTLAND) [REDACTED]
Sent: 17 April 2020 17:55
To: Currie, Brian
Cc: STORRAR, Ian (NHS NATIONAL SERVICES SCOTLAND); MCLAUGHLAN, Edward (NHS NATIONAL SERVICES SCOTLAND)
Subject: RE: RHCYP + DCN - Little France - Final AHU selection, data sheets and AHU Statements document for HFS, Mott MacDonald and Authorising Engineer approval.

Brian

We have reviewed the following information related to the AHUs, which was received on the 16 April 2020.

Document	Author
AHU-01-ISO-01 & 02	Daikin
AHU-01-ISO-03 & 04	Daikin
AHU-03-ISO-01 & 02	Daikin
AHU-03-ISO-03 to 05	Daikin
AHU-04-06	Daikin
AHU-04-07	Daikin
SCH-2727164-Y40-AHU-01-ISO-01 T3	Hoare Lea
SCH-2727164-Y40-AHU-01-ISO-02 T3	Hoare Lea
SCH-2727164-Y40-AHU-01-ISO-03 T3	Hoare Lea
SCH-2727164-Y40-AHU-01-ISO-04 T3	Hoare Lea
SCH-2727164-Y40-AHU-03-ISO-01 T3	Hoare Lea
SCH-2727164-Y40-AHU-03-ISO-02 T3	Hoare Lea
SCH-2727164-Y40-AHU-03-ISO-03 T3	Hoare Lea
SCH-2727164-Y40-AHU-03-ISO-04 T3	Hoare Lea
SCH-2727164-Y40-AHU-03-ISO-05 T3	Hoare Lea
SCH-2727164-Y40-AHU-04-06 T3	Hoare Lea
SCH-2727164-Y40-AHU-04-07 T3	Hoare Lea
Air Handling Units Compliance Statements for Approval	Hoare Lea

We have reviewed these documents and our view is as follows.

1 There are still inconsistencies between the Hoare Lea information and that from Daikin

2 It should be possible for these AHUs to be manufactured to comply with SHTM 03-01 Part A subject to the following:

- The inter-relationship of the components is as shown on the images on the Daikin documents mentioned above.
- The access to the components is available in line with the SHTM
- Internal cabling must be kept to a minimum and enclosed in containment (which can be easily cleaned) and does not prejudice the air seals of the unit.

It should be possible for these AHUs to deliver the requirements which you have requested in your instruction to the Contractor subject to the following:

- The units are fully coordinated with the remainder of the works
- All calculations are completed accurately
- Those elements of design, which are not yet complete (including selection of equipment which is not yet finalised), do not contradict the assumptions which they have already made. You had previously agreed with

them that they could progress the AHU order without completing the design on the basis that each AHU has the additional margins that you instructed and , if necessary, changes during the completion of the design would be accommodated from that margin. We would recommend, as your margin has already been reduced in two cases, that you advise the Contractor on the limitations which you would accept regarding the use of this margin, to compensate for changes in their interim design assumptions.

- All efficiencies, including specific fan powers, must comply with the Scottish Technical Standards

We look forward to the receipt of the remaining design information and the Daikin manufacturing drawings for the AHUs.

Regards

David

David McNeill CEng MCIBSE

Principal Engineer - Health Facilities Scotland
Procurement, Commissioning and Facilities

NHS National Services Scotland

3rd Floor
Meridian Court
5 Cadogan Street
Glasgow
G2 6QE

[REDACTED]
[REDACTED]
[REDACTED]

From: Currie, Brian

Sent: 16 April 2020 16:49

To: MCNEILL, David (NHS NATIONAL SERVICES SCOTLAND)

Cc: STORRAR, Ian (NHS NATIONAL SERVICES SCOTLAND) ; MCLAUGHLAN, Edward (NHS NATIONAL SERVICES SCOTLAND)

Subject: RE: RHCYP + DCN - Little France - Final AHU selection, data sheets and AHU Statements document for HFS, Mott MacDonald and Authorising Engineer approval.

Given that there are only six schedules to review and that the information is very familiar I feel it would not be an unreasonable request to respond by cob tomorrow.

My comments at the earlier part of the meeting were on the basis that there was much more information to review which there isn't.

Fully appreciate your other commitments though David.

Regards

Brian

Brian Currie
Project Director - NHS Lothian
RHCYP + DCN
4th Floor Management Suite
Little France Crescent

Currie, Brian

From: John Rayner [REDACTED]
Sent: 17 April 2020 14:08
To: Currie, Brian
Cc: Greer, Graeme; Brodie, Ian S; 'MCNEILL, David (NHS NATIONAL SERVICES SCOTLAND)'
Subject: AHU Final Selections
Follow Up Flag: Follow up
Flag Status: Flagged

Dear Brian,

As you requested, I have looked through the DAIKEN AHU datasheets provided by Robert Eastham and am happy to report the following:

“Without impacting upon IHSL’s design responsibility and based upon the information currently available to us, IHSL’s AHU Design Proposals with associated documents, reference:

12/04/2020 - 896, Ref. 563313/Rev 07 (AHU 01-ISO-01&02)

15/04/2020 - 896, Ref 563984/Rev 07 (AHU 01-ISO- 03&04)

12/04/2020 - 896,Ref 563310/Rev 07 (AHU 03-ISO-01&02)

12/04/2020 - 896, Ref 563309/Rev 07 (AHU 03-ISO-03 to 05)

15/04/2020 - 896, Ref 564660/Rev 15 (ADN12ECW2)

14/04/2020 - 896, Ref 563968/Rev 11 (ADN11ECW2)

reflects and is a satisfactory response to the Board’s performance compliance requirements as stated in HVC 107 and agreed RFI’s (i.e. Part A of the Scope).”

Please don’t hesitate to contact me if you need any further information.

Best wishes,

John

Eur Ing John M Rayner, BSc (Eng), CEng, FIHEEM, FCMI, MIMechE, MEI, MIET, MSVHSoc, TechIOSH
 Authorising Engineer
TURNER PROFESSIONAL ENGINEERING SERVICES

TURNER 

Energy + Utilities + Assets + Compliance

Ecoliving Ltd | Optimum Technical Services Ltd | Turner Property Services

65 Craigton Rd, Glasgow, G51 3EQ | [REDACTED]

From: [Graham, Chris](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Henderson C \(Calum\)](#); [Colin Sinclair](#); [Cosens, Sorrel](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); [Gordon James](#); [Graham, Chris](#); [Graham, Iain](#); [Smith G \(Gregor\)](#); [Jacqui Reilly](#); [Jim Miller](#); [Joyce, Alex](#); [Judith Mackay](#); [Little, Kerryann](#); [McMahon, Alex](#); [Morgan, Mary](#); [Murray, Fiona](#); [Nicoli, Nadine](#); [Peter Reekie](#); [Roxanne Gallacher \(Jim Miller PA\)](#); [Trotter, Audrey](#); [Walker, Anna](#)
Subject: RHCYP, DCN & CAMHS Oversight Board - 07/05/2020 @8am - MS Teams
Date: 06 May 2020 08:55:22
Attachments: [07-05-2020 RHCYP+DCN Oversight Board Papers.pdf](#)
Importance: High

Please find attached the papers for tomorrow’s Oversight Board meeting.

Please join the meeting through TEAMS directly – “RHCYP,DCN,CAMHS Oversight Board”

I will instigate the meeting at 7:45am

Kind regards
Chris

Chris Graham
Secretariat Manager

The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>



Scottish Government
Riaghaltas na h-Alba
gov.scot



Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 7th May 2020, 8:00 – 9:30am

Venue: MS TEAMS: RHCYP, DCN, CAMHS Oversight Board

AGENDA

1.	Chair's Welcome and Introductions	FMc	v
	Apologies:		
2.	Minutes of previous meeting for approval: 23 April 2020	FMc	*
3.	Matters Arising		
4.	Senior Programme Director's Reports		
	4.1 Highlight report	MM	*
	4.2 Programme briefing	MM	*
5.	Progress with Ventilation Remedials and Fire Enhancements		
	5.1 Supplemental Agreement commercial sign-off – draft paper to NHSL Board	SG	*
	5.2 Design sign off	BC	*
6.	DCN Service Migration	TG	v
7.	NHS Lothian response to NSS Review Actions	TG	*
8.	Communications	JM	v
9.	Any Other Competent Business		
	9.1 Approval of NHS Lothian Board papers	FM	v
10.	Date of Next Meeting		
	Thursday 14 th May 2020, 8am		

* = paper attached

v = verbal report

p = presentation

= paper to follow

OVERSIGHT BOARD**NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services**

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 23 April 2020 held via MS Teams

Present by Teams: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Miss T. Gillies, Medical Director, NHS Lothian; Mrs S. Goldsmith, Director of Finance, NHS Lothian; Professor A. McMahon, Nurse Director NHS Lothian; Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian; Mr C. Henderson, Scottish Government; Mr P. Reekie, Chief Executive, Scottish Futures Trust; Mr C. Sinclair, Chief Executive, NHS National Services Scotland and Mr G. Archibald, Joint Staff Side Representative.

In Attendance by Teams: Ms M. Morgan, Senior Programme Director; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Prof J. Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work; Mr G. James, Director of Facilities, Health Facilities Scotland; Mr B. Currie, Project Director, NHS Lothian; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

Apologies: Ms J. Mackay, NHS Lothian Director of Communications and Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side).

1. Minutes of previous meeting – 9 April 2020

1.1 The minutes of the meeting held on 9 April 2020 were accepted.

2. Matters Arising**2.1 Theatre corridor doors**

- Confirmation that the local Health and Safety lead adviser now content with doors from health and safety aspect raised. Oakleaf to confirm from ventilation and fire safety point of view.

2.2 DCN Migration

- Fluid situation - working with clinical teams to move Out Patients service and diagnostics from 11/05/2020
- Other services to then be moved in incremental stages, getting the timing right to move as nimbly as possible
- Noted that Media release regarding completion of DCN had been issued 22/04. This had been released publicly and cascaded through DCN / RHSC/ Project team/ DATCC/ Pharmacy / Radiology and will be posted on the NHSL intranet
- Will be made clear to patients when appointments arranged over telephone which site they are to attend
- Sincere thanks were passed to all involved in DCN services with this achievement moving DCN to the new site. The current clinical pressures, need for clinical safety and the staff capacity involved in making these moves were recognised by the oversight board and the work being undertaken by staff was greatly appreciated.

3. Senior Programme Director's Reports

Highlight report

- Noted that current overall programme status remains at green (November 2020 completion). However there is a major risk in the system around sign off of Supplementary Agreement 2 due to a new stance from IHSL
- DCN outstanding works now completed – minor issues to complete as part of commissioning plan
- DCN fire enhancement works completed
- Building had not been handed over on 20/04 due to need for cleaning, this was now underway ahead of the HAI scribe on 28/04
- CAMHS work commenced and will run for some time, this will continue to be monitored
- Supplementary Agreement 2 (SA2)
 - Issues remaining around signing of SA2, SA2 principles and legal drafting, change in IHSL stance and ordering of Air Handling Units (AHUs)
 - Any delay to ordering of AHUs, expected 24/04, will likely result in slippage to programme timeline
 - Further discussion to be held with MacRoberts 23/04 to get their assessment, advice and an indication of potential shift in the risk profile
 - Noted that from NHSL point of view the principles had been agreed some time ago and been agreed through the NHSL Board, Finance and Resources Committee and through the Cabinet Secretary as signature sign off
 - Noted IHSL may not be prepared to order AHUs unless there is full agreement of SA2 and this sign off could potentially be two weeks away. This could result in delay to the programme and increase Imtech anxiety around delivery of works. Ordering of AHUs recognised as a critical milestone for the programme
 - Discussion about what could be driving IHSL stance, consideration of meeting directly with IHSL funders to break through defensive cycle and unacceptable behaviour
 - Wait to receive MacRoberts assessment on the newly received information, understand the commercial differences and get greater understanding of what the actual issues are
 - Look to convene a brief meeting of the Commercial Sub Group to help with this in the coming days
 - Noted that for AHUs to be ordered the following would have to happen:
 - Agreement to the terms of final version of SA2 having done due diligence and assuming no shift in commercial plan
 - Provide formal confirmation in writing to agreement of terms of SA2, design and BYES costs sign off
 - SG to provide updates to FM via MM on progress being made over coming days – **SG**
 - Have had confirmation from AHUs manufacturer that they have all required components for building the units
- RHCYP, DCN, CAMHS Helipad - Request received to start using helipad now. Proposal to be worked up and taken to Executive Steering Group
- Ronald McDonald House accommodation now open to staff to use during COVID19 should it be required
- Action tracker noted – work ongoing with IHSL and HFS in relation to remaining electrical items.
- Ventilation – IOM checking and action to be moved to the commissioning tracker. Work will be closed off before next oversight board
- High Consequence Infectious Disease work in ED – still waiting on IHSL to have capacity to undertake the design work. Have been advised that feasibility study will start next week, then

findings would come back in 2-3 weeks time. Any impact on timescale is currently unknown. Important this this work is done given the short and long term uncertainty around COVID19.

4. DCN Service Migration

- Already covered, nothing further to add.

5. Progress with Ventilation Remedials and Fire Enhancements

5.1 Supplemental Agreement commercial sign-off – Covered above.

5.2 HVC107 Design sign off

- The Oversight Board accepted the assurance from Mott MacDonald (Technical Advisors), Health Facilities Scotland (for NSS), and the Authorising Engineer that the specification for air handling units meets NHS Lothian's requirements for critical care and haematology-oncology.
- The Oversight Board agreed to approve sign off of the specification to allow IHSL and Imtech to procure the Air Handling Units. The minor derogation in the spare capacity of the units (25% down to 18-19%) was noted.

6. Communications

6.1 Nothing further to report, other than Media release regarding DCN 22/04

7. Any Other Competent Business

7.1 None.

8. Date of Next Meeting

8.1 Thursday 7th May 2020, 8am



Senior Programme Director's Report

DCN/RHCYP Project

4.1



HIGHLIGHT REPORT

Date 05/05/2020

Senior Programme Director

Mary Morgan

Overall Status / Update	RAG
<p>The overall programme is red status as, slippage to a number of milestones means that the overall programme for completion of works has delayed. (Briefing Note attached). Commercial negotiations are proceeding at pace and since the briefing note was prepared the AHUs have been ordered and on site prep works are progressing</p> <p>There are significant milestones that are now completed, most notably the remedial works required by system reviews are now complete or construction works in progress – 182 actions closed or moved to BAU or migration plans, signalling a full transition to service migration activity.</p> <p>Service commissioning is now underway for DCN operations and “the move” is on track as planned</p>	Red

Milestone	Planned Completion Date	RAG
Transition from system workstreams to service migration activity	20/03/2020 30/04/2020	Blue
Confirmation of impact on DCN of HVC 107 works	20/3/2020	Blue
“Go – No Go” decision for DCN migration	09/04/2020	Blue
Completion of MVC 112 DCN Fire Enhancement works	07/05/2020 24/04/2020	Blue
Completion of DCN LVCs and minor works	07/05/2020 24/04/2020	Blue
DCN Migration	31/05/2020 11/05/2020	Green
Completion of MVC (131) CAMHS Fire Enhancement Works	30/10/2020	Green
Completion of MVC (127) CAMHS LVCs and minor works	30/10/2020	Green
“Go – No Go” decision for CAMHS migration	tbc	White
CAMHS Migration	tbc	White
Supplementary Agreement 2 (SA2) agreed	18/03/2020 04/05/2020	Red
HVC 107 Air Handling Units ordered	20/03/2020 27/03/2020 24/04/2020	Blue
Completion of HVC 107 construction works	03/09/2020	Red
Completion of contractor's commissioning and validation HVC107	23/11/2020	Red
Completion of MVC (126) RHCYP Fire Enhancement works	27/07/2020	White
Completion of RHCYP LVCs and minor works	tbc	White
Clinical Scoping/Risk Assessment of Emergency Dept works for HCID	20/03/2020	Blue
Feasibility/options appraisal of ED HCID solutions	tbc	Amber

Milestone	Planned Completion Date	RAG
Submission of change notification to IHSL	tbc	White
"Go – No Go" decision for RHCYP migration	03/10/2020	White
RHCYP Migration	tbc	White

Exception to	Planned End Date	RAG	Cause	Consequences	Recommendation
Supplementary Agreement 2 (SA2) agreed	18/03/20	Red	Negotiation of contractual points and principles reopened by IHSL	Potential overall programme delay. Potential for breakdown in commercial relationship.	Accept delay to ensure risk mitigation. Target date for signing now 14/05/2020
Completion of HVC 107 construction works	03/09/20	Red	SA2 and AHU delay No contractual obligation for IHSL to deliver. (Briefing note attached)	Programme not seen but expect 10/11/2020	Accept and manage messaging
Completion of contractor's commissioning and validation HVC107	23/11/20	Red	SA2 and AHU delay No contractual obligation for IHSL to deliver	Anticipated completion 25 th January 2021 (verbal report 28/04/20)	Accept and manage messaging
Feasibility/options appraisal of ED HCID solutions	tbc	Amber	No date for completion of feasibility from IHSL	Uncertain impact to overall programme	Accept and monitor

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Reputational impact on NHSL caused by delay, adverse media reports and opinion of internal and external stakeholders	Executive Steering Group meets weekly and is attended by NHSL Communications Director. Ongoing engagement with stakeholders formally and informally Engagement with Cabinet Secretary	High	Very High
R	Performance of Project Co & Supply Chain (Hard FM) - Project Co. fail to meet Service Level Specification (Post Completion).	Standard form payment mechanism to hold Project Co. to account is agreed. Contracts Manager in post to monitor and measure performance. Additional support for Programme from HFS, SFT and NHSL. Additional input and support at every level given to Contractor.	High	Very High
R	Coronavirus outbreak adversely impacts programme delivery: Sickness absence of project team and	Circulation of information throughout NHS. Continue to monitor and escalate any concerns.	Very High	Very High

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
	contractors or diversion of project team and or project resources.			
R	Delay in remedial and enhancement works delays transfer of RHSC & DCN into the building	Experience gained from late postponement of previous move. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management. Weekly meetings: Internal with Project Team and Operational Management and Technical Meeting with Design Team and Contractor. Validation activities run concurrently with Commissioning Activities. Expanded NHSL Facilities Commissioning Team.	High	High
I	Delay in completion of the programme has generated additional costs.	Some costs are known and others are being collated. Eg aborted move, costs to services in maintaining and operating in existing accommodation, Remedial works costs Scottish Government have made provision for funding.	High	High
R	Reprovision of critical care ventilation requires full design, construction and commissioning within programme identified timelines.	Design Group established to oversee and deliver. Critical Care and IPCT Clinical Representation on Group High Value Change submitted detailing NHSL requirements.	High	High
R	Provision of enhanced Haematology & Oncology Department ventilation requires full design, construction and commissioning within programme identified timelines.	High Value Change submitted detailing NHSL requirements. SBAR & Risk Assessment completed involving Clinicians & IPCT. Design Team and contractors appointed. IHSL have agreed to undertake.	High	High
R	Operational Board Changes (DCN Priority) These essential Board Changes may not be implemented in time to enable migration of DCN.	NHSL Project Team continue to monitor delivery of these works through IHSL and their Hard FM Contractor, BYES. BYES have a schedule of implementation. Reviewed weekly.	Closed	High

RAG Description Key (Time Status)	
WHITE	Activity has yet to commence
RED	Key milestones will be or have been delivered outside tolerance to agreed baseline
AMBER	Forecasting that there is a significant risk that key milestones will be delivered outside tolerance on agreed baseline
GREEN	All milestones forecast to be on time or early
BLUE	Task Complete



4.2

DCN/RHCYP Programme

The purpose of this paper is to advise the DCN/RHCYP Oversight Board of a delay to the HVC107 Critical Care & Haemato – oncology ventilation system remedial works.

Situation

IHSL have verbally (but formally) advised (28/04/2020) that the HVC107 works programme will extend from 23rd November 2020 to 25th January 2021 (This date to be confirmed at SA2)

The reasons given for this are:

- IHSL have not concluded negotiations with sub contractors to a level sufficient to conclude SA2 or progress their governance arrangements
- Prioritisation of DCN, by the NHS
- Scrutiny of the ventilation works design that is excessive, beyond that normally required and not accounted for in the design programme
- Lockdown due to Covid 19 has had an (unquantifiable) effect on communications and review and added complexity.

Subject to a range of actions that are being progressed urgently, IHSL have agreed to progress the ordering of new AHUs, decommissioning of existing AHUs and commencement of down takings in good faith. They do not have a contractual requirement to do so until SA2 is signed. A contractually committed programme will form part of the SA2.

Background

The Senior Programme Director has reported against forecast or actual delays to the completion of Supplementary Agreement 2 (SA2) since the initial planned date of completion 18/03/2020.

In addition, the Senior Programme Director has reported against forecast or actual delays against the ordering of new Air Handling Units (AHUs) from the same date.

Overall programme status has remained “green” because IHSL site management agent, George Street Ltd, have consistently advised that the SA2 and AHU delays have not and would not impact upon the overall programme. This has been further reinforced at commercial meetings and informal conversations with IHSL representatives.

NHSL and the Senior Programme Director believed that the terms of SA2 had been fully agreed, and progressed the terms through relevant governance groups – NHSL F&R committee, NHSL Board and then on to the OsB and submission to the Cabinet Secretary. The commercial sub group of the OsB was fully involved in progressing the agreements and provided additional assurance. It was acknowledged that there were some outstanding matters and legal drafting to be agreed. This was not considered to be significant, given that the principles were agreed and IHSL had agreed to progress works, including the ordering of the new AHUs (using a vesting agreement) – the ordering of the AHUs being a critical milestone in the programme pathway.

However, on 22nd April 2020 it became clear that IHSL were not prepared to order the AHUs in the absence of a signed SA2.

The lack of clarity and need to reopen commercial discussions was reported at the OsB on 23rd April 2020. Urgent discussions were arranged with IHSL which confirmed that IHSL would not progress the ordering of AHUs pending completion of SA2. The IHSL

requirements were further clarified in an email of 26th April 2020. A commercial meeting was set for 28th April 2020 to progress the issues raised therein.

Assessment

The commercial meeting of 28th April progressed agreement on points of perceived disagreement and lack of clarity.

IHSL advised that they would not be ready to sign the SA2 until 14 May 2020. They had not completed their negotiations with sub contractors or their governance requirements with Funders.

These negotiations had also impacted upon the terms of SA2 which required additional points to be agreed.

Further actions required by IHSL are as follows:

- Statements from NHSL advisors that the design developed to date will meet HVC 107
- Agreement on the programme as will be formally reviewed by Imtech prior to SA2 commitment
- Letter of comfort from NHSL that once decommissioning is commenced, work will not be aborted (perceived as a Covid 19 response risk). The Senior Programme Director has already provided this assurance.
- Agreement of the Opex costs as submitted by BYES – required to conclude SA2 and to ensure maintenance and repair once works completed. (Completed at time of writing)

IHSL maintain that the previous delays to ordering of AHUs, and the fact that down takings of duct work/existing services and decommissioning of existing AHUs comprise construction works which requires an extension to the Letter of Engagement and confirmation of insurance have resulted in a delay to the overall programme. They have agreed to progress these works once the LOE is completed.

It should be noted that:

- DCN completion and migration is not affected by this delay to the Haemto-oncology and Critical Care ventilation works
- CAMHS works is scheduled to complete 30/10/20.
- Fire enhancements works for sick children's non critical care/haem-onc is scheduled to complete 27/07/20.
- NHSL are considering a phased approach to migration of RHCYP services in light of learning and positive service changes as a result of Covid 19 experience
- The HCID ED feasibility study is expected to commence w/c 4th May with a report 2-3 weeks thereafter. Programme implications will be clear at that point.

Mary Morgan

Senior Programme Director

28/04/2020



NHS Lothian

5.1

Board Meeting
13 May 2020

Director of Finance

**ROYAL HOSPITAL FOR CHILDREN AND YOUNG PEOPLE AND
DEPARTMENT OF CLINICAL NEUROSCIENCES – COMMERCIAL UPDATE**

1 Purpose of the Report

- 1.1 The purpose of this report is to recommend that the Board takes moderate assurance from the progress towards signing of commercial agreements with IHS Lothian for the remedial ventilation works on RHCYP & DCN.

Any member wishing additional information should contact the Executive Lead in advance of the meeting.

2 Recommendations

- 2.1 The Board is recommended to:
- 2.1.1 Accept moderate assurance of progress towards the signing of Supplemental Agreement 2 to deliver the required ventilation works in the RHCYP, noting that the timescale for autumn completion is subject to further discussion.
- 2.1.2 Approve the Board minute laid out in Appendix 1 in relation to the signing of Supplemental Agreement 2.

3 Discussion of Key Issues

- 3.1 As described in the earlier public Board paper, following approval of the commercial principles by the Board on 8th April 2020 and then the Oversight Board for the project on 9 April 2020, the Cabinet Secretary confirmed that NHS Lothian can proceed to signing Supplemental Agreement 2 (SA2) on conclusion of negotiations.
- 3.2 Formal contracts to document the design, construction and operation of the new ventilation works required at the hospital are near finalisation. There remain some points of commercial detail to be agreed between the parties but it is anticipated that these will be closed out within the next two weeks to allow the signing of SA2.
- 3.3 IHSL have confirmed that the order for the air handling units was placed on 1 May, however they have also informed the Board that because of the complexities involved and the impact of COVID-19, it is possible that the remaining work will not be completed in time to allow children's services to move in by the autumn timeline. Discussions are underway to confirm the programme.
- 3.4 Other issues still to be resolved are set out below.
- 3.5 Indemnity provisions: As the Board will recall, it has been agreed with IHSL that in certain circumstances, where there is a dispute regarding liability for a defect in the new ventilation works, the Board will cash-flow that dispute and the costs or deductions associated with rectification on an interim basis pending resolution of the dispute.

3.6 The process for the rectification of defects in the ventilation works has still not been agreed with BYES. This is crucial because the Board must ensure, as far as possible, continuity of service in connection with the ventilation system in critical care. Although commercial negotiations are ongoing between BYES and IHSL, it appears that the Board will be asked to take on additional risk in relation to:

- The Board paying BYES costs for attending tests and inspections;
- The Board paying for certain BYES inspections post completion; and
- An extension of the circumstances when the indemnity might be triggered.

3.7 Liability Caps: the Board has agreed that IHSL's liability will be capped in line with the Imtech contract for the first 5 years. Between years 5 and 12, liability for the rectification of defects would be capped in line with the Imtech contract but IHSL would retain liability for Deductions. Post-year 12 the normal Project Agreement provisions apply. We have always proceeded on the basis that the liability cap until year 12 only related to Defects in the Ventilation Works. However IHSL has now drafted the cap to apply to all liabilities that flow to IHSL. Liability for damage would generally be insured. Board assets however are not currently carved out of the liability cap (eg Board equipment or other assets) and so in agreeing to this **the Board should note that damage to Board assets is capped at the Imtech liability cap.**

3.8 Compensation Events: these are circumstances that arise outwith the control of the parties which entitle IHSL to additional time and money. It is anticipated that there may be some extension to the circumstances where a compensation event might be granted.

3.9 We remain in discussion with IHSL about the detail of these commercial points and will report at the Board meeting if there is any material change to the risk profile as a result.

4 Key Risks

4.1 The ordering of air handling units on 1 May partially mitigates the risks to programme, however continued delays by IHSL to conclude the commercial discussions and sign SA2 could impact on the overall programme to handover RHCYP in the autumn.

4.2 In order to mitigate programme slippage pending signing of SA2, ongoing financial cover for the contractor and the supply chain has been agreed through a third extension to the Initial Engagement Agreement in relation to the ventilation works.

4.3 The overlapping of construction, commissioning and validation processes that will take place in implementing SA2 and the changes poses risks to ultimate sign-off if opinion differs as to compliance or the contractor fails to meet the standards required.

4.4 NHS Lothian has been supported by legal advisers MacRoberts LLP, and Scottish Futures Trust through the Commercial Sub-group of the Oversight Board. Scottish Government are fully apprised of the state of negotiations through the Oversight Board and the appointed Senior Programme Director.

5 Risk Register

5.1 The above risks are considered in detail by the commercial group as matters progress.

- 5.2 The impact of the delays to moving into RHCYP & DCN is included on the corporate risk register (risk 4813). This includes the management of commercial discussions to conclude SA2 and instruct the required ventilation works. Controls, through the establishment and work of the commercial sub-group of the Oversight Board, are in place.
- 5.3 SA2 will not be signed unless these risks have either been eliminated or mitigated to an acceptable level. It should be recognised that the Board will be accepting some additional risks as a result of agreeing to the SA that will require management and mitigation during the implementation phase.

6 Impact on Inequality, Including Health Inequalities

- 6.1 There is no impact on equality arising from the matters outlined in this paper.

7 Duty to Inform, Engage and Consult People who use our Services

- 7.1 No further duty for public involvement has arisen regarding the issues in this paper.

8 Resource Implications

- 8.1 The indicative cost of SA2, as reported to the Board in April 2020, is £4.175m.
- 8.2 Expenditure on the project team, professional fees and commissioning is funded through a revenue budget. While the facility remains incomplete, the Board continues to fund the Project Team and advisory support. The complexity of the process continues to take up a significant proportion of the time of several senior Board staff. The total cost of this is difficult to quantify, however, directly incurred additional costs are tracked.

Susan Goldsmith
Director of Finance
6 May 2020

List of Appendices

Appendix 1: Proposed NHS Lothian Board minute

Appendix 1: Proposed NHS Lothian Board minute

LOTHIAN HEALTH BOARD BOARD MEETING RHSC & DCN PROJECT

Certified true copy extract from the private session of the meeting of the Lothian Health Board (the “Board”) on 13 May 2020 via MS Teams (the “Board Meeting”)

1. PRESENT

1.1 [T be added]

2. APOLOGIES

2.1 [T be added]

3. QUORUM

3.1 Pursuant to paragraph 5.5 (*Quorum*) of NHS Lothian Standing Orders for the Proceedings and Business of Lothian NHS Board (as approved on 04.03.20) (the “**Standing Orders**”) the Chairman noted that a quorum was present. Accordingly, the Chairman declared the meeting duly convened.

4. DECLARATION OF INTERESTS

4.1 [No declaration(s) of interests were raised in relation to any of the matters discussed.]

5. RHSC & DCN PROJECT

5.1 The Board Meeting was updated in connection with the progress of the project described in the project agreement between the Board and IHS Lothian Limited dated 12th and 13th February 2015 in relation to the Scottish Government’s NPD initiative for the design, build, finance and maintenance of the project to re-provide the services from the Royal Hospital for Sick Children, Children and Adolescent Mental Health Service and Department for Clinical Neuroscience in a single building adjoining Royal Infirmary of Edinburgh (“the **Project Agreement**”) as amended, and the proposed supplemental agreement relating to the Project Agreement for additional ventilation works and amendments to the Services at RHSC & DCN at Little France between the Board and IHS Lothian Limited (the “**Supplemental Agreement No. 2**”).

5.2 It was noted at the Board Meeting that the Board had previously delegated its authority pursuant to paragraph 7.1 (*Delegation of Authority by the Board*) of the Standing Orders to the Finance & Resources Committee to undertake “oversight and responsibility” on behalf of the Board in respect of matters pertaining to the Supplemental Agreement No. 2. In accordance with this delegated authority, the Finance & Resources Committee approved the business case for the Supplemental Agreement No. 2 on 25 March 2020. In terms of Scottish Government approval, the Scottish Government issued a letter to the Board on [XXXXXXX] referring to the receipt of the supplementary business case and provision of the additional capital funding of £6 Million from the Scottish Government to support the programme of work referred to in the Supplemental Agreement No. 2. Furthermore, on 22 April 2020 the Finance & Resources Committee supported the key terms of the Supplemental Agreement No. 2 and referred the Supplemental Agreement No. 2 to the Board for approval (with an accompanying report dated 5 May 2020).

5.3 The key terms of the Supplemental Agreement No. 2, as are more fully described in the Finance & Resources Committee report in relation to the Supplemental Agreement No. 2 dated 8 April 2020, were noted at the Board Meeting;

5.4 Following the consideration of (i) the referral dated 22 April 2020 from the Finance & Resources Committee to approve the Supplemental Agreement No. 2; (ii) the key terms of the Supplemental Agreement No. 2, as set out in paragraph 5.3 above; and (iii) the time constraints to approve the Supplemental Agreement No. 2 before 15th May 2020; the Board Meeting **FORMALLY RESOLVED** pursuant to paragraph 6.4 (*other items of business*) of the Standing Orders to be presented with the Supplemental Agreement No. 2 as an item of business to be reviewed and approved by the Board as opposed to the Finance & Resources Committee.

- 5.5 Following the resolution of the Board Meeting described in paragraph 5.4 above, the Board Meeting **FORMALLY RESOLVED AS FOLLOWS:**
- 5.5.1 Approved the draft Supplemental Agreement No. 2 (as at 13.05.20) and accordingly the associated amendments referred to therein to the Project Agreement;
- 5.5.2 Authorised the Chief Executive and/or the Director of Finance to continue to negotiate and agree the final terms of the following documents on behalf of the Board:
- (a) Supplemental Agreement No.2 (at 13.05.20) (if required); and
 - (b) any necessary ancillary documentation in connection with Supplemental Agreement No.2:
- 5.5.3 Pursuant to paragraph 7.1 (*Delegation of Authority by the Board*) of the Standing Orders, authorised the Chief Executive and/or the Director of Finance to approve, seal, execute, deliver and/or initial the final form of the following documents on behalf of the Board:
- (a) the Supplemental Agreement No. 2 (as negotiated by them pursuant to paragraph 5.5.2 above); and
 - (b) any necessary ancillary documentation in connection with the Supplemental Agreement No. 2:
- 5.5.4 Authorised the Board to execute, deliver and perform the following documents:
- (a) the Supplemental Agreement No. 2 (as negotiated pursuant to paragraph 5.5.2 above); and
 - (b) any necessary ancillary documentation in connection with the Supplemental Agreement No. 2;
- 5.5.5 Authorised an officer of the Board to provide a certificate to IHS Lothian Limited setting out the names and specimen signatures of the Chief Executive and Director of Finance who are authorised to approve, seal, execute, deliver and/or initial the following documentation:
- (a) the Supplemental Agreement No. 2 (as negotiated by them pursuant to paragraph 5.5.2 above); and
 - (b) any necessary ancillary documentation in connection with the Amendment Agreement;
- 5.5.6 Authorised the Chief Executive and/or the Director of Finance or their nominated representative to provide IHS Lothian Limited the following certified true copies of the Board's current versions of the following documentation:
- (a) Standing Orders;
 - (b) Standing Financial Instructions; and
 - (c) Lothian NHS Board Scheme of Delegation.

The above resolution of the private session of the meeting of Lothian Health Board remains in full force and effect and has not been rescinded or varied.

Douglas Weir

Business Manager

Interim Chair and Chief Executive's Office

[Date]



5.2

RHCYP & DCN
Oversight Board

7 May 2020

Project Director

Design Development and sign-off of HVC107

REQUEST FOR DESIGN ASSURANCE STATEMENT:

To: MCNEILL, David (NHS NATIONAL SERVICES SCOTLAND) [REDACTED]; 'Greer, Graeme' [REDACTED] 'John Rayner' [REDACTED]

Subject: RHCYP + DCN - Little France - HVC 107 SA2 - Design Assurance Statement

Gents

We ask that you prepare a design assurance statement using the pro forma letter within the extracted Schedule Part 9 of the Supplemental Agreement No 2 between the Board and IHSL as below.

Please ignore the reference to Hoare Lea – MEP Engineering, Stage 4 Report: Revision 4 (11th May 2020) and Air Handling Unit Manufacturer's Drawings as clearly they have not been received for review at time of writing. Instead please base your statement on what design information you have reviewed to date.

We would be grateful for your response as quickly as possible but certainly no later than cob on Wednesday 6th May, 2020

Many thanks

Brian

Brian Currie
Project Director - NHS Lothian
RHCYP + DCN

Schedule Part 9

Board's Advisers' Design Assurance Statements

Design Assurance Statement to be provided by the following three parties (**on their respective headed paper**), addressed to Lothian Health Board for inclusion in Schedule Part 9 of Supplemental Agreement No.2 (SA2):

- Mott MacDonald (Lothian Health Board Technical Advisor)
- Health Facilities Scotland (Scottish Government's Technical Observer)
- Turner Professional Engineering Services Ltd (Lothian Health Board Authorising Engineer)

The following proposed letter is intended to meet the requirements agreed in Clause 6.2.2 of SA2.

"Dear [Sir / Madam]

***Supplemental Agreement Number 2: Ventilation Works
Design Assurance Statement***

Where words appear in capitalised terms in this letter, such words and expressions shall have the same meaning as defined in Supplemental Agreement No.2 ("SA2") between Lothian Health Board and IHS Lothian Limited.

We confirm in our capacity as Lothian Health Board's Technical Advisor/Authorising Engineer/Scottish Government Technical Observer (delete as appropriate) that we have reviewed IHS Lothian Limited design response to HVC 107 as detailed in the following documentation as it exists 2 business days prior to the SA2 Effective Date:

Hoare Lea – MEP Engineering, Stage 4 Report: Revision 4 (11th May 2020)

- *Air Handling Unit Technical Specifications*
- *Air Handling Unit Manufacturer's Drawings*
- *Requests for Information (RFI's) 01 – [015]*

(together Part B of the Scope) and confirm to Lothian Health Board our opinion that the contents and design proposals therein will allow Project Co to meet the requirements of Part A of the Scope.

This letter is a confirmation that the design included in Part B of the Scope meets the requirements of Part A of the Scope ; and is not an acceptance on our part of any design liability.

Yours Faithfully

Etc."

RESPONSE FROM MOTT MACDONALD, TECHNICAL ADVISER 04/05/20:

Brian,

Further to our previous discussions and your email dated 1st May 2020 requesting we provide an assurance statement for inclusion in SA2.

Our Advisory Services are inconsistent with providing a Design Assurance Statement, and as such I hope you can understand we are unable to do so. Any assurances regarding design compliance, if they are required between the Board and Project Co, we believe should be provided by Project Co.

MML assists the Board in providing Advisory Services, not design or design assurance. Specifically related to HVC 107, we have assisted the Board in defining the Part A works scope, and have subsequently *commented upon, advised, and queried* Project Co's Part B design, all as per our scope email of 18 Feb 2020. Consistent with an Advisory Services remit, our scope clarifies that *we are unable to validate, check, endorse, sign off or approve the design*.

Our Advisory Services are provided for the exclusive benefit of the Board, and are not provided to Project Co (or any other third party) for reliance purposes.

We believe that our work in relation to HVC 107, provided in a collaborative manner with the design team, has assisted Project Co to progress their design proposals. We have to date and continue to fulfil our remit to provide *comments, advice, and queries*, and as a result are positively influencing Project Co's emerging design. It is for Project Co to continue to satisfy those queries, and ultimately meet the requirements of Part A.

We cannot confirm that Project Co's design will meet the requirements of Part A without undertaking design, and we cannot be Designer and client advisor at the same time.

We continue to be absolutely committed to supporting the Board and Project Co achieving a satisfactory outcome from this process.

Kind Regards

Graeme

Graeme Greer

Associate

[REDACTED]

RESPONSE FROM NSS 05/05/20:

Brian

Thank you for your email. It may hopefully be helpful to you if we set out what we have been able to look at so far, on behalf of the Scottish Government.

We have commented on all of the technical documentation which you have forwarded to us to date. This includes reports, drawings, specifications and technical equipment schedules. In the face of tight turnaround time scales we have still been able to provide you with a significant number of comments relating to the documentation.

This level of review has utilised our experience of ventilation, heating and cooling systems plus the NHS guidance documents to seek out obvious errors or potential problems. We have not carried out a "shadow design" check of their detailed calculations or their coordination/setting out. We have also not undertaken random calculation checks, which it is understood that your Technical Advisors will do for you.

As a collaborating partner within the NHS, we have sought to advise you on where, in our opinion, corrections would be required to the Contractors documents and IHSL seem to have been noting the errors and making amendments. You will recall that we became concerned at the frequency of corrections which were required and as to the fundamental nature of some of them. Due to this basic level of a number of these miscalculations, we had questioned whether you may wish to have a more detailed check of their calculations carried out by a third party (e.g. you're your Technical Advisor) to provide you with assurance that there were no further errors.

At this stage the design is not completed and we await both corrected information and the outstanding elements which we have still to see (revised Stage 4 report, revised drawings, revised equipment schedules, architectural details, structural details, coordination details, etc.). Once we receive them we will, as previously, provide you with further advice and comments.

It would not be possible for us to provide you with the Design Assurance in the format which you have requested. However, if the Contractor has met and will meet high quality standards, it should be possible for them to deliver on your request in HVC 107.

There is of course the item which the Contractor has brought to your attention recently about the potential lack of capacity in the existing central chiller plant. It was agreed that NHS Lothian would look into this and make a decision on further action if required. This could have an impact on the system performance if the existing plant was found to be unable to deal with the peaks.

Regards

David

David McNeill CEng MCIBSE

Principal Engineer - Health Facilities Scotland
Procurement, Commissioning and Facilities

NHS National Services Scotland





7.

Royal Hospital for Children and Young People and Department of Clinical Neurosciences

NHS Lothian response to actions identified in the

NSS National Services Scotland Reviews

These actions were all addressed in partnership with

IHS Lothian, Health Facilities Scotland and Health Protection Scotland

Management and Assurance

NSS Review: Omissions identified in key roles within the management structure, ease of access to information.

NHS Lothian response: Contract and information management arrangements follow guidance. Management roles and responsibilities are identified. The Responsibility Matrix is a live document that is reviewed regularly through operational management channels. Prioritisation of alarms has been agreed and procedures, including ongoing system testing, are in place.

Issue	NSS Review	NSS Action Assessment	Action status
Structures and processes	<i>Structures and processes are not fully in place to assure the Board that the facility is being operated in compliance with contract requirements. These should be in place from the point where the building services referred to in this report are put into use.</i>	<i>NHS Lothian and IHSL should adopt the management and reporting processes as described in SHTM 00 – Best Practice Guidance for Healthcare Engineering and the SHTMs for each critical engineering service.</i>	COMPLETED
Contract requirements	<i>Some of the records and documents necessary for the effective and safe operation of the hospital could not be found. The document management system appears to lack a logical structure which will impact on the ability to readily find necessary information. Some of the sections contain none, or only part, of the documentation they should have as required by the Construction (Design and Management) Regulations 2015.</i>	<i>The Board should require IHSL to rectify the filing structure of the documentation and verify that the information contained is both complete and accurate as required by the Construction (Design and Management) Regulations 2015.</i>	COMPLETED
Alarms	<i>The alarms for the building are reportedly un-prioritised, resulting in a very large number of alarms potentially masking critical alarms.</i>	<i>Prioritise alarms to make most critical failures visible and manageable. Until alarms are prioritised, have procedures and staff in place to ensure critical alarms are not missed as per SHTM 08-05 - Specialist services building management systems.</i>	COMPLETED
Responsible persons	<i>There appeared to be a lack of qualified and experienced Authorised Persons and Competent Persons for both the HV and LV electrical installations.</i>	<i>The number of HV and LV Competent Persons should be reviewed. NHS Lothian should require IHSL satisfy themselves that adequate numbers are provided as required by the Electricity at Work Act (1989) and SHTM 00, SHTM 06-01 and SHTM 06-02.</i>	COMPLETED

Issue	<i>NSS Review</i>	<i>NSS Action Assessment</i>	Action status
Responsible persons	<i>There is no responsible person formally identified for the high voltage electrical installation.</i>	<i>NHS Lothian should require IHSL satisfy themselves that a suitable responsible person is appointed as required by the Electricity at Work Act (1989) and SHTM 00, SHTM 06-01 and SHTM 06-02.</i>	COMPLETED

Ventilation

NSS Review: Remedial action is required within both general and theatre ventilation systems. Augmented care redesign was already being considered separately by the Board. Haematology / Oncology is also being reviewed as a result of the review as specific risks were identified. Risk assessments are underway as part of the ward by ward risk assessments being done locally requested as part of the review.

NHS Lothian response:

The required remedial actions in general and theatre ventilation systems are completed and signed off. Board changes have been instructed for ventilation provision in augmented care and in the haematology/oncology ward – programme for completion in November 2020. Patient safety will be managed through infection prevention and control guidance and clinical risk assessment.

Issue	NSS Review	NSS Action Assessment	Action status
General ventilation systems 1	<i>Provision for maintenance or plant failure in the ventilation systems has not been validated in accordance with SHTM 03-01 Ventilation for Healthcare Premises. The bypass arrangements and functioning of ward ventilation in the event of plant failure remains to be demonstrated.</i>	<p><i>Demonstrate efficacy of approach of utilising adjacent air handling unit to supply areas not served by failed plant.</i></p> <p><i>Commission and validate isolation rooms and general ward spaces in the event of supply by adjacent air handling unit.</i></p> <p><i>Engage clinical leads and Infection Prevention and Control colleagues in developing service provision strategies in the event of air handling plant failure.</i></p> <p><i>Confirm damper operation and compliance with fire requirements in bypass mode.</i></p>	AGREED
General ventilation systems 2	<i>Air handling units and ductwork contain numerous deviations from contract requirements (SHTM 03-01) and were found not to be clean despite having been presented for validation. Deviations include: loose internal cabling in the airflow, cable routes allowing</i>	<i>The ventilation systems throughout the hospital should be subject to a full snagging exercise and all defects rectified following which air handling units and ventilation systems are cleaned. All deficiencies</i>	COMPLETED

Issue	NSS Review	NSS Action Assessment	Action status
	<i>air to bypass filters, air leakage at penetrations and possible fan replacement difficulties which need to be corrected.</i>	<i>identified in validation and specialist Consultant Engineer reports should be addressed as part of this.</i>	
General ventilation systems 3	<i>The general ward ventilation design is based on four air changes per hour mechanical ventilation plus a component of natural ventilation. With a few exceptions, the mechanical component has been validated. However, design and validation information for the natural component has not been proven.</i>	<i>Confirm that all areas served by this arrangement are suitable for categorisation as general ward areas or single rooms as listed in SHTM 03-01 Part a, Appendix 1. Undertake an IPCT risk assessment ward by ward/ speciality specific in relation to the guidance.</i>	COMPLETED
General ventilation systems 4	<i>The pressure regimen detailed in the design, and reflecting the environmental matrix, will be affected by opening windows and the pressure between the room and the corridor, and therefore direction of air flow, cannot be relied upon when windows are open.</i>	<i>A full assessment of the services and patient population should be carried out and mechanisms for monitoring established.</i>	COMPLETED
General ventilation systems 5	<i>External doors to plant rooms</i>	<i>Ensure that excessive gaps are removed and appropriate anti vermin measures are applied to all the doors and screens as per SHTM 03-01 and HFS Interim Guidance - Managing the Risk of Contamination of Ventilation Systems by Fungi from Bird Droppings – February 2019.</i>	COMPLETED
General ventilation systems 6	<i>Fire dampers in some locations cannot be adequately tested as duct access has not been provided. Also, locations of fire dampers and fire rated ductwork has been questioned in relation to the requirements of SHTM 03-01 and confirmation of compliant provision is awaited.</i>	<i>Provide access so all fire dampers can be readily visually inspected to verify operation. Review fire damper provision and fire rated ductwork and confirm appropriate provision</i>	COMPLETED
General ventilation systems 7	<i>Air intake location - Air intakes and opening windows are sited in the courtyard below the helipad and at the adjacent RIE. Information has not been provided on the impact of downdraft on air flows and pressures or entrainment of contaminants as per SHTM 03- 01.</i>	<i>Demonstrate the effect of helicopter landing on air flows in ventilation systems with intakes below through measurement when test flights take place or through modelling. This should include the air intakes of the RIE adjacent.</i>	COMPLETED

Issue	<i>NSS Review</i>	<i>NSS Action Assessment</i>	Action status
Theatre ventilation systems 1	<i>Scrub areas which are narrow and deep are unlikely to be scavenged effectively by theatre air changes and require e alternative means of achieving removal of contaminants as per SHTM 03-01. The efficacy of the high level extract to achieve sufficient dilution of contaminants or entrainment of heavier than air water droplets is not in accordance with the requirements of SHTM 03-01and has not demonstrated as equivalent.</i>	<i>The ability of the single high level extract provided in deep plan scrub areas to effectively prevent contaminants being dispersed into theatres should be demonstrated and/or additional low level ventilation provided.</i>	COMPLETED
Theatre ventilation systems 2	<i>Anaesthetic rooms 31 and 34 do not demonstrate a clean air flow path to reduce exposure of staff to gasses as per SHTM 03-01. Move ceiling supply to opposite side of room from extract. In room 30, move supply away from door.</i>	<i>Move ceiling supply to opposite side of room from extract. In room 30, move supply away from door.</i>	COMPLETED
Theatre ventilation systems 3	<i>Theatre utility rooms Extract ventilation means theatres have to be used in pairs and taking a theatre out of service may reduce the extract in utility room below the levels as per SHTM 03-01.</i>	<i>Add supplementary extract ventilation to allow for one theatre being out of service or plan for service impact following the loss of a pair of theatres. NHS Lothian has advised that the appropriate pressure differentials are maintained when only one theatre is operation. Validation evidence is to be provided.</i>	COMPLETED Confirmed that required standard is met.
Isolation room ventilation systems	<i>Isolation rooms are not served by a single ventilation system for each room as recommended in SHPN4 Supplement 1. The arrangement provided, where ventilation systems serve an area of the building</i>	<i>Prove that bypass connections to adjacent ventilation systems will allow safe operation of both areas and / or explain service provision strategy for loss of each area including isolation rooms. Also include assurance</i>	AGREED

Issue	<i>NSS Review</i>	<i>NSS Action Assessment</i>	Action status
	<i>including contained isolation rooms, has not yet been proven in the event of failure of an air handling unit and the implications for service impact are not yet understood.</i>	<i>on operational effectiveness e.g. the pressure differentials and air flows being maintained. Develop clinical service provision strategy to reflect the potential loss of up to 5 of the 19 isolation rooms on the failure of an air handling unit and confirm impact on service continuity.</i>	

Water

NSS Review: Independent testing identified no widespread contamination of the water systems, however, remedial action is required on a number of water system areas as well as system wide disinfection prior to occupation.

NHS Lothian response:

The reviews undertaken have not identified any systemic issue of contamination with the water system. NHS Lothian and IHS Lothian have established the operational Water Safety Group for RHCYP & DCN to maintain control and oversight of the system. Maintenance regimes have been amended to reflect the fact that the building is currently unoccupied. The replacement and retesting of fixtures that had been found to be positive for *Pseudomonas aeruginosa* has taken place. Whole system disinfection will be scheduled to take place prior to occupation of the building by patients.

Issue	NSS Review	NSS Action Assessment	Action status
Water services augmented care	<i>Pseudomonas found in taps, in Paediatric Medical Inpatients and DCN Inpatients. (SHTM 04-01 Part A published in July 2014)</i>	<i>All taps (not just TMT/TMV4) to be disinfected and retested. Inspect and replace, as appropriate, taps, tap components and pipework. Replace tap strainers and cartridges in affected TMT taps.</i>	COMPLETED replacement and retesting of effected components.
Water services non-augmented care	<i>Swarf and biofilm found in tap strainers, contrary to SHTM 04- 01 Water safety for healthcare premises.</i>	<i>Replace tap strainers in all areas.</i>	AGREED that all tap strainers will be cleaned. They will be replaced if necessary.
Showers	<i>Shower hose lengths do not comply with Scottish Water by-laws and guidance in SHTM 04-01 Water safety for healthcare premises.</i>	<i>Shorten hose length, or add retaining ring, to ensure that shower head cannot reach WC or drain. Disinfect showers, hose and drain after rectification.</i>	COMPLETED Solution signed off by Scottish Water
Water General 1	<i>Testing has found some fungal / mould contamination and high total viable counts.</i>	<i>Given a number of indicators the water system should be disinfected and re-tested.</i>	AGREED this will take place

Issue	NSS Review	NSS Action Assessment	Action status
			ahead of occupation
Water General 2	<i>Legionella risk assessment actions not recorded as required by HSE Approved Code of Practice and Guidance L8 - Legionnaires' disease. The control of Legionella bacteria in water systems. Legionella risk assessment insufficient to reflect system contamination in general. Those responsible for the system have a responsibility under the Control of Substances Hazardous to Health Regulations 2002 (COSHH) to prevent exposure to microorganisms.</i>	<i>The Legionella Risk assessment Feb 2019 identified a range of actions. The Action Tracker does not demonstrate that the issues raised have been resolved or a timeline provided for resolution. Record rectification of actions. The risk assessment is heavily focussed on Legionella and not taking into account other organisms in line with patient type that will occupy the building. Broaden to reflect system contamination in general. Develop analysis categorisation of patient type and consideration to susceptibility for each area.</i>	COMPLETED
Water General 3	<i>Designated roles and responsibility as per SHTM 00 Best practice guidance for healthcare engineering.</i>	<i>The current Responsible Person (RP) has not been appointed in writing and uncertain as to whether received RP training. Additionally, has no previous experience of healthcare.</i>	COMPLETED
Water General 4	<i>Water tanks as per SHTM 04-01 Water safety for healthcare premises.</i>	<i>To be inspected. The Raw Water and Filtrate water tanks are interconnected at the drain. These must be separated.</i>	COMPLETED
Water General 5	<i>Hot and cold water temperatures / flushing. SHTM 04-01 Water safety for healthcare premises</i>	<i>There was an issue with raised cold water temperatures during the boiler outage – this requires investigation.</i>	COMPLETED
Water General 6	<i>Filtration Plants</i>	<i>From lessons learned by NSS in recent work, microbiological growth potential was identified as part of the Backwash cycle. Consideration should be given to Chlorine dioxide addition to backwash water tank to counter microbiological and biofilms development on filters.</i>	CLOSED No action is required until guidance is provided.
Water General 7	<i>Instant Boil Taps and Rise and Fall Baths</i>	<i>These were found to be contaminated and need to be disinfected and tested to demonstrate safe water</i>	COMPLETED

Issue	<i>NSS Review</i>	<i>NSS Action Assessment</i>	Action status
		<i>delivery as per SHTM 04-01 Water safety for healthcare premises.</i>	

Drainage and Plumbing

NSS Review: The drainage system has multiple redundancies in place, however, active monitoring is required. Elements of plumbing require disinfection.

NHS Lothian Response: Monitoring and any necessary disinfection of drainage are incorporated into the building maintenance schedule.

Issue	<i>NSS Review</i>	<i>NSS Action Assessment</i>	Action status
Drainage and plumbing 1	Sinks drains	<i>Initial testing indicates that these are not significantly contaminated, however the horizontal drain and protruding seal means they retain stagnant water and they need to be disinfected periodically prior to and post occupancy to maintain their condition. From lessons learned, there should be a system of inspection and appropriate remedial action taken.</i>	COMPLETED
Drainage and plumbing 2	Bottle traps	<i>There would appear to be an inconsistency of installation and potential of back-feed from trap to drain. This requires review and rectification.</i>	COMPLETED
Drainage and plumbing 3	Pumped drainage	<i>The internal pumped sewage drainage system presents the potential for sewage to back up through basement drains on pump failure and will require active monitoring.</i>	COMPLETED

Fire Safety

NSS Review: Action is recommended to include remotely resettable smoke dampers within the ventilation system serving all sleeping accommodation areas where ducting leads to a corridor serving as an evacuation route Identified fire doors should be upgraded.

NHS Lothian response: The facility has received the necessary building warrant and completion certification to demonstrate fire safety and compliance with legislation. The opportunity to enhance the built environment is recognised and an instruction for agreed enhancements to be completed ahead of patient occupation has been issued to IHS Lothian.

Issue	NSS Review	NSS Action Assessment	Action status
Fire and smoke dampers	<i>Fire and smoke dampers are installed at compartment and sub-compartment level. However, smoke dampers are not fitted to corridors serving sleeping accommodation.</i>	<i>Remotely resettable fire and smoke dampers should be fitted to prevent the travel of smoke between sleeping accommodation areas where ducting leads to a corridor serving as an evacuation route.</i>	AGREED works have been instructed
Fire doors	<i>Based on sample inspection some doors within the escape routes from sleeping accommodation are not fire door sets.</i>	<i>NHS Lothian and IHSL should ensure the appropriate fire rated door sets are installed.</i>	AGREED works have been instructed
Fire doors	<i>The half leaf “penny farthing” doors are not fitted with self-closing devices.</i>	<i>Half leaf doors should be fitted with the same self-closing device as on the main leaf.</i>	AGREED works have been instructed
Snagging	<i>A number of remedial snagging and housekeeping issues were identified; damage to fire doors, seals and workmanship; penetrations in compartment walls; delineation of rooftop escape.</i>	<i>A number of the items have already been identified and logged by NHS Lothian via the helpdesk process. NHS Lothian and ISHL should ensure all works are undertaken prior to occupation. Procedures should be adopted to ensure rooftop escape remains clear.</i>	COMPLETED

Electrical

NSS Review: Remedial action is required within both the high voltage (HV) and low voltage (LV) installations.

NHS Lothian response: Review and risk assessments have been completed; any required remedial action required has been instructed for completion ahead of patient occupation.

Issue	<i>NSS Review</i>	<i>NSS Action Assessment</i>	NHS Lothian response
Resilience	<i>All 3 Uninterruptable Power Supplies (UPS) are contained in the same room, thereby reducing resilience if a major localised failure should occur.</i>	<i>NHS Lothian should require IHSL to demonstrate compliance with the technical intent of SHPN 00-07 Resilience planning for healthcare estates, providing mitigation measures to maximise resilience of co-located equipment.</i>	COMPLETED
Resilience	<i>The UPS and output switchboards are a significant distance from the point of load. From this point there is no alternative supply within the internal infrastructure thereby increasing the potential for a single point of failure contrary to clause 4.6 of SHTM 06-01.</i>	<i>NHS Lothian should require IHSL to provide agreed mitigation strategies to meet SHPN 00-07 and SHTM 06-01 to avoid internal failure of the single electrical supply to the critical electrical services such as Medical IT cabinets serving life support and other critical systems.</i>	COMPLETED
Medical devices	<i>Medical IT system¹ final circuit cabling exceeds manufacturer and SHTM recommended values. Final circuits are in excess of the 30 cable metre length of run set out in Clause 16.34 of SHTM 06-01 and Regulation 134.1.1 of BS 7671.</i>	<i>The designer should indicate their derogation of the manufacturer recommendations, BS 7671 and SHTM 06-01 requirements. The mitigations should also include consideration of the capacitive leakage current effects associated with multiple long runs of final circuits.</i>	COMPLETED

¹ (IT electrical system fulfilling specific requirements for medical applications. This does not refer to Information Technology)

Issue	<i>NSS Review</i>	<i>NSS Action Assessment</i>	NHS Lothian response
CAMHS	<p><i>Child and Adolescent Mental Health Service (CAMHS) Unit Electrical installation. It was observed that there may be the potential to defeat the ligature reduction measures.</i></p> <p><i>In addition, the power to the CAMHS unit rooms cannot be isolated outwith the room.</i></p>	<p><i>NHS Lothian and IHSL should check that the provision of access hatches in bedrooms and en-suites are consistent with the risk assessment approach to ligature reduction measures for the CAMHS.</i></p> <p><i>The luminaire type (particularly bedhead) should be checked against HBN 03-01 to confirm that they meet the requirements.</i></p> <p><i>Isolation arrangements for CAMHS room power supplies should be checked with clinical colleagues as this may require modification.</i></p>	COMPLETED

Medical Gas Installations

NSS Review: The review of the medical gas installations confirmed that they have been designed installed and commissioned in accordance with the relevant standards.

NHS Lothian Response: The medical gas installations will be fully re-commissioned and validated prior to occupation

Issue	NSS Review	NSS Action Assessment	NHS Lothian response
Outlets	<p>The provision of the outlets in the following areas are slightly different from the requirements of SHTM 02-01.</p> <ul style="list-style-type: none"> • Assisted bathrooms. • In-patient bed spaces. • Theatre anaesthetic rooms. 	NHS Lothian should check that the installed provision meets their contract and operational requirements.	COMPLETED
Documentation	There is duplication within the electronic document management system and some elements are omitted.	NHS Lothian and IHSL should ensure that duplicated documents are removed and ensure all missing documentation is provided.	COMPLETED
Commissioning	As the system has been "idle" for some time it is recommended that the systems be re-commissioned and revalidated.	NHSL and IHSL to re-commission MGPS as and when operational elements of the building become live.	AGREED works have been instructed



From: [Graham, Chris](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Henderson C \(Calum\)](#); ["Colin Sinclair"](#); [Cosens, Sorrel](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); ["Gordon James"](#); [Graham, Chris](#); [Graham, Iain](#); [Smith G \(Gregor\)](#); ["Jacqui Reilly"](#); [Jim Miller](#); [Joyce, Alex](#); ["Judith Mackay"](#); [Little, Kerryann](#); [McMahon, Alex](#); [Morgan, Mary](#); [Murray, Fiona](#); [Nicol, Nadine](#); ["Peter Reekie"](#); [Roxanne Gallacher \(Jim Miller PA\)](#); [Trotter, Audrey](#); [Walker, Anna](#)
Subject: RHCYP, DCN & CAMHS Oversight Board - 21/05/2020 @8am - MS Teams
Date: 20 May 2020 06:33:47
Attachments: [RHCYP, DCN, CAMHS OSB Papers 21-05-2020.pdf](#)
Importance: High

Please find attached the papers for tomorrow’s Oversight Board meeting.

Please join the meeting through TEAMS directly – “RHCYP,DCN,CAMHS Oversight Board”

I will instigate the meeting at 7:45am

Kind regards
Chris

Chris Graham
Secretariat Manager

The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 21st May 2020, 8:00 – 9:30am

Venue: MS TEAMS: RHCYP, DCN, CAMHS Oversight Board

AGENDA

1.	Chair's Welcome and Introductions	FMc	v
	Apologies:		
2.	Minutes of previous meeting for approval: 7 May 2020	FMc	*
3.	Matters Arising		
	3.1 Management of HCID patients in the RHCYP ED	TG	*
4.	Senior Programme Director's Reports		
	4.1 Highlight report	MM	*
5.	Progress with Ventilation Remedials and Fire Enhancements		
	5.1 Commercial progress with SA 2	SG	V
	5.2 Design assurance for HVC107	BC	*
6.	DCN Service Migration	TG	V
7.	RHCYP & CAMHS Service Migration	TG	V
8.	Communications	JM	V
9.	Any Other Competent Business	FMc	V
10.	Date of Next Meeting		
	Thursday 4 th June 2020, 8am		

* = paper attached

v = verbal report

p = presentation

= paper to follow

2.

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 07 May 2020 held via MS Teams

Present by Teams: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Miss T. Gillies, Medical Director, NHS Lothian; Mrs S. Goldsmith, Director of Finance, NHS Lothian; Professor A. McMahon, Nurse Director NHS Lothian; Mr C. Henderson, Scottish Government; Mr P. Reekie, Chief Executive, Scottish Futures Trust; Mr C. Sinclair, Chief Executive, NHS National Services Scotland and Mr G. Archibald, Joint Staff Side Representative.

In Attendance by Teams: Ms M. Morgan, Senior Programme Director; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Prof J. Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work; Mr G. James, Director of Facilities, Health Facilities Scotland; Mr B. Currie, Project Director, NHS Lothian; Ms J. Mackay, NHS Lothian Director of Communications; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

Apologies: Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side).

1. Minutes of previous meeting – 23 April 2020

1.1 The minutes of the meeting held on 23 April 2020 were accepted.

2. Matters Arising

2.1 None.

3. Senior Programme Director's Reports

Highlight report

- The Oversight Board noted that the overall programme is red status due to slippage to a number of milestones meaning the overall programme for completion of works has delayed. The Briefing Note was also noted.
- Positives noted:
 - Commercial negotiations are proceeding at pace, the Air Handling Units (AHUs) have now been ordered and on site preparation works are progressing
 - There are significant milestones that are now completed, most notably the remedial works required by system reviews are now complete or construction works in progress – 182 actions closed or moved to business as usual or migration plans, signalling a full transition to service migration activity.
 - Service commissioning is now underway for DCN operations and “the move” is on track as planned
 - CAMHS work underway and due to complete 30/10/2020

- Clinical Scoping/Risk Assessment of Emergency Department works for HCID – work to commence next week
- Risk report remains similar to previously received. 1 risk closed and noted around operational board changes.
- SA2 Discussions with legal team progressing
- The Oversight Board noted the huge amount work that the team had undertaken to get the programme to this stage.

Programme Briefing

- The Briefing was noted.

4. Progress with Ventilation Remedials and Fire Enhancements

4.1 Supplemental Agreement commercial sign-off

- It was noted that there was a lot of positive work now happening on site despite IHSL saying a week ago that the Air Handling Units would not be ordered or works started until SA2 was signed off.
- It was now clear from discussions with IHSL that they still had more work to do around their own supply chain, which NHSL had not appreciated. The main negotiations were around the supply chain ability to deliver and the transfer of risk
- It was noted that there remained a couple of issues to resolve
 - Rectification of defects – important point in agreeing indemnity rectification still in line with the project agreement
 - Liability cap – getting extended – any damage to NHSL assets, IHSL liability would be capped
- It was agreed that the Commercials Sub Group would take forward the resolution of the outstanding issues over the next 48 hours including any further risk that may need to be taken on by NHSL as part of that work

4.2 HVC107 Design sign off

RHCYP + DCN - Little France - Design Assurance Statement for OSB

- There was discussion on the request from IHSL to have Design Assurance Statement Proformas completed by
 - Mott MacDonald (NHSL Technical Advisor)
 - Health Facilities Scotland (Scottish Government's Technical Observer)
 - Turner Professional Engineering Services Ltd (NHSL Authorising Engineer)
- It was noted that there were concerns about the wording within the Design Assurance Statement in particular the statement:
- "This letter is a confirmation that the design included in Part B of the Scope meets the requirements of Part A of the Scope; and is not an acceptance on our part of any design liability."
- The Oversight Board noted that responses had now been received from Mott MacDonald; Health Facilities Scotland and Turner Professional Engineering Services Ltd. The responses confirming that it was not possible to give NHSL the assurance being sought by IHSL.
- The Oversight Board recognised that whilst the request from IHSL was highly unusual it was likely that they were looking for assurance that no further surprises or questions come to light

as their design process progresses. It was agreed that a conversation with IHSL was needed to understand their point of view around this and find a middle ground.

- The Oversight Board was clear that it was not for NHSL and advisers to check IHSL's design and this seems to be what IHSL were trying to achieve.
- The Oversight Board are content to the sharing of the 3 responses with IHSL but also clear that accountability and responsibility rests not with the NHSL team, however work should continue in partnership
- It was suggested that something could be developed that Mott MacDonald; Health Facilities Scotland and Turner Professional Engineering Services Ltd could all sign up to in some sort of alignment, this should emphasise no further delays as a consequence of this with work to continue – PR/BC
- It was also agreed that SG, BC and MM would continue to progress work on this and keep the Oversight Board updated around any issues that may arise
- Noted that there was an option to have a shadow design carried out but this was not the preferred option as it would have an adverse impact on the timeline. It was hoped this could be resolved in a way which recognised that design liability does not rest with NHSL.

5. DCN Service Migration

- Noted that DCN migration 1st phase was on track and people would be moving in the next week, there were current no concerns around this
- Work around Critical Care capacity to support the remaining DCN moves was now underway, testing numbers for the next phase of the move as this determines how many staff need to be released and what this looks like. Working with the Health Board's Military Liaison Officers to undertake table-top exercises around testing assumptions and looking at when In Patient services can move
- The Oversight Board acknowledged the good work done by all this involved to get the migration to this stage during the current pandemic

6. NHS Lothian response to NSS Review Actions

- The Oversight Board agreed to note the formal completion of actions against the 2 phase NSS report with the caveat that HVC107 remains to be finished to achieve full completion. The great progress with this work was also acknowledged.

7. Communications

DCN Move

- Communications Plan being prepared and media release will go to Cabinet Secretary for clearance – **JM/CH**
- Looking at detailed schedule for social media and looking to involve a photographer to cover packing and arrival at both sites
- Consideration to be given to inviting some media into new hospital once staff are settled – to be done in consultation with staff
- Continue to emphasise the message to patients that attendance at new hospital is by appointment only
- Consideration to be given to doing a media piece with first patient whilst emphasising attendance by appointment only - **JM**

8. Any Other Competent Business

8.1 Approval of NHS Lothian Board papers

- Noted that NHSL Public Board Paper for NHSL Board meeting on 13/05 was currently with the Cabinet Secretary for review.
- Noted that due to timing some of the dates in the Board Paper were different from the Programme Director's report

9. Date of Next Meeting

9.1 Thursday 21st May 2020, 8am



3.1

The management of High Consequence Infectious Disease (HCID) patients in the new Emergency Department in RHCYP/DCN

Situation:

There has been previous detailed discussion and presentation of options about where to manage any patients with an HCID in the ED of the new hospital and there is current work (a Low Value Change issued to prepare a building services and architectural feasibility study by IHSL) outstanding to progress this to reach a conclusion.

Background:

- The design of the department was one of mainly open cubicles with particular areas designated and designed for particular activities. These included a suite of three rooms, designated and designed as two treatment rooms and a bathroom that would be well placed geographically for management of an individual patient with an HCID. The ventilation profile of these rooms is positive as would be expected for major interventions
- In discussion with the clinical teams the rooms within majors and minors areas of the department would not be used for any major interventions such as long lines or chest drains (that activity would be undertaken in Resuscitation, which after completion of the necessary installation and rebalancing works will have a higher positive pressure profile).
- The work to consider making the suite of 3 rooms have a negative pressure cascade with a switchable effect was considered in February 2020 to be NHS Lothian's least worst option.
- It was not HFS's preferred option because of concerns about safety in terms of staff behavior of a switchable option.
- This difference led to the Oversight Board supporting a low value change to explore the cost and magnitude of additional work to make the suite of 3 rooms negative, and whether there were any other options.

Assessment

- Current ways of working in the existing department have changed during the Covid 19 pandemic and staff are now accustomed to managing patients in individual rooms with doors in a way that they were not previously.
- There is no guidance that states that within an ED, a patient with a possible HCID would need to be managed in a negative pressure area. What is expected is that the patient is segregated for the brief time they would be in the department. There is a requirement for a distinct donning and doffing area. HFS/ HPS have advised that, as this is an emergency department treatment area it would appear acceptable that a patient with an HCID is managed within the department in an en-suite facility, with ante room and ventilation which is neutral (balanced) to the corridor whilst awaiting transfer to a suitable location.
- There is not considered to be a requirement for positive pressure ventilation for the types of minor procedures (venepuncture, peripheral venous cannulation, urinary catheterisation, lumbar puncture and wound care including suturing) planned within these rooms and the existing bays and treatment rooms. Higher risk invasive procedures (e.g chest drain and central line insertion, thoracotomy) would be performed in the resuscitation rooms at positive pressure.

Recommendation

- The pressure profile in the suite of three rooms could be changed to balanced and this would make them suitable for use for a patient with an HCID. The scale of the work required to do this is not known and it may involve some invasive, additional ventilation work on ducting. It is not expected to involve a new AHU. **A feasibility study could be scoped under a low value**

change to bring the necessary clarity. However, in the interests of expediency and given anticipated lead in times and construction activity restrictions imposed under COVID 19 guidelines, the issue of a Medium Value Change to both design and install may be more appropriate. A target completion date aligning with other key remedial and enhancement works currently on site will be essential.

- Doors fitted to existing cubicle spaces will improve area functionality and facilitate segregation of patients with respiratory viral infections (including suspected SARS CoV 2) in a way that is compliant with IPC guidance for management of Covid 19. This has now become an acceptable way for staff to work. The ventilation in these new 'rooms' and existing treatment rooms will also require to be altered from positive to balanced, as above, the scale of this work is not yet fully known.
- RHSC staff will consider the implications of working in a department with doors for staffing requirements and resource in the longer term and bring this forward as part of planning services in a post Covid 19 situation.

Tracey Gillies

Medical Director

Brian Currie

Project Director

19 May 2020



Senior Programme Director's Report

DCN/RHCYP Project

4.1



HIGHLIGHT REPORT

Date 18/05/2020

Senior Programme Director

Mary Morgan

Overall Status / Update	RAG
<p>The overall programme is red status as, slippage to a number of milestones means that the overall programme for completion of works is delayed against agreed planned completion dates and there is an absence of a formal programme from IHSL.</p> <p>HVC 107 Design stage 4 report v4 has been received and is being reviewed by advisors. Commercial negotiations are proceeding. Lenders have now undertaken due diligence against the draft SA2, NEC4 and Service Contracts, with a number of further points arising. It is unlikely that SA2 will be signed until the end of this month. The outstanding submissions lie with IHSL at the time of writing.</p> <p>DCN outpatient services have moved successfully in to the building, along with associated support services</p>	Red

Milestone	Planned Completion Date	RAG
Transition from system workstreams to service migration activity	20/03/2020 30/04/2020	Blue
Confirmation of impact on DCN of HVC 107 works	20/3/2020	Blue
"Go – No Go" decision for DCN migration	09/04/2020	Blue
Completion of MVC 112 DCN Fire Enhancement works	07/05/2020 24/04/2020	Blue
Completion of DCN LVCs and minor works	07/05/2020 24/04/2020	Blue
DCN Migration	31/05/2020 11/05/2020	Blue
Completion of MVC (131) CAMHS Fire Enhancement Works	30/10/2020	Green
Completion of MVC (127) CAMHS LVCs and minor works	30/10/2020	Green
"Go – No Go" decision for CAMHS migration	tbc	White
CAMHS Migration	tbc	White
Supplementary Agreement 2 (SA2) agreed	18/03/2020 04/05/2020	Red
HVC 107 Air Handling Units ordered	20/03/2020 27/03/2020 24/04/2020	Blue
Completion of HVC 107 construction works	03/09/2020	Red
Completion of contractor's commissioning and validation HVC107	23/11/2020	Red
Completion of MVC (126) RHCYP Fire Enhancement works	27/07/2020	Green
Completion of RHCYP LVCs and minor works	27/07/2020	Green
Clinical Scoping/Risk Assessment of Emergency Dept works for HCID	20/03/2020	Blue
Feasibility/options appraisal of ED HCID solutions	22/05/2020	Green

Milestone	Planned Completion Date	RAG
Submission of change notification to IHSL	tbc	White
"Go – No Go" decision for RHCYP migration	03/10/2020	White
RHCYP Migration	tbc	White

Exception to	Planned End Date	RAG	Cause	Consequences	Recommendation
Supplementary Agreement 2 (SA2) agreed	18/03/20	Red	Delays in submission of contract revisions by IHSL, and subsequent negotiation required thereafter.	Potential overall programme delay. Potential for breakdown in commercial relationship.	Accept delay to ensure risk mitigation. Target date for signing now 31/05/2020
Completion of HVC 107 construction works	03/09/20	Red	SA2 and AHU delay No contractual obligation for IHSL to deliver. (Briefing note attached)	Programme not seen but expect planned completion date 10/11/2020	Accept and manage messaging
Completion of contractor's commissioning and validation HVC107	23/11/20	Red	SA2 and AHU delay No contractual obligation for IHSL to deliver	Anticipated completion 25 th January 2021 (verbal report 28/04/20)	Accept and manage messaging

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Reputational impact on NHSL caused by delay, adverse media reports and opinion of internal and external stakeholders	Executive Steering Group meets weekly and is attended by NHSL Communications Director. Ongoing engagement with stakeholders formally and informally Engagement with Cabinet Secretary	High	High
R	Performance of Project Co & Supply Chain (Hard FM) - Project Co. fail to meet Service Level Specification (Post Completion).	Standard form payment mechanism to hold Project Co. to account is agreed. Contracts Manager in post to monitor and measure performance. Additional support for Programme from HFS, SFT and NHSL. Additional input and support at every level given to Contractor.	High	High
R	Coronavirus outbreak adversely impacts programme delivery: Sickness absence of project team and contractors or diversion of project team and or project resources.	Circulation of information throughout NHS. Continue to monitor and escalate any concerns.	Very High	Very High

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Delay in remedial and enhancement works delays transfer of RHSC & DCN into the building	Experience gained from late postponement of previous move. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management. Weekly meetings: Internal with Project Team and Operational Management and Technical Meeting with Design Team and Contractor. Validation activities run concurrently with Commissioning Activities. Expanded NHSL Facilities Commissioning Team.	High	High
I	Delay in completion of the programme has generated additional costs.	Some costs are known and others are being collated. Eg aborted move, costs to services in maintaining and operating in existing accommodation, Remedial works costs Scottish Government have made provision for funding.	High	High
R	Reprovision of critical care ventilation requires full design, construction and commissioning within programme identified timelines.	Design Group established to oversee and deliver. Critical Care and IPCT Clinical Representation on Group High Value Change submitted detailing NHSL requirements.	High	High
R	Provision of enhanced Haematology & Oncology Department ventilation requires full design, construction and commissioning within programme identified timelines.	High Value Change submitted detailing NHSL requirements. SBAR & Risk Assessment completed involving Clinicians & IPCT. Design Team and contractors appointed. IHSL have agreed to undertake.	High	High

RAG Description Key (Time Status)	
WHITE	Activity has yet to commence
RED	Key milestones will be or have been delivered outside tolerance to agreed baseline
AMBER	Forecasting that there is a significant risk that key milestones will be delivered outside tolerance on agreed baseline
GREEN	All milestones forecast to be on time or early
BLUE	Task Complete



**RHCYP & DCN
Oversight Board**

**Project Director
20 May 2020**

5.2

DESIGN DEVELOPMENT AND SIGN-OFF OF HVC107

The assurance received from Mott MacDonald and the authorising engineer are attached.

Comments have been received from HFS, with letter of confirmation awaited.



Lothian Health Board
Waverlygate
2-4 Waterloo Place
Edinburgh
EH1 3EG

Our Reference
Advisory Services
Statement

Mott MacDonald
Ground Floor West
19A Canning Street
Edinburgh EH3 8EG
United Kingdom


mottmac.com

MML Advisory Services Statement

18 May 2020

Dear Sir / Madam

Advisory Services Statement

This Advisory Services Statement is issued subject to the terms and conditions of the Consultancy Agreement of October 2011 between the Lothian Health Board and Mott MacDonald Limited. To the extent achievable using reasonable skill and care, we hereby confirm as follows:

We confirm in our capacity as Lothian Health Board's Technical Advisor we have undertaken a review, commensurate with the time and information made available to us, of IHS Lothian Limited's design response to HVC 107 as detailed in the following documentation as it exists on 13th May, 2020:

- Hoare Lea – MEP Engineering, Stage 4 Report: Revision 4 (13th May 2020)

We further confirm we have previously commented upon the following:

- Air Handling Unit Technical Specifications
- Air Handling Unit Manufacturer's Drawings
- Requests for Information (RFI's) 01 – 015

In accordance with the findings of our Advisory Services Note dated 18th May 2020, and without prejudice to advice previously provided to the Lothian Health Board, we consider that good progress has continued to be made by Project Co (Imtech) and we have received assurances from Project Co on many issues. Whilst there are ongoing issues to be resolved with the design (including but not limited to the matters raised in our Advisory Services Note), on the basis of those assurances we have not identified significant 'red flags' at this stage which in our opinion would prevent Project Co ultimately meeting the requirements of Part A of the Scope, subject to Project Co;

- Continuing to develop and finalise their design and provide assurance against the comments, advice, and queries raised,
- Completing any necessary quality assurance and in particular correcting inconsistencies in their design (we continue to spot errors that need to be corrected by Project Co),
- Achieving necessary approvals,

Mott MacDonald Limited. Registered
in England and Wales no. 1243967.
Registered office: Mott MacDonald
House, 8-10 Sydenham Road,
Croydon CR0 2EE, United Kingdom



Turner Property Services Limited
 t/a Turner Professional Engineering Services (TPES)
 65 Craighton Road, Glasgow, G51 3EQ, United Kingdom

NHS Lothian Health Board
 Waverley Gate
 2-4 Waterloo Place
 Edinburgh
 EH1 3EG

17 May 2020

Dear Sirs,

Supplemental Agreement Number 2: Ventilation Works

Design Assurance Statement

Where words appear in capitalised terms in this letter, such words and expressions shall have the same meaning as defined in Supplemental Agreement No.2 ("SA2") between Lothian Health Board and IHS Lothian Limited.

I confirm in my capacity as Lothian Health Board's Authorising Engineer (Ventilation) that I have completed a review of IHS Lothian Limited's design response to HVC 107 as detailed in the following documentation as it exists on 13 May 2020:

- Hoare Lea – MEP Engineering, Stage 4 Report: Revision 4 (13th May 2020)
- Air Handling Unit Technical Specifications
- Air Handling Unit Manufacturer's Drawings
- Requests for Information (RFIs) 01 – 015

(together Part B of the Scope) and confirm to the NHS Lothian Health Board my opinion that the contents and design proposals therein should allow Project Co to meet the requirements of Part A of the Scope.

This letter is a confirmation that it should be possible for the design included in Part B of the Scope to meet the requirements of Part A of the Scope; and is not an acceptance on my part of any design liability.

Yours Faithfully

Eur Ing John M Rayner, BSc (Eng), CEng, FIHEEM, FCMI, MIMechE, MIET,
 MSVHSoc, TechIOSH



From: [Graham, Chris](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Henderson C \(Calum\)](#); [Colin Sinclair](#); [Cosens, Sorrel](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); [Gordon James](#); [Graham, Chris](#); [Graham, Iain](#); [Smith G \(Gregor\)](#); [Jacqui Reilly](#); [Jim Miller](#) [REDACTED]; [Joyce, Alex](#); [Judith Mackay](#); [Little, Kerryann](#); [McMahon, Alex](#); [Morgan, Mary](#); [Murray, Fiona](#); [Nicol, Nadine](#); [Peter Reekie](#); [Roxanne Gallacher \(Jim Miller PA\)](#); [Trotter, Audrey](#); [Walker, Anna](#)
Subject: RHCYP, DCN & CAMHS Oversight Board Papers - 04-06-2020
Date: 03 June 2020 14:37:45
Attachments: [RHCYP Oversight Board Papers 04-06-2020.pdf](#)
Importance: High

Please see attached the Oversight Board Papers for the meeting tomorrow morning

Please note that Item 5 - SA2 Completion and Risk Profile is marked as to follow.

Kind regards
Chris

Chris Graham
Secretariat Manager – Corporate Governance Team
NHS Lothian

MS TEAMS – [REDACTED]

The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 4th June 2020, 8:00 – 9:30am

Venue: MS TEAMS: RHCYP, DCN, CAMHS Oversight Board

AGENDA

1.	Chair's Welcome and Introductions	FMc	v
	Apologies:		
2.	Minutes of previous meeting for approval: 21 May 2020	FMc	*
3.	Matters Arising		
	3.1 Management of HCID patients in the RHCYP ED	TG/MM	*
4.	Senior Programme Director's Reports		
	4.1 Highlight report	MM	*
5.	SA2 Completion and Risk Profile	SG	*
6.	DCN Phase 2 Service Migration	TG	*
7.	RHCYP Phase 1 Service Migration	TG	*
8.	Communications	JM	V
9.	Any Other Competent Business	FMc	V
10.	Date of Next Meeting		
	Thursday 18 th June 2020, 8am		

* = paper attached

v = verbal report

p = presentation

= paper to follow

2.

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the meeting of the Oversight Board held at 8:00am on Thursday 21 May 2020 held via MS Teams

Present by Teams: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Miss T. Gillies, Medical Director, NHS Lothian; Mrs S. Goldsmith, Director of Finance, NHS Lothian; Professor A. McMahon, Nurse Director NHS Lothian; Mr C. Henderson, Scottish Government; Mr P. Reekie, Chief Executive, Scottish Futures Trust; Mr C. Sinclair, Chief Executive, NHS National Services Scotland and Mr G. Archibald, Joint Staff Side Representative.

In Attendance by Teams: Ms M. Morgan, Senior Programme Director; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Prof J. Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work; Mr G. James, Director of Facilities, Health Facilities Scotland; Mr B. Currie, Project Director, NHS Lothian; Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

Apologies: Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side) and Ms J. Mackay, NHS Lothian Director of Communications;

1. Minutes of previous meeting – 07 May 2020

1.1 The minutes of the meeting held on 07 May 2020 were accepted.

2. Matters Arising

2.1 Management of HCID patients in the RHCYP ED

- Circulated paper and background history noted
- Recognised that it was important to understand the way in which the existing department has now changed its way of working due to Covid19 which has led the department to become more accepting of cubicles with doors on than they had previously been. Part of the reason that the current solution had initially been explored was in part because of clinical reluctance to accept the model of a department with doors on cubicles
- Noted that a change in the pressure profile for the three rooms suite to balanced would not limit the use of the room but would allow use of the suite for high consequence infectious diseases. The addition of cubicle doors would improve functionality and facilitate greater segregation (the rooms had positive pressure at moment to allow minimal invasive procedures to take place, not highly invasive).
- Noted that the work on a balanced pressure HCID room and cubicles in other spaces would form one package of ventilation, doors and associated joinery work
- It was recognised that despite apparent confirmation in writing from NSS colleagues that this proposal was acceptable, there appeared to remain issues on the proposed solution

to be resolved between NHSL and NSS and this would be taken forward out with the meeting with the option for this to be resolved remotely – **TG/MM/GJ/JR**

3. Senior Programme Director's Reports

Highlight report

- Noted that overall status remains Red due to absence of a written programme report and timelines
- HVC107 works progressing
- Many Blue actions shown in connection to DCN migration with patients now been seen in the new building and nothing adverse reported at this time
- Exceptions – recognised that SA2 was still not agreed
- Otherwise works continue onsite
- RHCYP Fire Enhancement works expected to be complete in July 2020
- CAMHS remodelling works progressing significantly

4. Progress with Ventilation Remedials and Fire Enhancements

4.1 Commercial progress with SA2

- The outlined current frustrations around the signing of SA2 were noted. It was hoped to still have SA2 signed off by 31 May 2020
- It was recognised that the agreed commercial principles as NHSL had understood them had been taken to the Board's F&R Committee, the Board itself in March, and the Oversight Board to communicate to the Cabinet Secretary
- It was noted that further issues had now been raised following due diligence work undertaken by IHSL's funders legal team
- There continues to be nothing documented from IHSL outlining the issues emerging for discussion, with changes to documentation having to be picked up by NHSL's legal team
- The three sets of legal teams (NHSL, IHSL, Funders) had now met and were due to have further discussions 21/05 to try and move forward
- The key principle for NHSL and the Oversight Board to remember was around moving away from the Project Agreement for delivering hospital operations, maintenance and the life cycle across the whole hospital. There now seems to be an indication of a move away from this principle, with separate arrangements for ventilation in HCVC107 compared to the rest of the hospital.
- Recognised that consideration now needs to be given to contingency plans such as NHSL stepping in and self delivering, this would not be a preferred option at this stage and there would need to be a full risk assessment undertaken around this as well as consideration of any impact on programme delivery
- Noted that NHSL F&R Committee remain supportive but it is now becoming an uncomfortable position whereby they have been advised several times now that the SA2 was close to being signed
- Noted that the length of time taken for IHSL to provide the services agreement behind SA2 is too long and not acceptable
- Recognised that this building is going to be with people of Scotland for the next 40 years and there was a need for NHSL to have leverage around any future big problems. NHSL

will be vilified if the need arises and the correct contractual arrangements are not in place.

- Noted that the next 24 hours would be critical and agreed that there needs to be something in writing from ISHL which can then be discussed and taken forward over the coming days through the Commercials Sub Group. Details also to be developed around the self delivery option, risks involved and a 'ball park' idea of impact on programme – **SG/MM**

4.2 Design assurance for HVC107

- The circulated paper was noted
- The developments around design assurance were noted with amended proforma correspondence now received from the authorising engineer and also from Mott MacDonald (using own style and caveats). HFS were taking advice from CLO about responding to the request but this was likely to be finalised in the next couple of days
- In relation to the design progress, NHSL were currently responding to the latest IHSL design report and the tracking of issues continues
- The immediate challenge was aligning the technical workstream with the legal and contractual side for the suite of NEC4 contract documents
- Working with IHSL's project management team had become increasingly frustrating as there was a very clear disconnect between the technical people within the IHSL Supply Chain and the IHSL legal and contractual strategy
- Linking to the conversation around NHSL stepping in – it was noted that there was good relationships with Imtech on site, working with their supply chain and making good progress on programmed work, it appears the problems are at the high level contractual side

5. **DCN Service Migration**

- Noted that some services had now moved in and were seeing patients, there was also activity with the setting up of theatres
- Other staff who are part of the future migration were now being encouraged to visit the new hospital
- In relation to inpatients it was noted that the migration date depends on getting back into base covid critical care footprint at the WGH and this was being actively worked on with a view to aiming for a date in June 2020 for services moving over
- It was recognised that the Scottish Government were looking for 50% of critical care base capacity to be ring-fenced for Covid19 moving forward

6. **RHCYP & CAMHS Service Migration**

- RHSC proposal to have some outpatient appointments moved across to the new hospital from middle to end of July 2020
- Whilst this was a positive message it was agreed that no message would go out until further details are discussed at the meeting with the RHSC Medical Staff Committee on 01/06.
- Further update to come to the oversight board on 04/06 - **TG**

7. Communications

- Noted there had been a series of well received TV interviews last week showcasing clinical neurology to increase the service's profile given the usual emphasis around anaesthetics and critical care.

8. Any Other Competent Business

8.1 There was no other business

9. Date of Next Meeting

9.1 Thursday 04 June 2020, 8am



3.1

SBAR – Emergency Department (ED) Ventilation & High Consequence Infectious Diseases (HCID) RHCYP

01 June 2020.

Situation:

As part of NHS Lothian preparedness response for COVID 19 it was identified that the area in the ED majors area at RHCYP previously identified for the segregation and assessment of patients with HCID currently provides 10 air changes at positive pressure to the adjacent department.

The ED triage room at RHCYP is also designed to, and performs as, a treatment room with 10 air changes at positive pressure.

This means that both rooms as currently configured, are not safe or appropriate for the triage or segregation of paediatric patients with a HCID, particularly those spread by aerosol or droplet transmission (e.g. avian influenza or MERS).

The risk to other patients, staff and the wider public not wearing PPE increases if any aerosol generating procedures are performed e.g. intubation.

At design stage the departmental modelling anticipated that patient attendances would rise incrementally year on year and so additional capacity was included. In the intervening period the number of patient attendances at RHSC now exceed the forecast and so at the point of opening the department will already be operating at full capacity with a preference to not lose any existing clinical areas for assessment or treatment.

Background:

In the UK there isn't a requirement to provide negative pressure isolation rooms or any type of isolation room within ED. The lack of negative pressure isolation rooms in ED and other front door services to respond to patient admission with HCID is not restricted to RHCYP DCN site. In January 2020, it was identified on review that none of the EDs across NHS Lothian had a negative pressure isolation room with lobby. The rooms identified in HCID patient pathways at SJH and RIE were also found to have a positive pressure cascade, having been designed as treatment rooms.

The minimum requirement currently described by national guidance (Infection Prevention and Control Advice for acute settings, acute respiratory illness from novel or emerging pathogens version 9.0, 10th March 2020) is provision of a negative pressure isolation room **OR** an ensuite single room which is at balanced pressure to the adjoining spaces and has a door that would be kept closed for respiratory viral infections.

HCID are categorised in the UK as contact or airborne. For those that are categorised as airborne, their individual guidance documents for their infection control management in the UK highlight that negative pressure isolation rooms should be used where available but that single rooms with ensuite facilities and closed doors is an acceptable alternative when isolation rooms are not available. Positive pressure single rooms must never be used.

An SBAR dated 04 March 2020 identified that the NHSL preferred solution (from 6 options) was:

Provide new switchable negative pressure extract system with HEPA filtration in rooms 5 and 6 (G-A1-012 and G-A1-014.) This will involve the provision of additional ducting, and ancillary services.

The risk associated with this option is largely operational in that it increases the scope of work requested of Imtech/Hoare Lea in relation to critical care and haematology oncology ventilation to provide a safe and compliant system. It will have additional costs, and any impact on the overall timeline to complete is unclear at this stage however retrospectively converting the space after opening would be extremely disruptive to the Service.

There are recognised and anticipated potential clinical risks associated with having a switchable system, however the team feel that it is possible to mitigate these risks via a combination of SOPs, and technical measures (see supplementary risk assessment) and are outweighed by the benefit of making a room available with a negative pressure cascade on the occasion it is required for HCID, but ensures the clinical spaces can continue to be used as treatment rooms at all other times and therefore protecting departmental capacity.

Current risk level of Option 4

(possible/ moderate)

Medium 9

However, NSS were unable to support this solution as current national and international guidance advises against adopting switchable pressure cascades due to the high risk of user error and resulting transmission risk for staff and patients associated with this.

Furthermore, in light of actual Covid 19 patient placement experience at RHSC and with further opportunity to re-assess working practices at RHCYP in light of that , a new solution has emerged. This solution (option 7) seeks to add doors to all open fronted cubicles in major and minor areas. By doing this it becomes more feasible to alter ventilation delivery to rooms in these areas to become balanced pressure with the corridor (rather than positive pressure). Clinical procedures planned to be performed in these rooms do not require a positive pressure environment. More invasive procedures which require a positive pressure environment will be performed in the resuscitation rooms which will be changed to have positive pressure (currently balanced). For the interlinking suite of 3 rooms in majors for temporary containment of patients with suspected HCID, rooms 5 and 6 will be at balanced pressure and the adjoining en suite toilet/ wash down room will remain negative due to its existing air extract as a toilet. This creates a dedicated room at balance pressure for donning PPE (room 6), a single room for patient containment (room 5) and an en suite room (at negative pressure to corridor) for doffing PPE.

Assessment:

This option follows on from the previous risk assessments associated with the management of patients with suspected /positive test for HCID, which had not found an acceptable solution that met the needs of patients and clinical staff attending this area, whilst also satisfying NSS. It was also

informed in light of learning from the current RHSC emergency department in relation to Covid19 patient pathways. This learning made it clear that that additional segregation of ED patients in the department would be beneficial to minimise risk of transmission of any respiratory viral infection e.g. RSV, influenza etc and so having doors installed in the open cubicles is now felt to outweigh the clinical risks associated with reduced visibility of patients in the department.

When segregating an HCID patient prior to transfer the following measures (already part of the existing design) would be used :-

- retractable floor to ceiling screening across corridor to provide an additional physical barrier to inadvertent staff or visitor entry segregating the interlinking rooms when in use as HCID holding area from the rest of majors
- Interlinking rooms used with closed doors
- Pneumatic tube in Majors area will be switched off when holding area and retractable screen are in use for suspected HCID to reduce potential risk of vacuum system creating a pull of air from rooms 5 and 6 across the corridor when samples being sent to/from labs

Current risk level of Option 7

Medium 8

The risk assessment is appended.

The opinion of NSS has been sought and advice (Annette Rankin/David McNeill 29/05/2020) is as follows:

We are unaware of any published guidance, for the UK, which requires the provision of a negative pressure area within ED to manage HCID patients. There is therefore a need to interpret available guidance for the handling of HCID patients for the temporary, short stay situation which has been indicated would exist in ED. To do this we had considered the PHE guidance document "Ebola Guidance for Emergency Departments" and The "National Infection Control Manual, Appendix 11".

The Ebola guidance document states that *"The patients should be isolated in a single room with handwashing facilities and a telephone, and if possible a private bathroom (otherwise a dedicated commode). There should also be an adjacent contained space in which appropriate infection control can be carried out. The separate, contained space is to be used for removal of PPE and waste disposal with clear segregation of clean and dirty"*. The suggested solution in the paper to convert the three rooms (G-A1_008, 012 & 014) to a suite would provide this type of facility.

Appendix 11 of the National Infection Control Manual identifies 3 options for a room to house an inpatient with HCID. These three options are as follows:

1. A high level isolation unit
2. Negative pressure and ante room within an infectious diseases unit
3. Isolation room/suite

20200602 SBAR ED Ventilation & HCID v0.5

The suggested solution in the paper to convert the three rooms (G-A1_008, 012 & 014) to a suite would provide option 3 of the above.

The setup which you would then have for these rooms would be as follows:

Room G-A1-008 negative pressure to room G-A1-012

Room G-A1-012 neutral pressure to corridor

Room G-A1-014 neutral; pressure to corridor

The transfer of the infected patient as soon as possible, from this suite, to an HCID facility for inpatients would minimise risk. It would also enable the room to be cleaned and made ready for the next patient.

The changes to the cubicles, to replace curtains with doors and to change the room pressure to neutral to the corridor will improve use for source patients. They would not, however, be suitable for patients with an HCID. Appendix 11 of the National Infection Control Manual identifies the uses to which these cubicles could be put. As these cubicles will be at balanced pressure we suggest a local sop is agreed between clinicians and the IPCT on the types of patients that can be treated and the procedures undertaken.

The proposal to use the two Resuscitation Rooms as spaces, to carry out a procedure which would require positive pressure, particularly more invasive type procedures, would give you spaces to carry out some of the procedures which might have previously been undertaken in the converted cubicles or the converted three room suite.

It was noted that there was some discrepancy in the pressure regimes documented for the resuscitation rooms. It is confirmed that the resuscitation rooms are currently at balanced pressure and would require to be made positive pressure.

Healthcare architects (Oberlanders), engaged by IHSL to assist with identifying alternative solutions to the switchable pressure cascade, are supportive of this option, recognising that the department has already been constructed with clinical patient flows in mind. Further options could not be progressed without significant redesign and departmental construction. However, Oberlanders are going to complete a piece of work to ensure that patient flows are optimised within the department, on the basis that this option is progressed.

Recommendation:

1. It is recommended that the option 7 as described above be progressed as the preferred solution for HCID in RHCYP.

Likelihood	Consequences / impact				
	Negligible	Minor	Moderate	Major	Extreme

Almost certain	Medium 5	High 10	High 15	V High 20	V High 25
Likely	Medium 4	Medium 8	High 12	High 16	V High 20
Possible	Low 3	Medium 6	Medium 9	High 12	High 15
Unlikely	Low 2	Medium 4	Medium 6	Medium 8	High 10
Rare	Low 1	Low 2	Low 3	Medium 4	Medium 5

Descriptor	Rare	Unlikely	Possible	Likely	Almost Certain
Probability	Can't believe this event would happen – will only happen in exceptional circumstances	Not expected to happen, but definite potential exists – unlikely to occur	May occur occasionally, has happened before on occasions – reasonable chance of occurring	Strong possibility that this could occur – likely to occur	This is expected to occur frequently/ in most circumstances – more likely to occur than not

ID:

Record of General Risk Assessment

Name of Assessor(s):	Dorothy Hanley		Date of Original Assessment:	22 nd May 2020
Posts Held:				
Manager Responsible:				
Department:	Emergency Department			
Subject of Assessment: Consider Task or Environment.				
<p>Following on from previous risk assessments associated with the management of patients with suspected positive test for HCID, (see attachment 1) the Project Team have held discussions with clinical teams, IPCT colleagues and HFS/HPS to identify a solution that met the needs of patients and clinical staff attending this area.</p> <p>A switchable negative / positive pressure isolation suite was ruled out however after several reviews and much discussion with key stakeholders to clarify the types of procedures carried out in the rooms(see attachment 2) it was agreed that an acceptable way forward could be to adapt the open cubicles to enclosed rooms and adjust the ventilation pressures to meet the clinical needs of the department (see attachment 3)</p> <p>Covid 19 learning has been applied to current clinical practices at the RHSC Emergency Department, and it is clear that additional segregation of ED patients in the department would be beneficial to minimise transmission of respiratory viral infections and so having doors installed in the open treatment rooms is now felt to outweigh the risk associated with reduced visibility of patients in the department.</p>				

Step 1: What are the Hazards?
<p>Patients cared for within the open rooms could be exposed to airborne contaminants as the cubicles are currently all positive to the corridor.</p> <p>The interlinking rooms designed as a holding area is positive to the corridor and so, although it does provide a donning and doffing room a treatment room and an en suite facility, the opening of any of these doors would have the potential to push air out of the rooms into the corridor.</p>
Step 2: Who might be harmed and how?
<p>Staff and patients in the department corridor could be exposed to airborne contaminants.</p>
Step 3: What are you already doing? (Existing Precautions)
<ul style="list-style-type: none"> • retractable floor to ceiling screening across corridor to provide an additional physical barrier segregating the interlinking rooms when in use as HCID holding area • Interlinking rooms used with closed doors • Pneumatic tube in Majors area will be switched off when holding area and retractable screen are in use for suspected HCID to reduce potential risk of vacuum system creating a pull from rooms across corridor when samples being sent to/from labs • Patients with respiratory / airborne infection symptoms nursed in the cubicles with doors (limited resource)

Medium

Level of Risk

Current risk level
(unlikely/ major)

(possible/ major)

Post works risk level

Step 4: Action Plan			
What further action is necessary?	Action By Whom	Action by when (dd/mm/yy)	Action completed. (dd/mm/yy)
<ul style="list-style-type: none"> • Install penny farthing door sets to the open treatment rooms • adjustment of the ventilation pressures in the majority of the rooms from positive to balanced pressure. • Pressure within the resuscitation rooms would be increased to provide positive pressure so that any major invasive procedures could be carried out in those rooms. 			

20200602 SBAR ED Ventilation & HCID v0.5

Proposal to alter ventilation in RHCYP ED in light of covid

The Emergency Dept at RHCYP was designed in accordance with relevant guidance / regulations. Currently the ED treatment rooms in RCHYP have ventilation that provides positive pressure within the room in relation to the adjacent clinical area. This provides a safe environment for patients undergoing invasive procedures.

However, the emergence of covid19 has brought additional challenges to the management of acutely unwell or injured children with the need to isolate all children / families who have symptoms of a respiratory tract infection until their covid19 status is known, increased caution around aerosol generating procedures (AGPs) and more comprehensive cleaning of rooms between patients. In the existing RHSC department this has required a significant departmental expansion and change in clinical workflow.

During the winter period, the majority of children presenting to the emergency department will have some respiratory symptoms and will need to be isolated. A significant number of these will need upper airway suction (the mainstay of management for infants / young for children with respiratory distress and/or feeding difficulties) which is defined as an AGP.

Clinical pressures on the department will mean that maximum clinical flexibility is required at all times, with the ability to manage up to 25 patients an hour who need initial isolation and clinical assessment. To achieve this all of the RHCYP treatment rooms (1-14) and the triage room will need to be suitable for the isolation of, and use of AGPs in, patients with suspected covid19.

In order to reduce the risk that aerosol generated within the room is carried into the adjacent clinical area / staff-base it is proposed to add doors to those treatment rooms that are currently screened with curtains alone (i.e rooms 1-4 and 7-12). Additionally, it is proposed that consideration is given to altering the ventilation within treatment rooms 1-14 and the triage room to provide balanced pressure with the adjacent clinical area / staff base.

Operationally, this would mean that invasive procedures within these rooms would be limited to those that carry a low risk of infection (venepuncture, peripheral venous cannulation, urinary catheterisation, lumbar puncture and wound care including suturing). Higher risk invasive procedures (e.g chest drain and central line insertion, thoracotomy) would be performed in the resuscitation rooms.

Step 5: Review Table			
Date (dd/mm/yy)	Reviewer	Reasons for review	Approved/Not Approved by (dd/mm/yy)



Senior Programme Director's Report

DCN/RHCYP Project

4.1



HIGHLIGHT REPORT

Date 03/06/2020

Senior Programme Director

Mary Morgan

Overall Status / Update	RAG
<p>The overall programme has been changed to green status as the programme timeline has been reset in accordance with the IHSL documented programme of works, confirming the target completion date of 25th January 2021. Planned works completion dates have revised accordingly and the programme report reset.</p> <p>Progress towards SA2 completion has been rapid and positive over the past week. A more up to date verbal report will be provided at the OsB meeting on 4th June 2020. The actual signing of the SA2 will take place sometime (c2 weeks) after it has been finally agreed. Meanwhile works continue on site.</p> <p>Positively, much of the project discussion is about the potential for further services to migrate to the hospital – separate agenda items for the OsB meeting</p> <p>Project risks have been reviewed. There is no change to the project risk profile</p>	Green

Milestone	Planned Completion Date	RAG
Transition from system workstreams to service migration activity	20/03/2020 30/04/2020	Blue
Confirmation of impact on DCN of HVC 107 works	20/3/2020	Blue
“Go – No Go” decision for DCN migration	09/04/2020	Blue
Completion of MVC 112 DCN Fire Enhancement works	07/05/2020 24/04/2020	Blue
Completion of DCN LVCs and minor works	07/05/2020 24/04/2020	Blue
DCN Migration	31/05/2020 11/05/2020	Blue
Completion of MVC (131) CAMHS Fire Enhancement Works	30/10/2020	Green
Completion of MVC (127) CAMHS LVCs and minor works	30/10/2020	Green
“Go – No Go” decision for CAMHS migration	tbc	White
CAMHS Migration	tbc	White
Supplementary Agreement 2 (SA2) agreed	18/03/2020 04/05/2020	Red
Supplementary Agreement 2 (SA2) signed	30/06/2020	White
HVC 107 Air Handling Units ordered	20/03/2020 27/03/2020 24/04/2020	Blue
Completion of HVC 107 construction works	03/09/2020 23/10/2020	Green
Completion of contractor's commissioning and validation HVC107	23/11/2020 25/01/2021	Green
Completion of MVC (126) RHCYP Fire Enhancement works	27/07/2020	Green
Completion of RHCYP LVCs and minor works	27/07/2020	Green

Milestone	Planned Completion Date	RAG
Clinical Scoping/Risk Assessment of Emergency Dept works for HCID	20/03/2020	Blue
Feasibility/options appraisal of ED HCID solutions	22/05/2020	Red
Submission of change notification to IHSL	tbc	White
“Go – No Go” decision for RHCYP (inpatient and ED) migration	tbc	White
RHCYP (Inpatient and ED) Migration	tbc	White

Exception to	Planned End Date	RAG	Cause	Consequences	Recommendation
Supplementary Agreement 2 (SA2) agreed	18/03/20	Red	Delays in submission of contract revisions by IHSL, and subsequent negotiation required thereafter.	Potential overall programme delay. Potential for breakdown in commercial relationship.	Accept delay to ensure risk mitigation. Separation of agree & sign milestones for SA2. Target date for signing now 30/06/2020.
Feasibility/options appraisal of ED HCID solutions	22/05/20	Red	Solutions for ED revisited in light of Covid experience. – To be discussed at OsB 4 th June 20	Delay to MVC submission and subsequent impact on overall programme	Accept and manage messaging. Agree recommendations for HCID ED.

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Reputational impact on NHSL caused by delay, adverse media reports and opinion of internal and external stakeholders	Executive Steering Group meets weekly and is attended by NHSL Communications Director. Ongoing engagement with stakeholders formally and informally Engagement with Cabinet Secretary	High	High
R	Performance of Project Co & Supply Chain (Hard FM) - Project Co. fail to meet Service Level Specification (Post Completion).	Standard form payment mechanism to hold Project Co. to account is agreed. Contracts Manager in post to monitor and measure performance. Additional support for Programme from HFS, SFT and NHSL. Additional input and support at every level given to Contractor.	High	High
R	Coronavirus outbreak adversely impacts programme delivery: Sickness absence of project team and contractors or diversion of project team and or project resources.	Circulation of information throughout NHS. Continue to monitor and escalate any concerns.	Very High	Very High

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Delay in remedial and enhancement works delays transfer of RHSC & DCN into the building	Experience gained from late postponement of previous move. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management. Weekly meetings: Internal with Project Team and Operational Management and Technical Meeting with Design Team and Contractor. Validation activities run concurrently with Commissioning Activities. Expanded NHSL Facilities Commissioning Team.	High	High
I	Delay in completion of the programme has generated additional costs.	Some costs are known and others are being collated. Eg aborted move, costs to services in maintaining and operating in existing accommodation, Remedial works costs Scottish Government have made provision for funding.	High	High
R	Reprovision of critical care ventilation requires full design, construction and commissioning within programme identified timelines.	Design Group established to oversee and deliver. Critical Care and IPCT Clinical Representation on Group High Value Change submitted detailing NHSL requirements.	High	High
R	Provision of enhanced Haematology & Oncology Department ventilation requires full design, construction and commissioning within programme identified timelines.	High Value Change submitted detailing NHSL requirements. SBAR & Risk Assessment completed involving Clinicians & IPCT. Design Team and contractors appointed. IHSL have agreed to undertake.	High	High

RAG Description Key (Time Status)	
WHITE	Activity has yet to commence
RED	Key milestones will be or have been delivered outside tolerance to agreed baseline
AMBER	Forecasting that there is a significant risk that key milestones will be delivered outside tolerance on agreed baseline
GREEN	All milestones forecast to be on time or early
BLUE	Task Complete



NHS Lothian

5.

RHCYP & DCN Oversight Board
4 June 2020

Director of Finance

**ROYAL HOSPITAL FOR CHILDREN AND YOUNG PEOPLE AND
DEPARTMENT OF CLINICAL NEUROSCIENCES – LEGAL AND COMMERCIAL UPDATE**

1 Purpose of the Report

The purpose of this report is to advise members of the Oversight Board that the terms of the Supplemental Agreement 2 between NHS Lothian and IHSL have been agreed subject to the resolution of the legal drafting and finalisation of documentation.

Any member wishing additional information should contact the Director of Finance in advance of the meeting.

2 Recommendations

2.1 Given the need to complete Supplemental Agreement 2 with agreed legal contracts for the works, the Oversight Board is asked to note whilst the terms remain consistent with commercial position approved by the Board and Oversight Board, the due diligence process by the lenders solicitors and the belated input from the Services contractor, has enabled IHSL to push the balance of risk in certain areas.

2.2 The Oversight Board is recommended to note that:

- a) The commercial points are resolved and points of principle agreed between the Board and IHSL; the legal and technical teams are working to finalise content and ensure consistency across the suite of documents and close out all matters of issue.
- b) As a result of resolving the legal drafting between all parties there are two key points not yet fully documented between the parties that the Oversight Board requires to be aware of:
 - a. That there will be an alteration to the risk profile associated with completion of Supplemental Agreement 2
 - b. the approach to the definitions in the Board's Project Agreement with IHSL.
- c) The programme to completion of SA2 is dependent on all the parties, including the funders, concluding their due diligence and now finalising the documents and completing all technical documentation before we are able to confirm that they are in their final form for signing.

2.3 It is not considered that the outstanding points above add a further material impact for the Board and so it is not expected that formal approval will be required.

3 Discussion of Key Issues

3.1 NHS Lothian has received and reviewed the Services Agreement between IHSL and Bouygues and the NEC4 design and build contract between IHSL and Imtech, in

addition to the Supplemental Agreement 2. In addition the Funders legal team have also undertaken a due diligence exercise and required some changes in the definitions included in the main Project Agreement between NHS Lothian and IHSL. The documents are currently being circulated around the IHSL parties for review and confirmation.

3.2 SA2

- 3.2.1 The principle of the whole Facility, including the completed Ventilation Works undertaken through the NEC4 contract, being maintained equitably (but subject to an indemnity) is agreed. The mechanics of how this will work in practice is outlined in the briefing attached at Appendix 1.
- 3.2.2 The risk to the Board of a “two tier” arrangement, or contractual confusion in the event of a defect in the future is relatively high due to the key clinical uses of the areas in question. The actual drafting of the Definitions in SA2, arising from the above point, is not a commercial issue but is still being discussed between Pinsent Mason and Hogan Lovell, for IHSL and Funders respectively, and has therefore not been fully shared with NHSL’s solicitors for review. The draft put forward by MacRoberts, however, has not been accepted by IHSL. It is anticipated that their proposal will be with us on Friday 5th June.
- 3.2.3 For noting by the OSB, NHSL has accepted, reluctantly, that should a H&S conviction arise against IHSL during the period of these Works, SA2 will not be terminated. This termination arrangement would be the normal position during the Facility’s original construction period but we are now in the Operational phase. This concession potentially raises a precedent for any future alterations where Buoygues as FM provider would be expected to undertake works.
- 3.2.4 As reported previously to the OSB and through the Commercial Sub Group, the overall PA risk profile will be altered by the concessions arising from SA2 through for example, erosion of the incentives for project co, FM and contractor to complete works and address defects under pain of deductions. There are now a number of exceptions to that principle, as they apply to and during the works phase and into the “normal” phase.

3.3 Ancillary Documents

- 3.3.1 The technical documentation is mainly covered through the NEC4 contract. This will include the construction programme which, for the SA2, has yet to be provided. It has been indicated in the technical meetings that completion date is 25 January 2021.
- 3.3.2 Services Contract: Agreed between NHSL and IHSL. Comments awaited from BYES and funders. MacRoberts shall review when we receive these comments (which are not understood to be significant). They have no clear timeline on this from Pinsent Mason.

NEC Contract: Comments awaited from funders and Imtech. There may also need to be consequential changes to reflect whatever is agreed in SA2 on the definitions. We have no clear timeline on this from Pinsent Mason. The NHSL advisers’ Design sign off letters will be appended to the SA2.

Consultant’s Appointment: with the consultants for finalisation and signing.

4 Key Risks

- 4.1 The paper outlines the key risks to completion being finalisation of the documentation for signing. Due to a visible disconnect between IHSL, their solicitors and the technical workstream, the risk of gaps between the contracts has been mitigated by MacRoberts and Mott Macdonald undertaking additional drafting / reviews.
- 4.2 The Funder due diligence which is underway and sign off will add a short period of delay before signing SA2. IHSL have been asked to confirm this period urgently.

5 Risk Register

- 5.1 The above risks are considered in detail by the commercial group as matters progress.

6 Impact on Inequality, Including Health Inequalities

- 6.1 There is no impact on equality arising from the matters outlined in this paper.

7 Duty to Inform, Engage and Consult People who use our Services

- 7.1 No further duty for public involvement has arisen regarding the issues in this paper.

8 Resource Implications

- 8.1 The indicative cost of SA2, has been reported separately to NHSL Board and OSB.

Susan Goldsmith
Director of Finance
3 June 2020

List of Appendices

Appendix 1: SA 2: Service provision to the ventilation works

Appendix 1

RHCYP & DCN: SA2 SERVICE PROVISION TO THE VENTILATION WORKS

There are four distinct periods that need to be considered in the context of service provision to the Ventilation works as follows:-

1. Service provision from commencement of the Ventilation Works and during the construction of the Ventilation Works;
2. Service provision following completion of the Ventilation Works until the Ventilation Works Indemnity Expiry Date (5 years post completion);
3. Service provision following completion of the Ventilation Works until 12 years post completion of the Ventilation Works; and
4. Service provision post 12 years from completion of the Ventilation Works.

We deal with each of these periods in turn below.

1. Service provision from commencement of the Ventilation Works and during the construction of the Ventilation Works

A. Excusing Cause

During this period Project Co via BYES should generally continue to provide Services to all of the Facilities however is entitled to the benefit of an Excusing Cause, meaning if there is any interference with service provision as a result of the Ventilation Works then Project Co are excused from service provision to the extent so affected by the Ventilation Works and there are no Deductions applied for any Failures to provide the Services in accordance with the Service Level Specification.

Such interference and trigger for Excusing Cause is most likely to arise in the areas where the Ventilation Woks are being carried out.

We have discussed the need for continuity of Services and in particular that , Project Co (via BYES) should still get access to areas in which the Ventilation Works are being carried out and should maintain service provision to infrastructure and utilities in those parts of the Facilities affected by the Ventilation Works (for example continuing the flushing regime, utility provision).

B. Indemnity

During this time period Project Co also has the benefit of an indemnity which we have described further in Section 2, because although it applies from the commencement of the Ventilation Works, it is most likely to be called upon in respect of post-completion defects in the Ventilation Works, since the Excusing Cause regime is operating in any event during the carrying out of the Ventilation Works.

C. Cap on Liability

Also during this time (until year 12s post completion of the Ventilation Works) Project Co's liability in relation to Ventilation Works is also capped at the level that Project Co can recover from Imtech, albeit excluded from the cap are liabilities which are or should be covered by the Insurances which Project Co or Imtech have to maintain (with the costs being met by the Board). However that does mean that most uninsured losses – such as financial losses of the Board - would be subject to the cap

on liability and irrecoverable if the cap was reached. The Board previously has agreed to take the risk of uninsured financial losses in other scenarios on this and other PFI projects, and this is not an unusual risk for the Board since the Board generally functions on a “self-insuring” basis.

2. Service provision following completion of the Ventilation Works until the Ventilation Works Indemnity Expiry Date (5 years post completion)

During this time period Project Co continues to have the benefit of an indemnity and would also potentially have Excusing Cause when the Ventilation Works Contractor attends the Facilities to attend to defects, if by such attendance there is interference with the service provision, as well as the cap on liability described above.

The indemnity applies in most circumstances where there is an interface issue between the existing hospital and the Ventilation Works. Where the indemnity is triggered Project Co has the protection of:-

- Interim or full coverage of the cost of rectification of a defect in the Ventilation Works;
- Interim or full Deduction relief (subject only to a very limited exception where a Permanent Repair Deadline is missed – on which see below); and
- Coverage of BYES’s increased opex costs.

In return, Project Co (via BYES) is obliged to provide the Services to the Ventilation Works and to undertake all PPM and lifecycle works to the Ventilation Works which it is agreed form part of the Facilities from the point the Ventilation Works are complete.

Where a Ventilation Works Defect arises, the first **response** will be by Project Co via BYES. BYES are obliged to make the defect safe, and to agree a Temporary Repair with the Board’s clinical and contract management team, and then undertake that **Temporary** Repair (if required / appropriate), drawing upon BYES in-house resource and its supply chain, to permit the space to still be used subject to agreeing with the Board a set of minimum availability standards (for example a reduced air change rate / pressure regime).

It should be noted that the precise nature of any response / rectification will depend upon the defect which arises. Certain circumstances might arise where either:-

- (i) a temporary repair is not possible, albeit we understand that it is anticipated in many circumstances some form of temporary repair (potentially with the benefit of additional kit) will be achievable; or
- (ii) no temporary repair is required and BYES can carry out a permanent repair relatively easily if, for example, such repair is within the bounds of the Planned Maintenance obligations that BYES have taken on.

Once the defect has been made safe / a temporary repair undertaken (if required / appropriate), if it is ascertained that BYES cannot permanently repair the defect because it requires specialist input then Project Co can call upon Imtech to remedy the defect.

The way that this sequence will operate in practice is:-

- A Service Event affecting the Ventilation Works arises and is logged on the Helpdesk operated by BYES. The time periods for the initial Response (make safe) and Rectification commence.

- Project Co is obliged to use reasonable endeavours to undertake the initial response within 15 minutes and the rectification within one hour.
- Assuming the indemnity is triggered, Deduction relief would apply and so no Deductions would be applied. NHSL would be obliged to cashflow the Rectification on an interim basis (pending determination of any dispute re liability).
- BYES would make safe and (if appropriate) ask for agreement to a Temporary Repair. BYES may effect a permanent repair if, for example, the issue is within the bounds of BYES Planned Maintenance responsibilities.
- Project Co would use their reasonable endeavours to get Imtech to Rectify the Defect if / as required.
- There is **no** clear contractual incentive on Imtech to respond to rectify the defect. However, there are certain protections for NHSL as follows: (i) NHSL have agreed to accept an obligation that they will use reasonable endeavours to mobilise to rectify the defect within the Rectification Period (one hour) so they are incentivised to get Imtech to rectify and if Imtech do not do so they can ask BYES to rectify; (ii) in the Ventilation Works Contract Imtech have accepted an obligation to respond to a “critical defect” within 72 hours; (iii) NHSL have certain rights against Imtech under the terms of the collateral warranties; (iv) it is understood that there is a memorandum of understanding (probably not with any contractual standing) to be/being agreed between BYES and Imtech regarding responding to defects.
- If Imtech fail to undertake Rectification Project Co will ask BYES to rectify. BYES have accepted the obligation to rectify if required by Project Co and have the benefit of the indemnity which NHSL have granted to Project Co.
- NHSL then agree a Permanent Repair Deadline with Project Co (and BYES / Imtech).
- Deductions are applied if the Permanent Repair Deadline (as the same may be extended) has passed and Rectification has not occurred.
- If Project Co fail to use reasonable endeavours to mobilise to rectify a Ventilation Works Defect then NHSL can seek to force Project Co to take action by (i) raising Court proceedings to force them to “use reasonable endeavours to mobilise to Rectify” (not a particularly attractive or fast tool); or (ii) utilise the Board’s remedial rights to self-deliver the Rectification (where applicable) under clause 24.5 – 24.9 of the PA if the circumstances detailed in those clauses exist¹ (likely to be a more attractive tool to leverage Project Co / BYES into action, particularly where they also have the benefit of the indemnity to cover their costs / provide deduction relief).

3. Service provision following completion of the Ventilation Works until 12 years post completion of the Ventilation Works

After the first five years, the indemnity described in Section 2 above no longer applies and the risk of Excusing Cause because of the Ventilation Works Contractor interfering with the Services provision is also likely to be very low because there should be limited presence of Imtech at site to trigger such interference. The cap on Project Co’s liability described in Section 1 however continues to apply until the expiry of the 12 years.

Generally speaking the PA standard position now prevails and Project Co / BYES need to Respond / Rectify within the periods set out in the Service Level Specification, Deductions flow where there is a

¹ The circumstances being (a) immediate and serious threat to the health or safety of any user of the Facilities and/or the Retained Estate or (b) material interruption in the provision of one or more of the Services or (c) risk of the ability of the Board to provide the relevant Board Services is being prejudiced to a material degree

Failure to provide the Services in accordance with the Service Level Specification and costs for rectification of defects sits with Project Co subject to the cap on liability.

The obligation to respond and rectify and deduction and rectification pain has been passed on by Project Co to BYES. BYES have accepted this subject to being given the opportunity to undertake a survey (paid for by NHSL) of the Ventilation Works six months prior to the five year expiry date.

4. Service provision post 12 years from completion of the Ventilation Works.

The standard PA position prevails.

Note any rights which the Board has against Imtech under the collateral warranty will also come to an end at the expiry of the 12 year period (save for any proceedings which have been commenced by the Board prior to the end of the 12 year period).

MacRoberts LLP
29 May 2020



6.

RHCYP & DCN Oversight Board

4 June 2020

Mr Michael Pearson, General Manager Surgical Services

DCN PHASE 2 MIGRATION: REVIEW OF THE 6 WEEK COMMISSIONING PERIOD

1 Purpose of the Report

- 1.1 The purpose of this report is to ask the Oversight Board to support the plans for Clinical Commissioning of DCN Phase 2 In-patient/Interventional Radiology/ Services at WGH moving to the RHCYP & DCN site.

2 Recommendations

The meeting is recommended to:

- 2.1 Approve the proposal to move in this paper.

3 Discussion of Key Issues

- 3.1 The service has been asked to review the timescale for the relocation of the remainder of DCN and associated services from WGH to the RHCYP and DCN building.

3.2 Activities that need to be carried out during service migration

- 3.2.1 DCN Service, medical/clinical and nursing teams confirm they are ready to transfer their in-patient and supporting services with 5-6 week's notice contingent on the following:

- 3.2.2 Any move plan is contingent on the capacity of adult critical care and theatres to move concurrently. These services advise that 6 weeks' notice is preferred to provide adequate time for doctors in training and consultants of changed rota commitments, as we enter peak holiday period. Theatres and Critical care are in a position to move within this timeframe provided that the critical actions outstanding in the outbreak sustainability and surge plan are completed. This includes all critically ill patients returning to the critical care bed footprint. For an early July date move date to be possible, assurance from IPCT and Facilities colleagues is required that agreed work is completed in WGH and RIE critical care areas, far enough in advance of this date to permit safe transfer of patients. If a decant of RIE critical care is necessary this date may need to be delayed.

- 3.2.3 Scottish Ambulance Service has confirmed they can support patient moves during the week of the 6th July 2020 present. The SAS have an operational manager to support the move. SAS have protocols in place concerning patient movement and restrictions required due to COVID-19 (1 patient per ambulance plus cleaning regime). This will be kept under review.
- 3.2.4 HarrowGreen, have confirmed their availability and the same management team to relocate DCN Phase 2 services. Meetings arranged for movement of medicines and chemicals involving pharmacy, nursing, commissioning and the relevant sub-contractor (ENVA).
- 3.2.5 Neuropathology Digital Scanner, NHSL Laboratories confirm they have a contingency to continue to provide service regardless of where DCN is based.
- 3.2.6 Optima (Neurophysiology Equipment Installation) are a non critical element for move. There are plans to activate the VTM Beds remotely after transfer.
- 3.2.7 The Imaging Commissioning Manager, who also has operational responsibilities for elements of the service, sees no barriers to moving the remainder of the service (Interventional Radiology) concurrent with in-patient move. Imaging Service would positively encourage the move to occur asap.
- 3.2.8 Facilities and other supporting services need a minimum of 4 weeks to prepare for any move. All they require is sufficient notice.

5. COVID-19

- 5.1 DCN at the WGH is not currently part of the COVID-19 management plan therefore this is not an impediment to moving.
- 5.2 Constant review to ensure the NHSL, SAS and Harrow Green resources required to support the move remain available.
- 5.3 The transfer of DCN patients, equipment and staff between sites will be subject to Covid-19 risk assessment with physical spacing requirements taken into account.

6. Staff Resource

- 6.1 Management and clinical colleagues confirmed the bulk of elective activity is currently suspended which means rotas etc support the expediting of the DCN move.
- 6.2 Service and nursing colleagues were confident there is sufficient staffing resource to support the move; however this will be kept under review. The service has reviewed the nursing establishment and at this time are able to commission 57 Beds (15 Neurology – no change to what was planned and 42 Neurosurgery a reduction of 5 Beds). The DATCC can provide 20 Theatre Sessions, 6 Angiogram sessions and 1MRI session.

- 6.3 Familiarisation /Induction and Super Users training has been completed as per previous paper. An Interim Site Director is in post and the Commissioning Team are available for additional support following transfer.

7 Key Risks

- 7.1 Response to COVID-19 diverts resources e.g. capacity / SAS availability required for the move.
- 7.2 Clinical fitness of neurosciences patients to transfer will be assessed on an individual basis, so this is mitigated.
- 7.3 Sustaining the management of COVID-19 in critical care WGH and RIE, and support for the of the at a time of service pressure.
- 7.4 Covid-19 is on the project risk register; mitigation actions to undertake the Phase 2 DCN moves are outlined above.
- 7.5 Split site working for DCN and associated services could not be sustained for a significant period of time.

8 Involving People

- 8.1 Continued discussion with all staff and organisational stakeholders. Effected patients will be informed when a move date is confirmed.

9 Resource Implications

- 9.1 The cost of Phase 2 of the DCN move is covered within the project budget, including additional funding identified since the July 2019 delay.

Fiona Halcrow
Project Manager
29th May 2020



7.

RHCYP & DCN Oversight Board

4 June 2020

Director, Women and Children's Services

PARTIAL MOVE OF RHCYP OPD, THERAPIES AND ADMIN TO RHCYP+DCN BUILDING EARLY JULY 2020

1 Purpose of the Report

- 1.1 The purpose of this report is to ask the Oversight Board to support the plans for Clinical Commissioning of Paediatric out patients, Therapies out patients and clinical/ support staff moves into the Clinical Management Suite in advance of the main in patient moves

2 Recommendations

The meeting is asked to:

- 2.1 Support the plan to migrate none-inpatient elements of elements of Children's Services.

3 Key Issues

- 3.1 As detailed in the SBAR taken to the Executive Steering Group on 25th May, there is support from clinical teams to use the Royal Hospital for Children and Young People (RHCYP) outpatient department, even though it will require cross-site working.
- 3.2 Clinicians and other clinic support Services have been consulted and a clinic template drawn up identifying which clinics can safely be delivered on the new site.
- 3.3 Therapies have also requested that elements of their Outpatient Service also move to the new building.
- 3.4 Clinical and Admin staff from various Services would also move into the Clinical staff Offices on the 2nd floor and Therapy staff Offices on the First Floor to support delivery of Services including "Near Me" consultations.
- 3.4 An action log with RAG ratings has been developed by the Service team to track activities required to be completed to ensure a safe and timely transfer of Services.
- 3.5 The Joint Commissioning Action log notes some of the Service actions noted in the Service Action log but covers a wider range of building related actions.

- 3.6 Any move plan is contingent on the ability of the Clinical Team to provide Paediatrician cover for any clinical emergencies and as a result the emergency department will move their ED review clinics to RHCYP outpatients, enhancing paediatric emergency cover for the site.
- 3.7 Any move is also reliant on eHealth support in terms of setting up IT equipment but more importantly close working with Trak team around which clinics will be happening on the RHCYP site to enable them to be built. These templates will be the same as the ones created for the initial move, so it is anticipated they shouldn't require a complete build.
- 3.8 Imaging have confirmed they can provide plain xray and ultrasound cover for clinics, but not Paediatric CT or MRI. This information has been used to determine the content of the clinic templates.
- 3.9 Harrow Green, have confirmed their availability to support the moves, and are awaiting notification to carry out departmental assessments for transferring volume.
- 3.10 Soft FM have been advised of moves plan and are liaising closely with the Soft FM Commissioning Manager to identify sufficient resource.

4. Move Programme

- 4.1 Harrow Green will transfer any equipment for relevant clinics and offices w/c 6th Jul
- 4.2 As detailed in the original SBAR, clinics will commence on 6th July with activity and additional clinics added incrementally over the following two weeks.
- 4.3 A migration plan has been developed with proposed move dates for admin and clinic transfers. (Appendix 5) This schedule will be further detailed following approval for the moves plan and a detailed review with Harrow Green can be carried out.

5. COVID-19

- 5.1 Infection control and social distancing issues have been identified and mitigations put in place to address these (eg removal of some seating in waiting areas – the intention being to minimise use of waiting areas through clinic scheduling patient pathway management).

6. Staff Resource

- 6.1 Consideration has been given to the challenge of operating outpatient clinics across two sites, with the bulk of activity happening on the new RHCYP site. The CNM has confirmed that, as other sites have closed, staffing the new RHCYP is possible.

- 6.2 Familiarisation /Induction and Super Users training will be revisited with Commissioning Team inducting new starts to the building and the department leads taking on the local familiarisation programme for their departments.

7 Key Risks

- 7.1 eHealth/Trak input is critical to the safe and smooth transfer of clinic activity to this building.

8 Involving People

- 8.1 Continued discussion with all staff and organisational stakeholders. Affected patients' families will be informed when move date is confirmed.

9 Resource Implications

- 9.1 Move costs were incorporated in original project budget, however this more staged approach may incur additional costs.
- 9.2 A reduced commissioning team resource with competing demands on those remaining from this and other Capital Planning Projects will need careful management to ensure safe transfer of services and support for incoming building and Service users.

Dorothy Hanley, Service Redesign and Commissioning Lead, Children's Services

Tobias Tipper, Service Manager, Women and Children's Services



From: [Graham, Chris](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Henderson C \(Calum\)](#); ["Colin Sinclair"](#); [Cosens, Sorrel](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); ["Gordon James"](#); [Graham, Chris](#); [Graham, Iain](#); [Smith G \(Gregor\)](#); ["Jacqui Reilly"](#); [Jim Miller](#); [Joyce, Alex](#); ["Judith Mackay"](#); [Little, Kerryann](#); [McMahon, Alex](#); [Morgan, Mary](#); [Murray, Fiona](#); [Nicoll, Nadine](#); ["Peter Reekie"](#); [Roxanne Gallacher \(Jim Miller PA\)](#); [Trotter, Audrey](#); [Walker, Anna](#)
Subject: RHCYP, DCN & CAMHS Oversight Board Papers - 18-06-2020
Date: 17 June 2020 08:05:03
Attachments: [RHCYP DCN OSB Papers 18-06-2020.pdf](#)
Importance: High

Please see attached the Oversight Board Papers for the meeting tomorrow morning

Kind regards
Chris

Chris Graham
Secretariat Manager – Corporate Governance Team
NHS Lothian

MS TEAMS – [Redacted]

The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service. For more information please visit <http://www.symanteccloud.com>



Scottish Government
Riaghaltas na h-Alba
gov.scot



Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 18th June 2020, 8:00 – 9:30am

Venue: MS TEAMS: RHCYP, DCN, CAMHS Oversight Board

AGENDA

1.	Chair's Welcome and Introductions Apologies: Judith Mackay	FMc	v
2.	Minutes of previous meeting for approval: 4 June 2020	FMc	*
3.	Matters Arising		
	3.1 SA 2 progress	SG	V
4.	Senior Programme Director's Report	MM	*
5.	DCN Phase 2 Service Migration	TG	*
6.	RHCYP Phase 1 Service Migration	TG	*
7.	Communications		
8.	Delay costs update	SG	*
9.	Public Inquiry Terms of Reference – for noting	FMc	*
10.	Any Other Competent Business	FMc	V
11.	Date of Next Meeting Thursday 2 nd July 2020, 8am		

* = paper attached

v = verbal report

p = presentation

= paper to follow

OVERSIGHT BOARD**NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services**

Minutes of the Oversight Board held at 8:00am on Thursday 04 June 2020 held via MS Teams.

Present by Teams: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Miss T. Gillies, Medical Director, NHS Lothian; Mrs S. Goldsmith, Director of Finance, NHS Lothian; Mr C. Henderson, Scottish Government; Mr P. Reekie, Chief Executive, Scottish Futures Trust (until 8:30am) and Mr G. Archibald, Joint Staff Side Representative.

In Attendance by Teams: Ms M. Morgan, Senior Programme Director; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Mr B. Currie, Project Director, NHS Lothian; Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian; Ms J. Mackay, NHS Lothian Director of Communications; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

Apologies: Professor A. McMahon, Nurse Director NHS Lothian; Mr C. Sinclair, Chief Executive, NHS National Services Scotland; Prof J. Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work; Mr G. James, Director of Facilities, Health Facilities Scotland and Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side)

1. Minutes of previous meeting – 21 May 2020

1.1 The minutes of the meeting held on 21 May 2020 were accepted.

2. Matters Arising**2.1 Management of HCID patients in the RHCYP ED**

- Further narrative detail in circulated SBAR noted
- Noted that following engagement with NSS colleagues there was now support around the solution as proposed at the last Oversight Board. This would be to change the ED pressure regime and provide doors for the suite of rooms that the team would use to treat HCIDs whatever they may be. A MVC submission would now be worked up for IHSL to deliver
- Noted that there could be a 12 to 14 week lead time for procurement of doors but there would be ongoing liaison with the construction team to reduce this and look at alternative procurement if required
- Noted that solution comprises three pieces of work:
 - Entire department balanced pressure cascade
 - Doors for open fronted bays
 - Resuscitation rooms to move to positive pressure for invasive procedures
- Noted that advice had also been sought from Annette Rankine and David McNeil at NSS and that this response had also been included and confirmed that the solution as proposed would meet requirements
- SOP to now be developed with local clinicians and the Infection Control and Prevention Team looking at how patients would move around the building

- Noted that Oberlanders healthcare architects were also supportive of the solution, recognising that the department is already constructed for clinical flow but work will be undertaken to optimise this as the solution progresses
- Noted that costs remained to be confirmed, but were expected to be under £500k. It was agreed that as the costs were unlikely to breach the previously agreed £16M then this would not require to come back to the Oversight Board on a cost basis.
- Noted that in contracting terms the intention was to get back to normal contracting arrangements through BYES undertaking this work.
- The Oversight Board noted that NSS were supportive of this position and approved the proposal to move to the next step, namely submission of the MVC to IHSL. This would go to the ESG 08/06/20 for approval and would then be submitted. IHSL would then have up to 20 days to respond. Once the design proposal was returned from IHSL this would come back to the Oversight Board for information with the indicated cost. A budget price for the MVC would be obtained for the ESG meeting on 08/06/2020.

3. Senior Programme Director's Reports

Highlight report

- Circulated report noted
- Noted that overall status now changed to Green as now have a written programme of works.
- Confirmed completion date of 25 January 2021 now set in writing and will carry forward into SA2
- SA2 completion remains Red as not finally agreed. Signing of SA2 is a key milestone and recent progress with this had been rapid and positive
- Feasibility/options appraisal of ED HCID solutions action would now change from Red given earlier discussion (above)

4. SA2 Completion and Risk Profile

- The Oversight Board noted the following:
 - The Circulated paper outlining that the terms of the Supplemental Agreement 2 between NHS Lothian and IHSL have been agreed subject to the resolution of the legal drafting and finalisation of documentation.
 - Given the need to complete Supplemental Agreement 2 with agreed legal contracts for the works, the Oversight Board is asked to note whilst the terms remain consistent with commercial position approved by the Board and Oversight Board, the due diligence process by the lenders solicitors and the belated input from the Services contractor, has enabled IHSL to push the balance of risk in certain areas.
 - That the commercial points are resolved and points of principle agreed between the Board and IHSL; the legal and technical teams are working to finalise content and ensure consistency across the suite of documents and close out all matters of issue. This should be completed 05/06/2020.
 - As a result of resolving the legal drafting between all parties there are two key points not yet fully documented between the parties that the Oversight Board requires to be aware of:
 - That there will be an alteration to the risk profile associated with completion of Supplemental Agreement 2
 - the approach to the definitions in the Board's Project Agreement with IHSL.

- The programme to completion of SA2 is dependent on all the parties, including the funders, concluding their due diligence and now finalising the documents and completing all technical documentation before we are able to confirm that they are in their final form for signing.

5. DCN Phase 2 Service Migration

- Detail in circulated paper noted
- Into final phase of additional minor works and ventilation checks for Critical Care reconfiguration plan at WGH, looking at areas that will be used as part of Covid19 second wave expansion.
- Noted that plans for the final DCN move were already in progress e.g. rotas and the move was now being targeted for the middle of July 2020.

6. RHCYP Phase 1 Service Migration

- Detail in circulated paper noted
- Time frame was expected to be similar as for DCN Phase 2 move although due to physical distancing requirements moves would not happen on same days and the phased move of Out Patient service in to the Children's part of the building would be early to mid July 2020. As per DCN this move would be slowly phased starting with administrative and health records staff and virtual Out Patient activity would take place along with face to face appointments as required. It was noted that there would be lead time to take account of relating to communicating changes to patients and families as well as required changes to clinic templates.
- Noted that there had been a meeting with the RHSC MSC 01/06 and there had been a lot of positivity around the move
- Noted that there was likely to be 2 phases to the RHCYP Service Migration:
 - Phase 1 – Out Patients
 - Phase 2 – In Patient Based Services & CAMHS

7. Communications

- Newsletter currently being drafted. Will cover migration of Out Patient services once date confirmed. Will also cover success of the DCN move.
- Noted that the newsletter will have to be cleared by Cabinet Secretary in advance.

8. Any Other Competent Business

8.1 There was no other business

9. Date of Next Meeting

9.1 Thursday 18 June 2020, 8am



Senior Programme Director's Report

DCN/RHCYP Project

4.



HIGHLIGHT REPORT

Date 16/06/2020

Senior Programme Director

Mary Morgan

Overall Status / Update	RAG
<p>The overall programme remains green. Works continue towards HVC 107 completion revised programme date and it is likely that RHCYP Fire Enhancements (MVC 126) & LVCs will be completed ahead of programme (end June v end July)</p> <p>Positive progress continues with SA2, which is in its final stages of completion. A more detailed report will be provided at OsB.</p> <p>Also positively, much of the project discussion is about rDCN and children's outpatient services migration planning – separate agenda items for the OsB meeting</p> <p>There is no change to the project risk profile. However, risks will be reviewed again prior to the next OsB</p>	Green

Milestone	Planned Completion Date	RAG
Transition from system workstreams to service migration activity	20/03/2020 30/04/2020	Blue
Confirmation of impact on DCN of HVC 107 works	20/3/2020	Blue
"Go – No Go" decision for DCN migration	09/04/2020	Blue
Completion of MVC 112 DCN Fire Enhancement works	07/05/2020 24/04/2020	Blue
Completion of DCN LVCs and minor works	07/05/2020 24/04/2020	Blue
DCN Migration (Outpatients)	31/05/2020 11/05/2020	Blue
rDCN migration	13/07/2020	Green
Completion of MVC (131) CAMHS Fire Enhancement Works	30/10/2020	Green
Completion of MVC (127) CAMHS LVCs and minor works	30/10/2020	Green
"Go – No Go" decision for CAMHS migration	tbc	White
CAMHS Migration	tbc	White
Supplementary Agreement 2 (SA2) agreed	18/03/2020 04/05/2020	Red
Supplementary Agreement 2 (SA2) signed	30/06/2020	Green
HVC 107 Air Handling Units ordered	20/03/2020 27/03/2020 24/04/2020	Blue
Completion of HVC 107 construction works	03/09/2020 23/10/2020	Green
Completion of contractor's commissioning and validation HVC107	23/11/2020 25/01/2021	Green
Completion of MVC (126) RHCYP Fire Enhancement works	27/07/2020	Green
Completion of RHCYP LVCs and minor works	27/07/2020	Green
RHCYP outpatients migration (Phase 1)	20/07/2020	Green

Milestone	Planned Completion Date	RAG
Clinical Scoping/Risk Assessment of Emergency Dept works for HCID	20/03/2020	Blue
Feasibility/options appraisal of ED HCID solutions	22/05/2020	Blue
Submission of change notification (MVC 157) to IHSL	09/06/2020	Blue
Response to MVC 157 from IHSL	07/07/2020	Green
Completion of MVC157 construction works	tbc	White
Completion of contractor's commissioning and validation MVC157	tbc	White
"Go – No Go" decision for RHCYP (inpatient and ED) migration	tbc	White
RHCYP (Inpatient and ED) Migration	tbc	White

Exception to	Planned End Date	RAG	Cause	Consequences	Recommendation
Supplementary Agreement 2 (SA2) agreed	18/03/20	Red	Delays in submission of contract revisions by IHSL, and subsequent negotiation required thereafter.	Potential overall programme delay. Potential for breakdown in commercial relationship.	Accept delay to ensure risk mitigation. Separation of agree & sign milestones for SA2. Target date for signing now 30/06/2020.

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Reputational impact on NHSL caused by delay, adverse media reports and opinion of internal and external stakeholders	Executive Steering Group meets weekly and is attended by NHSL Communications Director. Ongoing engagement with stakeholders formally and informally Engagement with Cabinet Secretary	High	High
R	Performance of Project Co & Supply Chain (Hard FM) - Project Co. fail to meet Service Level Specification (Post Completion).	Standard form payment mechanism to hold Project Co. to account is agreed. Contracts Manager in post to monitor and measure performance. Additional support for Programme from HFS, SFT and NHSL. Additional input and support at every level given to Contractor.	High	High
R	Coronavirus outbreak adversely impacts programme delivery: Sickness absence of project team and contractors or diversion of project team and or project resources.	Circulation of information throughout NHS. Continue to monitor and escalate any concerns.	Very High	Very High

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Delay in remedial and enhancement works delays transfer of RHSC & DCN into the building	Experience gained from late postponement of previous move. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management. Weekly meetings: Internal with Project Team and Operational Management and Technical Meeting with Design Team and Contractor. Validation activities run concurrently with Commissioning Activities. Expanded NHSL Facilities Commissioning Team.	High	High
I	Delay in completion of the programme has generated additional costs.	Some costs are known and others are being collated. Eg aborted move, costs to services in maintaining and operating in existing accommodation, Remedial works costs Scottish Government have made provision for funding.	High	High
R	Reprovision of critical care ventilation requires full design, construction and commissioning within programme identified timelines.	Design Group established to oversee and deliver. Critical Care and IPCT Clinical Representation on Group High Value Change submitted detailing NHSL requirements.	High	High
R	Provision of enhanced Haematology & Oncology Department ventilation requires full design, construction and commissioning within programme identified timelines.	High Value Change submitted detailing NHSL requirements. SBAR & Risk Assessment completed involving Clinicians & IPCT. Design Team and contractors appointed. IHSL have agreed to undertake.	High	High

RAG Description Key (Time Status)	
WHITE	Activity has yet to commence
RED	Key milestones will be or have been delivered outside tolerance to agreed baseline
AMBER	Forecasting that there is a significant risk that key milestones will be delivered outside tolerance on agreed baseline
GREEN	All milestones forecast to be on time or early
BLUE	Task Complete



NHS Lothian

RHCYP & DCN Oversight Board
18 June 2020

5.**DCN PHASE 2 MIGRATION: UPDATE****1. Purpose of the Report**

To provide the Oversight Board with an update on the migration plan for DCN Phase 2 to the RHCYP & DCN Site. This move encompasses the inpatient Neurosurgery and Neurology wards, Theatres and Anaesthetics, and Interventional Neuroradiology

2. Recommendations

The meeting is recommended to approve the proposal to move in this paper

3. Discussion of Key Issues

3.1 Following planning discussions within DCN itself and with colleagues in the directorate of Diagnostics, Anaesthetics & Theatres, Critical Care (DATCC) all parties have concluded that it is appropriate to transfer the remaining services from DCN at the WGH to the new RHCYP & DCN Building during the week beginning 13th July 2020.

3.2 All services have indicated that the period of notice for this move is adequate, and that the contingent work within Critical care facilities at both the RIE and WGH sites will have been completed in enough time to enable this move to take place

3.3 The Scottish Ambulance Service and the removal company and Facilities have all confirmed that they can support the move within this timescale

4. Activities that are programmed to occur during the commissioning period. The migration plan and service timetable of moves is attached as Appendix One**5. Covid-19**

5.1 The transfer of DCN patients, equipment and staff between sites will be subject to Covid-19 Risk Assessment with physical spacing requirements taken into account

6. Staff Resource

6.1 Management and clinical colleagues have confirmed the bulk of elective activity is currently suspended which means rotas etc support the expediting of the DCN move

6.2 The numbers of beds and theatre sessions that are staffed for the opening of DCN are as per the paper that came to the Oversight Board on 4th June

7. Key Risks

7.1 Response to a further spike in Covid-19 diverts resources e.g. DCN and DATCC capacity and also Scottish Ambulance Service availability required for the move

7.2 Clinical fitness of neurosciences patients to transfer will be assessed on an individual basis, so this is mitigated

8. Involving People

8.1 Continued discussion with all staff and organisational stakeholders. Affected patients will be informed.

9. Resource Implications

The cost of Phase 2 of the DCN move is covered within the project budget, including additional funding identified since the July 2019 delay

Michael Pearson
General Manager, Surgical Services
Royal Infirmary of Edinburgh

Appendix 1: Migration Plan and Service Timetable

RHSC DCN Reprovision Service Move Timetable Condensed

Service/Department	Current Location	New Location	Last Day of Service	Additional Detail	Last Day for Packing	Day of Move	Patient Move Day	Unpack	Day of Service Resuming
DCN Theatre & DOSA non essential equipment	WGH DCN Theatres	1st Floor DCN Theatres	Continuous	Some equipment may move on Monday post patient moves	10th July 2020	10th July 2020 - Friday		Continuous	Continuous
DCN Neurosurgeons/ Anaethetists/Radiology Consultants /Admin Staff	WGH DCN Admin Corridor/WGH Anne Ferguson Bld Anaesthetic offices	Small Bld CMS Desk	On-going until patient moves complete		14th July 2020 Tuesday	14th July 2020 - Tuesday		14th/15th July 2020	Continuous
DCN Therapies	WGH DCN	2nd Flr DCN Therapy Dept	Continuous (In-Patient)	DCN AHP OPD Equipment to move plus IT, Sundries and operator chairs move	14th July 2020 Tuesday	14th July 2020 - Tuesday		14th/15th July 2020	Continuous (IP) Old site
DCN PIU	WGH DCN Ward 31	2nd Flr DCN PIU	13th July 2020 Monday		14th 2020 Tuesday	14th July 2020 - Tuesday		14th/15th July 2020	16th July 2020
DCN Theatre 1		WGH DCN Grd Main Corridor1st Floor, Theatres 36,37,38,39	Continuous		14th July 2020 Tuesday	14th July 2020 Tuesday			Continuous
DCN Wards	WGH, DCN 1st, 2nd & 3rd Floors	NB 1st Flr Ward 130, 2nd Flr Ward 230,231 & RIE Ward 118	16th May 2020 Thursday	Pending on patient numbers one Ward to close and 20 beds to transfer to Ward 130	15th July 2020	15th July 2020	15th/16th July 2020	Continuous	
DCN Adult Critical Care	WGH Ward 20	RIE 116/1118	Continuous	Key pieces of neuroscience medical physic kit to move once last pt transferred . Beds need to transfer	14th July	15th and 16th July	15th and 16th July		Continuous
DCN Therapies	WGH Ward 32	2nd Flr DCN Therapies	Continuous	In-Patien AHP kit to start to be transfer to new building	16th July 2020 Thursday	16th July 2020 Thursday		16th July 2020	Continuous
DCN Mail Room	WGH DCN Grd Flr	Basement	last day of service 16th July 2020 Thursday		16th July 2020 Thursday	16th July 2020 Thursday			Already open
DCN Neurophysiology	DCN Neurophysiology Dept	2nd Floor OPD 15	16th July 2020	Remaining mobile kit to move		16th July 2020 Thursday			VTM Beds open w/c 19th July
DCN Theatre (2)	WGH, DCN, Main Corridor	NB 1st Flr Ward 130, 2nd Flr Ward 230,231 & RIE Ward 118	9th July 2020 Thursday (In-Pateint Emergencies)	Remaining kit to move		16th July 2020 Thursday			
DCN Imaging	DCN Radiology Dept	1st floor tbc	16th July 2020 (in-patient emergencies)	Image intensifier and mobile xray	16th July 2020 Friday	16th July 2020 Thursday			continous



6.

RHCYP & DCN Oversight Board

18 June 2020

Medical Director

PARTIAL MOVE OF RHSC OPD, THERAPIES AND ADMIN TO RHCYP+DCN BUILDING WITH CLINICS COMMENCING ON 20 JULY 2020

1 Purpose of the Report

- 1.1 The purpose of this report is to ask the Oversight Board to support the plans for Clinical Commissioning of Paediatric out patients, Therapies out patients and clinical/ support staff moves into the Clinical Management Suite in advance of the main in patient moves

2 Recommendations

The meeting is asked to:

- 2.1 Support the plan to migrate non-inpatient elements of Children's Services.

3 Key Issues

- 3.1 As detailed in the SBAR taken to the Executive Steering Group on 25th May, there is support from clinical teams to use the Royal Hospital for Children and Young People (RHCYP) outpatient department, even though it will require cross-site working.
- 3.2 Clinicians and other clinic support Services have been consulted and a clinic template drawn up identifying which clinics can safely be delivered on the new site.
- 3.3 Therapies have also requested that elements of their Outpatient Service also move to the new building.
- 3.4 Clinical and Admin staff from various Services would also move into the Clinical staff Offices on the 2nd floor and Therapy staff Offices on the First Floor to support delivery of Services including "Near Me" consultations.
- 3.4 An action log with RAG ratings has been developed by the Service team to track activities required to be completed to ensure a safe and timely transfer of Services.
- 3.5 The Joint Commissioning Action log notes some of the Service actions noted in the Service Action log but covers a wider range of building related actions.
- 3.6 Any move plan is contingent on the ability of the Clinical Team to provide Paediatrician cover for any clinical emergencies and as a result the emergency

department will move their ED review clinics to RHCYP outpatients, enhancing paediatric emergency cover for the site.

- 3.7 Any move is also reliant on eHealth support in terms of setting up IT equipment and close working with the Trak team around which clinics will be happening on the RHCYP site to enable them to be built. This work is now underway, and eHealth Trak team have confirmed they can support clinic start date target of 20th July.
- 3.8 Imaging have confirmed they can provide plain xray and ultrasound cover for clinics, but not Paediatric CT or MRI. This information has been used to determine the content of the clinic templates.
- 3.9 Harrow Green have confirmed their availability to support the moves and are awaiting notification to carry out departmental assessments for transferring volume.
- 3.10 Soft FM have been advised of moves plan and are liaising closely with the Soft FM Commissioning Manager to identify sufficient resource.

4. Move Programme

- 4.1 Harrow Green will start the transfer any equipment for relevant clinics and offices w/c 6 July.
- 4.2 A revised date of **20 July** has now been agreed for the first outpatient clinics to commence with additional clinics added incrementally over the following 3 weeks.
- 4.3 A migration plan has been developed with proposed move dates for admin and clinic transfers and will be finalised shortly.

5. COVID-19

- 5.1 Infection control and social distancing issues have been identified and mitigations put in place to address these (eg removal of some seating in waiting areas – the intention being to minimise use of waiting areas through clinic scheduling patient pathway management).

6. Staff Resource

- 6.1 Consideration has been given to the challenge of operating outpatient clinics across two sites, with the bulk of activity happening on the new RHCYP site. The Clinical Nurse Manager responsible for Outpatients has confirmed that, as other sites have closed, staffing the new RHCYP is possible.
- 6.2 Familiarisation /Induction and Super Users training will be revisited, with Commissioning Team inducting new starts to the building and the department leads taking on the local familiarisation programme for their departments.

7 Key Risks

- 7.1 eHealth / Trak input is critical to the safe and smooth transfer of clinic activity to this building.

8 Involving People

- 8.1 Continued discussion with all staff and organisational stakeholders. There have been discussions with the RHSC Family Council about the proposed move and they are very supportive. Patients' families will be sent clinic appointment letters for the RHCYP as appropriate, with the relevant information on access, parking etc.

9 Resource Implications

- 9.1 Move costs were incorporated in original project budget, however this more staged approach will incur additional costs, and mainly IT costs for additional laptops to support cross site working. A separate SBAR will be submitted for this.
- 9.2 A reduced commissioning team resource with competing demands on those remaining from this and other Capital Planning Projects will need careful management to ensure safe transfer of services and support for incoming building and Service users.

Dorothy Hanley, Service Redesign and Commissioning Lead, Children's Services

Tobias Tipper, Service Manager, Women and Children's Services



SUMMARY OF ESTIMATED DELAY COSTS

1 Purpose of the Report

- 1.1 The purpose of this report is to provide an update to the Oversight Board on the estimated delay costs initially included within the update to Parliament on 11th September 2019, and subsequently updated at this Board in December 2019.

2 Recommendations

- 2.1 Agree the update on the estimated costs arising from the delay in opening the RHCYP & DCN facility, and the proposed approach to fund non rectification costs through a separate allocation.

3 Discussion of Key Issues

- 3.1 As part of an update to Parliament on the RHCYP & DCN facility, the Cabinet Secretary for Health and Sport advised Parliament that the costs associated with the delay are £16m. The Cabinet Secretary reiterated a commitment in Parliament on 18th September to support necessary investments in the current RHSC and DCN facilities.
- 3.2 This figure was provided by the Scottish Government Health and Social Care Division Finance, based on estimates prepared by NHS Lothian. Given the timescales, the information to inform this estimate was necessarily high level, and include some contingencies where work is not concluded.
- 3.3 Updates to this estimate have been reported to the Oversight Board December 2019. A number of these estimates have now been further refined, based on actual costs and ongoing contractor negotiations, and an updated summary is included in Appendix 1. The following should be noted:
- the estimated cost of remedial works at the new facility has been updated to reflect the ongoing negotiations with IHSL and its supply chain. A number of change orders associated with the rectification works have been issued, and the current estimates for these orders total £5.9m, against an initial estimate of £6m. An element of these changes may relate to enhancements, and this will be reviewed to ensure costs are reported accurately.
 - several other changes have been instructed that do not relate to rectification, but are for enhancements or other service changes. For completeness, these are shown separately in Appendix 1 and are funded outwith the £16m forecast from an additional allocation.
 - although the forecast assumes ongoing property and maintenance costs at RHSC and DCN, until all moves are concluded, there is no further estimate for upgrades to key systems (ie ventilation, fire) at either facility.

- Project Team and Advisor Costs have been updated to reflect an elongated programme, as well as significant legal and technical input into SA2 negotiations; and
 - contingency is now shown as an overall sum within the £16m forecast, and is currently £1.077m. This will be closely monitored as contractor negotiations around SA2 are concluded and greater certainty of costs is achieved.
- 3.4 In order to ensure consistency of reporting, NHS Lothian and the Scottish Government should jointly agree when the overall £16m estimate should be updated. In the interim, changes in estimated costs can be captured through adjustments to the contingency lines, with the potential to release this contingency when greater certainty over cost estimates has been achieved.
- 3.5 This report will be available to the ESG and Oversight Board on a monthly basis, or more frequently if significant changes are identified.

4 Key Risks

- 4.1 The key risk associated with the estimate of delay costs is that required investments and remedial works may exceed current estimates, once fully scoped and tendered. This is mitigated by the contingencies within the £16m estimates, however the Board will work closely with the Scottish Government to ensure any funding issues are understood and addressed.

5 Resource Implications

- 5.1 The resource implications are addressed in Appendix 1.

Nick Bradbury
Head of Property and Asset Management Finance
16 June 2020



List of Appendices

Appendix 1: Estimated RHSC / DCN Continuing Service Costs from July 2019

Appendix 1: Estimated RHSC / DCN Continuing Service Costs from July 2019.

Rectification Costs associated with new hospital	Spend to Date £k	Est. Cost £k
Spend to date as at 31 May 2020		
High Value Change 107 - ventilation works	840	5,000
Medium Value Change 127 - CAHMS	-	450
Medium Value Change 086 - Full Disinfection of Water System	29	29
Medium Value Change 093 - Disinfect Taps	25	25
Medium Value Change 100 - Outlet Flushing	206	400
Medium Value Change TBC - HCID at ED	-	-
Total: Costs associated with New Hospital	1,100	5,904
Costs of maintaining existing sites		
Dual running of existing sites: RHSC/DCN staff	119	254
Dual running of existing sites: RHSC/DCN equipment/supplies	212	245
Additional maintenance / property costs at current RHSC and DCN facilities	1,772	2,627
Additional capital investments in current RHSC	507	831
Additional capital investments in current DCN	1,101	1,126
Total: Costs of maintaining existing sites	3,710	5,083
Project Team costs		
Project Team and Advisor Costs	893	1,667
Additional Project Support (NSS)	0	300
Legal Advisors	216	476
Technical Advisors	411	994
External Reviews and Assurances	0	500
Total: Project team costs	1,520	3,936
Contingency		
Contingency	-	1,077
Total Spend/ Estimated Additional Costs	6,329	16,000

Other IHSL Changes (Enhancements / Service Changes)	Spend to Date £k	Est. Cost £k
Medium Value Change 112 - DCN Fire Enhancements	162	425
Medium Value Change 131 - CAHMS Fire Enhancements	-	550
Medium Value Change 126 - Fire Enhancements	-	650
Medium Value Change 143 - Disabled Access	-	55
Medium Value Change 085 - Align with NHSL Guidance and Policy Documents	19	23
Medium Value Change 092 - Tap Changes	63	63
Medium Value Change TBC - COVID 19 Response	-	TBC
Low Value Change - 150 - Access Control	-	TBC
Low Value Change - 151 - Accoustic Hood Removal	-	TBC
Low Value Change - 106 - Desk Adjustments	-	TBC
Total Spend/ Estimated Additional Costs	244	1,766

9.

Inquiry into the construction of the QEUH, Glasgow and the RHCYP/DCN, Edinburgh: terms of reference

Published: **15 Jun 2020**

Terms of reference for the inquiry into the construction of the Queen Elizabeth University Hospital Campus (QEUH), Glasgow and the Royal Hospital for Children and Young People and Department of Clinical Neurosciences (RHCYP/DCN), Edinburgh.

Remit

The overarching aim of this Inquiry is to consider the planning, design, construction, commissioning and, where appropriate, maintenance of both the Queen Elizabeth University Hospital Campus (QEUH), Glasgow and the Royal Hospital for Children and Young People and Department of Clinical Neurosciences (RHCYP/DCN), Edinburgh.

The Inquiry will determine how issues relating to adequacy of ventilation, water contamination and other matters adversely impacting on patient safety and care occurred; if these issues could have been prevented; the impacts of these issues on patients and their families; and whether the buildings provide a suitable environment for the delivery of safe, effective person-centred care.

The Inquiry will make recommendations to ensure that any past mistakes are not repeated in future NHS infrastructure projects. The Inquiry will do this by fulfilling its Terms of Reference.

Terms of Reference

1. To examine the issues in relation to adequacy of ventilation, water contamination and other matters adversely impacting on patient safety and care which arose in the construction and delivery of the QEUH and RHCYP/DCN; and to identify whether and to what extent these issues were contributed to by key building systems which were defective in the sense of:

- A. Not achieving the outcomes or being capable of the function or purpose for which they were intended;
- B. Not conforming to relevant statutory regulation and other applicable recommendations, guidance, and good practice.

2. To examine the arrangements for strategic definition, preparation and brief, and concept design, including the procurement, supply chain and contractual structure

adopted for the financing and construction of the buildings, to determine whether any aspect of these arrangements has contributed to such issues and defects.

3. To examine during the delivery of QEUH and RHCYP/DCN projects:

- A. Whether the Boards of NHS Greater Glasgow and Clyde and NHS Lothian put in place governance processes to oversee the projects and whether they were adequate and effectively implemented, particularly at significant project milestones;
- B. Whether operational management provided by the Boards of NHS Greater Glasgow and Clyde and NHS Lothian was adequate and effective for the scale of such infrastructure projects;
- C. The extent to which decision makers involved with the projects sought and facilitated the input and took account of the advice and information provided by, or available from, the clinical leadership team; infection control teams; estate teams; technical experts and other relevant parties to ensure that the built environment made proper provision for the delivery of clinical care;
- D. Whether, the organisational culture within the Boards of NHS Greater Glasgow and Clyde and NHS Lothian encouraged staff to raise concerns and highlight issues in relation to the projects at appropriate times throughout the life cycles of the projects;
- E. Whether failures in the operation of systems were a result of failures on the part of individuals or organisations tasked with specific functions.

4. To consider whether any individual or body deliberately concealed or failed to disclose evidence of wrongdoing or failures in performance or inadequacies of systems whether during the life of the projects or following handover, including evidence relating to the impact of such matters on patient care and patient outcomes; and whether disclosures of such evidence was encouraged, including through implementation of whistleblowing policies, within the organisations involved.

5. To examine whether, based on the governance arrangements in place, national oversight and support of such large-scale infrastructure projects was adequate and effective and whether there was effective communication between the organisations involved.

6. To examine, during the life cycle of the QEUH and RHCYP/DCN projects, how the Boards of NHS Greater Glasgow and Clyde and NHS Lothian secured assurance and supporting evidence that:

- A. All necessary inspection and testing had taken place;

- B. All key building systems had been completed and functioned in accordance with contractual specifications and other applicable regulations, recommendations, guidance, and good practice and;
- C. Adequate information and training were provided to allow end-users effectively to operate and maintain key building systems.

7. To examine what actions have been taken to remedy defects and the extent to which they have been adequate and effective.

8. To examine the physical, emotional and other effects of the issues identified on patients and their families (in particular in respect of environmental organisms linked to infections at the QEUH) and to determine whether communication with patients and their families supported and respected their rights to be informed and to participate in respect of matters bearing on treatment.

9. To examine the processes and practices of reporting healthcare associated infections within QEUH and determine what lessons have been or should be learned.

10. To examine whether the choice of sites was appropriate or gave rise to an increased risk to patients of environmental organisms causing infections.

11. To examine whether there are systematic knowledge transfer arrangements in place to learn lessons from healthcare construction projects and whether they are adequate and effective.

12. To examine whether NHS Lothian had an opportunity to learn lessons from the experience of issues relating to ventilation, water and drainage systems at the QEUH and to what extent they took advantage of that opportunity.

13. To report to the Scottish Ministers on the above matters, and to make recommendations identifying any lessons learnt to ensure that any past mistakes are not repeated in any future NHS infrastructure projects, as soon as reasonably practicable.



From: [Graham, Chris](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Henderson C \(Calum\)](#); [Colin Sinclair](#); [Cosens, Sorrel](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); [Gordon James](#); [Graham, Chris](#); [Graham, Iain](#); [Smith G \(Gregor\)](#); [Jacqui Reilly](#); [Jim Miller](#); [REDACTED]; [Joyce, Alex](#); [Little, Kerryann](#); [McMahon, Alex](#); [Morgan, Mary](#); [Murray, Fiona](#); [Nicoll, Nadine](#); [Peter Reekie](#); [Roxanne Gallacher \(Jim Miller PA\)](#); [Trotter, Audrey](#); [Walker, Anna](#); [Mackay, Judith](#); [Taylor, Kizzy](#); [Taylor, Kizzy \(DO NOT USE - use nhs.net\)](#)
Subject: RHCYP, DCN & CAMHS Oversight Board Papers - 30-07-2020
Date: 29 July 2020 09:07:29
Attachments: [RHCYP OSB Papers - 30-07-20.pdf](#)
Importance: High

Please see attached the Oversight Board Papers for the meeting tomorrow morning

Kind regards
Chris

Chris Graham
Secretariat Manager – Corporate Governance Team
NHS Lothian

MS TEAMS – [REDACTED]

The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 30th June 2020, 8:00 – 9:30am

Venue: MS TEAMS: RHCYP, DCN, CAMHS Oversight Board

AGENDA

1.	Chair's Welcome and Introductions	FMc	v
	Apologies: Judith Mackay		
2.	Minutes of previous meeting for approval: 18 June 2020	FMc	*
3.	Matters Arising	FMc	V
4.	Senior Programme Director's report	MM	*
5.	Any Other Competent Business	FMc	V
6.	Frequency of meetings / date of next meeting	FMc	

* = paper attached

v = verbal report

p = presentation

= paper to follow

OVERSIGHT BOARD**NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services**

Minutes of the Oversight Board held at 8:00am on Thursday 18 June 2020 held via MS Teams.

Present by Teams: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Miss T. Gillies, Medical Director, NHS Lothian; Mrs S. Goldsmith, Director of Finance, NHS Lothian; Mr C. Henderson, Scottish Government; Mr P. Reekie, Chief Executive, Scottish Futures Trust; Mr G. Archibald, Joint Staff Side Representative; Professor A. McMahon, Nurse Director NHS Lothian; Mr C. Sinclair, Chief Executive, NHS National Services Scotland; Prof J. Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work and Mr G. James, Director of Facilities, Health Facilities Scotland

In Attendance by Teams: Ms M. Morgan, Senior Programme Director; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Mr B. Currie, Project Director, NHS Lothian; Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

Apologies: Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side) and Ms J. Mackay, NHS Lothian Director of Communications

1. Minutes of previous meeting – 04 June 2020

1.1 The minutes of the meeting held on 04 June 2020 were accepted.

2. Matters Arising**2.1 SA2 Progress**

- Noted that only the final service contract between IHSL and BYES remains outstanding. The lawyers were meeting today to close this off
- The Funders continue to work on the suite of documents and this should be turned around for next week
- There were no outstanding commercial issues, just the alignment of multiple contracts
- It was noted that it had been agreed with NHSL Board that there was no need for re-approval of SA2. The Finance & Resources Committee agreed on 17/06 that the due diligence report due from MacRoberts on legals would be reviewed by the Interim Chief Executive; Interim Chair and Vice Chair before Susan Goldsmith signs this off. The sign off date of 30 June had been set.
- Work would now start on the strategy and narrative around public messaging for the project completion and migration dates. This would be discussed over the coming oversight board meetings. It would be easier to arrive at a consistent message once the official programme of works outlining timelines was confirmed following SA2 sign off. It was also acknowledged that programme work was outstanding on the ED

3. Senior Programme Director's Report

- The circulated report was noted, the programme was running to schedule despite SA2 not yet being signed and work on site continues
- Noted that the signing off of SA2 had now been separated out as had the migration of Children's outpatients from inpatients
- Confirmed dates were awaited for programmes of work e.g. CAMHS and MVC157.
- Risk Register to be reviewed following oversight board meeting – MM/SC

4. DCN Phase 2 Service Migration

- The Oversight Board noted the update on the migration plan for DCN Phase 2 to the RHCYP/DCN Site. This move encompasses the inpatient Neurosurgery and Neurology wards, Theatres and Anaesthetics, and Interventional Neuroradiology. The moves would all take place week commencing 13 July 2020
- The Oversight Board agreed to approve the proposal as outlined in the paper
- The Chair welcomed the news that people were looking forward to the moves and thanked everyone involved, recognising it takes a lot of work around the complexities involved to get to this point.

5. RHCYP Phase 1 Service Migration

- The Oversight Board agreed to support the plan to migrate the non-inpatient elements of Children's Services from 6 July 2020, in order to start patient services from 20 July 2020.
- The plans for Clinical Commissioning of Paediatric out patients, Therapies out patients and clinical/ support staff moves into the Clinical Management Suite in advance of the main in patient moves were noted.
- It was noted that part of the impact relating to Covid19 had meant that staff were more open to taking a more flexible approach to moving and there was a better understanding around mitigation of risks.

6. Communications

- The NHSL announcement on 17 June 2020 was noted. This would see a number of children's outpatient services at the new RHCYP from 20 July 2020, at the same time as remaining services from the DCN complete their move.
- It was noted that the publicly stated opening for the remainder of RHCYP is autumn 2020, and that this would be updated when all programme information was available.

7. Delay costs update

- The update on the estimated delay costs arising from the delay in opening the RHCYP/DCN&CAMHS facility was noted, and the proposed approach to fund non rectification costs through a separate allocation was agreed.
- The determination of revenue and capital position to be discussed offline – SG/AM

8. Public Inquiry Terms of Reference

8.1 The received Terms of Reference for the Public Inquiry were noted

9. Any Other Competent Business

9.1 Frequency of OSB going forward – to be discussed offline – FM and MM

9.2 Well Done and Public Messaging - The Oversight Board noted the positive position being reported to the meeting to that reported at the start of the group. There remained work to do around public communication and relaying of the final timeline and this would be picked up at meetings moving forward.

10. Date of Next Meeting

10.1 Thursday 02 July 2020, 8am



Senior Programme Director's Report

DCN/RHCYP Project

4.



HIGHLIGHT REPORT

Date 28/07/2020

Senior Programme Director

Mary Morgan

Overall Status / Update	RAG
<p>The programme status is unchanged and remains on track to deliver against milestones. The report has been revised to consolidate DCN milestones and to focus on the works programme, rather than including migration decisions which may be subject to a range of factors.</p> <p>SA2 awaiting funder approvals who are completing their due diligence and credit committee authorisation processes.</p> <p>Good progress has been made with scoping the work required the MVC 157 Emergency Dept. Infection Single Rooms (EDISR) works (Previously ED HCID). It has been requested that an initial design and programme for the work is submitted by mid August, with expectation of completion in line with HVC 107 (25/01/2021). There is a risk that IHSL require a further supplemental agreement to be negotiated.</p> <p>There is no change to the Programme risk profile since the last report</p>	Green

Milestone	Planned Completion Date	RAG
Transition from system workstreams to service migration activity	20/03/2020 30/04/2020	Blue
Completion of MVC 112 DCN Fire Enhancement, LVCs and minor works; DCN Migration	13/07/2020	Blue
Completion of MVC (131) CAMHS Fire Enhancement Works	30/10/2020	Green
Completion of MVC (127) CAMHS LVCs and minor works	30/10/2020	Green
Supplementary Agreement 2 (SA2) signed	30/06/2020	Red
HVC 107 Air Handling Units ordered	24/04/2020	Blue
Completion of HVC 107 construction works	03/09/2020 23/10/2020	Green
Completion of contractor's commissioning and validation HVC107	23/11/2020 25/01/2021	Green
Completion of MVC (126) RHCYP Fire Enhancement, LVCs and minor works	27/07/2020	Blue
RHCYP outpatients migration	20/07/2020	Blue
Clinical Scoping/Risk Assessment of Emergency Dept works for HCID	20/03/2020	Blue
Feasibility/options appraisal of ED HCID solutions	22/05/2020	Blue
Submission of change notification (MVC 157) to IHSL	09/06/2020	Blue
Response to MVC 157 from IHSL	07/07/2020	Blue
MVC scope and programme of works	31/08/2020	Green
Completion of MVC157 construction works	tbc	White
Completion of contractor's commissioning and validation MVC157	tbc	White

Milestone	Planned Completion Date	RAG

Exception to	Planned End Date	RAG	Cause	Consequences	Recommendation
Supplementary Agreement 2 (SA2) signed	30/06/20 10/07/20	Red	Delay in final SA2 agreement reached. Lenders consent timing unpredictable and needs to follow process	Low risk at this stage. Work continues on site.	Accept delay. There are no actions that can be taken to further expedite lenders' process

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Reputational impact on NHSL caused by delay, adverse media reports and opinion of internal and external stakeholders	Executive Steering Group meets weekly and is attended by NHSL Communications Director. Ongoing engagement with stakeholders formally and informally Engagement with Cabinet Secretary	High	High
R	Performance of Project Co & Supply Chain (Hard FM) - Project Co. fail to meet Service Level Specification (Post Completion).	Standard form payment mechanism to hold Project Co. to account is agreed. Contracts Manager in post to monitor and measure performance. Additional support for Programme from HFS, SFT and NHSL. Additional input and support at every level given to Contractor.	High	High
R	Coronavirus outbreak adversely impacts programme delivery: Sickness absence of project team and contractors or diversion of project team and or project resources.	Circulation of information throughout NHS. Continue to monitor and escalate any concerns. Safe working practices including PPE, hand hygiene and physical distancing - in offices and for construction work - in place.	High	High
R	Delay in remedial and enhancement works delays transfer of RHSC & DCN into the building	Experience gained from late postponement of previous move. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management. Weekly meetings: Internal with Project Team and Operational Management and Technical Meeting with Design Team and Contractor. Validation activities run concurrently with Commissioning Activities. Expanded NHSL Facilities Commissioning Team.	Med	Med
I	Delay in completion of the programme has generated additional costs.	Majority costs are known and shared with Scottish Government, who have funds allocated. Contingency for remaining costs agreed.	Med	Med

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Reprovision of critical care ventilation requires full design, construction and commissioning within programme identified timelines.	Design Group established to oversee and deliver. Critical Care and IPCT Clinical Representation on Group High Value Change submitted detailing NHSL requirements.	Med	Med
R	Provision of enhanced Haematology & Oncology Department ventilation requires full design, construction and commissioning within programme identified timelines.	High Value Change submitted detailing NHSL requirements. SBAR & Risk Assessment completed involving Clinicians & IPCT. Design Team and contractors appointed. IHSL have agreed to undertake.	Med	Med
R	Introduction of a HCID compliant environment within the ED and potential detrimental effect on current advised programme.	Confirmation that works can be achieved within the RHCYP Mobilisation Timescales is required and anticipated. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management.	Med	Med

RAG Description Key (Time Status)	
WHITE	Activity has yet to commence
RED	Key milestones will be or have been delivered outside tolerance to agreed baseline
AMBER	Forecasting that there is a significant risk that key milestones will be delivered outside tolerance on agreed baseline
GREEN	All milestones forecast to be on time or early
BLUE	Task Complete



From: [Graham, Chris](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Henderson C \(Calum\)](#); [Colin Sinclair](#); [Cosens, Sorrel](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); [Gordon James](#); [Graham, Chris](#); [Graham, Iain](#); [Smith G \(Gregor\)](#); [Jacqui Reilly](#); [Jim Miller](#); [REDACTED]; [Little, Kerryann](#); [McMahon, Alex](#); ["Morgan, Mary"](#); ["Murray, Fiona"](#); [Peter Reekie](#); [Roxanne Gallacher \(Jim Miller PA\)](#); [Trotter, Audrey](#); [Walker, Anna](#); [Mackay, Judith](#)
Subject: RHCYP, DCN & CAMHS Oversight Board Papers - 27-08-2020
Date: 25 August 2020 10:26:00
Attachments: [RHCYPDCN OSB Papers 27-08-2020.pdf](#)
Importance: High

Please see attached the Oversight Board Papers for the Thursday's meeting.

Kind regards
Chris

Chris Graham
Secretariat Manager – Corporate Governance Team
NHS Lothian

MS TEAMS – [REDACTED]
[REDACTED]

The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 27th August 2020, 8:00 – 9:30am

Venue: MS TEAMS: RHCYP, DCN, CAMHS Oversight Board

AGENDA

1.	Chair's Welcome and Introductions	FMc	v
	Apologies:		
2.	Minutes of previous meeting for approval: 30 July 2020	FMc	*
3.	Matters Arising	FMc	v
4.	Senior Programme Director's report	MM	*
5.	Public Inquiry	FMc	v
6.	Communications	JM	v
7.	Any Other Competent Business	FMc	v
8.	Date of next meeting 24th September	FMc	

* = paper attached

v = verbal report

p = presentation

= paper to follow

OVERSIGHT BOARD**NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services**

Minutes of the Oversight Board held at 8:00am on Thursday 30 July 2020 held via MS Teams.

Present by Teams: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Miss T. Gillies, Medical Director, NHS Lothian; Mrs S. Goldsmith, Director of Finance, NHS Lothian; Mr C. Henderson, Scottish Government; Mr P. Reekie, Chief Executive, Scottish Futures Trust; Mr G. Archibald, Joint Staff Side Representative; Professor A. McMahon, Nurse Director NHS Lothian and Prof J. Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work

In Attendance by Teams: Ms M. Morgan, Senior Programme Director; Mr B. Currie, Project Director, NHS Lothian; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

Apologies: Mr G. James, Director of Facilities, Health Facilities Scotland; Mr C. Sinclair, Chief Executive, NHS National Services Scotland; Ms J. Mackay, NHS Lothian Director of Communications and Mr A. Joyce, Employee Director, NHS Lothian (Joint Staff Side)

1. Minutes of previous meeting – 18 June 2020

1.1 The minutes of the meeting held on 18 June 2020 were accepted.

2. Matters Arising

2.1 None.

3. Senior Programme Director's Report

- The circulated report was noted, the programme was running to schedule and work continues despite SA2 not yet being signed:
- The first new air handling unit was expected next week
- The completed DCN Migration had now been consolidated into 1 point
- SA2 remains unsigned with funders progressing due diligence, hopefully to have SA2 signed before EIB August holidays. Colleagues will be informed when sign-off happens
- ED work – new title noted, now called MVC 157 Emergency Dept. Infection Single Rooms (EDISR)
- Noted that MVC 157 costs would probably require a further SA for the programme of work along with required indemnities around ventilation. At the moment this would not impact the January 2021 timescale. Suggested it may be prudent to have the Imtech/IHSL programme mid-August before confirming a January date. A briefing to the Cabinet Secretary about letting staff and public know the January date would be necessary and this would be discussed out with the meeting – FM/SG/MM
- Programme of work for MVC 157 has been requested for the middle of August and indications are works could be completed by December in line with the HVC107 works. Currently there is no change to the risk profile

- Recognised that the DCN migration and migration of RHSC service had gone well with operational issues being found with people now in the building now being resolved
- Noted that dates for migration of CAMHS and RHSC remains white. It has been agreed with Fiona McQueen, Calum Campbell and Esther Robertson to remove items from the report on the basis that migration activity lies solely with NHSL

4. Any Other Competent Business

- 4.1 **Overall Project Costs** - Noted that the costs were now in excess of the original £16M and a detailed brief would be prepared around this and shared – SG/AM
- 4.2 **Public Inquiry** - Noted that the Inquiry would soon start and the Oversight Board would have to consider its role in this. It would be important to demonstrate the good co-operative work of the OsB and the problems that had been overcome by working together. Discussion on the Public Inquiry to go on the next agenda.
- 4.3 **Communications** - Noted that there was the desire to keep staff appraised as much as possible and that the Scottish Government would continue to work with NHSL on the information going out to people about the project

5. Frequency of meetings / Date of next meeting

Agreed that the next meeting would be held on **27 August 2020 at 8am** with a view to moving to meetings once a month from thereon.



Senior Programme Director's Report

DCN/RHCYP Project

4.



HIGHLIGHT REPORT

Date 25/08/2020

Senior Programme Director

Mary Morgan

Overall Status / Update	RAG
<p>The programme status remains on track to deliver against milestones. SA2 is signed.</p> <p>Good progress has been made with scoping the work required the MVC 157 Emergency Dept. A draft programme has been received, confirming 25/01/21 completion. Commercial arrangements to effect the change have themselves been subject to negotiation and will be separately reported.</p> <p>There is no change to the Programme risk profile since the last report</p> <p>There is a need to communicate the works completion schedules to staff and patients of RHCYP</p>	Green

Milestone	Planned Completion Date	RAG
Transition from system workstreams to service migration activity	20/03/2020 30/04/2020	Blue
Completion of MVC 112 DCN Fire Enhancement, LVCs and minor works; DCN Migration	13/07/2020	Blue
Completion of MVC (131) CAMHS Fire Enhancement Works	30/10/2020	Green
Completion of MVC (127) CAMHS LVCs and minor works	30/10/2020	Green
Supplementary Agreement 2 (SA2) signed	30/06/2020	Blue
HVC 107 Air Handling Units ordered	24/04/2020	Blue
Completion of HVC 107 construction works	03/09/2020 23/10/2020	Green
Completion of contractor's commissioning and validation HVC107	23/11/2020 25/01/2021	Green
Completion of MVC (126) RHCYP Fire Enhancement, LVCs and minor works	27/07/2020	Blue
RHCYP outpatients migration	20/07/2020	Blue
Clinical Scoping/Risk Assessment of Emergency Dept works for HCID	20/03/2020	Blue
Feasibility/options appraisal of ED HCID solutions	22/05/2020	Blue
Submission of change notification (MVC 157) to IHSL	09/06/2020	Blue
Response to MVC 157 from IHSL	07/07/2020	Blue
MVC scope and programme of works	31/08/2020	Blue
Completion of MVC157 construction works	21/12/2020	Green
Completion of contractor's commissioning and validation MVC157	25/01/2020	Green

Exception to	Planned End Date	RAG	Cause	Consequences	Recommendation

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Reputational impact on NHSL caused by delay, adverse media reports and opinion of internal and external stakeholders	Executive Steering Group meets weekly and is attended by NHSL Communications Director. Ongoing engagement with stakeholders formally and informally Engagement with Cabinet Secretary	High	High
R	Performance of Project Co & Supply Chain (Hard FM) - Project Co. fail to meet Service Level Specification (Post Completion).	Standard form payment mechanism to hold Project Co. to account is agreed. Contracts Manager in post to monitor and measure performance. Additional support for Programme from HFS, SFT and NHSL. Additional input and support at every level given to Contractor.	High	High
R	Coronavirus outbreak adversely impacts programme delivery: Sickness absence of project team and contractors or diversion of project team and or project resources.	Circulation of information throughout NHS. Continue to monitor and escalate any concerns. Safe working practices including PPE, hand hygiene and physical distancing - in offices and for construction work - in place.	High	High
R	Delay in remedial and enhancement works delays transfer of RHSC & DCN into the building	Experience gained from late postponement of previous move. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management. Weekly meetings: Internal with Project Team and Operational Management and Technical Meeting with Design Team and Contractor. Validation activities run concurrently with Commissioning Activities. Expanded NHSL Facilities Commissioning Team.	Med	Med
I	Delay in completion of the programme has generated additional costs.	Majority costs are known and shared with Scottish Government, who have funds allocated. Contingency for remaining costs agreed.	Med	Med
R	Reprovision of critical care ventilation requires full design, construction and commissioning within programme identified timelines.	Design Group established to oversee and deliver. Critical Care and IPCT Clinical Representation on Group High Value Change submitted detailing NHSL requirements.	Med	Med
R	Provision of enhanced Haematology & Oncology Department ventilation requires full design, construction and	High Value Change submitted detailing NHSL requirements. SBAR & Risk Assessment completed involving	Med	Med

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
	commissioning within programme identified timelines.	Clinicians & IPCT. Design Team and contractors appointed. IHSL have agreed to undertake.		
R	Introduction of a HCID compliant environment within the ED and potential detrimental effect on current advised programme.	Confirmation that works can be achieved within the RHCYP Mobilisation Timescales is required and anticipated. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management.	Med	Med

RAG Description Key (Time Status)	
WHITE	Activity has yet to commence
RED	Key milestones will be or have been delivered outside tolerance to agreed baseline
AMBER	Forecasting that there is a significant risk that key milestones will be delivered outside tolerance on agreed baseline
GREEN	All milestones forecast to be on time or early
BLUE	Task Complete



From: [Marinitsi, Katerina](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Henderson C \(Calum\)](#); ["Colin Sinclair"](#); [Cosens, Sorrel](#); [Currie, Brian](#); [McQueen F \(Fiona\)](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); ["Gordon James"](#); [Graham, Chris](#); [Graham, Iain](#); [Smith G \(Gregor\)](#); ["Jacqui Reilly"](#); ["Jim Miller](#); [Little, Kerryann](#); [Mackay, Judith](#); [McMahon, Alex](#); [Morgan Mary](#); [Murray, Fiona](#); ["Peter Reekie"](#); ["Roxanne Gallacher \(Jim Miller PA\)"](#); [Trotter, Audrey](#); [Walker, Anna](#)
Subject: RHCYP, DCN & CAMHS Oversight Board, Thursday 24-09-20 - Papers
Date: 23 September 2020 10:21:28
Attachments: [RHCYP Oversight Board Papers 24-09-2020.pdf](#)

Dear All,

Please find attached papers for the RHCYP, DCN & CAMHS Oversight Board, Thursday 24-09-20 @8:00am.

The meeting will be held via MS Teams.

Kind Regards,

Katerina

Katerina Marinitsi | Support Officer | NHS Lothian Corporate Governance Team |



The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service. For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 24th September 2020, 8:00 – 9:30am

Venue: MS TEAMS: RHCYP, DCN, CAMHS Oversight Board

AGENDA

1.	Chair's Welcome and Introductions	FMc	v
	Apologies: Susan Goldsmith		
2.	Minutes of previous meeting for approval: 27 August 2020	FMc	*
3.	Matters Arising	FMc	v
4.	Senior Programme Director's report	MM	*
5.	Delay Costs	IG	#
6.	Communications	JM	v
7.	Any Other Competent Business	FMc	v
8.	Date of next meeting 15th October	FMc	

* = paper attached

v = verbal report

p = presentation

= paper to follow

OVERSIGHT BOARD**NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services**

Minutes of the Oversight Board held at 8:00am on Thursday 27 August 2020 held via MS Teams.

Present by Teams: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Mrs S. Goldsmith, Director of Finance, NHS Lothian; Mr C. Henderson, Scottish Government; Mr P. Reekie, Chief Executive, Scottish Futures Trust; Mr G. Archibald, Joint Staff Side Representative; Mr C. Sinclair, Chief Executive, NHS National Services Scotland and Prof J. Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work.

In Attendance by Teams: Ms M. Morgan, Senior Programme Director; Mr B. Currie, Project Director, NHS Lothian; Ms J. Mackay, NHS Lothian Director of Communications; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian; Mr Matthew Neilson, Associate Director: Strategy, Performance and Communications and Mr C. Graham, Corporate Governance Team (minutes).

Apologies: Professor A. McMahon, Nurse Director NHS Lothian; Miss T. Gillies, Medical Director, NHS Lothian and Mr G. James, Director of Facilities, Health Facilities Scotland.

The Chair welcomed Mr Neilson to the meeting. Mr Neilson was currently shadowing Ms Morgan.

1. Minutes of previous meeting – 30 July 2020

1.1 The minutes of the meeting held on 30 July 2020 were accepted.

2. Matters Arising

2.1 Overall Cost Framework – Noted that paper would be circulated once prepared – **SG**

3. Senior Programme Director's Report

- Noted that overall status remains Green with SA2 now showing as signed.
- Good progress being made with scoping work required for MVC 157 Emergency Dept.
- A draft programme had been received, confirming 25/01/21 completion. Commercial arrangements to effect the change have themselves been subject to negotiation and will be separately reported.
- There is no change to the Programme risk profile since the last report
- There is a need to communicate the works completion schedules to staff and patients of RHCYP
- Noted that the contractual negotiations between IHSL and BYES needs to accelerate and NHSL was currently underwriting the cost of required doors given a 10 week lead time, so these could now be ordered
- Contracting process for SA3, SA4 underway. Optimistic that BYES and Imtech can deliver required MVCs and that the process can improve going forward. Noted there would be a further meeting around this later today. BYES management, legal and procurement teams in London now up to speed with NPD and this contract

- Noted that RHCYP/DCN had been discussed at the Remobilisation session with Scottish Government colleagues yesterday. The Board's aspiration was to make the decision around when Inpatient services move using judgement on how winter goes. Scottish Government would need to agree that they would be comfortable with such a position.
- Noted that there would be a MSP meeting on Friday and RHCYP/DCN would be on the agenda.
- Noted that SA3 related to boundaries and outstanding land pieces. SA4 related to fire enhancement works including warranties and anything else that has been missed. These were expected to be signed in the normal running of things but would be looked at to see the options around fast tracking these. Currently the timeframe was unknown but for SA3 this had been on the books for 2-3 years now and would not interfere with any service delivery but would have a financial implication, as more maintenance of areas would be required. The target date for SA4 was within the next 3 weeks but again would not affect or stop any ongoing works.
- Noted that getting to this stage had taken a lot of focussed senior time which was not sustainable moving forward and requires processes to become easier and routine.

4. Public Inquiry

- Noted that Public Inquiry has started and Lord Brodie's team has started its research
- Noted that the OSB role remains overseeing the delivery of the overall programme of work needed to get the new hospital full open
- There was a need for consideration around reflecting how everyone has worked collaboratively to address the new hospital issues but in respect to the Public Inquiry. Agreed that best approach would be initially for everyone to speak to their own legal counsel in terms of preparing for the Public Inquiry and what might be expected. Also to discuss how people can interact with other witnesses.
- The potential demand of the Public Inquiry on resources, time and money was recognised.
- The Chair would also link in with the Scottish Government Public Inquiry Sponsor Team and circulate the response out with the meeting as this was not something for the OSB to discuss – **FM/AM/CH**

5. Communications

- Noted that the moving in arrangements for rest of services needs to start being looked at
- Need a decision on when date can go public and how this is to be communicated
- As Board remains at level 4 of the NHS Board Performance Framework the decision around the date was not for the board to make at the moment. A transfer as soon as possible following the building being ready would be expected
- Clinical led decisions around effective and efficient transfer of services would seem sensible
- Noted that the Board's Internal Audit report was receiving widespread media coverage today
- Issue around communication of new date to be taken up with Cabinet Secretary – **FM/CH**

6. Any Other Competent Business

6.1 Freedom of Information Request (SA2)

- Noted that FOI had been received for the SA2
- Briefing around communication of new date to be taken to Cabinet Secretary today – **FM/CH**

6.2 Sale of RHSC

- Noted that purchasers are looking to do further work and were anticipating starting on site in Spring 2021 so important to have clarity on dates as soon as possible

7. Date of next meeting

7.1 Agreed that the next meeting would be held on **24 September 2020 at 8am**



Senior Programme Director's Report

DCN/RHCYP Project

4.



HIGHLIGHT REPORT

Date 21/09/2020

Senior Programme Director

Mary Morgan

Overall Status / Update	RAG
<p>The programme status remains on track to deliver against milestones. There have been minor delays in parts of the ventilation works that are more challenging than initially anticipated. However, these have not been escalated as contributing to a programme delay. There is no change to the Programme risk profile since the last report. Works completion schedules have been publicly communicated since the last report.</p>	Green

Milestone	Planned Completion Date	RAG
Transition from system workstreams to service migration activity	20/03/2020 30/04/2020	Blue
Completion of MVC 112 DCN Fire Enhancement, LVCs and minor works; DCN Migration	13/07/2020	Blue
Completion of MVC (131) CAMHS Fire Enhancement Works	30/10/2020	Green
Completion of MVC (127) CAMHS LVCs and minor works	30/10/2020	Green
Supplementary Agreement 2 (SA2) signed	30/06/2020	Blue
HVC 107 Air Handling Units ordered	24/04/2020	Blue
Completion of HVC 107 construction works	03/09/2020 23/10/2020	Green
Completion of contractor's commissioning and validation HVC107	23/11/2020 25/01/2021	Green
Completion of MVC (126) RHCYP Fire Enhancement, LVCs and minor works	27/07/2020	Blue
RHCYP outpatients migration	20/07/2020	Blue
Clinical Scoping/Risk Assessment of Emergency Dept works for HCID	20/03/2020	Blue
Feasibility/options appraisal of ED HCID solutions	22/05/2020	Blue
Submission of change notification (MVC 157) to IHSL	09/06/2020	Blue
Response to MVC 157 from IHSL	07/07/2020	Blue
MVC scope and programme of works	31/08/2020	Blue
Completion of MVC157 construction works	21/12/2020	Green
Completion of contractor's commissioning and validation MVC157	25/01/2021	Green

Exception to	Planned End Date	RAG	Cause	Consequences	Recommendation

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Reputational impact on NHSL caused by delay, adverse media reports and opinion of internal and external stakeholders	Executive Steering Group meets weekly and is attended by NHSL Communications Director. Ongoing engagement with stakeholders formally and informally Engagement with Cabinet Secretary	High	High
R	Performance of Project Co & Supply Chain (Hard FM) - Project Co. fail to meet Service Level Specification (Post Completion).	Standard form payment mechanism to hold Project Co. to account is agreed. Contracts Manager in post to monitor and measure performance. Additional support for Programme from HFS, SFT and NHSL. Additional input and support at every level given to Contractor.	High	High
R	Coronavirus outbreak adversely impacts programme delivery: Sickness absence of project team and contractors or diversion of project team and or project resources.	Circulation of information throughout NHS. Continue to monitor and escalate any concerns. Safe working practices including PPE, hand hygiene and physical distancing - in offices and for construction work - in place.	High	High
R	Delay in remedial and enhancement works delays transfer of RHSC & DCN into the building	Experience gained from late postponement of previous move. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management. Weekly meetings: Internal with Project Team and Operational Management and Technical Meeting with Design Team and Contractor. Validation activities run concurrently with Commissioning Activities. Expanded NHSL Facilities Commissioning Team.	Med	Med
I	Delay in completion of the programme has generated additional costs.	Majority costs are known and shared with Scottish Government, who have funds allocated. Contingency for remaining costs agreed.	Med	Med
R	Reprovision of critical care ventilation requires full design, construction and commissioning within programme identified timelines.	Design Group established to oversee and deliver. Critical Care and IPCT Clinical Representation on Group High Value Change submitted detailing NHSL requirements.	Med	Med
R	Provision of enhanced Haematology & Oncology Department ventilation requires full design, construction and	High Value Change submitted detailing NHSL requirements. SBAR & Risk Assessment completed involving	Med	Med

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
	commissioning within programme identified timelines.	Clinicians & IPCT. Design Team and contractors appointed. IHSL have agreed to undertake.		
R	Introduction of a HCID compliant environment within the ED and potential detrimental effect on current advised programme.	Confirmation that works can be achieved within the RHCYP Mobilisation Timescales is required and anticipated. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management.	Med	Med

RAG Description Key (Time Status)	
WHITE	Activity has yet to commence
RED	Key milestones will be or have been delivered outside tolerance to agreed baseline
AMBER	Forecasting that there is a significant risk that key milestones will be delivered outside tolerance on agreed baseline
GREEN	All milestones forecast to be on time or early
BLUE	Task Complete



From: [Marinitsi Katerina](#)
To: [Morrison A \(Alan\)](#); [Archibald Gordon](#); [Henderson C \(Calum\)](#); [Colin Sinclair](#); [Cosens Sorrel](#); [Currie Brian](#); [McQueen F \(Fiona\)](#); [Gillies Tracey](#); [Goldsmith Susan](#); [Gordon James](#); [Graham Chris](#); [Graham Iain](#); [Smith G \(Gregor\)](#); [Jacqui Reilly](#); [Jim Miller](#); [Little Kerryann](#); [Mackay Judith](#); [McMahon Alex](#); [Morgan Mary](#); [Murray Fiona](#); "Peter Reekie"; [Roxanne Gallacher](#); [Susan Ferguson](#); [Trotter Audrey](#); [Walker Anna](#)
Cc: [Graham Chris](#)
Subject: RHCYP, DCN and CAMHS Oversight Board 19-11-20
Date: 18 November 2020 09:34:23
Attachments: [2. RHCYP OB 24-09-20 Minutes - Draft.doc](#)
[4. Project Director's report 13112020.docx](#)
[5. Technical Assurance OsB 19 Nov 2020.doc](#)
[7. OB 19Nov20 Delay Costs Estimate RHCYPDCN.DOCX](#)
[AGENDA RHCYP&DCN Oversight Board 201119.docx](#)

Dear All,

Please find attached agenda and papers for tomorrow's RHCYP, DCN and CAMHS Oversight Board. The paper for item 6 "Governance for SA4" is to follow.

The meeting will be held on MS Teams,
<https://teams.microsoft.com/l/team/19%3ac0e6c8866ad947ae97db73bd2b56700a%40thread.tacv2/conversations?groupId=8b1b0d31-82f6-4a68-a546-b36a9db3f6e7&tenantId=10efe0bd-a030-4bca-809c-b5e6745e499a>

Kind Regards,
Katerina

Katerina Marinitsi | Support Officer | NHS Lothian Corporate Governance Team | [REDACTED]

The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service. For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 19th November 2020, 8:00 – 9:30am

Venue: MS TEAMS: RHCYP, DCN, CAMHS Oversight Board

AGENDA

1.	Chair's Welcome and Introductions	AM	v
	Apologies: Fiona McQueen		
2.	Minutes of previous meeting for approval: 24 September 2020	AM	*
3.	Matters Arising		
	3.1 Status of escalation and ongoing governance	AM/MM	V
	3.2 Publication of SA 2	IG/JM	V
4.	Senior Programme Director's report	MM	*
5.	Technical Assurance	BC	*
6.	Governance for SA4	IG	*
7.	Financial position – updated delay costs	SG	*
8.	Communications	JM	V
9.	Any Other Competent Business	AM	V
10.	Date of next meeting	AM	
	17 th December 2020, 8.00-9.00am		

* = paper attached

v = verbal report

p = presentation

= paper to follow

OVERSIGHT BOARD**NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services**

Minutes of the Oversight Board held at 8:00am on Thursday 24 September 2020 held via MS Teams.

Present by Teams: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Professor A. McMahon, Nurse Director NHS Lothian; Mr C. Henderson, Scottish Government; Mr P. Reekie, Chief Executive, Scottish Futures Trust; Mr G. Archibald, Joint Staff Side Representative; Mr C. Sinclair, Chief Executive, NHS National Services Scotland and Prof J. Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work.

In Attendance by Teams: Ms M. Morgan, Senior Programme Director; Mr B. Currie, Project Director, NHS Lothian; Ms J. Mackay, NHS Lothian Director of Communications; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

Apologies: Mrs S. Goldsmith, Director of Finance, NHS Lothian; Miss T. Gillies, Medical Director, NHS Lothian; Mr G. James, Director of Facilities, Health Facilities Scotland and Ms S. Cosens, Capital Programme Business Manager, NHS Lothian.

1. Minutes of previous meeting – 27 August 2020

1.1 The minutes of the meeting held on 27 August 2020 were accepted.

2. Matters Arising

2.1 There were no matters arising.

3. Senior Programme Director's Report

- Noted that there had been very little change since the previous meeting. The work continues to plan and the timeline had now been communicated to staff and public.
- The arrangements for the helipad night flights and preparation and planning for the migration of services remained ongoing.
- Noted that arrangements for independent testing were looking positive with the independent tester attending all design and project meetings
- The milestones for the three main pieces of work were noted:
 - MVC - CAMHS to be completed end of October 2020
 - HVC - Vent works scheduled to be finished by 25 January 2021
 - ED ventilation changes works in same programme as the main works to be completed by end January 2021. Doors and key ventilation equipment now ordered. Works being treating as MVC following project agreement principles although this is slightly above the MVC level. There is ongoing dialogue with IHSL on that along with work on agreement around appropriate project documentation
- Noted that the commissioning manager was now discussing migration detail with paediatric staff and starting to map out what migration will look like and the options available.

- SA4 would use SA2 as a template. Tight deadlines had been set with legal teams to turn this around in the next week subject to NHSL Board sign offs.
- SA3 missing (boundary change always part project agreement)

4. Delay Costs

- Noted that NHS Lothian committees had not yet considered this paper and there remained changes to be made on points of clarification and costs. The paper would be circulated to the Oversight Board electronically when ready - **IG**
- Noted that costings currently were in a reasonable place and that the paper would be provided to Alan Morrison in advance of being circulated to the group – **IG/AM**

5. Communications

5.1 Noted that the January 2021 date had now been communicated to staff and the public.

6. Any Other Competent Business

6.1 BBC FOI request

- Noted that the response was due within the next week and the intention would be to publish the Supplementary Agreement (SA) documents, subject to the appropriate commercial and personal redactions.
- Noted that IHSL had made some representations to the effect that the SA documents should not be published or if they are then not in detail. There was to be further dialogue with IHSL later today (24/09).
- The Chair requested that Scottish Government communications were also linked into this work – JM/CH

6.2 Status of Escalation and Ongoing Governance (De-escalation)

- Acknowledged that there were still some actions showing as medium risk but there was confidence around completion of CAMHS work by end of October 2020 and the major works by 25 January 2021.
- Noted the programme was running to plan and was being well managed.
- Recognised that the overall summary of the current situation with the building was included in the programme plan with milestones showing as green or blue. There were some areas where a precautionary approach to management of risk was being taken, i.e. Covid19. There remained a reputational risk which was expected which was showing as medium due to the impact any delay to the project would have.
- Overall the project and relationships were in a much better place than a year ago.
- Agreed that in order for any possible de-escalation of the Board to be instigated the project team would need to demonstrate the role of all independent testers and the different parties involved in project sign off for completion of the works. How these parties fit together on their own without Oversight Board co-ordination would also have to be shown alongside the appropriate ongoing governance assurances from NHS Lothian.
- It was also agreed that a narrative providing the required assurances would be developed. This would allow the Chair to take a proposition to the Cabinet Secretary giving the relevant

information in regards to NHS Lothian de-escalation and the need for the continuation of the Oversight Board - **AMcM/MM/AM**

7. Date of next meeting

7.1 Agreed that the meeting scheduled for 15 October 2020 would be cancelled to allow time for the narrative paper on the Oversight Board role, ongoing governance and possible de-escalation to be prepared.

7.2 The next meeting would therefore be on **19 November 2020 at 8am**

Senior Programme Director's Report

DCN/RHCYP Project

HIGHLIGHT REPORT

Date 13/11/2020

Senior Programme Director

Mary Morgan

Overall Status / Update	RAG
<p>The programme status overall has moved from amber to green. The works programme is continuously reviewed and adjustments made as possible to keep to overall timeline. This now includes weekend and festive period working and exhausts any programme contingency. The project team are confident that construction, commissioning and validation can run concurrently. There may be some external works, such as landscaping that extend beyond 25th January 2021. These factors should not affect the ability to occupy the building. The risk of delay remains with any unplanned event such as absence, incident or supplier constraint.</p> <p>Costs have escalated and will be reported separately.</p> <p>MVC (127 & 1310) CAMHS is completed with the exception of snagging and the following (expected) outstanding items due to complete by 20th November 2020: Padding to seclusion room door, Fire escape door to PARU garden and Safehinge door alarm link to the guardian system. This was reported previously and the revised date for completion accepted by ESG. CAMHS services are preparing for their move to their new accommodation. The Programme risk profile is unchanged since the last report to ESG. However, the risk status is reported as reduced since last report to OSB until reviewed by OSB.</p>	Green

Milestone	Planned Completion Date	RAG
Completion of MVC (131) CAMHS Fire Enhancement Works	30/10/2020	Blue
Completion of MVC (127) CAMHS LVCs and minor works	30/10/2020 11/11/2020 20/11/2020	Green
HVC 107 Air Handling Units ordered	24/04/2020	Blue
Completion of HVC 107 construction works	03/09/2020 23/10/2020	Red
Completion of contractor's commissioning and validation HVC107	23/11/2020 25/01/2021 08/02/2021	Amber
Completion of MVC (126) RHCYP Fire Enhancement, LVCs and minor works	27/07/2020	Blue
RHCYP outpatients migration	20/07/2020	Blue
Completion of MVC157 (Emergency Dept works for HCID) construction works	21/12/2020	Green
Completion of contractor's commissioning and validation MVC157	25/01/2020	Green

Exception to	Planned End Date	RAG	Cause	Consequences	Recommendation
Completion of HVC 107 construction works	03/09/20 23/10/20	Red	Space constraints, service clashes and sub contractor delays have resulted in a delay to construction	Places potential completion date at risk	Mitigated through planned weekend working Accept and monitor

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Reputational impact on NHSL caused by delay, adverse media reports and opinion of internal and external stakeholders	Executive Steering Group meets weekly and is attended by NHSL Communications Director. Ongoing engagement with stakeholders formally and informally Engagement with Cabinet Secretary	Med	High
R	Performance of Project Co & Supply Chain (Hard FM) - Project Co. fail to meet Service Level Specification (Post Completion).	Standard form payment mechanism to hold Project Co. to account is agreed. Contracts Manager in post to monitor and measure performance. Additional support for Programme from HFS, SFT and NHSL. Additional input and support at every level given to Contractor. Regular meeting between IHSL & BYES	Med	High
R	Coronavirus outbreak adversely impacts programme delivery: Sickness absence of project team and contractors or diversion of project team and or project resources.	Circulation of information throughout NHS. Continue to monitor and escalate any concerns. Safe working practices including PPE, hand hygiene and physical distancing - in offices and for construction work - in place. Progress on site is good despite Covid	Med	High
R	Delay in remedial and enhancement works delays transfer of RHSC & DCN into the building	Experience gained from late postponement of previous move. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management. Weekly meetings: Internal with Project Team and Operational Management and Technical Meeting with Design Team and Contractor. Validation activities run concurrently with Commissioning Activities. Expanded NHSL Facilities Commissioning Team.	Med	Med
I	Delay in completion of the programme has generated additional costs.	Majority costs are known and shared with Scottish Government, who have funds allocated. Contingency for remaining costs agreed.	Med	Med
R	Reprovision of critical care ventilation requires full design, construction and commissioning within programme identified timelines.	Design Group established to oversee and deliver. Critical Care and IPCT Clinical Representation on Group High Value Change submitted detailing NHSL requirements.	Med	Med

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
		Works in progress		
R	Provision of enhanced Haematology & Oncology Department ventilation requires full design, construction and commissioning within programme identified timelines.	High Value Change submitted detailing NHSL requirements. SBAR & Risk Assessment completed involving Clinicians & IPCT. Design Team and contractors appointed. IHSL have agreed to undertake. Works in progress	Med	Med
R	Introduction of a HCID compliant environment within the ED and potential detrimental effect on current advised programme.	Confirmation that works can be achieved within the RHCYP Mobilisation Timescales is required and anticipated. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management.	Med	Med

RAG Description Key (Time Status)	
WHITE	Activity has yet to commence
RED	Key milestones will be or have been delivered outside tolerance to agreed baseline
AMBER	Forecasting that there is a significant risk that key milestones will be delivered outside tolerance on agreed baseline
GREEN	All milestones forecast to be on time or early
BLUE	Task Complete

NHS Lothian

RHCYP & DCN Oversight Board
19 November 2020

TECHNICAL ASSURANCE OF RHCYP + DCN

1 Purpose of the Report

- 1.1 The purpose of this report is to update the Oversight Board on the level of internal and external technical assurance deployed on the remaining remedial and enhancement works.

2 Recommendations

That the Board note and approve the continuing engagement of the various assurers outlined in the roles described.

3 Discussion of Key Issues

- 3.1 Reflecting lessons learned from the 2019-20 technical reviews by NSS, comprehensive assurance has been sought for the resulting remedial and enhancement works. These include technical sign off by internal NHSL expertise (eg. IPCT, Fire Officers), NHSScotland expertise from HFS and HPS, third parties working for NHSL (technical advisors, authorising engineer, independent validation), assurance by the contractor and building control for IHSL, and the independent tester appointed jointly by NHSL with IHSL. As an example, the assurance process and parties for HVC 107 (ventilation works in haematology/oncology and critical care) are attached at appendix 1.

4 Key Risks

- 4.1 Lack of availability of assurers through illness, self isolation or transportation difficulties as a result of COVID 19.

5 Resource Implications

- 5.1 There are no additional resources identified at this stage; to be confirmed along with the options for programme governance and delivery.

Brian Currie
November 2020

List of Appendices

Appendix 1: Technical Assurance for HVC 107 - ventilation works in haematology/oncology and critical care self-delivered by IHSL

APPENDIX 1

Technical Assurance for HVC 107 - ventilation works in haematology/oncology and critical care self-delivered by IHSL

Table 1: List of Participants

NHSL	Joint	IHSL
Clinical Input	Independent Tester	Main Contractor
Project Team		M&E Designers
Technical Advisers		Architect , Structural, & Acoustic Engineer
Infection Control		NEC Project Manager
AE Ventilation		NEC Supervisor
HFS		Specialist Commissioning Manager
HPS		Specialist Commissioning Contractor
Fire Safety		City of Edinburgh Council
Health & Safety		
AE Medical Gases		
AE Electrical		
AE Water		
Oakleaf		
IOM		

Table 2: Description of Participation

No.	Organisation	Name	Main Role	Input at Each Stage		
				Brief/Design	Construction	Commissioning/Validation
1	NHSL	Clinical Leads	Defining requirements for operational functionality	<ul style="list-style-type: none"> Define service requirements Participate in design meetings Comment on design submissions relating to operational functionality 	<ul style="list-style-type: none"> Clear work area Participate in progress meetings 	<ul style="list-style-type: none"> Room review to confirm operational functionality Re-commission work areas Participate in user familiarity training

No.	Organisation	Name	Main Role	Input at Each Stage		
				Brief/Design	Construction	Commissioning/Validation
2	NHSL Project Team	<ul style="list-style-type: none"> Project Director Commissioning Managers 	Manage project on behalf of NHSL	<ul style="list-style-type: none"> Participate in briefing meetings with clinical leads Brief IHSL Participate in design and technical meetings Review and comment on all aspects of design submissions Check/comment on technical compliance of design 	<ul style="list-style-type: none"> Participate in design and technical meetings Participate in progress meetings Monitor progress against programme Carry out quality checks on workmanship 	<ul style="list-style-type: none"> Participate in commissioning meetings Witness commissioning activities Organise and witness 3rd Party validation activities Monitor progress against programme
3	NHSL Technical Advisers	Mott Macdonald	Provide technical advice and comment as well as project management support	<ul style="list-style-type: none"> Participate in briefing meetings with clinical leads Participate in design and technical meetings Review and comment on all aspects of design submissions Check/comment on technical compliance Manage information 	<ul style="list-style-type: none"> Participate in design and technical meetings Participate in progress meetings Monitor progress against programme 	<ul style="list-style-type: none"> Participate in commissioning meetings Witness commissioning activities Witness 3rd Party validation activities
4	NHSL IPCT	<ul style="list-style-type: none"> Consultant Microbiologist & Lead Infection Control Doctor Lead Infection Control Nurse 	Provide infection control advice at all stages	<ul style="list-style-type: none"> Participate in briefing meetings with clinical leads Participate in design and technical meetings Review and comment on infection control aspects of design submissions 	<ul style="list-style-type: none"> Participate in design and technical meetings Participate in progress meetings Monitor compliance with HAI SCRIBE 	<ul style="list-style-type: none"> Participate in HAI SCRIBE stage 4 review at practical completion

No.	Organisation	Name	Main Role	Input at Each Stage		
				Brief/Design	Construction	Commissioning/Validation
5	NHSL AE Ventilation	John Rayner, Turner PES	Provide Authorising Engineer support at all stages	<ul style="list-style-type: none"> • Participate in briefing meetings with clinical leads • Participate in design and technical meetings • Review and comment on all aspects of design submissions • Check/comment on technical compliance 	<ul style="list-style-type: none"> • Participate in design and technical meetings • Participate in progress meetings 	<ul style="list-style-type: none"> • Participate in commissioning meetings • Witness commissioning activities • Witness 3rd Party validation activities
6	HFS	David McNeill	Provide technical advice and support at various stages	<ul style="list-style-type: none"> • Participate in briefing meetings with clinical leads • Participate in design and technical meetings • Review and comment on all aspects of design submissions • Check/comment on technical compliance 	<ul style="list-style-type: none"> • Participate in design and technical meetings • Participate in progress meetings 	None
7	HPS	Annette Rankin	Provide additional infection control advice and support at various stages	<ul style="list-style-type: none"> • Participate in briefing meetings with clinical leads • Participate in design and technical meetings • Review and comment on infection control aspects of design submissions 	<ul style="list-style-type: none"> • Participate in design and technical meetings • Participate in progress meetings 	None
8	NHSL Fire Safety	Jim Gardner	Provide fire safety advice and input	<ul style="list-style-type: none"> • Review and comment on fire safety aspects of 	<ul style="list-style-type: none"> • Monitor progress • Carry out quality 	<ul style="list-style-type: none"> • Witness commissioning activities

				Input at Each Stage		
No.	Organisation	Name	Main Role	Brief/Design	Construction	Commissioning/Validation
				design submissions <ul style="list-style-type: none"> • Check/comment on compliance 	checks on workmanship	<ul style="list-style-type: none"> • Witness 3rd Party validation activities
9	NHSL Health and Safety	Eric Drennan	Provide health & safety advice and input	Review and comment on health & safety aspects of design submissions	Participate in various meetings where health & safety is discussed	Participate in site walkrounds during commissioning and validation
10	NHSL AE Medical Gases	Ian Sandford, Hulley and Kirkwood	Provide Authorising Engineer support	None	Review & inspect medical gas installation	Witness medical gas commissioning activities
11	NHSL AE Electrical	John Rayner, Turner PES	Provide Authorising Engineer support	None	Review & inspect electrical installation	Witness electrical commissioning activities
12	NHSL AE Water	Dennis Kelly, Pro Lp	Provide Authorising Engineer support	None	None	<ul style="list-style-type: none"> • Comment on water systems commissioning RAMS • Witness water systems commissioning
13	NHSL Independent Validation	Oakleaf	Validate correct installation and performance of fire safety enhancements	None	None	Carry out 3 rd Party validation of fire safety enhancement installation & performance
14	NHSL Independent Validation	IOM	Validate installation and performance of vent systems	None	Participate in factory acceptance testing	Carry out 3 rd Party validation of ventilation installation & performance
15	Independent Tester	Arcadis	Review design, witness commissioning, and sign off completion	<ul style="list-style-type: none"> • Participate in design and technical meetings • Review and comment on all aspects of design submissions • Check/comment on 	<ul style="list-style-type: none"> • Participate in design and technical meetings • Participate in progress meetings • Monitor progress 	<ul style="list-style-type: none"> • Participate in commissioning meetings • Witness commissioning activities • Witness 3rd Party validation activities

				Input at Each Stage		
No.	Organisation	Name	Main Role	Brief/Design	Construction	Commissioning/Validation
				technical compliance of design	against programme <ul style="list-style-type: none"> Carry out quality checks on workmanship 	<ul style="list-style-type: none"> Review test results Sign off completion Produce and monitor snagging list
16	IHSL Main Contractor	Imtech	Deliver design and construction of project	<ul style="list-style-type: none"> Participate in briefing meetings with clinical leads Participate in design and technical meetings 	<ul style="list-style-type: none"> Carry out construction and installation in line with design Produce and update project programme Participate in design and technical meetings Participate in progress meetings Carry out quality checks as per quality plan 	<ul style="list-style-type: none"> Chair commissioning meetings Produce programme and schedule of commissioning activities and manage witnessing Facilitate NHSL 3rd party validation Produce and submit for review all commissioning RAMS Provide all necessary certificates, test results & as built information
17	IHSL M&E Designer	Hoare Lea	Produce technically compliant M&E design that meets the requirements of the brief	<ul style="list-style-type: none"> Participate in briefing meetings with clinical leads Participate in design and technical meetings Submit drawings, technical information, and schedules for review Produce schedule of derogations for review and agreement Obtain necessary regulatory approvals 	<ul style="list-style-type: none"> Participate in design and technical meetings Submit drawings, technical information, and schedules for review Produce schedule of derogations for review and agreement Review installation on site 	<ul style="list-style-type: none"> Participate in commissioning meetings Witness commissioning activities Witness 3rd Party validation activities Review test results

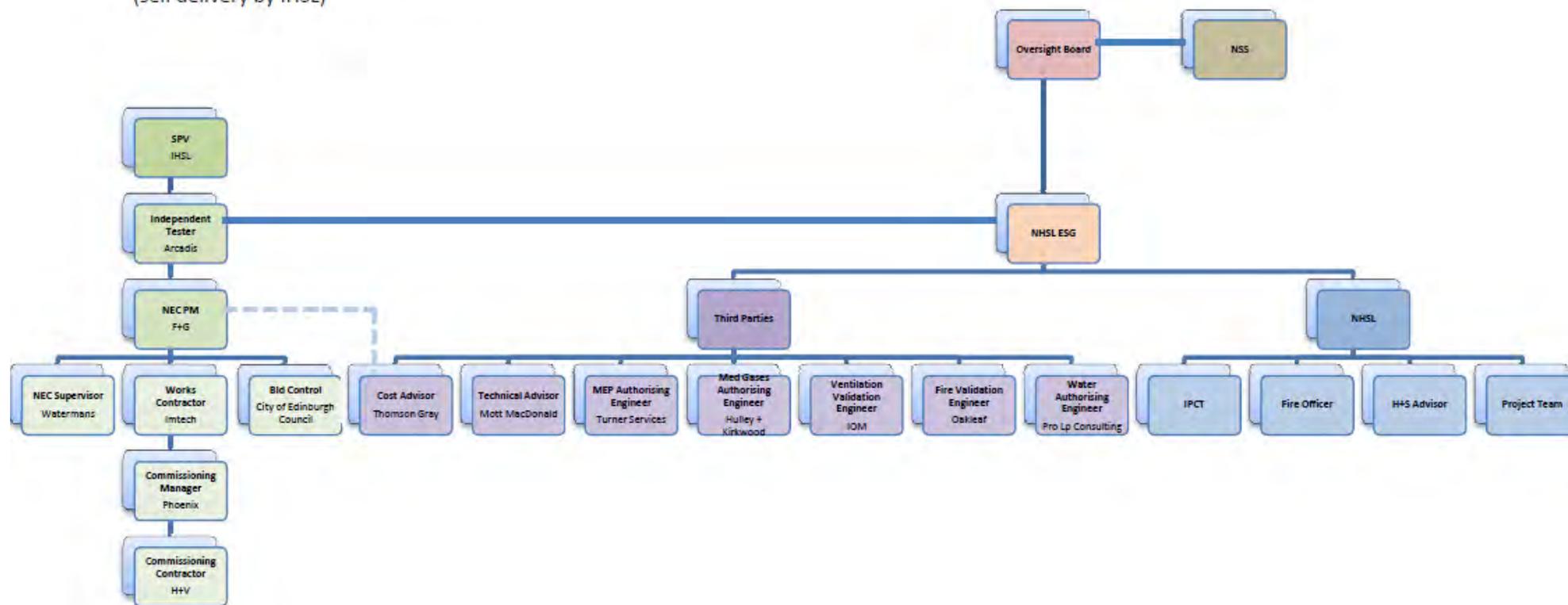
No.	Organisation	Name	Main Role	Input at Each Stage		
				Brief/Design	Construction	Commissioning/Validation
18	IHSL Architectural, Structural, and Acoustic Designer	Oberlanders	Produce compliant architectural, structural and acoustic design that meets the requirements of the brief and M&E installation	<ul style="list-style-type: none"> • Participate in briefing meetings with clinical leads • Participate in design and technical meetings • Submit drawings, technical information, and schedules for review • Produce schedule of derogations for review and agreement • Obtain necessary regulatory approvals 	<ul style="list-style-type: none"> • Participate in design and technical meetings • Submit drawings, technical information, and schedules for review • Produce schedule of derogations for review and agreement • Review installation on site 	None
19	NEC Project Manager	Faithful & Gould	Manage project on behalf of IHSL	<ul style="list-style-type: none"> • Chair briefing meetings with clinical leads and provide minutes • Chair design and technical meetings and provide minutes • Identify and record brief and design risks • Provide cost estimate & updates 	<ul style="list-style-type: none"> • Chair design meetings with clinical leads and provide minutes • Chair progress meetings and provide minutes • Identify and record construction risks • Provide cost estimate & updates 	<ul style="list-style-type: none"> • Participate in commissioning meetings
20	NEC Project Supervisor	Watermans	Inspection of the works for compliance and quality	None	<ul style="list-style-type: none"> • On site inspections to review workmanship, overall quality and compliance. • Produce regular 	<ul style="list-style-type: none"> • On site inspections to review workmanship, overall quality and compliance. • Participate in commissioning meetings

				Input at Each Stage		
No.	Organisation	Name	Main Role	Brief/Design	Construction	Commissioning/Validation
					reports on findings <ul style="list-style-type: none"> • Participate in design and technical meetings • Participate in progress meetings 	<ul style="list-style-type: none"> • Witness commissioning activities • Witness 3rd Party validation activities • Review test results
21	Specialist Commissioning Manager	Phoenix	Manage commissioning activities	None	<ul style="list-style-type: none"> • Carry out commissionability survey • Monitor progress towards commissioning phase • Participate in commissioning meetings 	<ul style="list-style-type: none"> • Participate in commissioning meetings • Produce programme and schedule of commissioning activities and manage commissioning • Facilitate NHSL 3rd party validation • Review and approve all commissioning RAMS • Provide all necessary certificates, test results & as built information
22	Specialist Commissioning Contractor	H & V	Carry out commissioning activities	None	<ul style="list-style-type: none"> • Monitor progress towards commissioning phase • Participate in commissioning meetings • Produce commissioning RAMS • Assist production of commissioning 	<ul style="list-style-type: none"> • Participate in commissioning meetings • Carry out commissioning activities as per programme • Facilitate NHSL 3rd party validation • Review and update Commissioning RAMS • Provide all necessary certificates, test results & as built information

				Input at Each Stage		
No.	Organisation	Name	Main Role	Brief/Design	Construction	Commissioning/Validation
					schedule	
23	City of Edinburgh Council	Planning & Building Control	Approve planning and building warrant	Review and approve elements of design requiring planning permission and/or building warrant	Inspect various systems (drainage, fire alarms etc) as applicable	Issue occupancy certificate

Table 3: Structure and relationships

Technical Assurance HVC 107
(self delivery by IHSL)



NHS Lothian

RHCYP/DCN Oversight Board
19 November 2020

NHS Lothian Director of Finance

COMPLETION OF SUPPLEMENTAL AGREEMENT 4

1 Purpose of the Report

- 1.1 The purpose of this report is to provide an update to Oversight Board members with the opportunity to consider and approve the RHCYP/DCN “Supplemental Agreement 4” (SA4) associated with the enhancements and programme of medium value works outside the scope of Supplemental Agreement 2.

2 Recommendations

- 2.1 Oversight Board members are asked to take significant assurance from the fact that Supplemental Agreement 4, drafted by MacRoberts solicitors, follows the commercial risk position of SA2; that the scope and implementation of the works have followed the same assurance processes; and that the works are nearing completion.
- 2.2 The Oversight Board is asked to authorise the NHS Lothian Director of Finance and / or Chief Executive to finalise and sign SA4 (as signatories for and on behalf of the contracting party, NHS Lothian Health Board, with the agreement of Scottish Government) once all NHS Lothian Board approvals are in place.

3 Discussion of Key Issues

- 3.1 The scope of SA4 is limited to capturing the suite of Medium Value Changes (MVC) instructions not already within SA2. Each MVC has been pre approved through the ESG and OSB with the enhanced assurance measures agreed for the SA2 works adopted. The works are:

MVC 112 - fire enhancements (DCN)
 MVC 126 – fire enhancements (RCYP)
 MVC 127 – changes to CAMHS
 MVC 131 – fire enhancements to CAMHS
 MVC164 – fire enhancements critical care, haematology/ oncology

- 3.2 The same contracting arrangements for SA2 have been employed and significant elements of the work are already completed by IHSL’s supply chain.

The costs of the works / overall project delivery costs are estimated at £2.75m and this element is covered under a separate paper.

- 3.3 The process to produce SA4, to record these works within the context of the Project Agreement at the behest of IHSL and their funders, has involved commercial Heads of Terms being agreed in line with SA2, subject only to project specific changes as a result of the scope, programme and implementation being captured. This has included ensuring and improving consistency between the technical and legal drafting. This has led to a shortened timeframe (and legal cost) to complete SA4 compared with SA2.

The only point to be closed off for SA4 is finalising the scope and contract with the Independent Testing Consultant which is with that firm, Arcadis, to complete their schedules of work.

Accordingly the Oversight Board's Commercial Sub Group has not been called upon to support the development of the Agreement.

- 3.4 In order to satisfy IHSL and their funders that the Board, with the support of Scottish Government, is able to sign SA4, an appropriate Minute recording such has been requested. This is the same approach as for all Supplemental Agreements to date.

With the signing of SA2, Scottish Government signed a "Certificate Issued in Terms of Section 1 of the National Health Service (Private Finance) Act 1997" (also known as an externally financed development agreement certificate). On this occasion for SA4, given the limited scope of works (a package of Medium Value Changes) being capially funded, it is proposed that Oversight Board approval is required.

- 3.5 It is intended that NHS Lothian Board approval will be confirmed to IHSL and their funders by letter following the next Board meeting. This is a departure from the "ask" from IHSL's solicitors who seek a "legal minute" from the respective Board meeting but this does not fit properly with the model of governance.

4 Key Risks

- 4.1 The key risk associated with the estimate of costs is that the nature of the contractual framework agreed for these works leaves risk to time and programme with the Board.
- 4.2 There is a risk that IHSL or their funders will demand a legal minute and / or Scottish Government Certificate.

5 Resource Implications

- 5.1 There are no further resource implications.

Iain F Graham
Director of Capital Planning and Projects

17 November 2020



List of Appendices

None

NHS Lothian

RHCYP/DCN Oversight Board
19 November 2020

NHS Lothian Director of Finance

SUMMARY OF ESTIMATED DELAY COSTS

1 Purpose of the Report

- 1.1 The purpose of this report is to provide an update to Board members of the estimated costs associated with the rectification and enhancement works associated with the delay of the RHCYP/DCN.

2 Recommendations

- 2.1 Committee members are recommended to take moderate assurance from the financial update, submitted to the NHS Lothian Executive Steering Group (ESG), over the delivery of the project within budget; and
- 2.2 Acknowledge the budget estimate for SA4.

3 Discussion of Key Issues

- 3.1 As part of an update to Parliament on the RHCYP & DCN facility, the Cabinet Secretary for Health and Sport advised Parliament that the estimated costs associated with the delay were £16m. The Cabinet Secretary reiterated a commitment in Parliament on 18th September 2019 to support necessary investments in the current RHSC and DCN facilities. The following table summarises the current estimate of cost against this original estimate, with more detail provided in Appendix 1 with the breakdown of the original estimate.

3.2 Table 1: Summary of Estimated Delay Costs

Category	Spend to Date £k	September 19 Estimate	Current Forecast Cost £k
Works at RHCYP / DCN Facility - IHSL	5,113	6,000	9,034
Costs of maintaining existing services / sites	4,307	4,460	2,808
Project team and advisor costs	2,495	2,850	3,747
Contingency	-	2,740	-
Total Spend to Date / Forecast	11,935	16,050	15,590

- 3.3 The initial estimate presented to this Board, prior to the completion of detailed design by IHSL, included a high level estimate for an additional £6m of capital to address the rectification of ventilation in Critical Care, and its enhancement in Haematology/Oncology. In addition the fire safety enhancements in that area were also included. This £6m was included in the original estimate of £16m

Spend to Date of £11.935m has been incurred, to 9th November 2020, however a number of the costs of maintaining existing sites require review, with coding errors anticipated to reduce year to date costs in line with forecast.

The forecast cost against this budget associated with the additional biplanar equipment at WGH has been reduced, with circa £0.8m reallocated to a separate budget, reflecting the use of the equipment by DCN on the WGH site.

3.4 With the signing of SA2 in August 2020 it has been possible to get greater clarification from IHSL on the cost profile and the following should be noted:

- The estimated cost of remedial works at the new facility has been updated to reflect the ongoing negotiations with IHSL and its supply chain. As noted in previous updates, estimates were based on high level assessments of cost by IHSL and its supply chain, in advance of conclusion of the design process.
- Estimated cost of HVC107 (ventilation works) has increased to £7.4m from £5m reported to this Board previously. This has arisen as the design process has developed, with more detailed costing information only recently made available to the project team to assess;
- NHS Lothian has been notified of a further increase to HVC107 of circa £0.8m, however this has not yet been validated by the Board's cost advisors through the agreed process and is therefore not yet included in the summary in Table 1 or the detailed table in Appendix 2. If validated and agreed by the Board, the increased costs for HVC107 increase the overall forecast to £16.4m against the £16m budget;
- IHSL advisor fees had previously been assumed to be included within the forecast costs, however lack of supporting information meant it was not possible to confirm. An estimate of £1.174m for advisor fees for HVC107 was presented to the Board on 30th July 2020 and is included in the current forecast.

HVC 107 "Cost Plus" Contract

3.5 Under the Project Agreement, High Value Changes (HVC) are subject to a two stage process. Following the initial request from the Board, Project Co provides a High Value Change Proposal and subsequently, if approved by NHS Lothian, a Stage 2 Submission which details the costs for carrying out the change, including professional fees and internal Project Co costs. If the Board does not believe that these represent value for money, the change request can be withdrawn. This ensures the Board has visibility of all the costs (including fees) in advance of agreeing to the Change. This was not possible for SA2 and the delivery of the works remains under a "cost plus" contract, which utilises a 'self delivery' mechanism as the Board was unable to agree an acceptable arrangement with Multiplex through IHSL.

3.6 This means that the cost of the works and programme are estimated in advance but only fully confirmed as the works progress. NHS Lothian carries out value-for-money due diligence on the costs incurred, utilising the services of Thomson Gray as external advisors. The overall risks of cost increases is reducing as significant areas of design work are progressed and advance orders have been placed. In addition,

working patterns to address Covid-19 restrictions are much better understood by all parties involved.

Existing Sites

- 3.7 The budget also included the cost of maintaining existing services at WGH / Sciennes and actual costs have reduced from £5.1m to £2.8m in the current forecast. As services migrate, greater clarity on double running costs is achieved, and contingencies can be released. There is potential scope to further review the costs directly attributed to the delay, to ensure this excludes all elements of costs that NHS Lothian would have incurred regardless.

Changes not included in the Business Case Addendum

- 3.8 Several other changes have been instructed that do not relate to rectification, but are for enhancements, commissioning costs, or other service changes. For completeness, these are shown separately in Appendix 1. These are outwith the £16m forecast. These changes are funded from a separate commissioning budget, given that they were not related to rectification but to enhancements agreed as part of the NSS review process.

4 Advisor Fees Analysis

- 4.1 A reconciliation of all technical, legal and financial advisor costs associated with the project has been undertaken but requires further review and will be considered in detail through NHS Lothian Governance. This analysis will look at costs both for the original project and from the switch to an NPD model.
- 4.2 The legal and advisory costs incurred by IHSL, supply chain and funders fall to be paid by NHS Lothian and are included overall works costs. Proportionately there have been significant increases from the original IHSL budget estimates across the range of those costs, particularly legal and associated management additions.

5 SA4 Cost Estimate

- 5.1 SA4 is to capture the suite of MVC instructions not already within SA2, for example enhancements to the fire detection system, CAHMS area improvements. As the same contracting arrangements for SA2 are to be employed and significant elements of the work is completed already, the template of SA2 has been utilised and issued with very few amendments from SA2. This item is covered under a separate paper.

The costs of the works / overall project delivery costs are estimated at £2.75m

Separately, MVC 157, works to ED, is being progressed utilising the PA procedure (through the FM contractor) but on an accelerated basis to meet programme for completion of all works.

The costs of the works / overall project delivery costs for MVC 157 are estimated at £750k.

These costs are funded through a separate commissioning budget.

6 Key Risks

- 6.1 The key risk associated with the estimate of costs is that the nature of the contractual framework agreed for these works leaves the risk on time and programme with the Board. With work still underway on SA2 and the further works underway for SA4, and the MVC for the Emergency Department there remains a risk of further cost increase. As noted at 3.4, the Board has received notification of an increase against HVC 107 of £0.8m which is still subject to verification by cost advisors.
- 6.2 There remains a key risk that Scottish Government funding will not be sufficient if forecast costs increase further.

7 Resource Implications

- 7.1 There is currently no request for additional resource against the £16m estimate, however if validated the increase of £0.8m against HVC 107 will increase the forecast to £16.4m. Further analysis of forecast costs is ongoing to understand if elements should be allocated against other budgets.
- 7.2 The additional works outwith the scope of the £16m estimate, detailed in Appendix 1, will be funded from a separate commissioning budget.

Nick Bradbury
Head of Property and Asset Management Finance
16 November 2020



List of Appendices

Appendix 1: Estimated RHSC / DCN Continuing Service Costs from July 2019 to 9th November 2020

Appendix 1: Forecast RHSC / DCN Continuing Service Costs from July 2019 to 09 November 2020

Costs associated with new facility	Spend to Date £k	Forecast Cost £k
High Value Change 107 - ventilation works	4,711	7,350
Medium Value Change 127 - CAHMS	303	510
Advisor Fees	120	1,174
Total: Costs associated with new facility	5,133	9,034
Costs of maintaining existing sites		
Dual running of existing sites: RHSC/DCN staff	262	254
Dual running of existing sites: RHSC/DCN equipment/supplies	221	245
Additional maintenance / property costs at current RHSC and DCN facilities (energy, rates, building maintenance)	2,176	1,661
Additional capital investments in current RHSC	548	539
Additional capital investments in current DCN	1,101	110
Total: Costs of maintaining existing sites	4,307	2,808
Project Team costs (Director of Finance)		
Project Team costs	2495	3,127
Reviews & SA2	0	620
Total: Project team costs	2,495	3,747
Contingency		
Contingency	-	-
Total Spend/ Estimated Additional Costs	11,935	15,590

Additional Costs – outwith scope of delay	Spend to Date £k	Forecast Cost £k
Medium Value Change 086 - Full Disinfection of Water System	29	29
Medium Value Change 093 - Disinfect Taps	25	25
Medium Value Change 154 - Outlet Flushing	145	298
Medium Value Change 157 - HCID at ED	16	750
Medium Value Change 112 - DCN Fire Enhancements	392	435
Medium Value Change 131 - CAHMS Fire Enhancements	399	536
Medium Value Change 126 - Fire Enhancements	370	599
Medium Value Change 143 - Disabled Access	-	66
Medium Value Change 085 - Align with NHSL Guidance and Policy Documents	19	19
Medium Value Change 092 - Tap Changes	63	63
Medium Value Change 133 - Settlement agreement part 6	9	25
Total Low Value Changes	266	1,108
Total Spend/ Estimated Additional Costs	1,733	3,953

From: [Marinitsi_Katerina](#)
To: [Morrison_A \(Alan\)](#); [Archibald_Gordon](#); [Henderson_C \(Calum\)](#); [Colin_Sinclair](#); [Cosens_Sorrel](#); [Currie_Brian](#); [McQueen_F \(Fiona\)](#); [Gillies_Tracey](#); [Goldsmith_Susan](#); [Gordon_James](#); [Graham_Chris](#); [Graham_Iain](#); [Smith_G \(Gregor\)](#); [Jacqui_Reilly](#); [Little_Kerryann](#); [Mackay_Judith](#); [McMahon_Alex](#); [Morgan_Mary](#); [Morrison_Stephanie](#); [Murray_Fiona](#); "Peter Reekie"; [Roxanne_Gallacher](#); [Chief Medical Officer](#); [Susan_Ferguson](#); [Trotter_Audrey](#); [Turnbull_Laura M](#)
Cc: [Graham_Chris](#)
Subject: RHCYP, DCN and CAMHS Oversight Board 14-01-2021
Date: 12 January 2021 11:45:36
Attachments: [Project Director's report 12012021.docx](#)
[RHCYP OB 19-11-20 Minutes - Draft.doc](#)
[AGENDA RHCYP&DCN Oversight Board 210114.docx](#)

Dear All,

Please find attached agenda and papers for the 14th January 2021 RHCYP, DCN and CAMHS Oversight Board.

The meeting will be held on MS Teams,

[REDACTED]

[REDACTED]

Kind Regards,

Katerina

Katerina Marinitsi | Support Officer | NHS Lothian Corporate Governance Team | [REDACTED]

 The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security.cloud service.
 For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 14th January 2021, 8:00 – 9:00am

Venue: MS TEAMS: RHCYP, DCN, CAMHS Oversight Board

AGENDA

1.	Chair's Welcome and Introductions	FM	v
	Apologies:		
2.	Minutes of previous meeting for approval: 19 November 2020	AM	*
3.	Matters Arising		
	3.1 Financial Position – Updated Delay Costs	SG	v
	3.2 Publication of SA 2	IG	v
	3.3 Completion of SA 4	IG	v
4.	Senior Programme Director's Report	MM	*
5.	Migration of CAMHS - 15 January 2021	AM	v
6.	Communications	JM	v
7.	Any Other Competent Business	FM	v
8.	Date of next meeting	FM	v
	11 th February 2021, 8.00-9.00am		

* = paper attached

v = verbal report

p = presentation

= paper to follow

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the Oversight Board held at 8:00am on Thursday 19 November 2020 held via MS Teams.

Present by Teams: Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government (Chairing); Mrs S. Goldsmith, Director of Finance, NHS Lothian; Miss T. Gillies, Medical Director, NHS Lothian; Mr C. Henderson, Scottish Government; Mr P. Reekie, Chief Executive, Scottish Futures Trust; Mr G. Archibald, Joint Staff Side Representative and Mr C. Sinclair, Chief Executive, NHS National Services Scotland.

In Attendance by Teams: Ms M. Morgan, Senior Programme Director; Mr B. Currie, Project Director, NHS Lothian; Ms J. Mackay, NHS Lothian Director of Communications; Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian; Mr E. McLaughlan, Assistant Director, Engineering, Environment and Decontamination, Health Facilities Scotland; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

Apologies: Professor F. McQueen, Chief Nursing Officer, Scottish Government; Professor A. McMahon, Nurse Director NHS Lothian; Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work and Mr G. James, Director of Facilities, Health Facilities Scotland.

1. Minutes of previous meeting – 24 September 2020

1.1 The minutes of the meeting held on 24 September 2020 were accepted.

2. Matters Arising

2.1 Status of Escalation and Ongoing Governance

- Noted that following discussion between NHSL and Scottish Government it had been agreed to not seek changes to governance arrangements or pursue de-escalation at this time, given the current project status and the remaining timeline of the programme. The processes for validation and commissioning would be brought back to the Oversight Board.

2.2 Publication of SA 2

- Noted that there was no further development with the BBC FOI request and that Supplementary Agreement 2 would soon be published in redacted form.

3. Senior Programme Director's Report

- Circulated report noted. The project overall status had moved from amber to green. The works programme is continuously reviewed and adjustments made to keep to the overall timeline of 25/01/2021. This now included weekend and festive period working but exhausted any programme contingency. The Oversight Board recognised that the risk of delay remained with any unplanned event such as absence, incident or supplier constraint.

- MVC (127 & 131) CAMHS now complete with the exception of snagging and the following (expected) outstanding items due to complete by 20th November 2020: Padding to seclusion room door, Fire escape door to PARU garden and Safehinge door alarm link to the guardian system. Slippage to completion is minimal and was reported previously with the revised date for completion accepted by the NHSL Executive Steering Group.
- It was acknowledged that a key issue would be around the timing of publicly announcing a move in date and the lead in time needed for this (6-8 weeks). At the moment staff had been informed that a move in date in early March 2021 was being aimed for. There can not be a situation of announcing a date and then moving it. There would need to be alignment of third-party validation and the announcement of a date. There was a confidence that the validation was on track but there would be a better idea of this over the next 4-6 weeks.
- Noted that the handover date of 25 January 2021 had been misinterpreted by some media as the move in date as they had misread the press release. This had been promptly corrected and the work during the commissioning period spelt out
- The Oversight Board appreciated that even in normal circumstances risks would remain, so the level of achievement during a global pandemic was recognised.

4. Technical Assurance

- The Oversight Board noted and approved the report updating on the level of internal and external technical assurance deployed on the remaining remedial and enhancement works and the continuing engagement of the various assurers outlined in the roles described.
- The list of participants and description of participation appendix was noted.
- There was discussion on the HVC107 Technical Assurance Structure and relationships diagram, noting that the diagram should show the independent tester between NHSL and the rest of the chain for accuracy.
- Whilst showing a robust structure it was recognised that HFS were missing from the completion of commission and testing process. There would be discussion on this out with the meeting – **MM/BC/EMc**

5. Governance for Supplemental Agreement (SA4)

- The Oversight Board received an update on SA4. SA4 was associated with the enhancements and programme of medium value works outside the scope of SA2.
- The Oversight Board took assurance from the fact that SA4, drafted by MacRoberts solicitors, followed the commercial risk position of SA2; that the scope and implementation of the works had followed the same assurance processes; and that the works were nearing completion.
- The Oversight Board agreed to authorise the NHS Lothian Director of Finance and / or Chief Executive to finalise and sign SA4 (as signatories for and on behalf of the contracting party, NHS Lothian Health Board, with the agreement of Scottish Government) once all NHS Lothian Board approvals are in place.

6. Financial Position – Updated Delay Costs

- The Oversight Board noted the report providing an update on estimated costs associated with the rectification and enhancement works associated with the delay of the RHCYP/DCN.
- Members accepted moderate assurance from the financial update, over the delivery of the project within budget and acknowledged the budget estimate for SA4.

- It was recognised that the cost estimates for the rectification works were far out of line with actual costs and noted that IHSL had accepted that financial management of the project for that part of the process had not been a satisfactory process, even if the overall outturn is expected to be close to the original estimate.
- A report on the costs would be prepared by IHSL towards the end of January 2021 following delivery of the programme.

7. Communications

- Other than ongoing FOI requests there was nothing further to report at this time.

8. Any Other Competent Business

- None.

9. Date of next meetings

- 17 December 2020
- 14 January 2021
- 11 February 2021

Senior Programme Director's Report

DCN/RHCYP Project

HIGHLIGHT REPORT

Date 12/01/2021

Senior Programme Director

Mary Morgan

Overall Status / Update	RAG
<p>The programme status overall has moved from green to amber as a result of realisation of a number of risks to programme completion. The works programme is continuously reviewed and adjustments made as possible to keep to overall timeline but it is likely that completion will slip beyond 25th January and a contingency of 2 weeks should be permitted. There will be some external works, such as landscaping that extend beyond this date. The issues/risks are as follows:</p> <p>1. Covid 19 Not all operatives have returned from leave and given more transmissible COVID now prevalent there may be instances of positive tests and isolations. Travel throughout the UK may also adversely impact on testing and commissioning.</p> <p>In mitigation, Imtech intend to implement temperature checks on staff and have extended the current workforce over a longer day to maximise physical distancing.</p> <p>2 Testing and validating ventilation to Critical Care Critical Care works have been 2 – 3 weeks behind Lochranza works. Confidence that all is as it should be regarding ventilation distribution in Critical Care environment will not be possible before 14th January. Ventilation validation data will not be available from IOM until 22 January as a result.</p> <p>3 Residual generally cosmetic finishing to Critical Care Access will be required by Imtech to the multi bed rooms and their access corridors post 25th January to replace damaged ceiling tiles and undertake limited redecoration. It is estimated that this work will take 2 – 3 weeks to complete. It is anticipated that it would be challenging for clinical service and commissioning teams to set up in this area while these finishing works are undertaken and therefore the project team recommends deferring the 6 week notice period for service migration to Monday 8th February permitting migration 22nd/23rd March 2021</p> <p>Lochranza ward should not present a risk to completion.</p> <p>MVC 157 (ED) remains on track for completion</p> <p>MVC (127 & 131) CAMHS is completed with the exception of some snagging items. CAMHS will relocate 15th January</p>	Amber

Milestone	Planned Completion Date	RAG
Completion of MVC (131) CAMHS Fire Enhancement Works	30/10/2020	Blue
Completion of MVC (127) CAMHS LVCs and minor works	30/10/2020 11/11/2020 20/11/2020	Blue
HVC 107 Air Handling Units ordered	24/04/2020	Blue
Completion of HVC 107 construction works	03/09/2020 23/10/2020	Red

Milestone	Planned Completion Date	RAG
Completion of contractor's commissioning and validation HVC107	23/11/2020 25/01/2021 08/02/2021	Amber
Completion of MVC (126) RHCYP Fire Enhancement, LVCs and minor works	27/07/2020	Blue
RHCYP outpatients migration	20/07/2020	Blue
Completion of MVC157 (Emergency Dept works for HCID) construction works	21/12/2020	Green
Completion of contractor's commissioning and validation MVC157	25/01/2020	Green

Exception to	Planned End Date	RAG	Cause	Consequences	Recommendation
Completion of HVC 107 construction works	03/09/20 23/10/20	Red	Space constraints, service clashes and sub contractor delays have resulted in a delay to construction	Places potential completion date at risk	Mitigated through planned weekend working Accept and monitor
Completion of contractor's commissioning and validation HVC107	23/11/20 25/01/21 08/02/21	Amber	Risk to completion	Places migration date at risk	Accept

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Reputational impact on NHSL caused by delay, adverse media reports and opinion of internal and external stakeholders	Executive Steering Group meets weekly and is attended by NHSL Communications Director. Ongoing engagement with stakeholders formally and informally Engagement with Cabinet Secretary	Med	Med
R	Performance of Project Co & Supply Chain (Hard FM) - Project Co. fail to meet Service Level Specification (Post Completion).	Standard form payment mechanism to hold Project Co. to account is agreed. Contracts Manager in post to monitor and measure performance. Additional support for Programme from HFS, SFT and NHSL. Additional input and support at every level given to Contractor. Regular meeting between IHSL & BYES	Med	Med
R	Coronavirus outbreak adversely impacts programme delivery: Sickness absence of project team and contractors or diversion of project team and or project resources.	Circulation of information throughout NHS. Continue to monitor and escalate any concerns. Safe working practices including PPE, hand hygiene and physical distancing - in offices and for construction work - in place. Progress on site is good despite Covid	Med	Med
R	Delay in remedial and enhancement works delays transfer of RHSC & DCN into the building	Experience gained from late postponement of previous move. Engagement between Project Co, Contractor,	Med	Med

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
		NHSL Project Team and Operational Management. Weekly meetings: Internal with Project Team and Operational Management and Technical Meeting with Design Team and Contractor. Validation activities run concurrently with Commissioning Activities. Expanded NHSL Facilities Commissioning Team.		
I	Delay in completion of the programme has generated additional costs.	Majority costs are known and shared with Scottish Government, who have funds allocated. Contingency for remaining costs agreed.	Med	Med
R	Reprovision of critical care ventilation requires full design, construction and commissioning within programme identified timelines.	Design Group established to oversee and deliver. Critical Care and IPCT Clinical Representation on Group High Value Change submitted detailing NHSL requirements. Works in progress	Med	Med
R	Provision of enhanced Haematology & Oncology Department ventilation requires full design, construction and commissioning within programme identified timelines.	High Value Change submitted detailing NHSL requirements. SBAR & Risk Assessment completed involving Clinicians & IPCT. Design Team and contractors appointed. IHSL have agreed to undertake. Works in progress	Med	Med
R	Introduction of a HCID compliant environment within the ED and potential detrimental effect on current advised programme.	Confirmation that works can be achieved within the RHCYP Mobilisation Timescales is required and anticipated. Engagement between Project Co, Contractor, NHSL Project Team and Operational Management.	Med	Med

RAG Description Key (Time Status)	
WHITE	Activity has yet to commence
RED	Key milestones will be or have been delivered outside tolerance to agreed baseline
AMBER	Forecasting that there is a significant risk that key milestones will be delivered outside tolerance on agreed baseline
GREEN	All milestones forecast to be on time or early
BLUE	Task Complete

From: [Graham, Chris](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Henderson C \(Calum\)](#); [Colin Sinclair](#); [Cosens, Sorrel](#); [Currie, Brian](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); [Gordon James](#); [Graham, Iain](#); [Smith G \(Gregor\)](#); [Jacqui Reilly](#); [Jim Miller](#); [Little, Kerryann](#); [Mackay, Judith](#); [McMahon, Alex](#); [Morgan Mary](#); [Murray, Fiona](#); "Peter Reekie"; "Roxanne Gallacher (Jim Miller PA)"; [Susan Ferguson](#); [Trotter, Audrey](#); [Walker, Anna](#)
Cc: [Croft A \(Amanda\)](#); [Jim Miller](#)
Subject: RHCYP, DCN, CAMHS Oversight Board
Attachments: [AGENDA RHCYP&DCN Oversight Board 210225.docx](#)
[2. RHCYP OB 14-01-21 Minutes - Final.doc](#)
[3.2 Delay Costs Estimate RHCYPDCN 25.02.21.docx](#)
[3.3 RHCYPDCN ESG legal update 230221.docx](#)
[4. Project Director"s report 23022021.docx](#)

Please find attached the Agenda papers for the Oversight Board meeting tomorrow morning

Can you please use the link below to join the meeting and do not join through the RHCYP,DCN,CAMHS Oversight Board" team

Many thanks

Chris

Microsoft Teams meeting

Join on your computer or mobile app

Click here to join the meeting



Join with a video conferencing device



Video Conference ID:



Alternate VTC dialing instructions



 The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

This email has been scanned by the Symantec Email Security cloud service
 For more information please visit <http://www.symanteccloud.com>

Oversight Board:

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 25th February 2021, 8:00 – 9:00am

Venue: MS TEAMS: RHCYP, DCN, CAMHS Oversight Board

AGENDA

1.	Chair's Welcome and Introductions	AM	V
	Apologies:		
2.	Minutes of previous meeting for approval: 14 January 2020	AM	*
3.	Matters Arising		
	3.1 Rectification of dental surgeries damage	AMcM	V
	3.2 Update on delay costs	SG	*
	3.3 Commercial progress of Supplemental Agreements	IG	*
4.	Senior Programme Director's Report	MM	*
5.	Communications	JM	V
6.	Any Other Competent Business	AM	V
7.	Date of next meeting	AM	V
	<i>To be confirmed: 18th / 25th March?</i>		

* = paper attached

v = verbal report

p = presentation

= paper to follow

OVERSIGHT BOARD**NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services**

Minutes of the Oversight Board held at 8:00am on Thursday 14 January 2021 held via MS Teams.

Present by Teams: Professor F. McQueen, Chief Nursing Officer, Scottish Government (Chair); Miss T. Gillies, Medical Director, NHS Lothian; Professor A. McMahon, Nurse Director NHS Lothian; Mrs S. Goldsmith, Director of Finance, NHS Lothian; Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government; Mr C. Henderson, Scottish Government; Mr P. Reekie, Chief Executive, Scottish Futures Trust; Mr G. Archibald, Joint Staff Side Representative and Mr C. Sinclair, Chief Executive, NHS National Services Scotland.

In Attendance by Teams: Ms M. Morgan, Senior Programme Director; Mr B. Currie, Project Director, NHS Lothian; Ms J. Mackay, NHS Lothian Director of Communications; Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian; Mr G. James, Director of Facilities, Health Facilities Scotland; Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

Apologies: None received.

1. Minutes of previous meeting – 19 November 2020

1.1 The minutes of the meeting held on 19 November 2020 were accepted.

2. Matters Arising**2.1 Financial Position – Updated Delay Costs**

- Noted that it had been agreed with IHSL that a written report on the cost profile would be provided once works were complete. The report would outline how original estimates were so far off the actual costs and would come back to the Oversight Board as soon as this was available.

2.2 Publication of SA 2

- Noted [SA2](#) had now been published with redactions and was available on the [NHSL website](#) along with the [project agreement](#).
- Noted that there was currently an FOI appeal from the BBC against the level of redaction, going through due process

2.3 Completion of SA4

- Noted that final checks around technical information and associate matters were ongoing and it was hoped that completion would be on 19 January 2021.

3. Senior Programme Director's Report

- Circulated report noted.
- Noted that the programme status overall had moved from green to amber as a result of realisation of several risks to programme completion
- Noted that since submission of the report there had been an issue arising with a critical supplier (ventilation) and an entire specialist team being affected by Covid19. This would have an impact on the completion date. There was to be a meeting with IHSL later today to establish what this looks like and what this means for completion of the works and migration notice to remaining services. The date of 25 January 2021 was looking less likely and the 8 February 2021 was more realistic barring any further new building issues or Covid19 events. The 8 February date would include incorporation of the required floor tile, re-decorating and cleaning work that would be needed. Other parts of the work were progressing well with CAMHS moving into the hospital tomorrow.
- The balance, drivers and timing of moving into the hospital versus the certainty of completion were discussed. This was for NHSL to consider carefully and against the context of other pandemic work and pressures. Noted that this was being considered currently by the NHSL Executive Steering Group.
- Noted that water leaks and mould had been discovered in the dental surgery part of the hospital and in critical care. These were currently being dealt with by the BYES operational team with involvement from the NHSL infection prevention and control (IPC) team using established IPC principles being followed to protect patients and service delivery. These leaks on the face of it were typical issues that could be expected in a building of this type several years after being built but it was important that the root causes of these leaks were found, given the history around the project and comparisons to the Children's Hospital in Glasgow.
- The Oversight Board recognised that there would be snagging issues and that a large proportion of the building had seen rectification works that had not uncovered major issues. Where Imtech had been doing ventilation works and discovered legacy defects (workmanship or material system issues) they had been remedying these and seeking appropriate recompense. It was not believed that these were systemic issues associated with poor quality materials. It was important that proactive management and clinical responses processes were in place to undertake any required immediate action to put things right.

4. Migration of CAMHS - 15 January 2021

- Noted that CAMHS would move tomorrow as decided by NHSL. All works were complete and the move was on track with a press release ready to go. There had been a lot of excellent work completed by the service and project team to get to this place.
- The Oversight Board passed it's thanks to colleagues and teams involved to get to this position and looked forward to having a proper look around the facilities which would help many young people.

5. Communications

- Noted that there would be media activity around the CAMHS migration tomorrow
- Holding lines had been prepared in relation to leaks in the hospital just in case they are needed
- Noted that the final migration date had not been provided to media so this shift in handover would not cause issues on the media front

6. Any Other Competent Business

6.1 Technical Assurance

- Noted that the Oversight Board on 19 November 2020 had discussed the HFS role in the completion of commission and testing process. Confirmed that HFS had been involved throughout the process and once the IOM Report was available later this month, HFS would only get involved if there was anything substantive identified as an issue.

7. Date of Next Meeting

- 11 February 2021

NHS Lothian

RHCYP/DCN Oversight Board
25 February 2021

NHS Lothian Director of Finance

SUMMARY OF ESTIMATED DELAY COSTS**1 Purpose of the Report**

- 1.1 The purpose of this report is to provide an update to Board members of the estimated costs associated with the rectification and enhancement works associated with the delay of the RHCYP/DCN.

2 Recommendations

- 2.1 Board members are recommended to take moderate assurance from the financial update on forecast costs against available budget.

3 Discussion of Key Issues

- 3.1 As part of an update to Parliament on the RHCYP & DCN facility, the Cabinet Secretary for Health and Sport advised Parliament that the estimated costs associated with the delay were £16m. The Cabinet Secretary reiterated a commitment in Parliament on 18th September 2019 to support necessary investments in the current RHSC and DCN facilities. The following table summarises the current estimate of cost against this original estimate, and the previous update to this Board in October 2020. Further detail is provided in Appendix 1.

- 3.2 Table 1: Summary of Estimated Delay Costs

Category	September 19 Estimate £k	October 20 Forecast Cost £k	February 21 Forecast Cost £k
Works at RHCYP / DCN Facility - IHSL	6,000	9,034	10,274
Costs of maintaining existing services / sites	4,460	3,799	2,808
Project team and advisor costs	2,850	3,747	3,747
Contingency	2,740	-	-
Total Spend to Date / Forecast	16,050	16,581	16,830

- 3.3 The forecast of £16.83m is a circa £0.25m increase from the forecast previously presented to this Group. However this net increase masks a £1.2m increase in the estimated cost of rectification works, offset by a circa £1m reduction in the costs attributed to delay from the existing sites at Sciennes / WGH.
- 3.4 Full supporting documentation has only been received for the increase to HVC 107. The cost increase has primarily been driven by the impact of COVID, which subsequently required an accelerated programme.

- 3.5 Based on a high level assessment from the cost advisor of costs incurred to date, previous experience on costs and the remaining programme, HVC 107 and MVC 157 are still at risk of cost increases, estimated to between £350k-£400k and £50k to £100k, respectively. It is anticipated that all remaining MVC's should be in line with current forecasts.

Changes not included in the Business Case Addendum

- 3.6 Several other changes have been instructed that do not relate to rectification, but are for enhancements, commissioning costs, or other service changes. For completeness, these are shown separately in Appendix 1. These are outwith the £16.83m forecast. These changes are funded from a separate commissioning budget, given that they were not related to rectification but to enhancements agreed as part of the NSS review process.

4 Key Risks

- 4.1 The key risk associated with the estimate of costs is that the nature of the contractual framework agreed for these works leaves the risk on time and programme with the Board. With work still underway on SA2 and the further works underway for SA4, and the MVC for the Emergency Department there remains a risk of further cost increase.

There is a specific concern around cost increases associated with HVC107, to be validated through external advisors.

- 4.2 There remains a key risk that Scottish Government funding will not be sufficient if forecast costs increase further.

5 Resource Implications

- 5.1 The £16.83m forecast is in excess of the initial estimate of £16.05m, with limited scope to reduce the forecast costs. Additional budget cover of £0.8m will be sought from the SGHSCD capital budget in 20/21.
- 5.2 The additional works outwith the scope of the £16m estimate, detailed in Appendix 1, will be funded from a separate commissioning budget.

Nick Bradbury

Head of Property and Asset Management Finance

24th February 2021

List of Appendices

Appendix 1: Forecast RHSC / DCN Continuing Service Costs from July 2019 to 23rd February 2021

Appendix 1: Forecast RHSC / DCN Continuing Service Costs from July 2019 to 23rd February 2021

Summary of Costs Associated with Delay	
Costs associated with new hospital	Estimated Cost £k
High Value Change 107 - ventilation works	8,554
Medium Value Change 127 - CAHMS	451
IHSL Advisor Fees	1,269
Total: Costs associated with New Hospital	10,274
Costs of maintaining existing sites	
Dual running of existing sites: RHSC/DCN staff	254
Dual running of existing sites: RHSC/DCN equipment/supplies	245
Additional maintenance / property costs at current RHSC and DCN facilities (energy, rates, building maintenance)	1,661
Additional capital investments in current RHSC	539
Additional capital investments in current DCN	110
Total: Costs of maintaining existing sites	2,808
Project Team costs (Director of Finance)	
Project Team costs	3,127
Reviews & SA2	620
Total: Project team costs	3,747
Contingency	
Contingency	-
Total Spend/ Estimated Additional Costs	16,830

Additional Costs - not associated with the delay	Total Spend to Date £k	Estimated Cost £k
HVC 107 - Replace Low Carbon Steel Heating Pipework	-	402
Medium Value Change - 100 - Flushing of Outlets Throughout the Building	206	206
Medium Value Change - 164 - Fire Enhancements - Critical Care & Lochranza	477	625
Medium Value Change 085 - Align with NHSL Guidance and Policy Documents	19	19
Medium Value Change 086 - Full Disinfection of Water System	29	29
Medium Value Change 092 - Tap Changes	63	63
Medium Value Change 093 - Disinfect Taps	25	25
Medium Value Change 112 - DCN Fire Enhancements	402	487
Medium Value Change 126 - Fire Enhancements	393	626
Medium Value Change 131 - CAHMS Fire Enhancements	643	786
Medium Value Change - 133 - HCID Ventilation	16	25
Medium Value Change 143 - Disabled Access	-	66
Medium Value Change 154 - Outlet Flushing	234	298
Medium Value Change 157 - HCID alterations - ED	382	1,174

Medium Value Change - 110 - Remedial Work (Pseudomonas Sampling (27 outlets))	-	68
Total Low Value Changes	100	333
Total Spend/ Estimated Additional Costs	2,989	5,232

NHS Lothian

RHCYP & DCN Oversight Board
8th February 2021

Director of Capital Planning and Projects

RHCYP / DCN AND RHSC LEGAL & COMMERCIAL UPDATE

1 Purpose of the Report

- 1.1 The purpose of this report is to recommend that the Oversight Board notes the position with the legal transactions associated with the project.

2 Recommendations

- 2.1 SA 4 – note that this Project Agreement amendment has now been completed.
 2.2 SA 2 – note that the “side letter” to the IT in progress.
 2.3 SA 1 – note that tripartite agreements subordinate to the documents signed by the Board have flagged some matters which should be noted for the future Board operational implications. NHS Lothian will be signing a Services Agreement as part of the finalised suite of documents for SA1.

3 Discussion of Key Issues

- 3.1 SA4 was electronically signed on behalf of the Board on Tuesday 2nd February but has been dated following completion of all other signatories as Friday 5th February.
- 3.2 SA2 agreement includes the appointment of the Independent Tester (IT) and was originally envisioned to be the standard form appointment as per the Project Agreement. However, as SA2 was for actually for works *after* Construction Practical Completion, the documentation required a clarification supplemental to the standard form on the IT duties and liabilities. For example, the IT had no role in selection of materials. The side letter was prepared by MacRoberts and is now being finalised but reflects the actual work envisaged in previous assurance and governance reports.
- 3.3 SA1 created three documents between IHSL, Multiplex and Bouygues. There were a number of issues at the time of signing SA1, or Practical Completion, which were to be completed by Multiplex, Bouygues or remained “unresolved” at the time, between those parties.

A Services Agreement between IHSL and Bouygues now requires approval and signature by NHSL as it varies the terms of the Project Agreement level Services [FM] contract. It is intended for NHS Lothian to progress with signing the Services Agreement part of SA1 shortly.

The Board will, however, be noting the position in relation to the other documents; a Construction Settlement Agreement documenting the financial and other matters to release retentions to Multiplex etc; and a Tripartite Agreement between IHSL, Multiplex and Bouygues. IHSL believed that these two documents were “domestic” and did not require NHSL input, review or approval. However sight of the documentation was obtained to verify the context and content of the Services Agreement.

MacRoberts advised NHSL of a number of areas in the Tripartite Agreement which could have an operational impact suggesting that NHSL should be able to comment or be a signatory too. As an example, the Board's Construction Requirements stated that key elements such as Nurse Call System, Building Management System and Access Control Systems should be "open protocol". The Board's opinion is that they would not fully pass an "open protocol" requirement test, but to prove this negative would be challenging.

The document records that Bouygues have obtained an overall "compensation" package from Multiplex for the added cost of maintaining and lifecycle replacement as part of the Agreement having been to adjudication. Whilst these systems are currently fully operational, were supplied or installed by reputable suppliers, and were costed into the current Unitary Charge for maintenance and lifecycle, future Board instigated changes MAY impact of the flexibility or cost of such systems.

It should be noted IHSL's view of this point is that this is not a change requiring derogation and particularly that there will be no impact now or in the future. It is difficult to "prove" that this is detrimental to NHSL and / or will incur a future loss at this point in time. However, in line with normal contract performance management measures, a failure of these components in the future would result in unavailability deductions following reporting to the helpdesk.

It is important to note the narrow contract risk transfer and performance approach from IHSL. Their internal finance and risks are carefully managed by IHSL, with limited recognition of any operational or long term implications on NHSL clinical and operational services. The essential need for building a collaborative understanding with IHSL (and their supply chain), alongside the need for ongoing proactive contract management by NHSL, is reinforced.

4 Key Risks

- 4.1 The risks are consistent with the legal and commercial reporting to date. The SA1 comments are intended for awareness and not an escalation of risks.

5 Resource Implications

- 5.1 The resource implications are consistent with previous reports.

Iain F Graham

Director of Capital Planning and Projects

23 February 2021



List of Appendices

None

Senior Programme Director's Report

DCN/RHCYP Project

HIGHLIGHT REPORT

Date 24/02/2021

Senior Programme Director

Mary Morgan

Overall Status / Update	RAG
<p>Internal works and contractors commissioning and validation are complete with the exception of expected external (seasonal planting etc) works and snagging issues.</p> <p>The project team are collating written reports confirming completion to standards from IOM and Oakleaf (ventilation and fire validation), completion certificates and written confirmation from authorising engineers and advisors:</p> <ul style="list-style-type: none"> Final report from Oakleaf (Fire validation) received 10th February 2021. Final report from IOM (ventilation validation) is expected w/e 5th March 2021. Review of IOM data review took place on 22nd Feb with IPCT. Final data sheets passed to HFS on 23rd Feb. HAI Scribe 4 IPCT sign off is awaiting IOM final report Independent Tester certification of HVC 107 is expected w/e 12 March 2021 <p>Project risks have been reviewed.</p>	Green

Milestone	Planned Completion Date	RAG
Completion of MVC (131) CAMHS Fire Enhancement Works	30/10/2020	Blue
Completion of MVC (127) CAMHS LVCs and minor works	30/10/2020 11/11/2020 20/11/2020	Blue
Completion of HVC 107 construction works	03/09/2020 23/10/2020	Blue
Completion of contractor's commissioning and validation HVC107	23/11/2020 25/01/2021 08/02/2021	Blue
Completion of MVC (126) RHCYP Fire Enhancement, LVCs and minor works	27/07/2020	Blue
Completion of MVC157 (Emergency Dept works for HCID) construction works	21/12/2020	Blue
Completion of contractor's commissioning and validation MVC157	08/02/21	Blue

Exception to	Planned End Date	RAG	Cause	Consequences	Recommendation
		Red			

Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Reputational impact on NHSL caused by delay, adverse media reports and opinion of internal and external stakeholders	Executive Steering Group meets weekly and is attended by NHSL Communications Director. Ongoing engagement with stakeholders formally and informally Engagement with Cabinet Secretary	Med	Med
R	Performance of Project Co & Supply Chain (Hard FM) - Project Co. fail to meet Service Level Specification (Post Completion).	Standard form payment mechanism to hold Project Co. to account is agreed. Contracts Manager in post to monitor and measure performance. Additional support for Programme from HFS, SFT and NHSL. Additional input and support at every level given to Contractor. Regular meeting between IHSL & BYES	Low	Med
R	Coronavirus outbreak adversely impacts programme delivery: Sickness absence of project team and contractors or diversion of project team and or project resources.	Circulation of information throughout NHS. Continue to monitor and escalate any concerns. Safe working practices including PPE, hand hygiene and physical distancing - in offices and for construction work - in place. Progress on site is good despite Covid	Med	Med
I	Delay in completion of the programme has generated additional costs.	Majority costs are known and shared with Scottish Government, who have funds allocated. Contingency for remaining costs agreed.	Med	Med

RAG Description Key (Time Status)	
WHITE	Activity has yet to commence
RED	Key milestones will be or have been delivered outside tolerance to agreed baseline
AMBER	Forecasting that there is a significant risk that key milestones will be delivered outside tolerance on agreed baseline
GREEN	All milestones forecast to be on time or early
BLUE	Task Complete

From: [Graham, Chris](#)
To: [Morrison A \(Alan\)](#); [Archibald, Gordon](#); [Henderson C \(Calum\)](#); [Colin Sinclair](#); [Cosens, Sorrel](#); [Currie, Brian](#); [Gillies, Tracey](#); [Goldsmith, Susan](#); [Gordon James](#); [Graham, Chris](#); [Graham, Iain](#); [Jacqui Reilly](#); [Little, Kerryann](#); [Mackay, Judith](#); [McMahon, Alex](#); [Morgan Mary](#); [Morrison, Stephanie](#); [Murray, Fiona](#); "Peter Reekie"; [Roxanne Gallacher](#); [Susan Ferguson](#); [Trotter, Audrey](#); [Turnbull, Laura M](#)
Subject: RHCYP/DCN Oversight Board Close Out Meeting - 08 April 2021 @ 4:30pm
Date: 06 April 2021 19:46:27
Attachments: [AGENDA RHCYP&DCN Oversight Board 210408.docx](#)
[2. RHCYP OB 25-02-21 Minutes - Final.doc](#)
Importance: High

Please find attached the Agenda for the short Oversight Board Meeting to be held on Thursday 8 April at 4:30pm.

Please use this link for the meeting:

Microsoft Teams meeting

Join on your computer or mobile app

[Click here to join the meeting](#)

Join with a video conferencing device



[Alternate VTC dialing](#)

[Learn More](#) | [Meeting options](#)

The Minutes from the 25 February are also attached.

Kind regards

Chris

Chris Graham
Secretariat Manager – Corporate Governance Team
NHS Lothian

MS TEAMS –

The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

**Oversight Board:**

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Date & Time: Thursday 08 April 2021, 4:30pm

Venue: MS TEAMS: RHCYP, DCN, CAMHS Oversight Board

AGENDA

1.	Chair's Welcome and Introductions	AM	v
2.	Minutes of Previous Oversight Board – 25 February 2021	AM	*
3.	Closing of Oversight Board	AM	v
4.	Any Other Competent Business	AM	v

* = paper attached

v = verbal report

p = presentation

= paper to follow

OVERSIGHT BOARD

NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services

Minutes of the Oversight Board held at 8:00am on Thursday 25 February 2021 held via MS Teams.

Present by Teams: Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government (in the Chair until 8:36am); Miss T. Gillies, Medical Director, NHS Lothian; Professor A. McMahon, Nurse Director NHS Lothian; Mrs S. Goldsmith, Director of Finance, NHS Lothian; Mr C. Henderson, Scottish Government and Mr P. Reekie, Chief Executive, Scottish Futures Trust.

In Attendance by Teams: Mr R. McCallum, Interim Director of Health Finance and Governance, Scottish Government (in the Chair from 8:36am); Mr C. Campbell, Chief Executive, NHS Lothian; Ms M. Morgan, Senior Programme Director; Mr B. Currie, Project Director, NHS Lothian; Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian; Prof Jacqui Reilly, HAI Executive lead for NSS and SRO for centre of excellence work; Mr J. Miller, Director of Procurement, Commissioning and Facilities, NSS; Ms J. Mackay, NHS Lothian Director of Communications; Ms S. Cosens, Capital Programme Business Manager, NHS Lothian and Mr C. Graham, Corporate Governance Team (minutes).

Apologies: Mr C. Sinclair, Chief Executive, NHS National Services Scotland.

1. Minutes of previous meeting – 14 January 2021

1.1 The minutes of the meeting held on 14 January 2021 were accepted with the following amendment:

- Item 3, Bottom bullet point - Add in a sentence emphasising that in relation to legacy defects being discovered, it was not believed that these were systemic issues associated with poor quality materials.

2. Matters Arising

2.1 Rectification of dental surgeries damage

- Noted that work was underway and was on track. Handover back for use was planned for 08.03.21.

2.2 Financial Position – Updated Delay Costs

- Circulated update was noted. Mrs Goldsmith reported that cost movement on the works was still being seen and that the report identified a further £250k with risks of further cost increases which were to be confirmed through external validation.
- It was noted that the costs of rectification had been higher than anticipated and that IHSL had been requested to prepare a formal report setting out why there had been so much movement with costs.
- Noted that the A&E works were shown on the Annex as 'Medium Value Change 157 - HCID alterations – ED'.
- Noted that there were ongoing discussions with SGHSCD around costs and the building of these into capital plans for 2021.

2.3 Commercial progress of Supplemental Agreements

- The circulated paper giving an update on the position with the legal transactions associated with the project was noted.
- SA 4 – noted that this Project Agreement amendment has now been completed.
- SA 2 – noted that the “side letter” to the Independent Tester is in progress.
- SA 1 – noted that tripartite agreements subordinate to the documents signed by the Board have flagged some matters which should be noted for the future Board operational implications. NHS Lothian will be signing a Services Agreement as part of the finalised suite of documents for SA1.

3. Senior Programme Director’s Report

- Circulated report noted.
- Noted that the programme status overall was at green with works at practical completion, with all internal building works complete.
- Recognised there would be some minor snagging and external works, e.g. seasonal planting, that will be identified within the IOM report and these would be mitigated.
- Noted that all construction validation had been submitted and there remained some HEPA filters to be fitted and tested in main single rooms, not in Lochranza Ward or Critical Care as these others had passed.
- The Final IOM Report was now awaited as this was the critical piece that was required to allow Infection Prevention and Control to sign off HAISCRIBE 4 and would then allow the Independent Tester to certify the final works so that the final service moves to the new Hospital could take place.
- The Oversight Board noted that the draft IOM report was expected by the end of this week (26.02.21) and the final report would then be completed over the next week. From the data submitted and shared there were no indications to expect any serious concerns being raised in the IOM report that would impact on final sign offs.
- There was discussion on options around the ultimate transfer of services. Would preparations for a move on w/c 22.03.21 continue whilst recognising there may be some time before the paperwork process was complete or would it be better to wait until all documentation was complete and it was 100% certain of no issues before the final services moves.
- Mr McCallum stated that it was clear that the Cabinet Secretary would be wanting to approve the hospital as good to go and would look to the Oversight Board for such a recommendation. This recommendation could only be made around 12.03.21 once the Independent Tester report sign off had been received.
- Mr Campbell added that following conversation with the Cabinet Secretary he was content that the Cabinet Secretary was content for NHS Lothian to make the decision on the timing of the move, with the plan being to begin final service moves w/c 22.03.21 and inpatient services moving on 23.03.21. The previous delay had been due to issues identified in the commissioning process, this was not an issue this time round with commissioning and validation running in tandem, and if something did come to light from the Independent Tester’s report that was serious then this would be dealt with, although this was a low risk as nothing has presently been raised from the data. The plan therefore would be to continue to work to the 22.03.21 date. The Oversight Board recognised that a significant proportion of the building was already occupied and that this was the completion of a move rather than an initiation of a move. Significant parts of the building were already being used for children service with commissioning checks complete and rectification done.
- Mr Reekie asked about other external certification processes such as fire and building control. Ms Morgan confirmed that all certificates had been received and were available for scrutiny. It was noted that Building Control were operating on a temporary certificates basis currently. The

IOM report remained the important piece that was missing to allow Independent Tester sign off.

- There was also discussion on the impact of waiting to move 2, 3 or 4 weeks later. Miss Gillies explained that from a clinical point of view asking people to work for longer across split sites should be done for the minimum amount of time.
- Ms Morgan added that there had been pressure on opening for the last year now and the new building was now substantially occupied with final service moves now lined up and staff preparing for the 22.03.21 date, although there had been no formal announcement of that date publicly.
- Mr Campbell stated that although not publicly announced the date was well known by staff given the notification and planning required. To finish the commissioning period and then delay the move would be very risk-averse for what would be accepted as a low risk and this would have to be balanced against the staff and patient risks associated with continuing to provide inpatient services from the current Sciennes building. Miss Gillies added that any delay would not be just a couple of weeks as the services would therefore not plan for another move until complete sign off had been received and that would mean a 6-8 week period and how would that reconcile when the building was substantially occupied. It was noted that the commissioning had also checked the Critical Care and Haematology/Oncology Ventilation Systems. Any further snagging identified in the IOM report would also have to be mitigated for and balanced against the risks of services remaining in the current Sciennes environment.
- The Oversight Board considered what would be the impact if there was any delay to the IOM report and Independent Tester report process. Mr Campbell stated that this was not expected but if there was a delay the question would be why was there a delay. Miss Gillies added that in terms of practicalities the approach would be the same as last time in reversing out of the moves. The difference being that services already in the hospital would not be moved out and the reputational and lose of confidence impact would be less.
- Mr Reekie pointed out that there appeared to be two main risks these were:
 - A risk to staff with changing of plans, longer working as split sites, working conditions and patient conditions at Sciennes
 - A risk to Public (reputation, confidence) having made a formal date announcement
 - The staff risk was already being taken with staff expecting moves to happen w/c 22.03.21 so nothing now can remove that risk. So, the remaining risk is the escalation around the Public risk and at what point is a public announcement made versus when the IOM Report and Independent Tester's report received.
- Ms Morgan outlined that the last year had been spent correcting the pressure cascade in the new Hospital. In that period the Critical Care and Lochranza Ward Ventilation Systems had been rebuilt, CAMHS had been stripped out and reopened and all other items in the HFS report had been addressed. The new Hospital was now one of the safest and best buildings in the whole of Scotland. To delay the final service moves further when no issues relating to the ventilation piece had been identified would be very risk adverse.
- Miss Gillies stated that it was not clear why the previously discussed and agreed course of action, now appeared not to being followed. Mr Morrison confirmed that there was a desire not to end up in the same place as July 2019 and recognised that this could be seen as overly risk-averse but testing and exploring options was part of having as much assurance as possible that the previous position would not be repeated. There was support for the direction of travel to continue the plan for w/c 22.03.21 but to wait until the Independent Tester report is received before any public announcements.

- Miss Gillies made the point that in July 2019 the Independent Tester did not pick up the issues that stopped the moves last time. The 2021 IOM Report has been done in conjunction with others and so no surprises were expected as the data around the ventilation systems had been shared. This was an important difference from July 2019 and rectification work now had been done on the back of working with NSS

Mr Morrison left the meeting at 8:36am and Mr McCallum took over in the Chair

- Mr McCallum summarised the Oversight Board discussion:
 - To note the point that this was not about replaying old conversations but given the history and challenges with the project, to test out and be clear on the steps to be taken and for the Oversight Board to have a clear position on this.
 - To recognise that the plan and engagement with staff for moves w/c 22.03.21 was the right thing to do, was already in train and process anyway and an expectation to continue on that basis
 - To note that the IOM Report and Independent Tester report will be needed before the final service moves could be confirmed for w/c 22.03.21 and that there should be no public or parliament announcements until after 12.03.21.
 - To note that it would seem sensible to move forward the date of the next Oversight Board Meeting to around the 12.03.21 and this date would be confirmed out with the meeting.
 - To note that expectations would be checked with the Cabinet Secretary and the announcement of date to parliament would also be followed up on.
 - To recognise that the aspects around completion of HAI Scribe and the follow up Infection Prevention and Control assurances and risk registers should not be lost and that NHS Lothian IPC team are sighted on all these processes.
 - To note that from a HFS perspective, everything had now been endorsed and HFS also expected the IOM report to include no surprises given the data that had been shared and conversations that had taken place. It was recognised there would be ongoing discussions around small technical areas but nothing that would cause any nervousness.

4. Communications

- Noted that a staff communication had been due to go out this week in advance of the Public Audit and Post-legislative Scrutiny Committee session today. This communication had gone to Scottish Government communications on 23.02.21 and as yet no response had been received. Richard McCallum would follow this up today and come back to NHS Lothian communications team.

5. Any Other Competent Business

5.1 There was none.

6. Date of Next Meeting

- 12 March 2021 or earlier.
- Date to be confirmed once checks around timing of reports are completed.

From: Matthew Templeton [REDACTED]
Sent: 08 October 2019 13:38
To: Stephen Kelly; Gordon Morrison
Subject: FW: Ventilation Log

Stephen/Gordon,

IOM schedule referred to in our earlier discussions. Multiplex are responsible for rectifying the majority, although a number of items are disputed.

Regards
Matt

From: Craig Simpson [REDACTED]
Sent: 08 October 2019 13:24
To: Matthew Templeton [REDACTED]
Cc: Wallace Weir [REDACTED]
Subject: FW: Ventilation Log

FYI as requested

From: David Wilson [REDACTED]
Sent: 04 October 2019 14:33
To: Brian Currie ([REDACTED])
Cc: Henderson, Ronnie [REDACTED]; Wallace Weir [REDACTED]; Graeme Salmon [REDACTED]; Craig Simpson [REDACTED]; Colin Grindlay [REDACTED]; Liane Edwards [REDACTED]
Subject: Ventilation Log

Brian / Ross

See attached the updated ventilation log updated from this morning's meeting

David

David Wilson
Commissioning Manager

MULTIPLEX

Multiplex Construction Europe Ltd

W www.multiplex.global



Please consider the environment before printing this e-mail.

This email and any attachments may contain confidential/legally privileged information, which is not waived. The contents are for the intended recipient/s only. Any unauthorised use is expressly prohibited. If you have received this in error please reply to notify the sender of its incorrect delivery, and then delete both it and your reply. Multiplex has no liability of any nature for any loss arising from this email or any attachments.

The HCP Group includes HCP Holdings Limited (registered number: 03209169), HCP Management Services Limited (registered number: 03819468) and HCP Social Infrastructure (UK) Limited (registered number: 02658304), all of whom are registered in England & Wales. The registered office for these companies is 8 White Oak Square, Swanley, Kent BR8 7AG.

This communication contains information which is confidential and may also be privileged. It is for the exclusive use of the intended recipient(s). If you are not the intended recipient(s), please note that any distribution, copying or use of this communication or the information in it is strictly prohibited. If you have received this communication in error, please notify the sender immediately, delete the message from the computer and destroy any copies.

Registered No: 06849002. Authorised and Regulated by the Financial Conduct Authority.

For addressee only. No legally binding commitments will be created by this e-mail message. Where we intend to create legally binding commitments these will be made through hard copy correspondence or documents.

If you are not the intended recipient it may be unlawful for you to read, copy, distribute, disclose or otherwise use the information in this e-mail. If you are not the intended recipient please contact us immediately.

E-mail may be susceptible to data corruption, interception and unauthorised amendment, and we do not accept liability for any such corruption, interception or amendment or the consequences thereof.

No	Area	Item	Issue	Update Comment - Ronnie Henderson, NHSL project team,	Multiplex (inc TUV-Sud / Mercury) Comments 12/07/19 & 17/07/19, 23/07/19, 26/07/19, 30/07/19, 02/08/19, 06/08/19, 09/08/19, 16/08/19, 30-08-19 - Red, NHSL Blue.	ACTION	NHSL	MPX	BYES	Closed	Dual	Due Date
2	Preparation	Some areas are not completed and ready for handover. Eg ceiling tiles still missing		CT & Fluoroscopy only areas still affected due to Turnkey works	Turnkey areas not Multiplex IOM still to test 06/09 Update - Balancing of IOMRI to take place 24/09 expected closure 30/09 MPX 04/10/19 - IOMRI balancing complete. Required Motorised damper on emergency extract fan duct.	NHSL/MPX/Mo dus		1				24-Sep
3	Theatres	Very limited extract in theatre corridors. Corridors are not at 0 absolute pressure and do not meet required 7 ach/hr (SHTM03-01 part A appendix 2 Table A2)	No escape for surplus air. Could impact on open door protection. Pressure in corridors is pushing fire doors open	To be reviewed by IPCT, All pressure Cascades are compliant	Pressure cascade is designed to flow from theatres through ancillary rooms out to corridor (reference point / pressure) Corridors designed to be positive pressure to the adjacent departments and circulation areas and are in excess of 7ac/h out flow. Noting that the dirty Utility extract draws air from the corridor contributing to the air change rate. ACTION - Confirmation / evidence that 7ac/h are being achieved and that contaminated air is not discharging to hospital corridor. 23/07/19 MPX stated that adjustments had been made, MPX to confirm if this is now compliant with requirement for 7 ac/h and 0 pressure. 26/07/19 NHSL - MPX commented that they may add more extract to corridors. 02/08/19 MPX - Additional extract will be required. two options being reviewed, one with additional extract fans in plantroom, second being adding additional branch duct to theatre extract. Final solution to be advised w/c12/08. 16/08/19 MPX - Solution to install small extract fans in level 2 plantroom (approximately 4 locations) and duct to grilles within the level 1 theatre corridor - TUV Sud producing design 23/08/19 MPX design to be issued w/c 26/08/19 29/08/19 - To be issued to NHSL for review and comment COB. 06/09 Update - Tuv Sud proceeding with detailed design 13/09/19 MPX - Design to be issued 18/09/19 13/09 Update DW expressed concern target date may not be met 20/09/19 MPX - Design issued. Procurement commenced	MPX / Tuv-Sud		1				30-Sep
11	Theatres	It is understood that extract grilles in DU are supplied one from each theatre.	Systems will need to be interlocked so both theatres are running when any one is in use.	Theatre Staff understand that theatres work as a pair	As per original design. 26/07/19 MPX - Confirmation that interlock between the two AHU is operational and demonstrate to IOM - Proposed Completion - 02/08/19. 02/08/19 MPX - Interlocks now operational and to be demonstrated to IOM - Request to check utility room pressure cascade with on THE operational and one in setback to be carried out 05/08/19 06/08/19 - Pressure cascade can still be achieved on setback - Forward results - IOM to check 16/08/19 - Await report from MPX 23/08/19 MPX - report issued, IOM to review 29-08-19 - No update received. Sent to HFS & IOM for comment/approval 06/09 Update - MPX to demonstrate door protection is achieved 13/09/19 MPX - Puffer test to be carried out (and videoed) to prove direction of airflow 20/09/19 - Smoke puffer test carried out with report issued demonstrating correct air flow path. Demonstration carried out 20/09/19 to Ronnie Henderson and Pota Kalima	IOM		1				30-Sep
13	Theatres	issues on some theatre light stems, covers missing, not well fitted and cabling exposed		Ongoing AV works under control of NHSL	By others NHSL to confirm AV works complete - Note AV works are group 1 works, board is progressing for expediency.	NHSL		1				20-Sep

No	Area	Item	Issue	Update Comment - Ronnie Henderson, NHSL project team,	Multiplex (inc TUV-Sud / Mercury) Comments 12/07/19 & 17/07/19, 23/07/19, 26/07/19, 30/07/19, 02/08/19, 06/08/19, 09/08/19, 16/08/19, 30-08-19 - Red, NHSL Blue.	ACTION	NHSL	MPX	BYES	Closed	Dual	Due Date	
22	Theatres	Scrub Extract Grilles	The extract grilles in the scrub area should have been located at low level to encourage a suitable clean air path and route for aerosols created to be away from users reducing the risk of aerosol from becoming airborne around the theatre suite		All operating theatres were designed with a high level grille as per RDD issued schematics.. Pressure stabilisers were considered but due to not all scrubs having a wall adjacent to the corridor a consistent approach was taken with the mechanical extract. Grilles were designed to be located at high level as this was deemed best to remove moisture laden air. TUV-Sud to confirm that the high level mechanical extract is equivalent to a Low Level passive vent such as stabiliser??. TUV Sud response 26/07/19 - SHTM03-01 A clause A4-27 details that open bay areas (such as scrub) has no requirement for additional ventilation, as noted extract was added to assist with removal of moisture laden air - HFS to review. 16/08/19 - HFS response MPX to demonstrate solution meets or exceeds L/L solution 23/08/19 MPX - NSHL confirm why the current arrangement is non-compliant 29-08-19 - No update received. Response expected from HFS 29/8. 06/09 Update - MPX to demonstrate that installation is equivalent to low level extract or 25 Ac/h through scrub 13/09/19 MPX - Scrub is part of theatre and theatre air changes have already been proved as part of re-validation with IOM - TUV-Sud to provide final statement on compliance 20/09/19 - TUV-Sud confirmed their design is based on SHTM03-01 clause A4-27 as per there construction issued drawings. NHSL / HFS to provide comment on non-compliance	NHSL	1						30-Sep
23	Theatres	Anaesthetic Room grilles	The supply grilles are relatively close to the low level extract which can short circuit the clear airflow path across the patient in the room		The supply terminal has been located high level and extract at low level adjacent to the gas outlets to ensure staff are in a clean air flow path. HFS to review.16/08/19 - HFS response MPX to demonstrate clean air path 23/08/19 MPX - NHSL to arrange joint review with IOM 29-08-19 - No update received. 06/09 Update IOM to check when on site 13/09 Update - MPX to prove clean air path 20/09/19 MPX - Theatres reviewed with only one grille identified as close to the extract location (THE 33- smoke puffer test carried out which demonstrates that the air is not short circuiting. Demonstration carried out 20/09/19 to Ronnie Henderson and Pota Kalima. THE 30, 31, 33, and 34 were all checked, no evidence of air flow short circuiting.	NHSL/IOM		1					20-Sep
25	Isolation rooms	Several isolation rooms on one AHU. HBN 04-01 supplement 1 (2013) Para 2.37 states that ideally each isolation suite should have its own supply and extract system.	Para 2.37 of HBN 04-01 states that ideally each isolation suite should have its own dedicated supply and extract system	Construction of footprint did not provide sufficient space for individual AHU's for each isolation room (19 total). All parties aware of this solution at an early stage. Solution is compliant with design for a high building	As previously agreed. HFS to review 29-08-19 - No update received.	HFS		1					23-Aug

No	Area	Item	Issue	Update Comment - Ronnie Henderson, NHSL project team,	Multiplex (inc TUV-Sud / Mercury) Comments 12/07/19 & 17/07/19, 23/07/19, 26/07/19, 30/07/19, 02/08/19, 06/08/19, 09/08/19, 16/08/19, 30-08-19 - Red, NHSL Blue.	ACTION	NHSL	MPX	BYES	Closed	Dual	Due Date
27	Isolation rooms	Back up arrangements appear to be very complex and as such likely to be challenging in future		SOP in place to operate changeover required during periods of maintenance to enable continued ventilation supply to isolation rooms	As per Isolation room functionality report. - To be demonstrated, MPX to confirm. 02/08/19 MPX- AHU04-08 and AHU04-09 now proved in manual mode. 2 additional control modules to be added (CSFD control) to make fully automatic to be completed w/c 12/08/19. Currently reviewing issues with 04-06 and 04-07 maintenance bypass. 29-08-19 - Tuv-Sud (WW) still reviewing technical information. 30-08-19 - MPX to confirm when CSFD control elements are delivered and demonstration can be undertaken. 06/09 Update Now critical close out date required by 13/09 13/09/19 - Further design information received and to be tested 16/09/19. Contractor procuring specialist to carryout software changes All documentation and drawings to be sent to NHSL to enable Clinical Risk assessment 20/09/19 MPX - Maintenance bypass being checked 20/09/19. When proved TUV-Sud will pull together a matrix and report to be issued. report will be issued to NHSL MPX 04/10/19 - report being compiled and will be issued 07/10/19	MPX / TUV Sud		1				04-Oct
28	HDU's	Only achieving 3-4 ach/hr vs required 10	NHS have apparently agreed this??	Relates to current critical care ventilation issue, work ongoing to provide design solution	As per design. Currently reviewing with NHSL team	All	1	1			1	Ongoing
29	AHUs	cabling inside AHU also cable connectors inside AHU, potential for electrical faults to cause as source of fire within the airstream. Potential for smoke/fume to enter clinical areas. Cables and connectors will be difficult to clean and soapy water used to clean AHU internals may impact on connections	Confirmed verbally with Paul Jameson of IOM this does not affect safe operation. IHSL to submit a plan for rectification without interruption to theatre activities other than during planned downtime	Witnessed the following comment: The AHU's have excessive amounts of cabling, containment within the airstream as identified within theatre AHU's. Cabling in airstream - SHTM 03-01 Part A Para 4.12 - "The plant and its distribution system must not contain any material or substance that could cause or support combustion."	The connectors are made from a Polyamide PA6.6 which is resistant to biogenic elements. The material is self-extinguishing. . Note that the AHU is also fitted with in duct mounted smoke detector. In the event of smoke being detected the AHU will shut down and the associated CSFD close to prevent the spread of smoke and fire into the theatre. HFS to review. Mercury to issue data sheets on cabling to confirm smoke and fire rating. MPX to confirm IP rating of internal fittings and equipment. MPX to confirm AHU's are SHTM 03-01 compliant Comment 26/07/19 - AHU inspected and current cabling bypassing pre-filter, to be rectified. Verification of SHTM 03-01 compliance still outstanding. 30/7 Manufacturer and agent to visit next week. 02/08/19 MPX - manufacture attending site to review 07/08/19 09/08/19 MPX - Meeting and site inspection held 07/08/19. AHU log to be produced and issued by NHSL. MPX/Mercury to review and respond / issue proposals. 16/08/19 Log issued, await proposal from MPX 23/09/18 MPX - Separate response issued. NHSL to review 29-08-19 - Q-Nis attended site Wed / Thurs / Fri to complete benchmark for review EONW (AHU 02-22 / 02-06). Inverters Outside Units / Filters Sealed / Internal Cables Sleeved. 30-08-19 - With Q-nis progressing with AHU benchmark, NHSL to provide list of priority AHU. 06/09 Update Materials arrived at Q-Nis, MPX to provide scope of wor to NHSL 13/09/19 MPX - Scope of works issued 12/09/19 . NHSL to issue email to proceed with scope of works on a sample unit (AHU02-06) 20/09/19 MPX - Works commenced on AHU02-06 with aim to complete for 2709/19 for inspection MPX 04/10/19 - AHU benchmark complete - Comments being addressed	NHSL /MPX / Mercury	1	1			1	30-Sep

No	Area	Item	Issue	Update Comment - Ronnie Henderson, NHSL project team,	Multiplex (inc TUV-Sud / Mercury) Comments 12/07/19 & 17/07/19, 23/07/19, 26/07/19, 30/07/19, 02/08/19, 06/08/19, 09/08/19, 16/08/19, 30-08-19 - Red, NHSL Blue.	ACTION	NHSL	MPX	BYES	Closed	Dual	Due Date
30	AHU's	Filter pleat orientation incorrect on top row of final filters	Should be vertical	SHTM 03-01 Part A Para 8.26 - The quality of filter housing and in particular, the seals is a critical factor in maintaining the efficacy of the filtration system by ensuring that air does not bypass the filter panels. Therefore, the following checks should be made: - filter seals should be fitted and in good condition; - filters should be installed correctly with respect to air flow; - bag filters should be installed so that the bags are vertical and their pockets free; - HEPA filters should be installed in a sealed housing and their seals tested to DIN 1946 if specified; - all filters should be checked to ensure they are free of visible damage; - the differential pressure indicators should be checked for accuracy and that they are marked with the initial and final filter resistance.	Filters checked and adjusted as required - Bouygues to confirm. 26/07/19 - Close once confirmed. 16/08/19 Filters ordered. 30-08-19 - Q-nis to complete benchmark for review next week. 06/09 Update - to be included in remedial works to AHU's	Bouygues			1			23-Aug
31	AHU's	Pre filters showing signs of bypass		Witnessed the following comment: Filter gauges reading low in some cases suggesting filter bypass. Final filter clamping mechanism is ineffective in some units leading to filter bypass. Additionally air flow pushing filters onto the housing. SHTM 03-01 Part A Para 4.117 - "Filters must be securely housed	Filters checked and adjusted as required - Bouygues to confirm. 16/08/19 Filters ordered. 30-08-19 - Q-nis to complete benchmark for review next week. 06/09 Update - to be included in remedial works to AHU's	Bouygues			1			23-Aug
39	AHU's	Motorised dampers take a long time to open and close which impacts on the speed of auto-changeover <u>Some MD's do not close on plant isolation</u>	No spring return fitted so may not close in the event of power failure.	SHTM 03-01 Part A Para 4.30 - "Motorised low-leakage shut-off dampers should be located immediately behind the intake and discharge of each supply and extract system respectively. They should be of the opposed-blade type, opening through a full 90° and must close automatically in the event of power failure or plant shutdown to prevent any reversal of the system airflow."	16/08/19 - Item reopened as part of wider AHU issue as statement in bold in column E is not being met. 29-08-19 - Await response from Mercury. 06/09 Update underlined item in column 1 imported from item 42 MPX and Schneider to investigate 13/09/19 MPX - All Motorised dampers close when AHUs are switched off. Await statement from Schneider on dampers closing when power fails 20/09/19 MPX - Schneider issued a statement on compliance to Mercury / MPX which has been challenged. Matter to brought to a conclusion w/c 23/09/19. If dampers are to be changed they will not be available for benchmark AHU completion. MPX 04/10/19 - All AHU dampers will be replaced with spring close dampers	MPX / Mercury		1			31/10/2019	
43	AHU's	Some motors running at over 95% speed so there is limited scope for system to overcome dirty filter pressure drop and maintain system performance			Still enough capacity to overcome dirty filters. - Review of all fan speeds as commissioned detailing remaining capacity to overcome dirty filters. 26/07/19 - Aiming to complete by 09/08/19 09/08/19 MPX - Work progressing with 70% of AHUs checked (no issues) remaining being checked thereafter report to be issued. 16/08/19 MPX - Filter dirty condition tests now complete - all fans accommodate dirty filters - Report to be issued 20/08/19 16/08/19 - await report, MPX to demonstrate dirty filter simulation to satisfaction of BYES and NHSL 23/08/18 MPX - Report issued 20/08/19 and demonstration carried out 20/08/19 30-08-19 - To be reopened. NHSL awaiting report review against actual maximum values. 06/09 Update - Report awaited from MPX showing actual versus maximum 13/09/19 MPX - Element relating to AHUs overcoming dirty filters is now closed. report to be issued detailing the current commissioned setting of the AHUs in relation to the maximum capacity. MPX 04/10/19 - Report to be issued 04/10/19	MPX / Mercury		1				04-Oct

No	Area	Item	Issue	Update Comment - Ronnie Henderson, NHSL project team,	Multiplex (inc TUV-Sud / Mercury) Comments 12/07/19 & 17/07/19, 23/07/19, 26/07/19, 30/07/19, 02/08/19, 06/08/19, 09/08/19, 16/08/19, 30-08-19 - Red, NHSL Blue.	ACTION	NHSL	MPX	BYES	Closed	Dual	Due Date
50	BMS	AHU Pressure Controls	The use of pressure control sensors downstream of AHU but upstream of UCV canopy has been shown at other hospitals to cause fluctuating or hunting airflows within UCV canopy. The use of air flow sensors appears to have be more stableTHE 35 air volumes are erratic and give differing readings at different tim		Can be monitored. Trend logs to be issued and reviewed. Review to include identifying sensor location. 02/08/19 MPX - Trend logs now downloaded an being collated - to be issued by 07/08/19 09/08/19 MPX - Trend logs started again as generally the THE AHUs were in setback mode so no meaningful results. All AHU put on occupied mode and further logs will be down loaded and issued w/c 12/08/19 16/08/19 MPX - Trend logs issued, NHSL to review sent to IOM for comment/approval 06/09 Update RM to chase IOM	NHSL					1	20-Sep
52	BMS	Plant control temperature Control	The plant dose not appear to benefit from close control. . Several Theatres do not achieve close temperature control (THE 34 and 35 had heater batteries operational and cooling coils open to reduce heat?	Various AHU heater batteries have been isolated?	To be monitored. Trend logs to be issued and reviewed. 02/08/19 MPX - Trend logs now downloaded an being collated - to be issued by 07/08/19 09/08/19 MPX - Trend logs started again as generally the THE AHUs were in setback although some issues were identified with valves passing allowing - now being reviewed and addressed. 16/08/19 MPX - Valve manufacturer to attend site to review. Date confirmed as 28/08 - mercury trying better this date. 16/08/19 Await report 29/08/19 - FloCon attending site 30/08/19 to investigate, survey and commence works. 30-08-19 - Await trend logs.06/09 Update - Report expected 13/09 13/09/19 MPX - Temperature trend logs ongoing. Reports to be downloaded and issued on return of controls engineer MPX 04/10/19 - trend logs issued, 3AHUs being adjusted for tighter control AHU02-15, AHU02-16, AHU02-19	MPX / Mercury					1	11-Oct
53	Surgeons Panel	Angio procedures room	There is no user indicator panel in the angio procedures room which allows the user to control the plant or indicates if there is a plant failure		The Angio room controls are as per design. NHSL to review requirements and confirm. 16/08/19 MPX - Ventilation controls fitted within the Angio Procedures Room. NHSL to review 30-08-19 - From site review, MPX to confirm procedure when AHU entered setback mode. 06/09 Update - RM to resend comment?? 13/09/19 MPX - Comment from NHSL that there is no indication of setback condition on control panel. MPX to review and return comment. 20/09/19 MPX - Setback and off are the same indication. No requirement for seperate indications. Instruction guide to be issued.	MPX					1	27-Sep
54	Recovery Room Ventilation	Air change rates below requirement (15ac/h)			All commissioning information checked and all rooms were previously achieving design flowrates values based on 15ac/h. Please forward measured grille volumes and room volumes. IOM to provide. 02/08/19 MPX - AHU02-08 S&E and AHU02-20 S completed and demoed to IOM. AHU 02-20E completed and to be demoed to IOM 05/08/19 16/08/19 IOM rechecked, confirmation awaited 06/09 Update IOM to confirm by 13/09 IOM to recheck while on site	IOM					1	30-Aug

No	Area	Item	Issue	Update Comment - Ronnie Henderson, NHSL project team,	Multiplex (inc TUV-Sud / Mercury) Comments 12/07/19 & 17/07/19, 23/07/19, 26/07/19, 30/07/19, 02/08/19, 06/08/19, 09/08/19, 16/08/19, 30-08-19 - Red, NHSL Blue.	ACTION	NHSL	MPX	BYES	Closed	Dual	Due Date
57	AHUs	Inverters	There are some units with inverters also within the airstream	SHTM 03-01 Part A Para 4.12 - "The plant and its distribution system must not contain any material or substance that could cause or support combustion."	16/08/19 As per cabling in AHU issue MPX to submit proposal 23/08/19 - refer to separate AHU report 30-08-19 - Q-nis to complete benchmark for review next week. 06/09 Update Included in scope of works for AHU remedials 13/09/19 MPX - Scope of works issued 12/09/19 . NHSL to issue email to proceed with scope of works on a sample unit (AHU02-06) 20/09/19 MPX - Works commenced on AHU02-06 with aim to complete for 27/09/19 for inspection MPX 04/10/19 - AHU benchmark complete - Comments being addressed	MPX / Mercury / NSHL		1				27-Sep
58	AHUs	Dampers	Some of the backdraught dampers fitted had deteriorated badly and were in need of repair		16/08/19 MPX to arrange repair 23/08/19 MPX - Qnis will carry out repairs - date to be confirmed. 29/08/19 - Rectification works being programmed. 30-08-19 - Q-nis to complete benchmark for review next week. 06/09 Update Included in scope of works for AHU remedials 13/09/19 - Repairs to be carried out after sample AHU works completed.	MPX / Mercury		1				30-Sep
60	AHUs	AHUs	Cleaning	Evidence of bird droppings to one unit	NHSL to advise the location. 30-08-19 - NHSL provided locations. MPX/BYES to progress. 13/09 update CS to confirm with BYES	NHSL / Bouygues	1		1		1	23-Aug
61	AHUs	Cleaning	One unit has a dead mouse or small bird in the inlet section	SHTM03-01 Part B Para 5.18 - "The intake section of a ventilation system should be vacuumed-out as necessary to remove visible particles."	NHSL to advise the location. 30-08-19 - NHSL provided locations. MPX/BYES to progress.	NHSL / Bouygues	1		1		1	23-Aug
62	AHUs	Cleaning	Internals of some units not clean.	SHTM 03-01 Part A Para 8.20 - "Should any doubt exist whether the guidance has been observed, the ducts must be cleaned internally to restore them to this standard before being taken into use." SHTM 03-01 Part B Para 5.19 - "AHUs should be vacuumed-out and/or washed down internally as necessary to remove obvious dust and dirt."	NHSL to advise the location. 30-08-19 - NHSL provided locations. MPX/BYES to progress.	Bouygues	1		1			23-Aug
63	AHUs	Thermal Wheels	The thermal wheels are on the	Position of heat recovery device - SHTM 03-01 Part A Figure 1	16/08/19 As per cabling in AHU issue MPX to submit proposal	MPX / Mercury					1	23-Aug
64	AHUs	Inlet Section	No self-drain arrangements on inlet sections to ahu's	Fresh air inlet drainage - SHTM 03-01 Part A Para 5.10 - "In inherently wet areas, such as the base of fresh air inlet ducts and some extract systems, the ductwork may require draining to prevent a build-up of standing water. The layout of the drains should be as specified in Paragraphs 4.20 - 4.25." SHTM 03-01 Part A Para 3.70 - "The duct behind louvres should be self-draining. If this is not practicable, it should be tanked and provided with a drainage system."	16/08/19 MPX to review 23/08/19 - Mercury to install drains 29/08/19 - Site Survey and material take off commencing tomorrow. 06/09 Update - Works commencing 09/09 13/09/19 MPX - Works ongoing to be complete by 27/09/19 MPX 04/10/19 Remaining connections to louvresto be completed 11/10/19	MPX/Mercury		1				11-Oct

No	Area	item	Issue	Update Comment - Ronnie Henderson, NHSL project team,	Multiplex (inc TUV-Sud / Mercury) Comments 12/07/19 & 17/07/19, 23/07/19, 26/07/19, 30/07/19, 02/08/19, 06/08/19, 09/08/19, 16/08/19, 30-08-19 - Red, NHSL Blue.	ACTION	NHSL	MPX	BYES	Closed	Dual	Due Date
							12	10	6	41	5	



IHS Lothian Limited
13 Queen's Road
Aberdeen
United Kingdom
AB15 4YL

191113 IHSL.NHSL HVC 095 & 096 Response

To: Brian Currie
Board Representative
LOTHIAN HEALTH BOARD
Waverley Gate
2-4 Waterloo Place
Edinburgh
EH1 3EG (the "Board")

From: **IHS LOTHIAN LIMITED** (company registered number SC493676) whose registered office is at
13 Queen's Road
Aberdeen
AB15 4YL (the "Project Co")

13 November 2019

Dear Sirs

Project Agreement dated 12 and 13 February 2015 between (1) the Board; and (2) Project Co (as amended, supplemented, varied, extended or restated from time to time) (the "Project Agreement")
High Value Change 095 and 096 ("High Value Changes")

Unless otherwise defined in this letter, words and expressions used in the Project Agreement shall bear the same meaning in this letter.

We refer to our letters dated 11th and 18th October 2019 in relation to the High Value Changes and to your letter dated 24th October 2019.

Following on from the productive discussions that have taken place to date and in particular the meeting on 11th November 2019, we agree with the Board's proposal that the High Value Changes should be aligned going forward.

In order to meet the challenging timetable set by the Scottish Government, it has been agreed that the most pragmatic way forward to progress the High Value Changes would be to agree the process and appropriate programme for the implementation of the High Value Changes notwithstanding the provisions of Section 4 of Schedule Part 16 of the Project Agreement.

In particular, notwithstanding the provisions of paragraph 3.1.1, 3.4, 4.1 and 8.4 of Section 4 of Schedule Part 16 of the Project Agreement it has been agreed between Project Co and the Board that in order to enable the development of the High Value Changes between Project Co and the Board that these requirements set out in these provisions will be waived by the Board and Project Co and Project Co will not be required to submit a High Value Change Proposal in accordance with paragraphs 3.1.1 that satisfies the requirements of paragraph 3.4 of Section 4 of Schedule Part 16 of the Project Agreement.

As discussed at the meeting between Project Co and the Board on the 11th November, our proposal to align the High Value Changes is as follows:

IHS Lothian Limited is incorporated and registered as a private limited company in Scotland with company number SC493676. Registered office is located at 13 Queen's Road, Aberdeen, United Kingdom, AB15 4YL.

1. Project Co will appoint Imtech Engineering Services Central Ltd to deliver the works required for the High Value Changes. As the Board will be aware, Imtech have excellent healthcare experience and are based in Grangemouth. Further details of their experience are set out in their proposal.
2. Imtech's project lead, David Keenan worked on the delivery of Forth Valley Hospital, Alder Hay Children's Hospital and Dumfries & Galloway Acute Hospital and is known to Project Co.
3. Imtech will appoint Hoare Lea as lead designer. Hoare Lea is a very respected M&E designer, with fire engineering expertise.
4. As the Board is aware, Imtech & Hoare Lea have already attended on Site and inspected relevant plant rooms and the affected clinical areas within the Facilities and understand project scope and the constraints. Imtech, Hoare Lea and George Street Asset Management together with the Project Co site tem also attended a kick off meeting with the Board's project team on the 12th November 2019.
5. Project Co will appoint a new Project Manager to ensure works are planned and delivered in accordance with an agreed specification and programme.
6. Subject to the Board and Project Co entering into the Initial Engagement Agreement (see below), Project Co, Imtech and their design team can commence within the next week. Please find enclosed the Imtech proposal and indicative programme which we shared with you earlier this week, which sets out that completion including commissioning by end of August 2020 is achievable.
7. Bouygues will support Project Co in the delivery of these works through facilitation with all parties and will engage to deliver the associated FM services and lifecycle works once the works have been completed
8. An initial engagement agreement ("**Initial Engagement Agreement**") will be entered into between NHSL and Project Co to enable Project Co to instruct Imtech to immediate commence the survey and design work.
9. The draft Initial Engagement Agreement will be provided by Project Co to the Board for review by 14th November 2019. This will require to be entered into no later than 21 November 2019 to progress in line with the indicative programme.
10. The Initial Engagement Agreement will provide that as discussed and agreed that (i) the Board waives the £400,000 of historic Deductions accrued up to and including 30th September 2019 with the agreed sum to be paid to Project Co within 5 Business Days of entering into the Initial Engagement Agreement; (ii) the attached warranty indemnity will be provided by the Board; (iii) both Project Co and the Board will use all reasonable endeavours to agree a new protocol for the application of the payment mechanism going forward; and (iv) the carrying out of the survey and design work by Imtech shall be an Excusing Cause.
11. Appropriate confirmation as to the Board's vires to enter into the Initial Engagement Agreement will be provided.
12. The Board and Project Co will work collaboratively and in good faith to enter into a supplemental agreement before 10 January 2020 which will set out the agreed requirements for the High Value Changes ("**Supplemental Agreement**"). This will be based on Project Co and Imtech entering into a NEC design & build contract on a Cost Plus basis. The Supplemental Agreement will be drafted to procure that there is no change to the risk profile of either Project Co or the Project and appropriate protections will be agreed to facilitate this.
13. A Cost Plus style of contract has been proposed due to the challenging programme requirements, the nature of the proposed works, any value for money tests and an acceptable risk profile to Project Co and Imtech as all costs will be transparent and demonstrable to the Board with key metrics such as overhead and profit agreed in advance. Project Co/Imtech

propose that the existing framework rates used in other capital projects in Scotland shall be used as a reference point where applicable/appropriate.

- 14. As discussed and agreed, subject to the Board's right to issue a Warning Notice and/or any Event of Default which has been materially caused by or materially contributed to by a material breach of health and safety, the Board agree not to issue Warning Notices and to waive any rights to exercise any rights and/or remedies that may be available to them in relation to any Events of Default prior to the arrive of patients in to the Department of Clinical Neurology (anticipated to be in March 2020).
- 15. The Board will waive any subsisting termination rights as a condition precedent to entering into the Supplemental Agreement.

The Board acknowledges and agrees that it will not procure the further implementation of the High Value Changes without further recourse to ProjectCo and it waives any rights that may be available to the Board in accordance with paragraph 8.4 of Section 4 of Schedule Part 16 of the Project Agreement.

Please sign and return the enclosed copy of this letter to acknowledge your agreement to its terms.

Yours faithfully,

Subscribed for and on behalf of
IHS Lothian Limited acting by

MATTHEW TEMPLETON

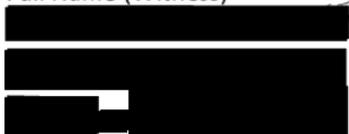
Full Name (Director)
in the presence of:



Signature of Director

MANNAN BLECK

Full Name (Witness)



Address



Signature of witness

ACKNOWLEDGEMENT AND CONSENT

We accept and agree to the terms of this letter.

Subscribed for and on behalf of
Lothian Health Board
acting by

.....
Full Name Authorised Signatory
in the presence of:

.....
Authorised Signatory

.....
Full Name (Witness)

.....

.....

.....
Address

.....
Signature of Witness

Date:

From: Graham, Iain
Sent: 19 November 2019 18:08
To: Currie, Brian
Cc: Pryor, Michael
Subject: FW: RHCYP: Letter of Engagement
Attachments: Ventilation HVC Draft Design Programme and Expenditure Profile 19Nov2019.xlsx; FEE-2727164-1A-PW-20191113-Fee Proposal to Imtech.pdf

Iain F Graham

Director of Capital Planning and Projects
 NHS Lothian
 Waverley Gate
 2-4 Waterloo Place
 Edinburgh
 EH1 3EG

 ([REDACTED]) or [REDACTED]
 [REDACTED]

From: Stephen Kelly [REDACTED]
Sent: 19 November 2019 18:02
To: Morgan, Mary; Goldsmith, Susan
Cc: Viv Cockburn; [REDACTED] Graham, Iain; Matthew Templeton
Subject: FW: RHCYP: Letter of Engagement

Mary and Susan

With reference to Matt's email below we have been working with Imtech, Hoare Lea and Project Co with a view to populating the "Maximum Amount" figure referenced in the letter of engagement.

To that end I attach a spreadsheet illustrating the indicative expenditure - on a weekly basis - from Monday 18th November through to Friday 31st January. I should point out that the 9 week programme therein is deemed to cease and recommence on 20th December and 6th January respectively, some staff will be working up to 24th December and then throughout the 2 week industry break. I should also add that while the "Maximum Amount" is intended to capture anticipated expenditure up to the point of entering the Supplemental Agreement (which we hope will be before 31st January), we asked Imtech to provide their projections to end-January because we will need works to commence on-site in February.

Also included in the spreadsheet is a summary of design activity over the corresponding period.

I think the first point of principle to note is that the time element is indicative and that costs will reflect actual time expended, demonstrable by time sheets in a format to be agreed.

In accordance with previous discussions the Imtech and Hoare Lea fees are based upon the HSF3 framework, which we understand will be familiar to NHS colleagues. (The Hoare Lee proposal is attached separately for completeness). For your information, I have reviewed the hourly rates in Schedule 16 and although the disciplines are not entirely comparable, the PM and Senior M&E designer rates therein are broadly similar to the framework rates being used here.

The IHSL costs are George Street costs associated with the 'Advanced Design Works' only. For Callum Mitchell (Project Manager) we have used the indexed Project Manager rate identified in Schedule 16 of the PA. For my costs,

I have aligned this with Dave Keenan's (Imtech Director) rate on the framework, although we have not added additional OH&P to our rates.

The IHSL adviser rates are included as allowances only. I suspect that the bulk of these costs will simply be factored into the Supplemental Agreement itself, but I thought it prudent to include something at this stage.

For the purposes of the engagement letter and the "Maximum Amount", and while accepting that we are waiting on a response from NHSL to the letters issued last week, we are seeking to agree the rates, assumptions and principles herein. The actual figure to be inserted will be dependent upon the date in January by which we collectively believe that we will be in a position to enter the Supplemental Agreement. For example, if we agreed it was the beginning of January it would be circa £160K (if you 'unhide' columns H and I in the 'All Parties' tab you will be able to see this) or if it was end January it would be the £348k figure in cell S33.

Finally, I think the attached serves to illustrate that the team intends to carry out a considerable amount of work over the next couple of months. However, our view, and that of Imtech's and their supply chain, is that this level of pre-construction works is absolutely necessary to allow a meaningful commencement of on-site works in February, in order to meet the end date of end-August 2020.

We look forward to hearing from you.

Regards
Stephen

Stephen Kelly
Director

www.georgestreet.co



From: Matthew Templeton [redacted]
Sent: 15 November 2019 13:35
To: MORGAN, Mary (NHS NATIONAL SERVICES SCOTLAND) [redacted]; Goldsmith, Susan [redacted]
Cc: Graham, Iain [redacted]; Viv Cockburn [redacted]
Stephen Kelly [redacted]; Richard Osborne (MacCap) [redacted]
Subject: RHCYP: Letter of Engagement

Dear Mary & Susan,

Please find attached a draft Letter of Engagement following our discussions and IHSL's response to the ventilation Board Changes (HVC 095 & 096). We have endeavoured to reflect our discussions and agreements, however if not reflective, happy to discuss.

This letter picks-up a number of the points detailed in our letter dated 13th November 2019, however we have not sought to include all items as these will be more appropriately detailed in the Supplemental Agreement to follow.

Imtech are working up indicative costs to be covered under their initial appointment, and these will be with you early next week.

Deduction reduction calculation provided.

Purpose of this letter of engagement is to allow the appointment of Imtech and enable design to progress, therefore hopefully we can finalise quickly.

Regards
Matt

Matt Templeton
Director



Dalmore Capital Limited
Caledonian Exchange
19a Canning Street
Edinburgh EH3 8EG

DDI: [REDACTED]
Mobile: [REDACTED]

Registered No: 06849002. Authorised and Regulated by the Financial Conduct Authority.
For addressee only. No legally binding commitments will be created by this e-mail message. Where we intend to create legally binding commitments these will be made through hard copy correspondence or documents.
If you are not the intended recipient it may be unlawful for you to read, copy, distribute, disclose or otherwise use the information in this e-mail. If you are not the intended recipient please contact us immediately.
E-mail may be susceptible to data corruption, interception and unauthorised amendment, and we do not accept liability for any such corruption, interception or amendment or the consequences thereof.

Disclaimer

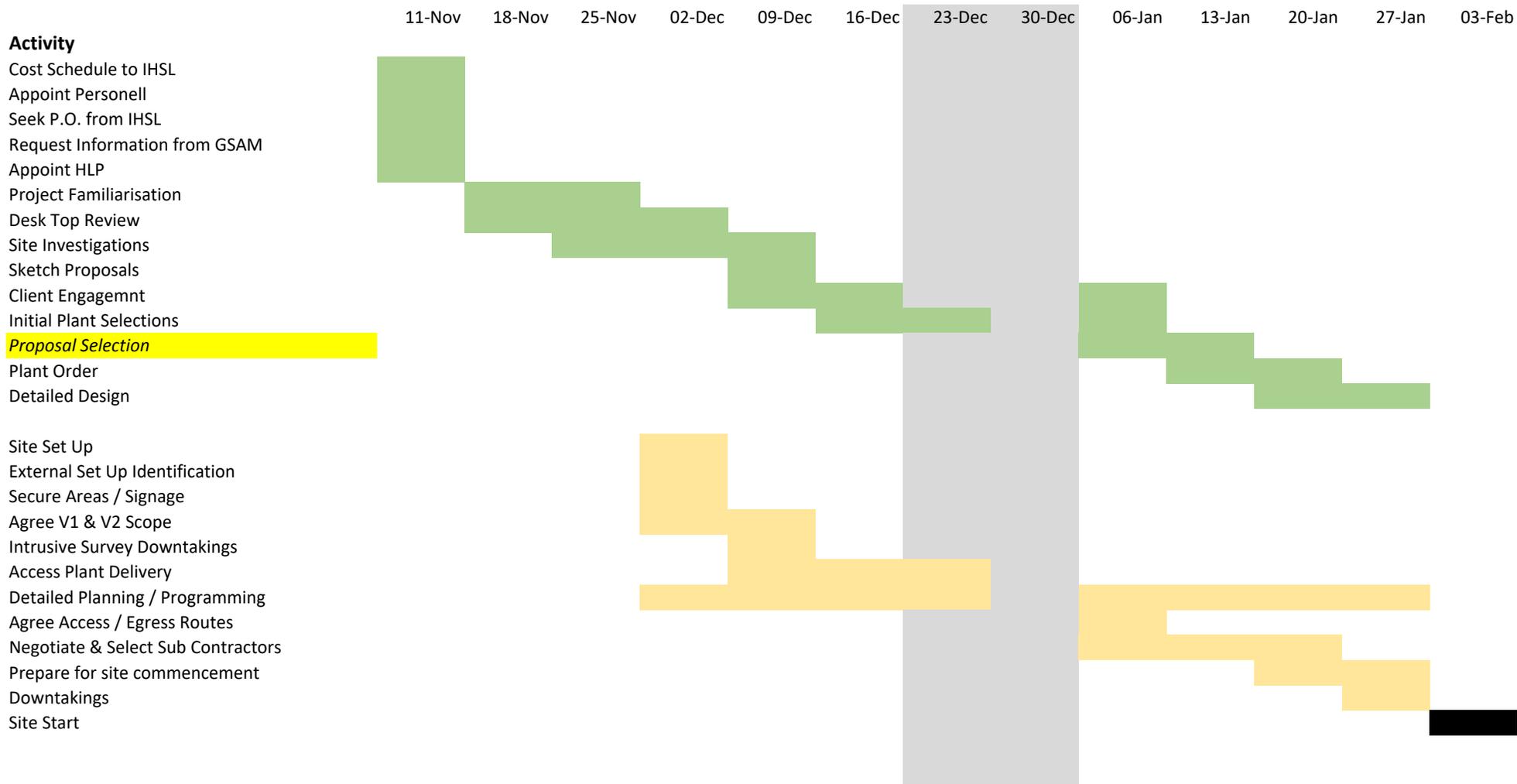
The information contained in this communication from the sender is confidential. It is intended solely for use by the recipient and others authorized to receive it. If you are not the recipient, you are hereby notified that any disclosure, copying, distribution or taking action in relation of the contents of this information is strictly prohibited and may be unlawful.

This email has been scanned for viruses and malware, and may have been automatically archived by **Mimecast Ltd**, an innovator in Software as a Service (SaaS) for business. Providing a **safer** and **more useful** place for your human generated data. Specializing in; Security, archiving and compliance. To find out more [Click Here](#).

NHS IT Security Warning: This message has an attachment which may contain malicious content. Please be careful when considering opening the attachment and if the email is unexpected or the content in the attachment is suspicious; please contact IT security on tel [REDACTED]

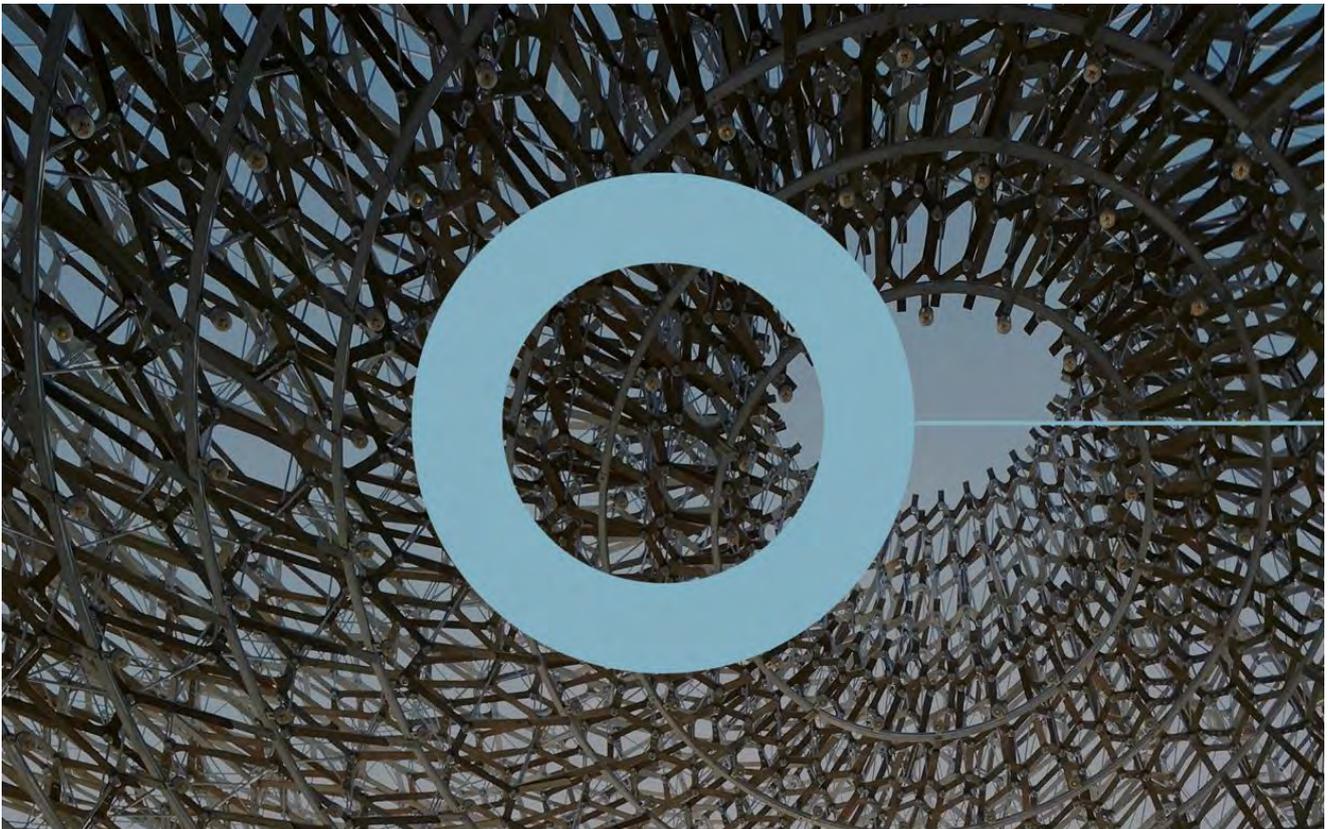
	Weekly Rate	18-Nov	25-Nov	02-Dec	09-Dec	16-Dec	23-Dec	30-Dec	06-Jan	13-Jan	20-Jan	27-Jan	Total weeks to end Jan	Total Estimate to end Jan	
Imtech															
David Keenan RD	£ 4,068.00	1	1	1	1	1			1	1	1	1	1.8	£ 7,322.40	
Dom Gallagher - Client Lead	£ 2,626.00	3	5	5	5	5			5	5	5	5	8.6	£ 22,583.60	
Darren Forbes - Construction Lead	£ 2,626.00	1	2	3	3	3			3	3	3	3	4.8	£ 12,604.80	
PM - Elec	£ 2,626.00	1	1	1	2	2			3	3	3	3	3.8	£ 9,978.80	
Commercial Mgr - Cost Planning	£ 2,317.00	3	3	3	3	3			5	5	5	5	7	£ 16,219.00	
Barney Grieve - Planner	£ 2,835.00	0	0	1	1	1			2	2	2	2	2.2	£ 6,237.00	
Procurement Manager (Martin Cook)	£ 2,071.00	0	0	0	0	0			3	3	3	3	2.4	£ 4,970.40	
Information Manager/Admin (TBA)	£ 1,078.00	0	0	0	0	0			0	0	0	0	0	£ -	
Pre Construction Manager	£ 2,626.00	0	0	0	0	0			3	3	3	3	2.4	£ 6,302.40	
Miscellaneous														£ 10,000.00	
														£ 96,218.40	Imtech total estimate (Net)
Hoare Lea (per separate submission)															
														£ 156,023.00	Hoare Lea total estimate (Net)
														£ 252,241.40	
														£ 47,547.50	18.85% HSF Framework OH&P for 'backlog maintenance projects in live buildings
														£ 299,788.90	Sub total - Imtech and Hoare Lea Total (Gross)
IHSL Management															
Stephen Kelly	£ 4,068.00	1	1	1	1	1			2	2	2	2	2.6	£ 10,576.80	
Callum Mitchell	£ 2,790.00	1	2	3	3	3			3	3	3	3	4.8	£ 13,392.00	
														£ 23,968.80	Sub total IHSL Management
IHSL Advisers (Allowance only)															
IHSL Legal														£ 5,000.00	January: £5,000.00
Lender Legal														£ 2,500.00	£5,000.00
Lender Technical Adviser														£ 2,500.00	£5,000.00
														£ 25,000.00	
														£ 348,757.70	

Short Term Design and Preparation Plan



Royal Hospital for Sick Kids. Edinburgh. Imtech.

MECHANICAL & ELECTRICAL ENGINEERING SERVICES
FEE PROPOSAL
13TH NOVEMBER 2019



Contents.

Fee proposal

Relevant Specialisms

Overview

Scope of services

Fee summary table

Qualifications and clarifications

Hoare Lea Terms and Conditions of Appointment

Additional information

Project stories

Team CVs

Resource & Cost

Resource Profile

Monthly Drawdown (Order of Cost)

REFERENCE FEE-2727164-1A-PW-20191113-Fee Proposal to Imtech
NUMBER 2727164
REVISION 01
DATE 13th November 2019
AUTHOR Paul Winning
REVIEWER Steve Clifford

Relevant specialisms.

MEP: Mechanical, Electrical & Public Health. Our firm's foundation.

Engineering is the backbone of building services. Mechanical, electrical, and public health are the workable organs of a building – the disciplines needed to build safe, comfortable, working structures for human use and occupation.

From heating, cooling and ventilation, to plumbing, fire detection, and energy supply... successful MEP design requires an understanding of how services will function as part of a wider whole, and be used by people themselves.

It's a changing landscape, where different sectors or building types require unique, sometimes cutting-edge, approaches. Our commitment to investing in research helps us develop and drive industry opinion. The result is our work remains at the forefront of new technology and changing legislation.

History and heritage.

We're the largest firm of MEP consulting engineers in the UK for a reason. Our experience delivering award-winning projects across all major market sectors is brought to every piece of work we do, no matter the size. Every one of our engineers is fuelled by personal pride and the firm's 155-year reputation and specialist MEP heritage.

Specialist service.

Although we began as MEP consulting engineers, our success and determination to deliver the best for every client meant we soon expanded into specialist areas. Our MEP team is strengthened by the expertise of our other specialist groups: from Acoustics and Sustainability, to Vertical Transportation and Performance. This bespoke knowledge enhances our MEP service to deliver unrivalled whole-life solution

Our unique approach.

With MEP work accounting for more than 80 percent of our work, we've built a vast portfolio of experience. Our commitment to collaboration creates truly close, long-term relationships with our clients. It also fuels our focus on the future. In 1862, Henry Lea became the first ever 'consulting mechanical engineer' and his innovative solutions made him one of the industry's leading figures. We bring this spirit to all our MEP work, determined to design the best possible solution for every project.

Our services:

- Energy supply: gas, electricity, and renewable sources.
- Heating and ventilation.
- Water, drainage and plumbing.
- Fire detection.
- Functional lighting.
- Air conditioning and refrigeration.
- Harnessing solar, wind, and biomass energy.
- Power distribution.
- Electricity generation plants.
- Lightning protection.
- Controls/building management systems.
- Medical Gases
- Nurse Call – Integrated Data Systems
- Security/Access control
- Pneumatic Tube carrier systems
- Laboratory systems

Relevant specialisms.

Public Health.

Protecting the welfare of building inhabitants.

"Sanitation is more important than independence". Mahatma Gandhi

A comprehensive understanding and coherent approach to the design of Public Health systems in healthcare premises is fundamental to ensuring a safe, clean and robust clinical facility. From planning approval and integration within the medical planning process, Public Health design plays an essential role in successful healthcare construction projects.

The World Health Organisation has cited that "Removing Storm water and wastewater is an important environmental health intervention for reducing disease. Wastewater may also contain pathogens that can pollute groundwater sources, increasing the risk of diseases. Poor drainage can lead to flooding, resulting in property loss, and people may even be forced to move to escape floodwaters. Flooding may also damage water supply infrastructure and contaminate domestic water sources". Ensuring these risks are removed by good design principles and solid design philosophy forms the basis of our approach to your building.

Commitment like no other.

Throughout our firm's history we have identified the need for dedicated Public Health experts and now have silos of expertise located throughout the practice offices.

We are problem solvers at heart and our team of Public Health experts have worked across all sectors and scales all around the world, from the largest mega hospital to the smallest of local surgeries. Every building requires our input and we delivered innovative, tailored solutions to each and each one. We pride ourselves on always providing fully integrated and sustainable Public Health solutions to meet the needs of our clients.

Industry leaders.

We play a key part in working groups that produce industry guidance and industry wide steering groups for education. It gives us an comprehensive knowledge of how to meet standards on challenging projects; often, our solutions exceed them altogether.

Our skill lies in understanding the physical limitations of integrating Public Health systems into architectural designs in a simple and unobtrusive way; this can only be achieved with expert knowledge of best practice and legislation.

Healthcare focus.

Public Health engineering within healthcare premises presents unique challenges that are focused around the maximising infection prevention and ensuring the safety of patients in their varying states of dependency. We use our expertise early in the process to identify intuitive, simple and robust designs to guarantee these principles, and advise from the outset the best final solution.

Our services:

We specialise in the design, Co-ordination of, Site supervision and Inspection of the following systems:

- Planning stage: Public Health strategy advice.
- Construction phase: on-going advice.
- Building Regulation & British Standard compliance.
- HTM compliance.
- Above Ground Foul drainage systems.
- Laboratory drainage systems.
- Grey water recovery systems.
- Below ground Foul & surface water drainage.
- Rainwater disposal systems.
- Rainwater Harvesting systems.
- Domestic and specialist water services.

Overview & scope of services.

Ventilation modifications.

This fee proposal has been produced in response to the invitation to tender from Imtech Engineering Services Scotland who are seeking proposals for mechanical, electrical and public health engineering services and associated specialist services in relation to the ventilation modifications within the Oncology and Paediatric Wards.

As the full scope of the project has still to be confirmed, we will carry out this project as a time charge basis.

We have produced a high level resource profile for the project that will address what we believe to be key elements of the project. These are:

- Meeting Attendance.
- Desktop review of the existing 'as built' information.
- Supporting the initial investigations on site.
- Producing Sketch proposals to ensure SFT, NHS Lothian, IHSL and HSE are all kept fully informed of the proposals.
- Plant selection to ensure orders are placed for long lead items.
- Detail design information.
- Site support throughout the installation period.
- Fire Engineering support.
- Acoustic support.

Fee summary table.

The following fee summary is based on the scope of services contained in this document.

Description / RIBA work stage	Fee/ cost	Notes / deliverables
Item 1. Meeting attendance	£49,912.50	Refer to meeting attendance schedule
Item 2. Desktop Review of existing Information	£12,232.50	
Item 3. Initial Investigations	£16,170.00	
Item 4. Detailed Investigations	£12,720.00	
Item 5. Sketch Design Proposals	£25,492.50	
Item 6. Design Review	£7,800.00	
Item 7. Plant Selection	£6,870.00	
Item 8. Detail Design	£91,650.00	
Item 9. Design Review	£12,750.00	
Item 10. Site Support / Commissioning/Witnessing	£72,570.00	
Total	£308,167.50	

- Fees exclude VAT
- Fees include reasonable disbursements and local travel. Flights/Hotels will be charged at cost.
- The order of costs are based upon an assessment of the time constraints indicated alongside each element. The assessment may be different than that assumed but we will highlight if our assessment will be exceeded.
- Fees are based upon the roles and responsibilities identified herein and
- Fees exclude the provision of a Resident Engineer/s.
- Refer to the BIM management section for details of the BIM deliverables included within the fee
- Fees exclude third party charges, such as registration fees, enquiry charges, etc.
- Fees exclude intrusive surveys, which are assumed to be procured directly by Imtech.
- Fees assume all record drawings and the BIM model is available for our use and therefore exclude extensive 'as built' surveys or investigations
- Fees assume that any retained buildings, core engineering services are suitable for extension or amendment unless declared otherwise herein
- EPC's production fees are excluded, but can be provided on request

Terms of appointment

Fees are provided on the understanding that Hoare Lea will be appointed on the basis of the Hoare Lea Terms and Conditions of Appointment included in brief herein.

Should you wish to appoint us pursuant to an alternative form of appointment, the Hoare Lea Terms and Conditions of Appointment shall apply until superseded by the agreement and execution of such alternative appointment.

Exclusions

1. 'Predicted Energy Assessment(s)' (PEA) or 'Energy Performance Certificate(s)' (EPC)
2. Façade consultancy services

Meeting attendance

We have assumed the following meeting attendance within our order of cost resource schedule

Activity	Attendances
Design period	Weekly for 12 weeks
Construction period	Weekly for 18 weeks
Principals meetings	Weekly for 42 weeks
Close out	10 man days

Qualifications and clarifications.

Our team and resourcing

Hoare Lea has high quality senior staff available with appropriate expertise and experience to provide consultancy advice on projects supported by high quality resources and specialist designers in mechanical, electrical and all related disciplines.

We propose providing the services through the following key individuals.

Leadership & Management

Steve Clifford (Partner)

- Sector Head for Healthcare

David Armstrong (Partner)

- Project Principal

Project Leader

Paul Winning (Project Director)

- Single point of contact for the project

Mechanical Engineers

Mike Greening (Associate)

Stratis Vatis (Principal Engineer)

Electrical Engineers

Mark Harrison (Associate Director)

Euan Sommerville (Principal Engineer)

Public Health Engineers

Alex Matthews (Associate)

Kenny Hay (Principal Engineer)

Programme

Design & Surveys - 15/11/19 to 28/02/20

Procurement - 20/12/19 to 01/05/20

Construction - 03/02/20 to 26/06/20

Commissioning - 22/06/20 to 28/08/20

Handover - 31/08/20

Payment

Payments will be due in accordance with the fee drawdown schedule set out in this fee proposal or, where no fee drawdown schedule has been incorporated, in accordance with the payment provisions in our Terms and Conditions of Appointment. Payments will be due into our bank account by BACS in pounds sterling and late payment will be subject to interest charges.

Time charge rates

As requested our duties will be remunerated on the basis of the time charge rates per hour, set out below.

Grade	Hourly rate
Partner	£140
Director	£110
Associate Director	£100
Senior Associate	£95
Associate	£85
Principal Engineer	£82
Senior Engineer	£65
Engineer	£55
Graduate	£45
Administration	£40

Time sheets and our monthly invoice will be issued by the end of each month to evidence our expenditure.

Fee proposal.

Hoare Lea Terms and Conditions of Appointment.

The following definitions and rules of interpretation apply to these Conditions:

Definitions

Appointment

Means the contract for the Services pursuant to the Fee Proposal and formed in accordance with clause 1 of these Conditions.

Client or You

Means the person or entity to whom the Fee Proposal is addressed.

Conditions

Means these Hoare Lea Terms and Conditions of Appointment.

Deliverables

Means the materials and outputs of the Services.

Fee

Means the fee for the Services as set out in the Fee Proposal or such other document as the parties may agree and as is payable and may be altered in accordance with these Conditions.

Fee Proposal

Means the proposal for the provision of the Services by Hoare Lea to the Client for the Project in which these Conditions are referenced and to which these Conditions are appended.

Hoare Lea or We or Us

Means Hoare Lea LLP (with company number OC407254) whose registered address is 155 Aztec West Business Park, Almondsbury, Bristol, BS32 4UB.

Project

Means the construction project as defined in the Fee Proposal.

Services

Means the services to be provided by Hoare Lea to the Client, the scope and extent of which is set out in the Fee Proposal or such other document as the parties may agree and as may be amended in scope pursuant to clause 5 of these Conditions.

Scheme

Means the Scheme for Construction Contracts (Scotland) Regulations 1998 (SI 1998/687) amended by the Scheme for Construction Contracts (Scotland) Amendment Regulations 2011 (SSI 2011/371).

Fee proposal.

Hoare Lea Terms and Conditions of Appointment.

Your attention is particularly drawn to clause 10 of these conditions which clause caps our liability to you.

1. Basis of Appointment

- 1.1 The Appointment shall come into existence on the earlier of either: (a) the Client instructing Hoare Lea to commence the Services following receipt of the Fee Proposal; or (b) the date We commence performance of the Services.
- 1.2 Unless and until superseded by Our agreement and formal execution of alternative terms, these Conditions apply to the Appointment to the exclusion of any other terms that the Client seeks to impose or incorporate, or which are implied by trade, custom, practice or course of dealing.
- 1.3 Any Fee Proposal is only valid for a period of 28 days from its date of issue.
- 1.4 If there is a conflict between the Fee Proposal and these Conditions these Conditions shall take precedence.

2. Our role and responsibilities

- 2.1 We warrant and undertake to exercise the reasonable skill and care to be expected of a qualified and experienced member of our profession undertaking the Services on projects similar in scope and character to the Project:
 - 2.1.1 When performing the Services;
 - 2.1.2 To comply with any statutory requirements or other regulations that apply to the Services;
 - 2.1.3 To perform the Services in accordance with any pre-agreed programme; and
 - 2.1.4 Where Building Information Modelling (BIM) is expressed in the Appointment to form part of the Services, We shall use reasonable endeavours to comply with the CIC Building Information Model (BIM) Protocol over which these Conditions will take precedence.

3. Your role and responsibilities

- 3.1 You will provide Us with such information and materials as We may reasonably require in order to supply the Services, and ensure that such information is accurate in all material respects.

4. Payment

- 4.1 The Client will pay the Fee to Hoare Lea for the Services in instalments as set out in the Fee Proposal or, where not otherwise set out in the Fee Proposal, in monthly instalments and the payment terms contained in Part 2 of the Schedule to the Scheme shall apply to all payments under the Appointment.
- 4.2 Where the Services or any additional services continue beyond the schedule of payment instalments set out in the Fee Proposal, payments shall be made on a monthly basis from the date of the last instalment set out in the Fee Proposal and in accordance with the Scheme.
- 4.3 The Client shall pay any VAT properly chargeable on the Services and any amount expressed as payable to Us under the Appointment is exclusive of VAT unless stated otherwise.
- 4.4 In addition to the Fee the Client shall reimburse Hoare Lea for any expenses or disbursements identified as such in the Fee Proposal.
- 4.5 Time for payment is of the essence and interest will be payable on all late Fee payments pursuant to the Late Payment of Commercial Debts (Interest) Act 1998.
- 4.6 The Fee shall be adjusted if the performance of the Services is delayed or disrupted due to a change in the scope, size, complexity or duration of the Project.

5. Additional services

- 5.1 We may accept an instruction from you to perform additional services outside the scope and extent of the Services.
- 5.2 The Client shall pay an additional fee for such additional services which additional fee shall be calculated in accordance with the rates set out in the Fee Proposal or, where no such rates are included in the Fee Proposal and the parties cannot otherwise agree, such reasonable rates as may be derived by reference to the level of the Fee in relation to the Services.
- 5.3 Unless expressly included in the Services we will not provide collateral warranties or third party rights to third parties and any subsequent agreement to provide such warranties or rights shall be considered an additional service. Where no rate is specified in the Fee Proposal, the default rate will be £750 per beneficiary.
- 5.4 Unless expressly included in the Services we do not agree to comply with or accept responsibility for third party agreements and any subsequent agreement to comply with or accept responsibility for third party agreements shall be considered an additional service.

6. Termination and suspension

- 6.1 Without limiting its other rights or remedies, Hoare Lea may terminate the Appointment with immediate effect by giving written notice to the Client if the Client fails to pay any amount due under the Appointment on the final date for payment and remains in default not less than 7 days after being requested to make such payment by Hoare Lea.
- 6.2 Following such termination by Hoare Lea the Client shall immediately pay to Hoare Lea all of our outstanding unpaid invoices and interest and, in respect of Services supplied but for which no invoice has been submitted, We shall submit an invoice, which shall be payable by You immediately on receipt.
- 6.3 Either you or Us may immediately terminate the Appointment by giving written notice to the other party if the other party becomes insolvent as defined in section 113 of the Housing Grants, Construction and Regeneration Act 1996.
- 6.4 Notwithstanding and without prejudice to the foregoing right to terminate, We may suspend the Services for non-payment in accordance with Part 2 of the Schedule to the Scheme.

7. Assignment

- 7.1 Both Hoare Lea and the Client may assign the benefit of the Appointment on two occasions to any person or entity with an interest in the Project.

8. Copyright and confidentiality

- 8.1 Hoare Lea owns all intellectual property rights (including copyright) relating to the Services and the Deliverables.
- 8.2 Subject to the payment of the Fee in accordance with these Conditions, We grant You a royalty-free licence to copy and make full use of the Deliverables for the purpose set out in the Fee Proposal.
- 8.3 We shall not be liable for use of the Deliverables for any purpose other than that for which they are prepared and/or provided.
- 8.4 Neither You nor We shall use the other party's confidential information for any purpose other than to exercise our rights or perform our respective obligations under or in connection with the Appointment.

9. Insurance

- 9.1 We shall maintain professional indemnity insurance for an amount of five million pounds in the annual aggregate for a period beginning on the date of the Appointment and ending six years after the completion of the Services or the termination of the Appointment, whichever is earlier, provided that such insurance is available at commercially reasonable rates and terms.

Fee proposal.

Hoare Lea Terms and Conditions of Appointment.

10. Liability: The Client's attention is particularly drawn to this clause.

10.1 Neither party shall commence any legal action against the other under the Appointment after six years from the date of the completion of the Services or the termination of the Appointment, whichever is earlier.

10.2 Our liability under or in connection with the Appointment shall be limited to £5,000,000 in the aggregate. This limit shall apply however that liability arises, including, without limitation, a liability arising by breach of contract, arising by tort (including, without limitation, the tort of negligence) or arising by breach of statutory duty or otherwise. Provided that this clause shall not exclude or limit Our liability for:

10.2.1. death or personal injury caused by our negligence; or

10.2.2. fraud or fraudulent misrepresentation.

10.3 In any event, Hoare Lea shall not be jointly and severally liable to You under the Appointment and Our liability shall be limited to such proportion of Your losses as is just and equitable having regard to Our responsibility for those losses.

11. Notices

11.1 Any notice given to a party under or in connection with this appointment shall be given in accordance with section 115 of the Housing Grants, Construction and Regeneration Act 1996.

12. Third party rights

12.1 A person who is not a party to the Appointment shall not have any rights, including under the common law doctrine of jus quaesitum tertio, which is expressly excluded, and the Contract (Third Party Rights) (Scotland) Act 2017, to enforce or otherwise invoke any term of this appointment.

13. Entire Agreement

13.1 The Appointment constitutes the entire agreement between the parties and supersedes and extinguishes all previous agreements, promises, assurances, warranties, representations and understandings between

them, whether written or oral, relating to its subject matter.

14. Variation

14.1 No variation of these Conditions shall be effective unless it is in writing and signed by the parties and these Conditions shall continue to apply unless superseded in accordance with clause 1.2 and notwithstanding any variations that may be made to the Appointment.

15. Severance of illegal terms

15.1 If any provision or part-provision of the Appointment or these Conditions is or becomes invalid, illegal or unenforceable, it shall be deemed modified to the minimum extent necessary to make it valid, legal and enforceable. If such modification is not possible, the relevant provision or part-provision shall be deemed deleted. Any modification to or deletion of a provision or part-provision under this clause shall not affect the validity and enforceability of the rest of the Appointment or these Conditions.

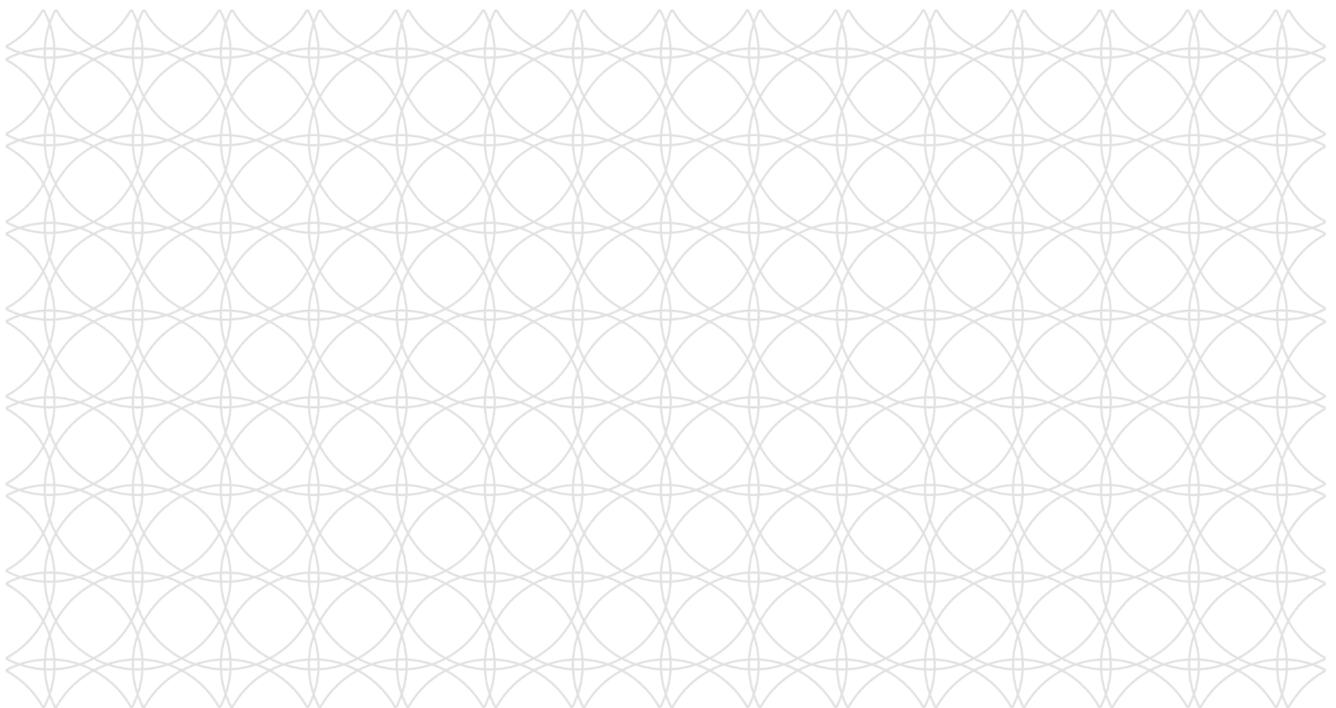
16. Adjudication pursuant to the Scheme

16.1 Notwithstanding any other provision of the Appointment either we or you may refer a dispute arising under the Appointment to adjudication at any time under Part I of the Scheme, which Part shall take effect as if it was incorporated into this clause.

17. Governing law and jurisdiction

17.1 The Appointment, and any dispute or claim (including non-contractual disputes or claims) arising out of or in connection with it or its subject matter or formation shall be governed by, and construed in accordance with the law of Scotland and each party irrevocably agrees that the courts of Scotland shall have exclusive jurisdiction to settle any dispute or claim arising out of or in connection with the Appointment or its subject matter or formation.

Additional Information. Project Stories & People.



Project stories.



Royal Liverpool University Hospital.

High ambitions for energy efficiency.

This state-of-the-art PFI hospital is one of the largest in the country. It features 646 beds (the majority being single-bed rooms) including a 40-bed critical care unit, 18 operating theatres and a large emergency department. A separate Clinical Services Support Building (CSSB), contains laboratories, and Pharmacy including an Aseptic Suite.

Extensive support

This was a large-scale project, and we helped to support the extensive alterations to the existing site. This included completely new infrastructure; negotiations for new utility supplies and investigation of multi-utility solutions; substantial diversions; water, site medical gases, natural gas, and steam main. We also ensured allowances were made for future developments on site.

Ambitious targets

The project has stringent energy targets and we helped meet them using a combination of passive design and energy efficient systems. An open loop bore hole system provides heating and cooling, linking to the existing CHP. The high-rise nature of the building also meant we had to carefully consider the distribution of MEP services to maintain the best space efficiency. Further to this we focused on design for resilience – during the transition phases, construction period, and in operation.

Remedial works

Following the collapse of Carillion, Hoare Lea have been engaged by the Trust to undertake the MEP design associated with the various remedial works that are required to the building. We are working closely with the Trust and contractor teams to achieve successful completion and handover of the project.

One of the largest state-of-the-art PFI hospitals in the country.

Stringent energy targets were met by a combination of passive design, energy efficient equipment and plant.

“We have full confidence that we will deliver an exceptional facility of which Hoare Lea have and continue to play a major part.”
Peter Leadbetter, Projects Engineering Manager

Client: Royal Liverpool & Broadgreen University Hospitals NHS Trust

Architect: HKS and NBBJ

Services: MEP, Vertical Transportation

Value: £450 million

Sector: Healthcare

Status: Ongoing

Project stories.



Dumfries and Galloway Royal Infirmary.

Quality, efficiency, and people focus.

Dumfries & Galloway Royal Infirmary (DGRI) is a bright, open and remarkably un-clinical environment. Set in landscaped surroundings, it provides 240 beds, including 24 critical-care beds for ICU and HDU, and four operating theatres. It's also equipped with an outpatient department, A&E with helipad, aseptic suite, isolation rooms, imaging suite including MRI and CT, pathology with CL3 laboratory, renal unit including dialysis, pharmacy and six standard wards.

Centred on people

The goal was for the project to set the standard for 'a place of healing' and help DGRI achieve its goal of attracting and retaining the best medical talent. The most significant aspect of the design was its spaces being centred around the best environments for patients and staff. This insistence on putting the wellbeing of people first is demonstrated by 100% single bedrooms that provide privacy for patients.

Fast turnaround

The project had an incredibly tight programme for such a large-scale, complex building. Our ability to factor offsite manufacturing into our designs, which contributed significantly to why we were brought in on the project, ensured we could do this. Working with Laing O'Rourke and Crown House Technologies, we drew on our experience of designing for offsite manufacturing on the Alder Hey and Royal Liverpool schemes. This way of working led to less construction time on site, and delivery to deadline. The result is a modern, energy-efficient facility that has transformed the quality of healthcare services for staff and patients alike.

Wellbeing focused design, with 100% single bedrooms that provide privacy for patients.

Offsite manufacturing was a key aspect of delivering the project.

This was our first hospital built to Scottish standards in compliance with Section 6 (the Scottish version of Part L energy standards).

Client:	Highwood Health Consortium for Dumfries & Galloway Royal Infirmary NHS Board
Architect:	Ryder and NBBJ
Services:	MEP, Sustainability, Vertical Transportation
Value:	£240 million
Sector:	Healthcare
Status:	Complete

Project stories.



Alder Hey in the Park. Reimagining what a hospital can be.

Alder Hey in the Park is Europe's first children's hospital built in the grounds of a park. The brief was to create a state-of-the-art facility and put health & wellbeing at its heart. The hospital contains the full range of clinical departments including a Pharmacy facility and Aseptic Suite.

Welcoming spaces

The MEP systems and services needed to work with the balance of wellbeing-centred design and clinical equipment requirements. Thanks to dedicated basement links and vertical cores, the building could optimise natural daylight and enabled as many spaces as possible would have views of outside. We worked on services for the innovative Critical Care Unit layouts that allows patient bays to curve around a staff base that's flooded in daylight via a roof light. And it's not just 'nice-to-have' design: research has shown that patients with access to views filled with light and greenery are more likely to recover faster.

Setting a new standard

New resilient infrastructure was designed to support the new hospital including boiler plant (gas fired and oil), water storage, and electrical generation. This involved successful negotiation with the utility supply companies to reserve capacity – both for main incomers and secondary supplies for resilience – and ensure the design of buildings would house their equipment.

We developed the design in BIM using the experienced skillset of our Digital Engineering team. We then worked with the subcontractor CHT to finalise the design and to enable the services installation to be manufactured off site in six-metre corridor modules. This effective form of construction allowed for maximum efficiency and quality, which was integral to this ambitious project's tight timescales.

Europe's first children's hospital built in a park.

The Alder Hey NHS Trust's vision for the project emphasised innovation, child-centred identity, and clinical best practice.

Extensive use of BIM throughout the project to improve efficiency.

Client: Alder Hey Children's NHS Foundation Trust

Architect: BDP

Services: MEP, Sustainability, Lighting Design, Vertical Transportation

Value: £162 million

Top awards:

- National Community Benefit accolade, 2016 RICS Awards Grand Final.
- Prime Minister's Better Public Building Award, British Construction Industry Awards 2017.

Sector: Healthcare

Status: Complete

14

Project stories.



Credit Avanti Architects

The Sheffield Children’s Hospital. Child-friendly spaces for better wellbeing.

Sheffield Children’s Hospital is a modern, child-friendly space focused on the health and wellbeing of its young patients and their families. The project involved the design and creation of a whole new department. The new ward block wraps around the existing building, providing 72 new state-of-the-art bedrooms.

Careful configuration

The ward block has three main levels, with specialist areas for a burns unit, an isolation suite suitable for infections patients, plus MRI and acoustic treatment rooms.

Ward areas were carefully designed to deliver high standards of natural light, benefiting both staff and patients alike. The new layout is also designed to provide a smoother journey through the hospital’s services and centralised play spaces, along with more single rooms with ensuite facilities for parents staying with their child.

Transformative care

We designed the services for a revolutionary new layout and functionality that allows a completely new style of nursing to be provided. Special drop-off stations were incorporated into the design, so that the nursing staff can provide medical supplies to the patients without the need for disturbing them.

The ventilation strategy we specified makes the best use of natural ventilation where possible to ensure patients have access to fresh air when it is safe for them to do so. Added to this, clever controls link the services together and provides fully automatic operation to deliver the required internal environmental conditions.

The overall result is a truly patient-centred hospital.

Modernisation project that initially began with a design competition in 2012.

Designed to provide a fun, non-institutional environment that is centred around children and play opportunities.

Designed to allow a completely new style of nursing, where patients aren’t disturbed unnecessarily.

Client:	Sheffield Children’s NHS Foundation Trust
Services:	MEP
Value:	£20 million
Sector:	Healthcare
Status:	Complete

Project stories.



Liverpool Heart & Chest Hospital. Catheter Laboratory Reconfiguration.

Liverpool Heart and Chest Hospital is undergoing a complete transformation through the reconfiguration of its existing Catheter Laboratory department into a state of the art facility. This new facility will be showcased to fellow professionals and will continue its vision of being the best in leading and delivering outstanding heart and chest care within the NHS.

The project involves decanting the existing 5No. Cath labs and the creation of 7No. new Cath labs on a phased basis to ensure the department continues to function during clinical hours. The majority of the existing services will be stripped back to source and new primary and secondary systems implemented to meet the technical and clinical requirements of the scheme.

Serving a catchment area of 2.8 million people the type of procedures undertaken within this department include Percutaneous Coronary Intervention (PCI), Cardiac Pacing, Electrophysiology Studies and Interventional Cardiology.

Working closely with the clinical team and surgeons through various user engagement meetings we have designed the mechanical, electrical and public health services to meet their needs, with particular attention to the technical requirements of the single and bi-plane c-arm imaging systems.

The facility also includes an Endoscopy Suite, Treatment rooms, Recovery, Blue Light Bays and Palliative Care, together with non clinical areas such as a Seminar Suite, Offices and MDT.

Phased works maintaining an operational department

3No. PCI Cath Labs
2No. Pacing Cath Labs
2No. EP Cath Lab
Endoscopy and Recovery

Outstanding state of the art facility

Client: Liverpool Heart & Chest Hospital NHS Foundation Trust

Architect: Gilling Dod

Services: MEP

Value: £9 million

Sector: Healthcare

Status: Current

Project stories.



**Manchester Children’s Hospital.
Paediatric and Radiology Reconfiguration.**

Manchester University NHS Foundation Trust is undertaking a radical reconfiguration and upgrade of the existing Manchester Children’s Hospital.

The investment to expand their existing clinical facilities to meet both immediate needs and future requirements will enable this hospital to excel in the specialist services they offer. This investment is broken down into three phases.

The redevelopment and reconfiguration of the entire Paediatric Emergency Department (PED) incorporating Blue Light Bays, Resus, Treatment Rooms and clinical decisions suites, all of which adopts a more fluid transition between minor and major cases, this being the first phase.

The second phase (iMRI) provides a new interoperable theatre, associated 3T MRI suite and a Bi Plane theatre which can operate individually or collectively as one clinical department. The final phase (MR) Resilience provides a new 3T MRI suite and a replacement of the existing 1.5T MRI Scanner.

Working closely with the clinical team and surgeons through various user engagement meetings we are responsible for the design of the mechanical, electrical and public health services to meet their specific needs.

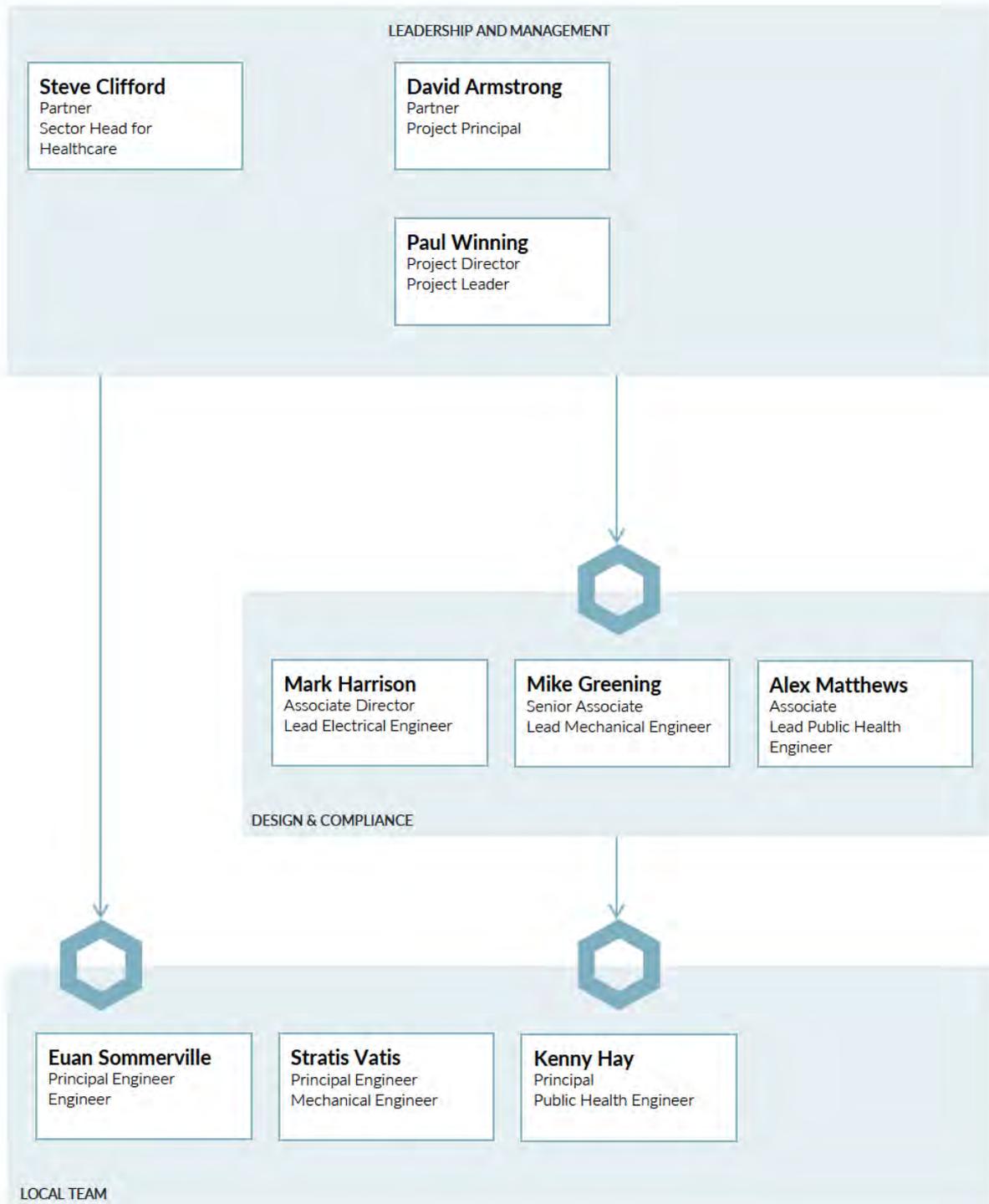
At the heart of the design, a particular challenge, is the design and upgrade of the site electrical infrastructure to meet the increase in electrical load without affecting clinical operations of the hospital.

Phased works maintaining an operational department

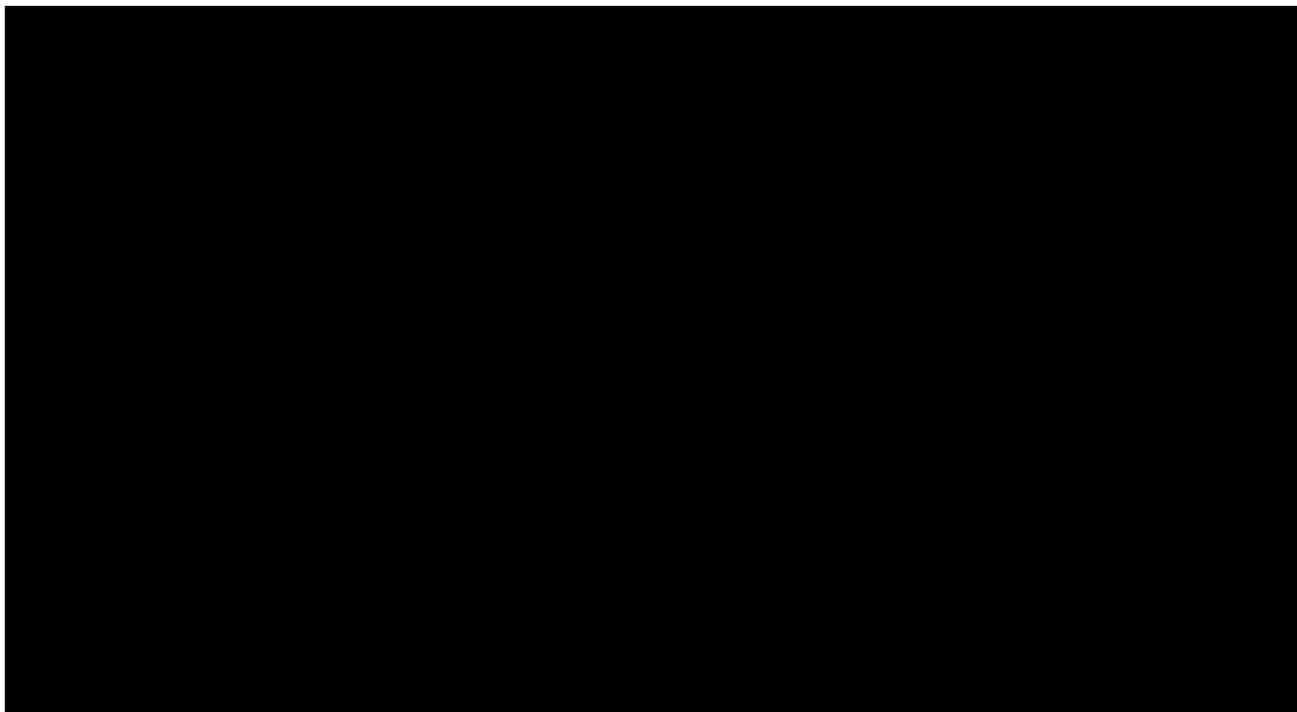
Reconfigured Paediatric Emergency Department
New MRI, Theatre, Bi-plane Department
Reconfigured Radiology Department plus with additional MRI

Client:	Manchester University NHS Foundation Foundation Trust
Architect:	Day Architectural
Services:	MEP
Value:	£17.5 million Construction
Sector:	Healthcare
Status:	Current

Our people.



Our people for your Project.



Steve Clifford

 35 YEARS EXPERIENCE

PARTNER
HEALTHCARE SECTOR HEAD
CEng MCIBSE FIHEEM

I have been involved in healthcare projects for approximately 35 years and have experience of the full range of clinical departments. Originally my involvement was in the Manchester office, acting as Project Associate on Nucleus schemes at Royal Lancaster Infirmary Phase III, Hope Hospital, Salford and Blackpool Victoria Phase IV and Healthcare projects in Isle of Man and in North Wales.

Specialist/sector expertise.

I will be the Project Partner, being the principal level contact for the framework, working closely to deliver projects. I have been involved in the introduction of a number of modern construction techniques on the recent PFI projects, working in conjunction with M&E installer developing off-site pre-fabrication and the use of modern materials.

I am responsible for Healthcare, a specialist group with representatives from all offices to ensure current practice is disseminated throughout the practice.

Project experience.

A project of significance I have completed is Alder Hey Children's Health Park in Liverpool. We formed part of the Acorn Consortium in delivering a new hospital,

providing 270 beds. This included 48 critical care beds for ICU, HDU, Burns and 16 operating theatres (4 day-case surgery and 12 inpatient theatres). Other facilities included the outpatients department, aseptic, imaging and pathology suites with CL3 Lab, isolation rooms, laboratory, renal unit with dialysis and Pharmacy. A new 1200 space multi-storey car park was also built.

- Dumfries and Galloway Royal Infirmary- A bright, open and remarkably un-clinical environment providing 240 beds, including 24 critical-care beds for ICU and HDU, and four operating theatres. It's also equipped with an outpatient department, A&E with helipad, aseptic suite, isolation rooms, imaging suite including MRI and CT, pathology with CL3 laboratory, renal unit including dialysis, pharmacy and six standard wards.
- Royal Liverpool University Hospital- State-of-the-art PFI hospital is one of the largest in the country, featuring 646 beds including a 40-bed critical care unit, 18 operating theatres and a large emergency department.
- Sidra Medical and Research Centre (SMRC), Qatar- 19 World class, ultra-modern, all-digital, academic medical centre.

Our people for your Project.

David Armstrong

 25 YEARS EXPERIENCE

PARTNER

OVERALL RESPONSIBILITY

BEng (Hons) CEng MCIBSE MIHEEM

I am one of three partners based in the Manchester office and I'm responsible for management of overall resource in the office and ensuring our projects are delivered in a quality and timely manner. What first attracted me to Hoare Lea, and indeed the building services industry – was the varied nature of day-to-day work, both in the office and on site. To this day I still enjoy the technical challenges that delivering such specialist services provides.

Specialist/sector expertise.

For me, the human impact I see on our projects comes from working with many different people – both within Hoare Lea and outside, across a wide range of projects and sectors. I have a dynamic approach, with a track record of delivering low energy and sustainable healthcare projects, both new build and refurbishment. I'm particularly interested in developing resilient and reliable energy efficient MEP solutions that minimise future running costs.

Project experience.

Alder Hey Children's Hospital, Liverpool, was a demanding project. We had to develop complex integrated design solutions using detailed analysis, all

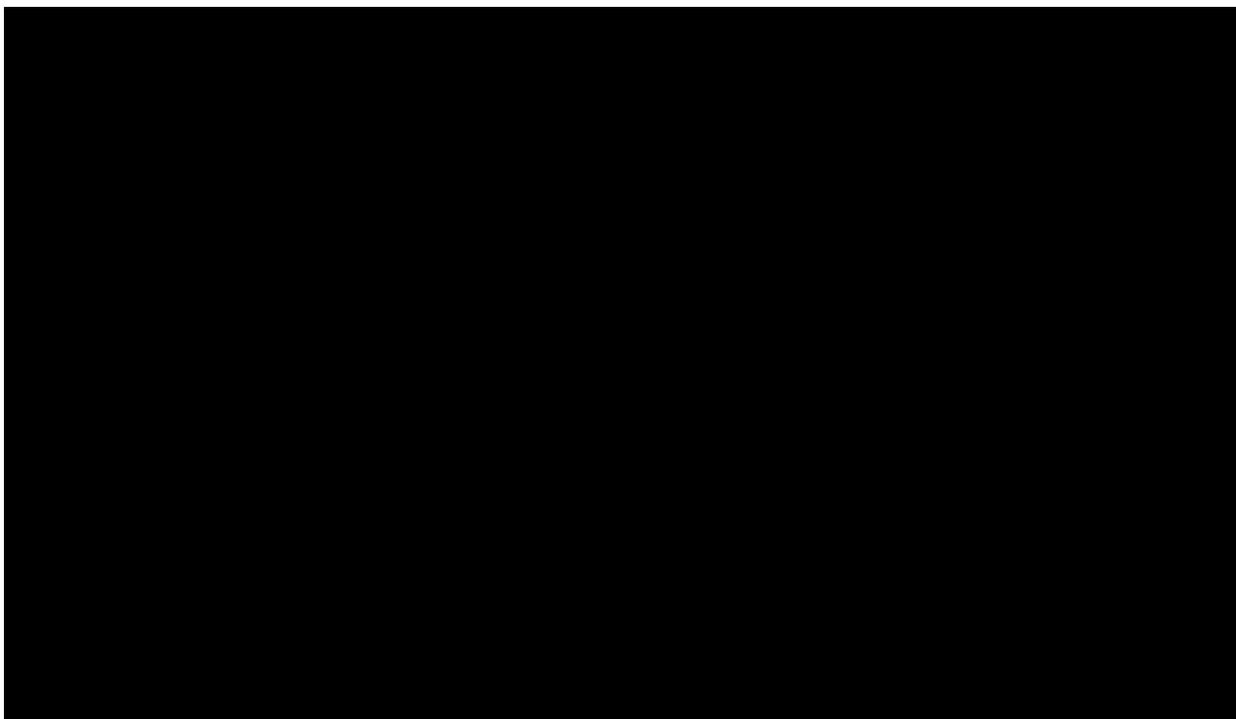
while working to ambitious client requirements. The entire facility was delivered within very tight timescales and, at the time, was one of the largest projects in which we integrated BIM. The result is a fantastic, award-winning space that we are all extremely proud of.

- Dumfries & Galloway Hospital
- Royal Liverpool University Hospital Redevelopment
- Liverpool Heart & Chest Hospital
- Manchester Children's Hospital

"Royal Liverpool and Broadgreen University Hospital NHS Trust can advise that Hoare Lea are proactive and continue to work well with the Trust team. They have given full commitment and been professional throughout this process. We have full confidence that we will deliver an exceptional facility of which Hoare Lea have and continue to play a major part. I would have no hesitation in appointing Hoare Lea to provide consultancy services in the future."

Peter Leadbetter, Projects Engineering Manager, RLBH NHS Trust

Our people for your Project.



Paul Winning

 22 YEARS EXPERIENCE

PROJECT DIRECTOR

PROJECT LEAD

CEng, BEng (Hons), MCIBSE

I have over twenty years' experience providing environmental engineering design, working across all building sectors. With a particular focus on low energy and sustainable design.

I have a strong preference in team working with fellow construction professionals. Whilst primarily this creates an enjoyable working environment, it also benefits the client and project due to the inter-relation of design and construction team members.

I will take ownership of your project and it will be delivered to your satisfaction, there will be challenges along the way but these will be met and dealt with in a positive, open and proactive manner and I will try to make the process as enjoyable as it can be.

Specialist/sector expertise.

My focus within the Healthcare sector has given me an in depth understanding of HTM & SHTM requirements. My experience ranges from working on acute hospitals to primary care centres and doctors surgeries.

Project experience.

- **£7M CRIC (Clinical Research Imaging Centre).** The CRIC facility incorporates the installation of a Cyclotron, Radioactive Hot Cells, PET/CT facility and an MRI facility.
- **£545M Queen Elizabeth Hospital, Birmingham.** The 1231 bed teaching hospital provides a regional centre of clinical excellence.
- **£6M Lochfield Road Primary Care Centre, Dumfries & Galloway.** This development brings together two GP practices under one roof with accommodation for Specialist Drug and Alcohol Services, District Nursing, Health Visitors and a Pharmacy Unit.
- **£1.2M Dunscore Primary Care Centre.** The new Primary Care Centre will provide a variety of health services on rotation, such as midwifery, health visitors, podiatry, psychology services and community nursing
- **£240M Dumfries & Galloway Royal Infirmary.** The new hospital provides 240 single bedrooms, including 24 critical care beds for ICU, HDU and 8 operating theatres.

Our people for your Project.

Mark Harrison

 17 YEARS EXPERIENCE

ASSOCIATE DIRECTOR ELECTRICAL DESIGN LEAD

CEng, BEng (Honours) in Electrical and Electronic Engineering

I bring over 17 years' experience in services design and construction monitoring, working on the successful delivery of a number of major projects. I understand the importance of building strong client and team relationships and actively participates in holistic inter-team design. I have been responsible for leading a wide range of schemes from complex, multi-building, government offices to single dwellings.

As Project Leader I am on hand at every step of the project and have overall responsibility for the project. I focus on resource, cost, programme, and design quality by having the clients best interests in mind; giving them piece of mind and assurance long the way.

Specialist/sector expertise.

My experience includes the design of projects to appropriate design guides and standards; careful management of stakeholder interface. Particular attention is paid to the mechanical and electrical services, as well as IT/power provision and FF&E coordination. I also bring experience in the design of integrated ICT, alarm, detection, and safety systems.

Project experience.

A significant project I have worked on was the Alder Hey Children's Health Park in Liverpool. This project was part of Acorn Consortium delivering new hospital which will provide 270 beds, including 48 critical care beds for ICU, HDU and Burns, and 16 operating theatres (4 for day-case surgery and 12 inpatient theatres). The facilities include an out patients department, Intensive Care Unit, Burns theatre, Aseptic suite, isolation rooms, Imaging suite, Pathology with CL3 laboratory, Renal unit including dialysis, and Pharmacy.

- Dumfries and Galloway Royal Infirmary- Bright, open and un-clinical environment providing 240 beds, including 24 critical-care beds for ICU and HDU, and four operating theatres. Also equipped with outpatient department, A&E with helipad, aseptic suite, isolation rooms, imaging suite including MRI and CT, pathology with CL3 laboratory, renal unit including dialysis, pharmacy and six standard wards.
- Leeds Teaching Hospitals, Clinical Services Reconfiguration Project
- Birmingham Children's Hospital
- North Wales Cancer Treatment Centre, Glan Clwyd Hospital

Our people for your Project.

Mike Greening

 25 YEARS EXPERIENCE

SENIOR ASSOCIATE MECHANICAL DESIGN LEAD

IEng, ACIBSE, MIHEEM

I have over 25 years' experience in design, management and construction supervision for a variety of engineering works. My strengths are in the coordination of service disciplines and a thorough understanding of project programming and efficient methods of working.

I am passionate about sustainable designs and have practical experience that follows the best practice hierarchy, to design out the need for services before incorporating renewable and efficient technologies.

Specialist/sector expertise.

I have a direct and goal-orientated approach with a focus on team synergy. I am mindful of the successful delivery of design and work packages to cost and programme requirements. I have been responsible for the design of a wide range of schemes and have an extensive knowledge of mechanical services for complex highly serviced spaces. I have particular expertise in the Healthcare, Laboratories, Leisure, Industrial and Retail sectors.

Project experience.

A significant project I have worked on was the Alder Hey Children's Health Park in Liverpool. This project was

part of Acorn Consortium delivering new hospital which will provide 270 beds, including 48 critical care beds for ICU, HDU and Burns, and 16 operating theatres (4 for day-case surgery and 12 inpatient theatres). The facilities include an out patients department, Intensive Care Unit, Burns theatre, Aseptic suite, isolation rooms, Imaging suite, Pathology with CL3 laboratory, Renal unit including dialysis, and Pharmacy. Also new 1200 space multi-storey car park.

- Dumfries and Galloway Royal Infirmary- Bright, open and un-clinical environment providing 240 beds, including 24 critical-care beds for ICU and HDU, and four operating theatres. Also equipped with outpatient department, A&E with helipad, aseptic suite, isolation rooms, imaging suite including MRI and CT, pathology with CL3 laboratory, renal unit including dialysis, pharmacy and six standard wards.
- Birmingham Children's Hospital
- North Staffordshire Hospital Maternity and Oncology
- Retained Estate, University of North Staffordshire
- University of North Staffordshire Trust 'Fit for the Future' Hospital, Stoke on Trent
- Clatterbridge Oncology Centre

Our people for your Project.

Alex Matthews

 31 YEARS EXPERIENCE

SENIOR ASSOCIATE
PUBLIC HEALTH DESIGN LEAD
BTEC ONC BTEC HNC

I provide the design and specification of public health engineering systems from conceptual schemes through to final stages. I am extremely well versed in public health design and the careful implementation of these systems from feasibility through to detailed design stage. I am enthusiastic and have extensive experience of public health systems, allowing me to provide clients with valuable advice and contribute effectively to design teams.

Specialist/sector expertise.

On this project I will be the dedicated public health engineer, having worked on many projects in a multitude of sectors. I have developed strong and valuable skills which I will apply to any project whilst liaising with my electrical and mechanical engineering team mates. During my time at Hoare Lea I have worked across various sectors, especially in Healthcare and Research schemes.

Project experience.

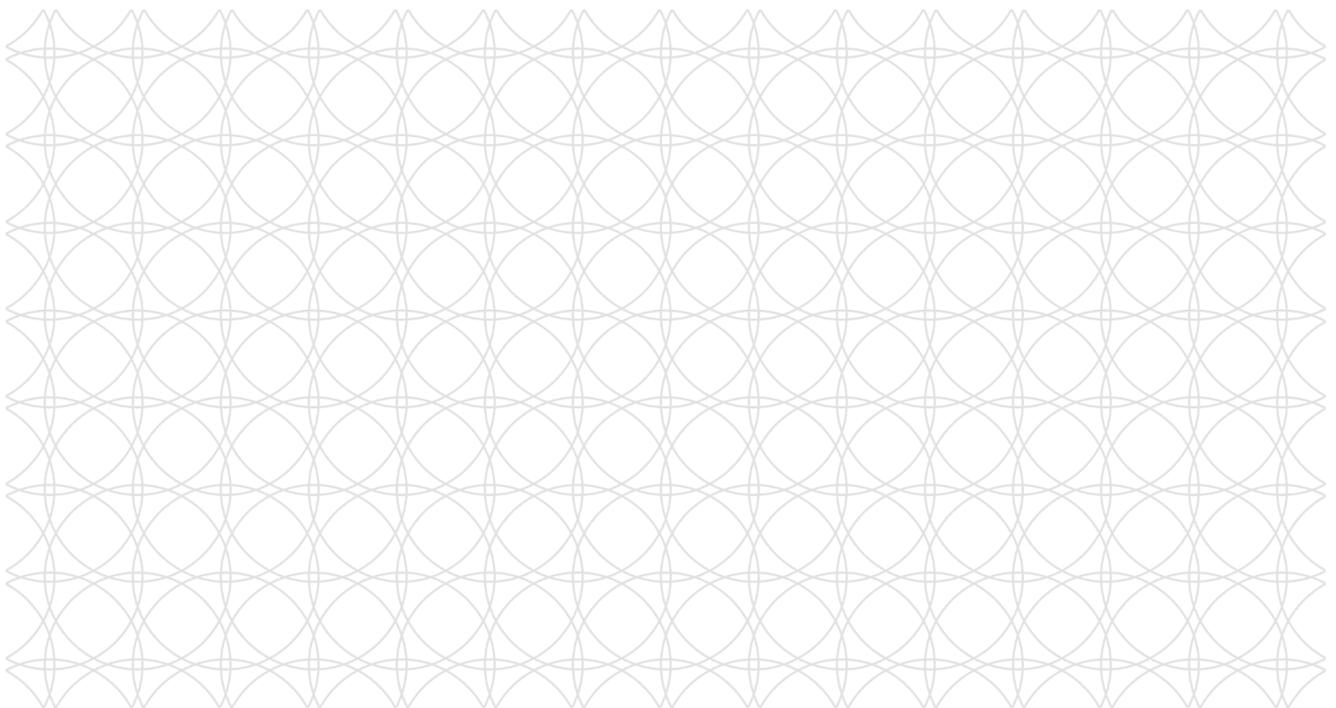
I was the lead Executive Engineer in the Public Health team for the modernisation of the Royal Liverpool University Hospital. The project was a new PFI hospital scheme, designed to replace the existing hospital with a new 10 storey modern facility with 646 beds, a 40-bed critical care unit, 18 operating theatres and a large

emergency department. Royal Liverpool University Hospital is now one of the 'greenest' hospitals in the country, using passive design, energy efficient equipment and plant, and an aquifer linked open loop borehole system for heating and cooling and a link to the existing CHP.

- Alder Hey Children's Health Park- 270 beds facility, including 48 critical care beds for ICU, HDU, Burns and 16 operating theatres (4 day-case surgery and 12 inpatient theatres), outpatients department, aseptic, imaging and pathology suites with CL3 Lab, isolation rooms, laboratory, renal unit with dialysis and Pharmacy.
- Dumfries and Galloway Royal Infirmary- Bright, open and un-clinical environment providing 240 beds, including 24 critical-care beds for ICU and HDU, and four operating theatres. Also equipped with outpatient department, A&E with helipad, aseptic suite, isolation rooms, imaging suite including MRI and CT, pathology with CL3 laboratory, renal unit including dialysis, pharmacy and six standard wards.
- Sidra Medical and Research Centre (SMRC), Qatar- 24 World class, ultra-modern, all-digital, academic medical centre.

Resource & Cost.

Resource Profile & Monthly Drawdown.



Resource Profile

w/c	November			December				
	11/11/2019	18/11/2019	25/11/2019	02/12/2019	09/12/2019	16/12/2019	23/12/2019	30/12/2019
Meetings	0.5	2.5	1.5	1.5	1.5	2.5	Christmas Break	
Desktop Review of existing information	0.5	9	9	0	0	0		
Initial Investigations	0	9	9	13	0	0		
Detailed Investigations	0	0	0	0	13	13		
Sketch Design Proposals	0	0	11	11	14	17		
Design Review by Man/Bir Office	0	0	2	2	2	4		
Plant Selection	0	0	0	0	0	7		
Detail Design	0	0	0	0	0	0		
Design Review by Man/Bir Office								
Site Support								
TOTAL RESOURCE (Man Days)	1	20.5	22.5	27.5	30.5	43.5	0	0

w/c	January				February			
	06/01/2020	13/01/2020	20/01/2020	27/01/2020	03/02/2020	10/02/2020	17/02/2020	24/02/2020
Meetings	1.5	2.5	1.5	1.5	1.5	2.5	1.5	1.5
Desktop Review of existing information	0	0	0	0	0	0	0	0
Initial Investigations	0	0	0	0	0	0	0	0
Detailed Investigations	0	0	0	0	0	0	0	0
Sketch Design Proposals	0	0	0	0	0	0	0	0
Design Review by Man/Bir Office	0	0	0	0	0	0	0	0
Plant Selection	7	0	0	0	0	0	0	0
Detail Design	30	30	30	30	25	25	16	16
Design Review by Man/Bir Office	2	2	2	2	4	4	0	0
Site Support	0	0	0	0	2	2	2	2
TOTAL RESOURCE (Man Days)	40.5	34.5	33.5	33.5	32.5	33.5	19.5	19.5

w/c	March				April				
	02/03/2020	09/03/2020	16/03/2020	23/03/2020	30/03/2020	06/04/2020	13/04/2020	20/04/2020	27/04/2020
Meetings	1.5	2.5	1.5	1.5	1.5	1.5	1.5	2.5	1.5
Desktop Review of existing information	0	0	0	0	0	0	0	0	0
Initial Investigations	0	0	0	0	0	0	0	0	0
Detailed Investigations	0	0	0	0	0	0	0	0	0
Sketch Design Proposals	0	0	0	0	0	0	0	0	0
Design Review by Man/Bir Office	0	0	0	0	0	0	0	0	0
Plant Selection	0	0	0	0	0	0	0	0	0
Detail Design	0	0	0	0	0	0	0	0	0
Design Review by Man/Bir Office	0	0	0	0	0	0	0	0	0
Site Support	2	2	2	2	2	2	2	2	2
TOTAL RESOURCE (Man Days)	3.5	4.5	3.5	3.5	3.5	3.5	3.5	4.5	3.5

w/c	May				June				
	04/05/2020	11/05/2020	18/05/2020	25/05/2020	01/06/2020	08/06/2020	15/06/2020	22/06/2020	29/06/2020
Meetings	1.5	1.5	2.5	1.5	1.5	1.5	2.5	1.5	1.5
Desktop Review of existing information	0	0	0	0	0	0	0	0	0
Initial Investigations	0	0	0	0	0	0	0	0	0
Detailed Investigations	0	0	0	0	0	0	0	0	0
Sketch Design Proposals	0	0	0	0	0	0	0	0	0
Design Review by Man/Bir Office	0	0	0	0	0	0	0	0	0
Plant Selection	0	0	0	0	0	0	0	0	0
Detail Design	0	0	0	0	0	0	0	0	0
Design Review by Man/Bir Office	0	0	0	0	0	0	0	0	0
Site Support	2	2	2	2	6	6	6	6	6
TOTAL RESOURCE (Man Days)	3.5	3.5	4.5	3.5	7.5	7.5	8.5	7.5	7.5

w/c	July				August				
	06/07/2020	13/07/2020	20/07/2020	27/07/2020	03/08/2020	10/08/2020	17/08/2020	24/08/2020	31/08/2020
Meetings	1.5	2.5	1.5	1.5	1.5	2.5	1.5	1.5	1.5
Desktop Review of existing information	0	0	0	0	0	0	0	0	0
Initial Investigations	0	0	0	0	0	0	0	0	0
Detailed Investigations	0	0	0	0	0	0	0	0	0
Sketch Design Proposals	0	0	0	0	0	0	0	0	0
Design Review by Man/Bir Office	0	0	0	0	0	0	0	0	0
Plant Selection	0	0	0	0	0	0	0	0	0
Detail Design	0	0	0	0	0	0	0	0	0
Design Review by Man/Bir Office	0	0	0	0	0	0	0	0	0
Site Support	6	6	6	6	6	6	6	6	6
TOTAL RESOURCE (Man Days)	7.5	8.5	7.5	7.5	7.5	8.5	7.5	7.5	7.5

Monthly Drawdown

Month	Invoice (Order of Cost
November	£ 26,805.00
December	£ 58,432.50
January	£ 70,785.00
February	£ 51,870.00
March	£ 12,075.00
April	£ 9,870.00
May	£ 9,870.00
June	£ 24,375.00
July	£ 19,710.00
August	£ 24,375.00
TOTAL	£ 308,167.50

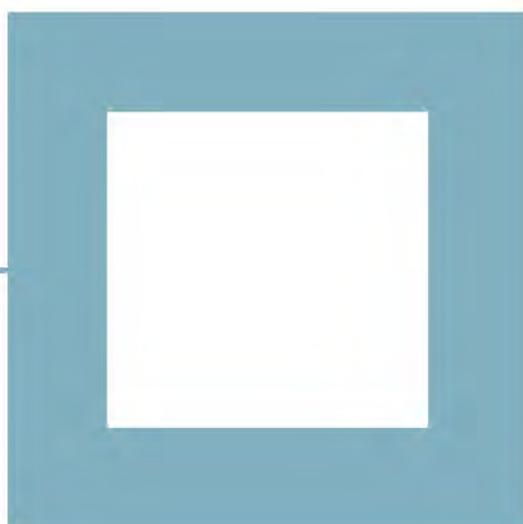
Thank you.
hoarelea.com.

Key contact

Paul Winning
Project Director



58 Waterloo Street
Glasgow
G2 7DA





High Value Change Notice

Project:	RHCYP + DCN – Little France Edinburgh
----------	---------------------------------------

1 – Issue of Change Notice to Project Co

Title:	Paediatric Critical Care and Haematology / Oncology Ventilation		
Reference No:	0107	Date:	5 th December, 2019
Target Cost Capital:	£4.6m	Target Cost Revenue:	TBA

High Value Change Requirements (Schedule Part 16, Section 4, Clause 2.1.3)

Single bedrooms and Multi-bedrooms in Paediatric Critical Care

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems which will deliver **10 air changes/hour at +10pa** as per SHTM 03-01, Appendix 1, Table A1 to the following rooms at the Facilities:

Room Number	Room Type
1-B1-065	Neo Natal 3 cot area including 1-B1-022 – Corridor, 1-B1-069 – Staff Base, 1-B1-066 – Clean Utility and 1-B1-071 – Resus Bay which are all open to 1-B1-065. This area does not contain an en-suite.
1-B1-075	Single cot cubicle neo natal including 1-B1-074 en-suite
1-B1-063	Open plan bay 4 bed This area does not contain an en-suite.
1-B1-037	Single bed cubicle This area does not contain an en-suite.
1-B1-031	Open plan bay 4 bed This area does not contain an en-suite.
1-B1-021	Single bed cubicle This area does not contain an en-suite.
1-B1-020	Single bed cubicle This area does not contain an en-suite.
1-B1-019	Single bed cubicle This area does not contain an en-suite.
1-B1-009	Open plan bay 4 bed This area does not contain an en-suite.

Isolation Rooms in Paediatric Critical Care

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems for a positive pressure ventilated lobby PPVL Single Bedroom Isolation Suite with a lobby air supply terminal with a HEPA filter, as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1, to the following rooms at the Facilities.

Project Co may utilise the supply and extract ventilation system description in SHPN 04-01, Supplement 1, Clause 4.5 for a dedicated ventilation system per Suite or SHPN 04-01, Supplement 1, Clause 4.8 for a common ventilation system to multiple Suites as the basis of their design. If Clause 4.8 is selected as the basis of design, a duplicate air handling / supply unit is considered necessary. A combination of both methods may be used provided Project Co, as far as is reasonably practical, reuse the existing ventilation installations. Regardless of option chosen, all aspects of the design and installation must be technically compliant with all relevant guidance.

NHSL require to remove or significantly reduce the risk of losing all isolation rooms due to a single point of failure. Ideally each isolation room would benefit from its own supply and extract, however, NHSL appreciate this may not be possible or practical due to other constraints e.g. space. Therefore, Project Co are requested to provide their best practical solution to reduce the risk as low as possible but maintaining guidance criteria as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1.

Room Number	Room Type
1-B1-016	Isolation Bedroom This area does not contain an en-suite.
1-B1-017	Isolation Bedroom This area does not contain an en-suite.

HVCN 0107



1-B1-026	Isolation Bedroom This area does not contain an en-suite.
1-B1-036	Isolation Bedroom This area does not contain an en-suite.

Single bedrooms and Multi-bedrooms in Haematology and Oncology

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems which will deliver **10 air changes/hour at +10pa** as per SHTM 03-01, Appendix 1, Table A1 and fit Hepa filters (H12 grade) to the air inlets to the following rooms at the Facilities:

Room Number	Room Type
3-C1.4-059	Single Bedroom including 3-C1.4-060 en-suite
3-C1.4-057	Single Bedroom including 3-C1.4-058 en-suite
3-C1.4-055	Single Bedroom including 3-C1.4-056 en-suite
3-C1.4-046	Single Bedroom including 3-C1.4-047 en-suite
3-C1.4-032	Single Bedroom including 3-C1.4-033 en-suite
3-C1.4-018	Single Bedroom including 3-C1.4-019 en-suite
3-C1.4-016	Single Bedroom including 3-C1.4-017 en-suite
3-C1.4-013	Single Bedroom including 3-C1.4-014 en-suite
3-C1.4-010	Single Bedroom including 3-C1.4-009 en-suite
3-C1.4-074	Single Bedroom including 3-C1.4-075 en-suite
3-C1.4-076	Single Bedroom including 3-C1.4-077 en-suite
3-C1.4-078	Single Bedroom including 3-C1.4-079 en-suite
3-C1.4-084	Multi-Bed (3) Day Care including 3-C1.4-085 en-suite
3-C1.4-061	Multi-Bed (6) Day Care including 3-C1.4-062 en-suite

Isolation Rooms in Haematology and Oncology

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems for a positive pressure ventilated lobby PPVL Single Bedroom Isolation Suite with a lobby air supply terminal with a HEPA filter, as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1, to the following rooms at the Facilities.

Project Co may utilise the supply and extract ventilation system description in SHPN 04-01, Supplement 1, Clause 4.5 for a dedicated ventilation system per Suite or SHPN 04-01, Supplement 1, Clause 4.8 for a common ventilation system to multiple Suites as the basis of their design. If Clause 4.8 is selected as the basis of design, a duplicate air handling / supply unit is considered necessary. A combination of both methods may be used provided Project Co, as far as is reasonably practical, reuse the existing ventilation installations. Regardless of option chosen, all aspects of the design and installation must be technically compliant with all relevant guidance.

NHSL require to remove or significantly reduce the risk of losing all isolations rooms due to a single point of failure. Ideally each isolation room would benefit from its own supply and extract, however, NHSL appreciate this may not be possible or practical due to other constraints e.g. space. Therefore, Project Co are requested to provide their best practical solution to reduce the risk as low as possible but maintaining guidance criteria as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1.

Room Number	Room Type
3-C1.4-040	Isolation Bedroom including 3-C1.4-041 en-suite
3-C1.4-043	Isolation Bedroom including 3-C1.4-042 en-suite

HVCN 0107



3-C1.4-049	Isolation Bedroom including 3-C1.4-050 <i>en-suite</i>
3-C1.4-052	Isolation Bedroom including 3-C1.4-051 <i>en-suite</i>
3-C1.4-072	Isolation Bedroom including 3-C1.4-073 <i>en-suite</i>

(the "Ventilation Works and Services").

All environmental requirements for all spaces in the Facilities served by or affected by the Ventilation Works and Services systems shall be met and maintained – including but not limited to, ventilation, temperature and control, lighting levels, noise, and humidity. These should be consistent to the agreed parameters throughout the Facilities to meet the specific clinical and operational needs for each space in the Facilities.

The Ventilation Works and Services shall fully comply with SHTM 03-01 requirements which includes, without limitation, implementation of the Ventilation Works and Services so that the system installation, finishes and maintenance regime shall be in accordance with SHTM 03-01 requirements, together with the clinical and operational constraints identified below:

1. All Ventilation Works and Services shall be carried out and monitored after and with reference to a collaborative full Stage 3 HAI SCRIBE assessment being approved by the Board.
2. The fire strategy and systems agreed for the Facilities will be maintained throughout the Ventilation Works and Services and the Operational Term and such that the ventilation systems will integrate with the fire strategy and systems and all other building management systems comprised in the Facilities.
3. The location of the installation within the rooms, external areas, route across such spaces and the take out of any windows, etc, will enable the current operational functionality and safety policies and procedures to be maintained.
4. The design, layouts, finishes and other details etc for the Ventilation Works and Services, at all stages (including during the design development stages), will require to be agreed with the Board's Representative (and in turn the clinical service and related stakeholders and Project Co recognises that in order to achieve agreement from the Board's Representative's the Board's Representative will seek input from the Board and all appropriate stakeholders.
5. Design must provide resilience in compliance with SHTM 03-01 to ensure performance of ventilation to rooms during maintenance downtime.

The Board will, in consultation with Project Co, continue to review costs as the design develops and at other stages. In order for the Board to assess whether the High Value Change Stage 2 Submission offers it value for money the submission shall include as a minimum the following information:

- A detailed and fully quantified pricing schedule for the construction works
- A detailed breakdown of all Preliminaries and general cost items
- Construction issue drawings and specification
- Proposed, construction and commissioning/testing programme
- Construction phase method statement

Date by which parties are required to meet to review the High Value Change Notice and agree the content for the High Value Change Proposal (Schedule Part 16, Section 4, Clause 2.3.1)	13th December, 2019
---	---------------------------------------

To: IHS Lothian

We require the Change described above.
Please advise when Project Co will submit a High Value Change Proposal for the above.

Signed on behalf of NHS Lothian: 

Name of Signatory (type or print): Brian Currie – Board Rep – NHS Lothian.....

Date: 5th December, 2019

HVCN 0107

HOARE LEA 

RHCYP+DCN.
Edinburgh.
IHS Lothian.

HVC107 AIR HANDLING UNIT SPECIFICATION
REVISION T1 - 20 MARCH 2020

RHCYP+DCN
IHS LOTHIAN

HVC107 AIR HANDLING UNIT SPECIFICATION -
REV. T1

Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
P1	03/02/2020	Initial Issue	SV	PRW	PRW
T1	20/03/2020	NHS comments incorporated	JN	SV	PRW

This document has been prepared for IHS Lothian only and solely for the purposes expressly defined herein. We owe no duty of care to any third parties in respect of its content. Therefore, unless expressly agreed by us in signed writing, we hereby exclude all liability to third parties, including liability for negligence, save only for liabilities that cannot be so excluded by operation of applicable law. The consequences of climate change and the effects of future changes in climatic conditions cannot be accurately predicted. This document has been based solely on the specific design assumptions and criteria stated herein.

Project number: 27/27164

Document reference: SP-2727164-9B-SV-03022020-Air Handling Unit Specification

RHCYP+DCN
IHS LOTHIAN

HVC107 AIR HANDLING UNIT SPECIFICATION -
REV. T1

Contents.

Audit sheet.

Y	Services reference specifications.
Y40	Air handling units
Y41	Fans
Y42	Air filtration
Y43	Heating/ cooling coils
Y45	Silencers/acoustic treatment

RHCYP+DCN
IHS LOTHIAN

HVC107 AIR HANDLING UNIT SPECIFICATION -
REV. T1

Y Services reference specifications.

- Y40 Air handling units
- Y41 Fans
- Y42 Air filtration
- Y43 Heating/ cooling coils
- Y45 Silencers/acoustic treatment

RHSCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y40 AIR HANDLING UNITS
CONTENTS

100	REFERENCE DOCUMENTS
200	GENERAL
210	Introduction
220	Performance objectives
230	Acoustic data
240	Handover
300	NON-RESIDENTIAL AIR HANDLING UNITS (AND MARINISED AIR HANDLING UNITS)
310	General and construction
311	Thermal insulation
312	Inspection windows and lighting
313	Mounting points
314	Paint finish
315	Airtightness
320	Externally-mounted air handling units
330	Condensate drainage system
340	Accessories and components
341	Heat recovery heat exchangers
342	Water and water/glycol (chilled water) cooling coils
343	Droplet eliminators
344	Condensate drip trays
345	Fans
346	Filters
350	Accessories and components - continued
351	Sound attenuators
352	Mixing and isolation dampers
400	HEALTHCARE AIR HANDLING UNITS
410	General
420	Cleanliness
430	Combustibility
440	Thermal insulation
450	Inspection windows and lighting
460	Airtightness
470	Condensate drainage system
480	Accessories and components
481	Heating and cooling coils
482	Droplet eliminators
483	Condensate drip trays
484	Filters
485	Access Doors / Panels

RHSCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y40 AIR HANDLING UNITS
100 REFERENCE DOCUMENTS

This specification is written based on legislation, standards and guidance in force in the UK generally, and within England by default. For projects in Scotland, Wales, Northern Ireland, the Channel Islands and the Isle of Man, give appropriate consideration to any locally applicable legislation, standards and guidance that deviates from or is additional to those in force within England. Similarly for projects outside the UK comply with the corresponding national legislation, standards and guidance.

Comply fully with the edition (including amendments, replacements and associated normative references) of each of the following, current at the time of tender.

When a standard referred to in this section conflicts with a standard referred to in an associated engineering system section (for example T30, T31, T50, T70, U10, etc) of this specification, the standard referred to in the engineering system section prevails.

Ecodesign for Energy-Related Products and Energy Information (ErP) Regulations

BS 3928	Method for sodium flame test for air filters (other than for air supply to I.C. engines and compressors)
BS 4533-102.19	Luminaires. Part 102. Particular requirements. Section 102.19 Specification for air handling luminaires (safety requirements)
BS 5141-1	Specification for air heating and cooling coils. Method of testing for rating of cooling coils
BS 5141-2	Specification for air heating and cooling coils. Method of testing for rating of heating coils
BS 6583	Methods for volumetric testing for rating of fan sections in central station air handling units (including guidance on rating)
BS 7671	Requirements for electrical installations. IET Wiring Regulations (18 th Edition)
BS EN 1751	Ventilation for buildings - Air terminal devices - Aerodynamic testing of damper and valves
BS EN 1822-1	High efficiency air filters (EPA, HEPA and ULPA). Classification, performance testing, marking
BS EN 1886	Ventilation for buildings. Air handling units. Mechanical performance
BS EN 12097	Ventilation for buildings – Ductwork – Requirements for ductwork components to facilitate maintenance of ductwork systems
BS EN 10088-1	Stainless steels. List of stainless steels
BS EN 10143	Continuously hot-dip coated steel sheet and strip. Tolerances on dimensions and shape
BS EN 13053	Ventilation for buildings. Air handling units. Rating and performance for units, components and sections
BS EN 13076	Devices to prevent pollution by backflow of potable water. Unrestricted air gap. Family A. Type A
BS EN 13823	Reaction to fire tests for building products – Building products excluding floorings exposed to thermal attack by a single burning item
BS EN 16798-1	Energy performance of buildings. Ventilation for buildings. Indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics. Module M1-6

RHSCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y40 AIR HANDLING UNITS

BS EN 16798-3	Energy performance of buildings – Ventilation for buildings. Part 3: For non-residential buildings – Performance requirements for ventilation and room-conditioning systems (Modules M5-1, M5-4)
BS EN 60034-30-1	Rotating electrical machines Part 30-1: Efficiency classes of line operated AC motors (IE code)
BS EN ISO 1182	Reaction to fire tests for products. Non-combustibility test
BS EN ISO 5801	Industrial fans - Performance testing using standardized airways
BS EN ISO 7235	Acoustics - Laboratory measurement procedures for ducted silencers and air-terminal units. Insertion loss, flow noise and total pressure loss
BS EN ISO 11691	Acoustics. Measurement of insertion loss of ducted silencers without flow. Laboratory survey method
BS EN ISO 14163	Acoustics - Guidelines for noise control by silencers
BS EN ISO 16890	Air filters for general ventilation
BESA DW/143	Guide to good practice. Ductwork air leakage testing
BESA DW/144	Specification for sheet metal ductwork
CIBSE Guide A	Environmental design
CIBSE Guide B3	Heating, ventilating air conditioning and refrigeration
CIBSE TM13	Technical memoranda minimising the risk of Legionnaires disease
HSE ACOP L8	Approved code of practice Legionnaires' disease. The control of Legionella bacteria in water systems. Approved code of practice and guidance
HSG 274	Legionnaires' disease: Technical guidance Part 2: The control of Legionella bacteria in hot and cold water systems
SHTM 00	Policies and principles of healthcare engineering
SHTM 03-01 Part A	Specialised ventilation for healthcare premises – Design and validation
SHTM 08-01	Health technical memorandum 08-01: Acoustics
SHTM 04-01	Water safety for healthcare premises – Part A: Design, installation and testing
SHTM 03-01	Part B Operational management and performance verification
SHTM 06-01	Electrical services supply and distribution
SHPN 04-01	Supplement 1

200 GENERAL
210 Introduction

This document, together with schedule Y40, specification sections and schedules U10, Y41, Y42, Y43 and Y45 (as applicable), provides the specification for the air handling units (AHUs).

This document is split into the following two major sections:

- ~ non-residential AHUs
- ~ healthcare AHUs

RHSCYP+DCN

AIR HANDLING UNIT SPECIFICATION

Y40 AIR HANDLING UNITS

220 Performance objectives

Provide AHUs, and associated attenuators where required, to achieve the thermal and acoustic performance specified in this document, schedule Y40 and the other ventilation system drawings, specification sections and schedules.

Ensure that the AHU system is capable of achieving a specific fan power at 25% of design flow rate no greater than that achieved at 100% design flow rate.

Ensure that every AHU has been manufactured and tested and has achieved the minimum performance criteria in this clause, including Table 1 following or, if otherwise stated in schedule Y40, the criteria so stated:

Table 1 Minimum Performance Criteria

Description	Minimum criteria
Leakage class of casing	Class L2 (R) (leakage ≤ 0.44 l/s/m ²) in accordance with BS EN 1886
Casing strength	Class D1 (R) (maximum total deflection of any panel ≤ 4 mm at selected design fan speed) in accordance with BS EN 1886
Filter bypass leakage	As required by BS EN 1886 for the class of filter specified.
Casing thermal transmittance	Class T3 ($1.0 < U \leq 1.4$) in accordance with BS EN 1886
Casing thermal bridging factor	Class TB2 ($0.6 \leq k_b < 0.75$) in accordance with BS EN 1886
Default air quality	SUP 2 in accordance with BS EN 16798-3
Leakage class of shut-off dampers for dampers for supply and exhaust air	Class 2 in accordance with BS EN 1751

Fit a heat recovery system to the outside air supply and extract ventilation systems in accordance with BS EN 13053, section T50 of this specification, and the equipment schedules.

Provide the control system for each AHU with the following minimum control functionality, in accordance with BS EN 15232:

- ~ on/off controls and settable timer control accessible from the air conditioned space
- ~ automatic pre-heating of the outside ambient air supply during cold periods to prevent freezing of run-around, air heating or cooling coils
- ~ prevent transference of heat between the cooling and heating systems by providing a dead band from between operation of the cooling system coil and the heating system coil
- ~ variable setpoint with outdoor ambient temperature compensation

RHSCYP+DCN
AIR HANDLING UNIT SPECIFICATION
Y40 AIR HANDLING UNITS
230 Acoustic data

Demonstrate that the AHU supplier has comprehensive test data available, which shows:

- ~ sound power level for the fan discharge, at the required air flow rate and a range of external static pressures that cover the range of the selected equipment
- ~ data presented in terms of octave band sound power level data, for the octave range 63 Hz to 8 kHz
- ~ standards to which the supplier tests have been performed, along with the tolerances to be expected on repeat tests. Details of the test standards and a comprehensive test report must be provided
- ~ dynamic test data available, to show that the selected AHU achieves the required levels in the applicable schedule
- ~ adequate casing construction with class 0 fire-rated sound insulation material applied to the unit casing to meet the specified breakout level from the AHU

Ensure that every AHU casing has independently verifiable minimum sound insertion loss values stated in Table 2 following:

Table 2 Minimum Sound Insertion Loss Values

Frequency (Hz)	63	125	250	500	1K	2K	4K	8K
Insertion loss (dB)	15	12	22	30	35	32	35	37

240 Handover

Provide a complete set of new filters for every AHU after practical completion and prior to handover.

Install the new filters after final tests, commissioning and validation or if the used filters are clean or have a substantial amount of operating life remaining and the Contract Administrator agrees in writing, leave the used filters installed and provide the new filters 'free-issue' as spares.

Dispose of old filters, with a suitable waste carrier registered with the Environment Agency (EA).

300 NON-RESIDENTIAL AIR HANDLING UNITS (AND MARINISED AIR HANDLING UNITS)
310 General and construction

Make each assembly of compact construction consisting of a rigid metal framework with double skinned panels. Ensure that skins of the outer panels are at least 1.0 mm thick and the inner skins at least 0.8 mm thick. Strengthen the panels, as necessary, to prevent distortion and drumming.

Construct the AHU panels using the 'dry-fold panel' principle or the 'tray and inverted tray method' to encapsulate insulation of the specified thickness. Ensure that the panels are completely sealed whichever construction method is used.

Provide insulation material between the double skins of each panel. Ensure that the insulation used is in accordance with the requirements of clause 311.

Assemble all components using bolts, anti-vibration lock washers and nuts or other approved quick-release fastenings. Do not use self-tapping screws to secure lift off panels.

Provide access doors and lift-off panels of sufficient size, wherever access for inspection, maintenance or the passage of large components, such as fans and motors, heating and cooling coils, filters and tools, is required, in accordance with clause 4.2 in BS EN 12097. Ensure access

RHSCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y40 AIR HANDLING UNITS

doors and lift-off panels are unrestricted and fully opeable without being restricted by other servces installation fixtures.

Fit every access door with floating hinges and heavy duty, cast aluminium, chrome or plastic-coated wedge-action sealing handles. Design the hinges so that the doors may be easily dismantled if it is necessary to remove the doors completely during maintenance activities.

Provide lift-out panels where access requirements do not allow for the swing of the door. Fit quick-release fasteners to lift-out panels; do not use bolt-on type fittings.

Ensure that all access doors and lift-out panels achieve a fully flush appearance both internally and externally.

Provide suitable restraints, dampers or interlocks to prevent injury to personnel should personnel attempt to open access doors or remove lift-out panels when an AHU is pressurised.

Provide all doors and lift-out panels with class 0 fire-rated, neoprene or foam rubber gaskets.

Ensure that all doors, lift-out panels and their frames are stiff enough to effectively compress such gaskets to make an airtight seal.

Size the sections of modular AHUs in order to enable them to be transported along planned routes to their final locations.

Package, protect and seal AHUs to prevent damage in transit and on site.

Achieve an overall appearance for each AHU that is straight along the top and sides by arranging all sections with a common height and width, unless otherwise agreed in writing with the Contract Administrator.

Mount each AHU on a permanent, robust, galvanised steel base frame, complete with lifting lugs for transportation, handling and support purposes. Make the base frames at least 200 mm deep to accommodate cooling coil, humidifier and recuperator condensate drainage traps; and at least 100 mm deep for heating-only AHUs, unless stated otherwise in the ventilation system drawings, specification sections and schedules.

Condensate drainage pipework from the drip tray to condensate drainage trap will provide a minimum fall of 1:20 in the direction of flow and the drainage pipework from the trap will provide a minimum fall of 1:60 in the direction of flow.

For AHUs that are to be stacked when installed, provide them suitably strengthened with a design that enables unimpeded inspection and maintenance access when stacked. Ensure that the lower AHU, when stacked, shows no sign of compression and all its doors and lift-out panels operate as required. Paint any part of the AHUs that will become inaccessible once assembled prior to installation.

Install suitable, safe, permanent access walkways with steps for the top decks of AHU plant with a mid-height of 1800 mm or above.

Obtain the AHU manufacturer's written confirmation that all factory-made electrical installations are in accordance with BS 7671 (18th edition).

Provide mesh screens on the inside of all external (weather) louvres for AHUs in accordance with section Y46 of this specification. Adequate access to mesh screens will be provided for routine cleaning/maintenance purposes.

Ensure that the AHUs meet the design requirements without the use of droplet eliminators. Notify the Contract Administrator in writing if this cannot be done due to technical constraints; and install droplet eliminators in accordance with the requirements in clause 480, when deemed essential to meet design requirements, if the Contract Administrator has approved their use.

RHSCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y40 AIR HANDLING UNITS
311 Thermal insulation

Sandwich insulation material between the double skins of AHU panels to prevent condensation and reduce noise. Vapour seal the insulation to the panels of the AHU.

Ensure that the insulation:

- ~ is Chlorofluorocarbon (CFC) and HydroChloroFluoroCarbon (HCFC) free thermal and acoustic insulation
- ~ will not deform, erode or migrate into the air stream and has a thermal conductivity ≤ 0.04 kW/m K
- ~ is class 0 fire rated

Ensure the thermal insulation is at least 25 mm thick in the panels of AHUs if the selection air flow is less than or equal to 4 m³/s, unless stated otherwise in the ventilation system drawings, specification sections and schedules.

Ensure the thermal insulation is at least 40 mm thick in the panels of AHUs if the selection air flow is greater than 4m³/s, unless stated otherwise in the ventilation system drawings, specification sections and schedules.

312 Inspection windows and lighting

Install an inspection window (port) in the downstream part of each cooler coil, humidifier and droplet eliminator section (all when fitted), unless stated otherwise in the ventilation system drawings, specification sections and schedules.

Install an inspection window for checking the fans and filters.

Ensure each inspection window is at least 150 mm diameter or square, double-glazed and sealed to prevent condensation obstructing the view through it.

Install an extra low voltage luminaire, with an ingress protection rating of IP55, in each section fitted with an inspection window, in accordance with the requirements of BS 4533-102.19 (EN 60 598-2-19) and the appropriate ventilation drawings, schedules and sections of this specification. Wire luminaires to a switch mounted on the outside of the AHU in an easily accessible location.

Place the inspection window at the bottom of the access doors of the upper unit, in double-stacked or double-deck units, unless otherwise specified elsewhere in the ventilation system drawings, schedules and sections of this specification.

313 Mounting points

Provide purpose-built mounting points for each control motor, sensor, switch and instrument mounted on each AHU, unless stated otherwise in the ventilation system drawings, specification sections and schedules.

Provide adequate space between components of the AHU assembly to enable all motor actuators, sensors, switches and instruments to be sited for correct operation. Provide, as a minimum:

- ~ a mounting point for a differential pressure sensor across each filter
- ~ a temperature sensor for each heating coil
- ~ a temperature sensor for each cooling coil
- ~ an actuator for each motorised damper
- ~ a humidity sensor for each humidifier

RHSCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y40 AIR HANDLING UNITS
314 Paint finish

Deliver every AHU section to site with a high quality factory-applied paint system at least 35 micron thick, including on the base frame; unless stated otherwise in the other ventilation system drawings, specification sections and schedules.

Ensure that the paint system is applied upon completion of all factory pre-assembly fabrication processes, thereby achieving complete coverage of all surfaces with no bare metal edges.

315 Airtightness

Ensure that each AHU meets the requirements of the air leakage rate and class specified in clause 220 or schedule Y40, whichever is the more onerous.

Provide a certificate confirming the air leakage rate and class achieved to the Contract Administrator.

320 Externally-mounted air handling units

Unless otherwise specified in the equipment schedules or system specification, provide a double pitched roof that gives full weather protection.

Provide all exposed air inlet and exhaust connections with mesh screens and external (weather) louvres in accordance with section Y46 of this specification. Provide all inlets with moisture eliminators and bottom drain outlets, situated behind the inlet louvres. Adequate access must be provided to allow for cleaning of the drain outlets and screens.

Ensure that the weather louvres prevent the ingress of moisture into the adjoining sections even when the AHU is not operating.

Spray all external AHUs with an ultraviolet-stabilised paint finish of the colour stated in schedule Y40, in addition to the paint finish specified in clause 3144, unless stated otherwise in the ventilation system drawings, specification sections and schedules.

330 Condensate drainage system

Provide a condensate drainage system in accordance with this clause and the ventilation system drawings, specification sections and schedules, and with specification section R11.

Ensure condensate drip trays are provided, for each of the following items of equipment (when that equipment is installed):

- ~ under and downstream of the cooling coil
- ~ under and downstream of the humidifier
- ~ under and downstream of the droplet eliminator
- ~ under and downstream of all heat recovery devices

Borosilicate traps and tundish arrangement will fully comply with STHM 03-01 Part A paragraph 8.27 and SHTM 03-01 Part B, paragraph 3.30.

Calculate the maximum individual and combined condensate flows, irrespective of the design conditions specified. Use the maximum peak condensate flow for pump selection if a condensate pump is required.

Install condensate drip trays within the AHUs, which meet the requirements of this clause and clause 344, and are adequately sized, correctly positioned and designed.

Ensure that the drainage system is capable of draining the combined maximum condensate flows, irrespective of the design conditions specified.

Compliance with the above sub-clause is a mandatory condition and failure to comply will result in responsibility for any remedial work and consequential costs.

RHSCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y40 AIR HANDLING UNITS
340 Accessories and components
341 Heat recovery heat exchangers

Install heat recovery heat exchangers when specified in the ventilation drawings, schedules and sections of this specification.

Ensure that the type, capacity and means of control complies with the schedule Y40, section T50 of this specification and BS EN 13053.

Ensure that the heat recovery heat exchangers meet the minimum dry heat recovery efficiencies stated in the Ecodesign for Energy-Related Products and Energy Information (ErP) Regulations and associated EU Directive, unless higher efficiencies are specified in the equipment schedules.

342 Water and water/glycol (chilled water) cooling coils

Provide cooling coil assemblies in accordance with this clause, schedule Y43 and the AHU schedules and sections of this specification and BS EN 13053.

Ensure that the air velocity at the face of the fin block of each coil does not exceed 2.3 m/s.

Provide coils of the cartridge type, supported on rails, so that they can readily be withdrawn from the side of the AHU in the direction indicated on the drawings, unless stated otherwise in the ventilation system schedules and sections of this specification.

Ensure that maintenance and inspection doors or lift-off panels are provided upstream and downstream of every cooling coil in accordance with clause 4.2 in BS EN 12097.

343 Droplet eliminators

Unless otherwise specified design AHUs so that the performance required is delivered without recourse to droplet eliminators, unless technical constraints dictate otherwise; in which case, obtain specific and separate agreement from the Contract Administrator to the use of droplet eliminators.

Provide droplet eliminators when specified in the ventilation system drawings, specification sections and schedules (or when the AHU is used in a healthcare application) in accordance with clause 482.

Compliance with the above sub-clause is a mandatory condition and failure to comply will result in responsibility for all remedial work and consequential costs.

344 Condensate drip trays

Fit condensate drip trays in accordance with BS EN 13053 beneath heat recovery heat exchangers, cooling coils, humidifiers and droplet eliminators (all when installed).

Ensure that the drip tray is not less than 15 mm deep and has a minimum fall of 1:20 to an integral condensate connection to prevent ponding.

Ensure that the drip tray is completely accessible for inspection and cleaning, or easily removable for inspection and cleaning.

Connect the condensate drip tray to the drainage system using tubing of an adequate diameter for the maximum potential flow rate.

Fit a condensate collection and drainage system to rotary and plate heat exchangers (when installed), in accordance with BS EN 13053 and specification section T50.

Construct condensate drip trays from:

- ~ galvanised steel in accordance with BS EN 10143, or
- ~ EN 1.4301/7 stainless steel in accordance with BS EN 10088-1

RHSCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y40 AIR HANDLING UNITS

Connect condensate drains to the condensate drainage system, see clause 330 for further information.

345 Fans

Provide variable speed centrifugal or plug fans in accordance with this clause, schedule Y40 and section Y41 of this specification.

Provide, either three phase inverter-driven or electronically commutated direct current (EC/DC) fan motors, in accordance with section Y92 of this specification. Ensure that this speed control does not induce motor noise.

Ensure that the replacement of bearings and fan impellers is readily accomplished.

Provide a diffuser section at the fan outlet when specified elsewhere in the ventilation system drawings, specification sections and schedules.

Ensure that every fan section is provided complete with:

- ~ fan impeller
- ~ fan casing
- ~ fan bearings
- ~ coupling or drive belts and pulleys, whichever is applicable
- ~ coupling guards (if required)
- ~ belt guards (if required)
- ~ motor and slide rail assembly or steel base-frame, whichever is applicable
- ~ flexible discharge duct connection
- ~ anti-vibration mountings

Fit the motor inside the AHU casing of the fan section with the motors in the airstream, together with the fan, drive and its guard, unless stated otherwise in an AHU specification section or schedule.

Enclose the fan pulley, motor pulley and drive belts (where applicable) in a space-saver wire mesh guard mounted behind the fan section access door, or by a fully enclosed double-sided wire mesh guard, depending on the unit size.

Fit the motor and drive external to the airstream when stated in schedule Y40.

Install duty and standby motors when stated in schedule Y40.

Install open spring anti-vibration mountings at every fan base, unless otherwise agreed in writing by the Contract Administrator.

Install non-flammable flexible duct connections with a minimum length of 100 mm, to prevent fan vibrations from being transmitted to the AHU casing.

Provide a factory-wired isolator mounted externally on the AHU for every motor.

Fix a permanent sign to the fan section access door of each AHU, warning that the fan must be stopped and isolated before the door is opened. Isolator must be lockable.

346 Filters

Provide filters in accordance with this clause, specification section Y42 and the other ventilation system drawings, specification sections and schedules.

RHSCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y40 AIR HANDLING UNITS

Ensure filters for general ventilation are classified and constructed in accordance with the requirements of BS EN ISO 16890.

Ensure that the width and height of the access door or lift-off panel is greater than the external dimensions of the replaceable filter elements.

Provide differential pressure tappings for each stage of filtration and connect the tappings to the following controls:

- ~ differential pressure transmitters which provide filter condition indication and alarm function signals to the building management system (BMS)
- ~ locally-mounted bourdon tube gauges displaying the differential pressure across each stage of the filter and/or
- ~ locally-mounted filter condition/change indicators

Mount all filters in either:

- ~ side access withdrawal housing frames with baffle plates that prevent unfiltered bypass, or
- ~ front withdrawal frames with an AHU access section provided upstream (the dirty face) of the filter, to facilitate filter replacement

Ensure that the air velocity at the face of general ventilation air filters does not exceed 2.3 m/s.

Install high efficiency particulate air (EPA, HEPA and ULPA) filters in accordance with BS EN 1822 if specified in schedule Y40 or the other ventilation system drawings or specification sections.

Fit EPA, HEPA and ULPA filters in the last filter section of the AHU.

350 Accessories and components - continued
351 Sound attenuators

Provide sound attenuators (splitters), acoustic treatments and vibration isolators in accordance with this clause, specification sections Y45 and Y52, and schedule Y40 to enable the AHUs to meet both the in-room and external Noise Ratings (NR) specified for the project.

Ensure that splitters are fully compliant with specification section Y45 in respect of selection, materials and performance.

Mount splitters using rails that do not compromise the acoustic performance or the integrity of any protection against fibre migration. Ensure that the mounting arrangement does not pierce Melinix linings (for healthcare applications follow relevant guidance).

352 Mixing and isolation dampers

Provide an inlet isolation damper and an outlet isolation damper on each AHU, unless stated otherwise in the ventilation system drawings, specification sections and schedules.

Install mixing dampers when specified in the ventilation system drawings, specification sections and schedules.

Ensure that all isolating and shut-off dampers are of multi-leaf opposed blade construction.

Arrange multi-leaf parallel blade dampers in air mixing sections of each AHU, so that they achieve efficient mixing of the air streams.

Install a quadrant control with lockable lever to every manually-operated damper.

Manufacture all damper blades from galvanized steel or extruded aluminium material of aerofoil section, each with a cadmium-plated drive spindle rotating in dirt-protected, maintenance-free, nylon bearings.

RHSCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y40 AIR HANDLING UNITS

Provide each motorised damper with a suitable linkage for connection to a single drive motor or actuator and suitable for having the motor mounting bracket fixed to it.

Ensure that all dampers are complete with suitable linkages, pointers and labels that clearly indicate the fully closed and fully open positions and the locked setting.

Unless stated otherwise in the ventilation system drawings, schedules and sections of this specification, make all damper blades of the low leakage type having neoprene edge seals and double frame seals (air leakage rate as specified in clause 220) with blades that can be replaced individually, gear wheels protected from the airstream, and suitable for conventional rotary actuators with a maximum torque of 20 Nm.

Ensure the BMS and automatic control specialist supplies all damper motors and actuators, unless stated otherwise in the AHU schedules and specification sections.

400 HEALTHCARE AIR HANDLING UNITS
410 General

On projects where SHTM 03-01 applies, comply with all clauses specific to healthcare, unless a derogation, which has been agreed with the client, applies to the clause.

Provide AHUs that comply with the requirements of clause 300, the following sub-clauses and the other ventilation system drawings, specification sections and schedules.

Provide sufficient provision for retrofitting humidifiers in operating theatre AHUs when not originally supplied. Ensure there is sufficient space, suitable materials have been used, and a capped drainage system has been installed.

No exposed screw spikes will be present.

AHU internals will be ridge and channel free to allow for internal cleaning.

420 Cleanliness

Ensure that organic materials or substances that can support the growth of microorganisms are not used in the construction of the plant or its distributions systems.

430 Combustibility

Ensure the plant and its distribution system do not contain any substance that could cause or support combustion.

440 Thermal insulation

Use panels that are at least 50 mm thick, manufactured using polymer-coated outer skin with a galvanised inner skin.

Pipework insulation will have a hygienic cleanable finish where it enters the airstream.

450 Inspection windows and lighting

Wire all the low voltage lights in a single ventilation system (AHU) to one external switch. External switch must be in a convenient and easily accessible location.

460 Airtightness

Provide plant with a high standard of airtightness capable of meeting the air leakage requirements specified in DW/143.

AHU casing leakage will be L1 and filter by pass will be F7.

RHSCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y40 AIR HANDLING UNITS
470 Condensate drainage system

Locate the main plant/ductwork far enough from the floor to permit the correct installation of drainage systems for cooling coils, humidifiers, droplet eliminators and heat recovery systems.

Connect each condensate tray to the drainage system, using a (borosilicate) glass type trap and an air break.

Ensure that the trap is located in an easily visible position, has means of filling it and incorporates couplings to facilitate removal for cleaning.

Provide easy access for maintenance of the drainage system and its associated pipework.

Provide drainage pipework with a minimum diameter of 22 mm and a minimum fall of 1:60 in the direction of flow.

480 Accessories and components

Ensure that electrical or mechanical services are not installed in positions that will reduce or impede access to them, for inspection and maintenance.

481 Heating and cooling coils

Provide CHW type cooling coils.

Manufacture CHW cooling/heating coil casings from EN 1.4301/7 stainless steel in accordance with BS EN 10088-1.

Design AHUs with a maximum coil face velocity of 2 m/s.

Provide bare run-around or pre-heater (frost) coils, if specified in schedule Y40 or the other the ventilation system drawings, specification sections and schedules.

482 Droplet eliminators

Ensure that droplet eliminators comply with the requirements of BS EN 13053.

Install droplet eliminators downstream of humidifiers (if fitted) and cooling coils, to prevent droplet carry-over to the airstream.

Arrange droplet eliminators to discharge into condensate drip trays and position them to facilitate their easy removal for cleaning.

Provide droplet eliminators downstream of cooling coils, either in the form of an extension of the coil fins, or as separate devices.

Ensure that separate droplet eliminators, when fitted, are removable to permit cleaning of the cooling coil face.

Ensure that maintenance and inspection doors or lift-off panels are provided downstream of every droplet eliminator, in accordance with clause 4.2 in BS EN 12097.

Ensure that droplet eliminators are specifically warranted for the required performance and able to meet that irrespective of the design conditions specified.

Compliance with the above sub-clause is a mandatory condition and failure to comply will result in responsibility for all remedial work and consequential costs.

483 Condensate drip trays

Manufacture condensate drip trays from EN 1.4301/7 stainless steel in accordance with BS EN 10088-1.

RHSCYP+DCN**AIR HANDLING UNIT SPECIFICATION**

Y40 AIR HANDLING UNITS**484 Filters**

Design AHUs with a maximum filter face velocity of 2 m/s.

Provide filter bags and/or panels with non-combustible frames in accordance with BS EN ISO 1182.

485 Access Doors / Panels

Access doors to be installed on both sides of all coils and heat recovery devices on the upstream side of all filters as SHTM 03/01.

All doors and access panels will have 2 stage latches. Manufacturer will provide a sample of door handles prior to purchase for approval.

END OF SECTION Y40

RHCYP+DCN**AIR HANDLING UNIT SPECIFICATION**

Y41 FANS**CONTENTS**

100	REFERENCE DOCUMENTS
200	FANS GENERAL AND FAN SELECTION
210	General
220	Fan selection
300	PRODUCTS AND MATERIALS
310	General
320	Plug fans (centrifugal fans without scrolls)
330	Motor Drives
331	General
332	Variable speed motor drives
400	COMMISSIONING
500	INSTALLER'S SUBMITTALS

RHCYP+DCN

AIR HANDLING UNIT SPECIFICATION

Y41 FANS

100 REFERENCE DOCUMENTS

This specification is written based on legislation, standards and guidance in force in the UK generally, and within England by default. For projects in Scotland, Wales, Northern Ireland, the Channel Islands and the Isle of Man, give appropriate consideration to any locally applicable legislation, standards and guidance that deviates from or is additional to those in force within England. Similarly for projects outside the UK comply with the corresponding national legislation, standards and guidance.

Comply fully with the edition (including amendments, replacements and associated normative references) of each of the following, current at the time of tender.

Where a standard referred to in this section conflicts with a standard referred to in an associated engineering system section (eg S10, T31, V21, etc) of this specification, the standard referred to in the engineering system section prevails.

Commission Regulation (EC) No 640/2009 Ecodesign requirements for electric motors

BS 848-9 (ISO 13348) Fans for general purposes. Tolerances, methods of conversion and technical data presentation

BS EN 50160 Voltage characteristic of electricity supplied by public electricity networks

BS EN 60034-1 Rotating electrical machines. Rating and performance

BS EN 60034-30-1 Rotating electrical machines. Efficiency classes of line operated AC motors (IE code)

BS EN 60085 Electrical insulation. Thermal evaluation and designation

BS EN 60204-1 Safety of machinery. Electrical equipment of machines. General requirements

BS EN 60204-11 Safety of machinery. Electrical equipment of machines. Requirements for HV equipment for voltages above 1000 V a.c. or 1500 V d.c. and not exceeding 36 kV

SHTM 03-01 Part A Design and Validation

SHTM 00 Policies and principles of healthcare engineering

SHTM 06-01 Electrical services supply and distribution

SHPN 04-01 Supplement 1

200 FANS GENERAL AND FAN SELECTION

210 General

Select, if possible, a single common fan manufacturer to provide all fans for the entire mechanical engineering services installation.

Select fans that meet the requirements of this specification, the Fan Schedule(s) and Air Handling Unit Schedule(s) as appropriate. Wherever possible select fans and their motor drives for maximum wire-to-air efficiency. Ensure that every fan is suitable to handle the duty and the range of air temperatures specified in the equipment schedules and is resistant to erosion, corrosion or attack from the air being conveyed.

Obtain the selected fan manufacturer's confirmation that the fans finally selected are suitable for the duty and other details specified.

Provide complete fan and motor assemblies that are efficient, mechanically balanced, quiet, and smooth running.

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y41 FANS

Mount fans and motor drives according to the fan manufacturer's written installation instructions.

For belt-driven fans tailor the fan impeller speed to the required design duty but ensure that the motor has sufficient capacity to provide the capability duty specified in the fan/air-handling unit schedule when the belt drive is altered. Allow for changing belts and pulleys on each pump once, as directed by the Contract Administrator, during commissioning.

For direct-driven fans tailor the fan impeller speed to the required design duty but ensure that the motor has sufficient capacity to provide the capability duty specified in the fan/air-handling unit schedule when the fan impeller speed is altered.

Check that the electrical power circuit supplying each fan is appropriately configured and of adequate capacity for the fan and its motor drive installed; report to the Contract Administrator any fan for which this requirement is not met.

Ensure that fans used for environmental control systems using a motor rated above 1100 W are fitted with or controlled by an appropriate variable speed controller.

Where the weight of an item of equipment exceeds 20 kg include a suitable lifting ring, lug or other device to aid transportation.

Provide an arrow showing the direction of rotation on the fan casing.

Give preference to fans that exhibit design features that allow for ease of maintenance and easy replacement of components liable to wear.

Ensure motors are suitable for operating at the voltages and frequency specified in the electrical services section of the specification. Ensure connection boxes on motors are easily accessible.

Provide each fan, motor and, where applicable, inverter drive as a package from one supplier.

220 Fan selection

Size fans, motors, drive systems and variable speed drives adequately to:

- ~ achieve the capability duty specified, including an additional 6% to accommodate for ductwork leakage and 25% spare capacity for the main AHU's
- ~ achieve the capability duty specified, including an additional 6% to accommodate for ductwork leakage and 10% spare capacity for the isolation room supply AHUs

Provide the fan manufacturer with full details of each system, including drawings, to ensure that the manufacturer is aware of the system configuration and the fan inlet and outlet conditions. Select the correct fans to meet the specified performance requirements, in particular:

- ~ ensure fan rating is sufficient for operation with dirty filters
- ~ do not select fans on a flat head part of the curve
- ~ select the static head at no flow (closed damper) to be at least 20% greater than that at design condition
- ~ ensure that no part of the fan curve has a negative gradient within the operating range

Select fans for constant air volume applications with maximum efficiency at the system design flow rate.

Select fans for variable air volume applications with maximum efficiency at maximum system design flow rate. If the fan selected does not fall within the manufacturer's recommended range at minimum fan speed and resulting system resistance, then choose the nearest fan size to satisfy this requirement.

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y41 FANS

Select fans to be non-overloading, except when motor drives with load-limiting logic are fitted.

Provide details of the minimum running speed for each fan as installed.

300 PRODUCTS AND MATERIALS
310 General

Ensure all the materials of construction are as specified in the fan schedules. Use industry standard materials if there is no indication in the fan schedules.

320 Plug fans (centrifugal fans without scrolls)

Provide duct or air handling unit mounted plug fans, as shown on the drawings.

Use backward curved non-overloading aerofoil type impellers, unless indicated otherwise.

Provide each fan with a perforated supply or extract diffuser (whichever is appropriate) manufactured from powder coated aluminium alloy, unless indicated otherwise.

Construct the inlet cone and end panel from deep drawn galvanized steel.

Construct impellers of sheet steel welded and painted with epoxy powder paint; and an impeller shaft and centre hub made from aluminium, welded steel, or cast iron.

Construct the motor base from galvanized sheet steel, or welded sheet steel painted with epoxy powder paint.

330 Motor Drives
331 General

Install test and commission motor drives in accordance with section Y92 of this specification, with starters and controllers in accordance with section Y72.

Fit motors certified by their supplier to be suitable for the duty specified and for the environmental conditions in which they are required to operate. For duty inside buildings or where otherwise shielded from an external environment, fit motors protected to IP55. For outside applications, fit motors protected to IP56.

Where a choice of motor speed is available, provide 1450 rpm motors for fixed speed fans, and provide 2900 rpm motors for variable speed fans. Give particular attention to airborne noise if using 2-pole (2900 rpm) motors.

Where belt drives are required fit raw edge, moulded notch V-belt drives. Select pulleys to run the fan at the appropriate speed to suit the duty required with the motor running at its nameplate rated speed. Select, install and adjust belt drives according to the belt manufacturer's instructions.

Wherever a belt driven fan has a variable frequency inverter, select the drive pulley ratio such that the fan is operating at maximum efficiency at its design output with the motor operating at its rated speed.

EC motor will have thermal overload protection built in to the motor electronics. The electronics temperature will be readable from the fans MODBUS connection.

332 Variable speed motor drives

Ensure that each variable frequency inverter drive is mounted in an enclosure protected to IP55.

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y41 FANS

For every inverter and motor combination, obtain the motor and inverter manufacturer's written certification that the combination will operate safely under the required load conditions and in the plant room environment specified.

Install each inverter, its connections and controls fully in accordance with the inverter manufacturer's written installation instructions.

Do not commission inverters to operate at a frequency greater than 50 Hz unless both the fan manufacturer and the motor manufacturer confirm it is acceptable to do so. In addition, do not commission inverters to operate at a frequency greater than 60 Hz without written agreement from the Contract Administrator.

400 COMMISSIONING

Commission all fans in accordance with specification section Y51. Ensure that all inverters and their controls are adjusted and commissioned by the inverter manufacturer in conjunction with the commissioning engineer responsible for commissioning the system served by the fan.

Where inverter or other variable speed drives are fitted, ensure that the specified minimum and maximum speeds are set.

Where inverters or other variable speed drives are fitted and where they are specified to communicate on a network with the BMS, demonstrate that all parameters are being appropriately received by the BMS.

Demonstrate that under manual operation, the speed of the drive can be controlled.

Where drives are specified to operate at a fixed speed, record in the commissioning documentation the actual set-point and power consumption

500 INSTALLER'S SUBMITTALS

Provide the following information for each fan, as applicable:

- ~ duty
- ~ head
- ~ efficiency
- ~ sound power spectrum data
- ~ motor speed
- ~ performance curves

Provide a copy of the manufacturer's fan curve for each fan, with the design, capability, installer's selection and commissioned duties marked on.

Provide the following information for each fan and each variable frequency inverter and/or motor drive installed, as applicable:

- ~ dimensioned drawings
- ~ full technical specification confirming: materials, dimensions, weights, motor rating and absorbed power, current (running and starting), fans speed at operating point and at capability duty, noise rating and sound power spectrum
- ~ power wiring and control wiring connection details

RHCYP+DCN

AIR HANDLING UNIT SPECIFICATION

Y41 FANS

- ~ fan motor operating frequency
- ~ warranty certificate

END OF SECTION Y41

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION
Y42 AIR FILTRATION
Audit sheet

Rev.	Description	Prepared by	Reviewed by	Authorised by	Date
P1	Initial issue	SV	PRW	PRW	03.02.20
T1	NHS comments incorporated	JN	SV	PRW	20.03.20

RHCYP+DCN**AIR HANDLING UNIT SPECIFICATION**

Y42 AIR FILTRATION**CONTENTS**

100	REFERENCE DOCUMENTS
200	GENERAL
210	General
220	Filter selection
300	PRODUCTS/MATERIALS
310	General
400	ACCESSORIES
410	Filter manometers
420	Filter bank monitoring
430	Frames and filter housing
440	Filter access
450	Clean filters
460	Spare filters
500	COMMISSIONING
510	General
520	High efficiency filters – local penetration verification
530	EPA, HEPA and ULPA filter testing to BS EN 1822
600	INSTALLER'S SUBMITTALS

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y42 AIR FILTRATION
100 REFERENCE DOCUMENTS

This specification is written based on legislation, standards and guidance in force in the UK generally, and within England by default. For projects in Scotland, Wales, Northern Ireland, the Channel Islands and the Isle of Man, give appropriate consideration to any locally applicable legislation, standards and guidance that deviates from or is additional to those in force within England. Similarly for projects outside the UK comply with the corresponding national legislation, standards and guidance.

Comply fully with the edition (including amendments, replacements and associated normative references) of each of the following, current at the time of tender:

Where a standard referred to in this section conflicts with a standard referred to in an associated 'engineering system' section (eg S10, T31, V21, etc) of this specification, the standard referred to in the engineering system section prevails.

Air Quality Standards Regulations 2010

Classification, Labelling And Packaging Regulations

BS 3928	Method for sodium flame test for air filters (other than for air supply to I.C. engines and compressors) (HEPA filter test)
BS EN 1822	High efficiency air filters (EPA, HEPA and ULPA)
BS EN 1886	Ventilation for buildings. Air handling units. Mechanical performance
BS EN 12469	Biotechnology. Performance criteria for microbiological safety cabinets
BS EN 13053	Ventilation for buildings. Air handling units. Rating and performance for units, components and sections
BS EN 16798-3	Energy performance of buildings. Ventilation for buildings. For non-residential buildings. Performance requirements for ventilation and room conditioning systems (Modules M5-1, M5-4)
BS EN ISO 16890-1	Air filters for general ventilation. Part 1. Technical specifications, requirements and efficiency classification system based upon Particulate Matter (PM)
BS EN ISO 29462	Field testing of general ventilation filtration devices and systems for in situ removal efficiency by particle size and resistance to airflow
ISO 29463-1	High-efficiency filters and filter media for removing particles in air Part 1: Classification, performance testing and marking
ISO 29463-4	High-efficiency filters and filter media for removing particles in air Part 4: Test method for determining leakage of filter elements-Scan method
ISO 29463-5	High-efficiency filters and filter media for removing particles in air Part 5: Test method for filter elements
DIN 1946	Ventilation and air conditioning
DD ISO/TS 21220	Particulate air filters for general ventilation. Determination of filtration performance
DEO Specification 037	Air conditioning, air cooling and mechanical ventilation for buildings
SHTM 03-01 Part A	Specialised ventilation for healthcare premises - design and validation
SHTM 03-01 Part B	Specialised ventilation for healthcare premises - operational management and performance verification
SHTM 00	Policies and principles of healthcare engineering
SHTM 06-01	Electrical services supply and distribution

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y42 AIR FILTRATION

SHPN 04-01 Supplement 1

200 GENERAL
210 General

Unless stated otherwise in the mechanical ventilation equipment or filter schedule(s), or in the relevant engineering 'system' specification section, provide filters of the minimum grades specified in this specification section.

Ensure that every filter is suitable for the full range of air flow rate specified for each system/application, and that it will not collapse at any (including the lowest) specified air flow rate.

Ensure that filters are installed where the relative humidity of the airstream is below 80%.

Do not install filters immediately after a fan outlet, or in places where the air flow distribution over the cross-section of the airstream is not uniform.

Provide each filter assembly with an easy means of withdrawing and clamping the filter media in place, and ensure that all filters can be accessed for maintenance purposes.

Filters must be installed with bags or pleats mounted vertically.

220 Filter selection

Where the mechanical ventilation equipment or filter schedule(s), or the relevant engineering 'system' specification section are silent on performance requirements for filters, select the minimum standard of air filtration in accordance with BS EN 16798-3. As a minimum, assume outdoor air quality ODA 1 and achieve supply air qualities of:

- ~ SUP 1 (very low concentration) for systems with high hygienic demands; such as hospitals
- ~ SUP 2 (low-concentration) for systems serving permanently occupied areas; such as workspaces
- ~ SUP 3 (medium-concentration) for systems serving intermittently occupied areas; such as toilet facilities, welfare facilities, reception and circulation areas, etc.
- ~ SUP 4 (high-concentration) for systems serving other areas; such as plant rooms

In addition, and as a minimum, select a filter grade of ISO Coarse 90% to BS EN ISO 16890:

- ~ as a pre-filter to extend the operating life of a fine-grade main filter
- ~ to protect ventilation equipment where no other filter is installed
- ~ in the return airstream onto a heat recovery device

Select the minimum filter grade required to provide the level of particle removal required, at the lowest pressure drop.

300 PRODUCTS/MATERIALS
310 General

Do not use filters containing machine-made mineral fibres where their use is prohibited in specification section A33. Where not so prohibited, do not use filters containing machine-made mineral fibres unless the manufacturer confirms that they meet the criteria to be classified as non-carcinogenic under The Classification, Labelling And Packaging Regulations.

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y42 AIR FILTRATION

Supply Eurovent Certified filters, of the type and class specified, that comply with the test requirements of BS EN ISO 16890 or BS EN 1822 as appropriate, and install them in the locations indicated on the drawings.

Ensure that filters are manufactured with filter media that does not shed fibres with a diameter of 3 µm or less, and a length longer than 5 µm in quantities that may pose a health risk to humans through inhalation.

Provide each filter assembly with all associated components necessary to ensure an easy means of withdrawing and securing each individual filter.

400 ACCESSORIES
410 Filter manometers

Unless stated otherwise in the AHU or filter schedule(s), install a differential pressure gauge of the magnetic-coupling type across each filter bank, with the range at least 20% greater than the anticipated 'filter dirty' pressure drop, to monitor the pressure drop, and to ascertain when filters need changing.

Secure each pressure gauge to a suitable backing frame. Ensure that the scale of each gauge is graduated in Pascals to provide a working range of at least one third of the full scale deflection. Clearly mark the "clean to dirty" range on the scale ensuring that the dirty mark is between 2 times to 2.5 times the clean pressure drop. Fit a label at each pressure gauge location identifying the system which it serves and the maximum operating pressure drop of the associated filter.

Position each pressure gauge to provide an easy visual check of the filter condition. Install flexible tubing from the suction and discharge ports of each pressure gauge connected to the upstream and downstream pressure tappings on the filter bank.

420 Filter bank monitoring

Monitor each filter bank, via the BMS, using a differential pressure sensor.

430 Frames and filter housing

Mount all filters in galvanized steel or aluminium housings with baffle plates to prevent unfiltered bypass. Ensure that the mounting frames allow the air flow to push the filter into its housing to help minimise air bypass.

Use a side-withdrawal arrangement only for filters of ISO Coarse class.

For all other filters classes, use a front-withdrawal arrangement with filters held to the housing frame using a clamping device that exerts pressure on a seamless, poured-into-place neoprene or silicone gasket seal.

Ensure that seals do not absorb any moisture and will not form a nutrient substrate for micro-organisms.

Do not use adhesive tape to seal filters and filter frames.

Ensure every filter case meets the acoustic capabilities required under BS EN 1886 and BS EN 13053.

For high efficiency (EPA/HEPA/ULPA) filters, agree with the Contract Administrator, the access requirements, filter frame and withdrawal methods prior to ordering such equipment.

440 Filter access

Provide a hinged access door, dimensioned 150 mm larger than the largest size of filter installed, and ensure that all filters can be safely accessed for replacement from this door.

RHCYP+DCN

AIR HANDLING UNIT SPECIFICATION

Y42 AIR FILTRATION

Incorporate a double-glazed viewing port of minimum diameter 150 mm into the access door to enable inspection of the upstream side of the filter bank.

Ensure that the door(s) opens against the normal operating air pressure inside the access chamber, and that the door is mounted on floating hinges.

Provide suitable labelling on or in proximity to the filter access door indicating the filter type and grade, and, where relevant, depth or length of replacement filter required.

450 Clean filters

Where stated in the mechanical ventilation equipment or filter schedule(s), ensure that all filters in each stage of filtration are new at practical completion.

Subject to agreement by the Contract Administrator, and as an alternative to replacing only lightly-loaded filters with new filters at practical completion, evidence a 'clean' condition for particulate filters by proving that the pressure drop across all filters in the filtration stage is no greater than 5% above the manufacturer's stated initial pressure drop for the filter as assessed at the prevailing design air flow rate.

460 Spare filters

Where stated in the mechanical ventilation equipment or filter schedule(s), supply a set of new, properly packaged, spare filters, of the correct specification and in the required numbers for complete replacement of all filters in that stage of filtration. Label the packaging of filters to identify their intended location(s). Hand them over, in advance of practical completion, in accordance with the requirements of the Contract Administrator.

500 COMMISSIONING

510 General

Do not operate air systems without having filters fitted in all appropriate locations in the outdoor air intake and extract/recirculation airstreams.

Commissioning air systems with new filters fitted in each stage of filtration.

520 High efficiency filters – local penetration verification

For filters in the classification H13 and H14, verify the local penetration with the visual oil-smoke oil thread test.

For filters in the classification U17, ensure that local penetration does not exceed 20 times the overall penetration value.

530 EPA, HEPA and ULPA filter testing to BS EN 1822

For EPA, HEPA and ULPA filters, engage a specialist to test the filters in accordance with the requirements of BS EN 1822.

600 INSTALLER'S SUBMITTALS

Provide performance data for each filter type proposed and copies of the filter type test certificates detailing both initial and discharged performance.

Provide on handover maintenance and inspection instructions, including advice of when filters must be replaced, either when the pressure loss reaches the specified final pressure loss, or when the following hygiene interval is reached (if this occurs earlier):

~ one year (2000 hours) for first-stage filters

RHCYP+DCN**AIR HANDLING UNIT SPECIFICATION**

Y42 AIR FILTRATION

- ~ two years (4000 hours) for second- and third-stage filters

Record and submit a report of the test results along with a statement of compliance or non-compliance, with the specified designation of air cleanliness by particle concentration. Ensure that the report will include:

- ~ name and address of the testing organisation
- ~ date of test
- ~ ID of location of the cleanroom or zone tested and sampling locations
- ~ specified designation criteria for the zone, including ISO class number, occupancy and particle size
- ~ relevant standards the filters are tested against
- ~ details of the test method and equipment calibration certificates
- ~ test results

END OF SECTION Y42

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION
Y43 AIR HEATING AND COOLING COILS

Audit sheet

Rev.	Description	Prepared by	Reviewed by	Authorised by	Date
P1	Initial issue	SV	PRW	PRW	03.02.20
T1	NHS comments incorporated	JN	SV	PRW	20.03.20

RHCYP+DCN**AIR HANDLING UNIT SPECIFICATION**

Y43 AIR HEATING AND COOLING COILS**CONTENTS**

100	REFERENCE DOCUMENTS
200	GENERAL
300	PRODUCTS AND MATERIALS
310	Coil casings
320	Water and water/glycol heating air coils
330	Water/glycol (chilled water) cooling coils
340	Condensate drip trays
350	Condensate drainage system
351	Condensate pumped drainage system
352	Condensate gravity drainage system
400	COMMISSIONING AND TESTING
410	General

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y43 AIR HEATING AND COOLING COILS
100 REFERENCE DOCUMENTS

This specification is written based on legislation, standards and guidance in force in the UK generally, and within England by default. For projects in Scotland, Wales, Northern Ireland, the Channel Islands and the Isle of Man, give appropriate consideration to any locally applicable legislation, standards and guidance that deviates from or is additional to those in force within England. Similarly for projects outside the UK comply with the corresponding national legislation, standards and guidance.

Comply fully with the edition (including amendments, replacements and associated normative references) of each of the following, current at the time of tender.

When a standard referred to in this section conflicts with a standard referred to in an associated engineering system section (eg S10, T31, U60, V21, etc) of this specification, the standard referred to in the engineering system section prevails.

BS 476-6	Fire tests on building materials and structures. Method of test for fire propagation for products
BS 476-7	Fire tests on building materials and structures. Method of test to determine the classification of the surface spread of flame of products
BS 5141-1	Specification for air heating and cooling coils. Method of testing for rating of cooling coils
BS 5141-2	Specification for air heating and cooling coils. Method of testing for rating of heating coils
BS 5970	Code of practice for thermal insulation of pipework and equipment in the temperature range of -100°C to +870°C
BS 7351	Specification for metal-sheathed heating elements for industrial use
BS 7671	Requirements for electrical installations. IET Wiring Regulations
BS EN 378	Refrigerating systems and heat pumps – Safety and environmental requirements
BS EN 1057	Copper and copper alloys. Seamless, round tubes for water and gas in sanitary and heating applications
BS EN 1092-3	Flanges and their joints. Circular flanges for pipes, valves, fittings and accessories, PN designated. Part 3 Copper alloy flanges
BS EN 1216	Heat exchangers - Forced circulation air-cooling and air-heating coils - Test procedures for establishing the performance
BS EN 10088-1	Stainless steels. List of stainless steels
BS EN 10143	Continuously hot-dip coated steel sheet and strip. Tolerances on dimensions and shape
BS EN 10226-1	Pipe threads where pressure tight joints are made on the threads. Taper external threads and parallel internal threads. Dimensions, tolerances and designation
BS EN 12097	Ventilation for buildings. Requirements for ductwork components to facilitate maintenance of ductwork systems
BS EN 12451	Copper and copper alloys. Seamless, round tubes for heat exchangers
BS EN 12735-1	Copper and copper alloys. Seamless, round copper tubes for air conditioning and refrigeration. Tubes for piping systems
BS EN 12735-2	Copper and copper alloys. Seamless, round copper tubes for air conditioning and refrigeration. Tubes for equipment

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y43 AIR HEATING AND COOLING COILS

BS EN 13076	Devices to prevent pollution by backflow of potable water. Unrestricted air gap. Family A. Type A
BS EN 13823	Reaction to fire tests for building products. Building products excluding floorings exposed to thermal attack by a single burning item
BS EN 14324	Brazing. Guidance on the application of brazed joints
BESA DW/144	Specification for sheet metal ductwork
CIBSE Guide A	Environmental design
CIBSE Guide B3	Refrigeration and air conditioning
CIBSE TM13	Minimising the risk of legionnaires disease
HSE ACOP L8	Legionnaires' disease. The control of legionella bacteria in water systems. Approved code of practice and guidance
HSG 274	Legionnaires' disease: Technical guidance Part 2: The control of legionella bacteria in hot and cold water systems
SHTM 03-01 Part A	Specialised ventilation for healthcare premises – design and validation
SHTM 03-01 Part B	Specialised ventilation for healthcare premises – operational management and performance verification
SHTM 04-01	Water safety for healthcare premises – Part A: Design, installation and testing
SHTM 00	Policies and principles of healthcare engineering
SHTM 06-01	Electrical services supply and distribution
SHPN 04-01	Supplement 1

200 GENERAL

Provide duct-mounted and air handling unit-mounted heating and/or cooling coil assemblies in accordance with the drawings, the heating and cooling coil schedules, the appropriate engineering system sections (for example U10, T50, U60, V21, etc) of this specification and the appropriate clauses within this section.

Ensure that, whenever practicable, the coil fin types provided are consistent with those supplied for the remainder of the project.

Ensure that all clauses specific to healthcare are complied with on projects where HTM 03-01 applies, unless a derogation that has been agreed with the client, applies to the clause.

Ensure that all the components of every air heating or cooling coil, including its rows of tubing, bends, headers, fins, pan, baffle plate and casing; and, for every electric air heater, its electric elements, wiring, terminals and accessories; are each factory-assembled and tested by a manufacturer specialising in this type of work.

Ensure that all coils having steam, water or water/glycol mixtures for their primary medium, are rated in accordance with BS 5141-1 or BS 5141-2, whichever is appropriate, and are performance tested in accordance with BS EN 1216.

Ensure that the resistance to primary water flow of each air heating coil does not exceed 10 kPa and the resistance to primary water flow of each air cooling coil does not exceed 20 kPa.

Ensure that fin spacings ≤ 150 fins/m are provided in unfiltered inlet air streams and ≤ 300 fins/m are provided in unfiltered outlet airstreams.

RHCYP+DCN

AIR HANDLING UNIT SPECIFICATION

Y43 AIR HEATING AND COOLING COILS

Provide bare frost coils in healthcare applications (mandatory requirement for healthcare applications).

Make pipe connections ≤ 50 mm diameter screwed or flanged.

Make pipe connections ≥ 65 mm diameter flanged.

Ensure that the threads of screwed pipe connections are in accordance with BS EN 10226-1 and flanged pipe connections are in accordance with BS EN 1092-3.

Select coils suitable for the final installed orientation (horizontal or vertical) of the duct as indicated on the drawings or schedules and in accordance with the criteria listed in Table 1. Do not exceed the "typical air pressure drop" unless agreed by the engineer. Select coils as close as possible to the "optimum tube velocity" and do not exceed the maximum value.

Ensure that the casing of every heating or cooling coil is sufficiently rigid and has flanges of the correct size, whose hole sizes and spacings match those of the ducting or plant chamber to which they are to be connected.

Install heating and cooling coils in accordance with the manufacturer's written installation instructions.

Support the coil casings and the adjacent ductwork independently, so that the coil casings can be removed and refitted without disturbing the ductwork.

Coil type	Face air velocity (m/s)	Typical air pressure drop per coil (Pa)	Maximum air pressure drop per coil (Pa)	Optimum tube velocity (m/s)	Maximum tube velocity (m/s)
Steam	1 to 6 (1 to 2 healthcare)	125	250	N/A	N/A
Hot Water (HW) > 60°C				0.6 to 1	1
Hot Water (HW) < 60°C				0.6 to 1.5	1.5
Run-around coil	1.5 to 3	125	250	1 to 2	2.4
Cold water	1 to 2.3 (1 to 2 healthcare)				
CHilled Water (CHW)					
Direct eXpansion (DX) refrigeration				N/A	N/A

Table 1 Selection criteria

300 PRODUCTS AND MATERIALS

310 Coil casings

Provide a heavy gauge coil casing (duct) made from, as indicated in the schedules or system specification:

- ~ galvanised steel in accordance with BESA DW/144 and BS EN 10143, or

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y43 AIR HEATING AND COOLING COILS

- ~ EN 1.4301/7 stainless steel in accordance with BESA DW/144 and BS EN 10088-1 (mandatory requirement for healthcare applications) or
- ~ stove enamelled heavy gauge mild sheet steel (as an alternative for some electric heating elements)

Provide suitably sized and positioned access panels or doors, in accordance with BESA DW/144, in the duct upstream and downstream of the air heating and cooling coils to enable safe access for cleaning of coils and condensate drip trays and access for the face and bypass damper.

Note: In order for a material to achieve a class 0 fire rating, it must achieve a class 1 fire rating from BS 476-7 and achieve a fire propagation index, $I < 12$ and $i_1 < 6$ from BS 476-6.

Install class 0 fire-rated neoprene or foam rubber gaskets in access panels or doors.

Line casings and access panels or doors, and condensate drip tray, wherever necessary to prevent heat loss and/or condensation and reduce noise, with dual function Chlorofluorocarbon (CFC) and HydroChloroFluoroCarbon (HCFC) free thermal and acoustic insulation. Ensure that the insulation is class 0 fire rated.

Mount the heating and/or cooling coils in the duct to make a rigid assembly.

Provide all mechanical fasteners, such as bolts, nuts, setscrews and washers manufactured from stainless steel or galvanised steel, whichever is appropriate for the overall assembly.

Seal all joints in the casings to make them airtight.

Treat any internal and external casing support, suspension and reinforcement members made from untreated steel to prevent corrosion.

Install heaters, coolers and duct assemblies in the positions and orientations indicated on the drawings.

320 Water and water/glycol heating air coils

Construct hot water coils from seamless copper tube to BS EN 12451 with fins made from one of the materials listed following, as indicated in the schedules or system specification:

- ~ aluminium
- ~ polyester-coated aluminium
- ~ copper
- ~ tinned copper

Provide tubular copper or bronze headers, brazed, in accordance with BS EN 14324, into the tube ends.

Design coil supports to allow for thermal expansion and contraction of the tubes.

Provide flow and return connections on the same side except when indicated otherwise on the drawings or heating coil schedules. When coils are wider than 1m and where indicated on the drawings, split them to permit withdrawal from both sides.

Provide a heavy gauge coil casing (duct) made from, as indicated in the schedules or system specification:

- ~ galvanised steel in accordance with BESA DW/144 and BS EN 10143, or
- ~ EN 1.4301/7 stainless steel in accordance with BESA DW/144 and BS EN 10088-1 (mandatory requirement for healthcare applications)

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y43 AIR HEATING AND COOLING COILS

Provide boxed ends, made from the same material as the coil casing, to enclose headers and return bends to minimise air leakage.

Attach the coil casing to the coils to make a rigid assembly.

Provide manually-operated air vent and drain connections on each coil.

Factory strength pressure-test and tightness-test coils in accordance with BS EN 378-2.

330 Water/glycol (chilled water) cooling coils

Construct water/glycol (ethylene glycol/propylene glycol) coils from seamless copper tube to BS EN 12451 with fins made from one of the materials listed following, as indicated in the schedules or system specification:

- ~ polyester-coated aluminium
- ~ copper
- ~ tinned copper

Provide tubular copper or bronze headers, brazed, in accordance with BS EN 14324, into the tube ends.

Design coil supports to allow for thermal expansion and contraction of the tubes.

Provide flow and return connections on the same side except when indicated otherwise on the drawings or cooling coil schedules.

Provide coils that are designed to avoid moisture carry-over into the air stream, thus avoiding the use of downstream eliminator blades.

Install a condensate drip tray in accordance with requirements of clause 340.

Install a pumped condensate drainage system in accordance with the requirements of clause 351 when indicated on the drawings or in the system specification.

Install a gravity condensate drainage system in accordance with the requirements of clause 352 when indicated on the drawings or in the system specification.

When coils are greater than 1m high, provide intermediate drain trays. When coils are wider than 1m and where indicated on the drawings, split them to permit withdrawal from both sides.

Provide a heavy gauge coil casing (duct) made from either, as indicated in the schedules or system specification:

- ~ galvanised sheet steel in accordance with BESA DW/144 and BS EN 10143, or
- ~ EN1.4301/7 stainless steel in accordance with BESA DW/144 and BS EN 10088-1

Provide boxed ends, made from the same material as the coil casing, to enclose headers and return bends to minimise air leakage.

Attach the coil casing to the coils to make a rigid assembly.

Provide manually-operated air vent and drain connections on each coil.

Factory pressure-test coils to 1.5 x MOP.

Note: The MOP is the maximum system pressure under fault conditions (set-point of the pressure relief safety valves).

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y43 AIR HEATING AND COOLING COILS
340 Condensate drip trays

Mount condensate drip trays beneath chilled water cooling coils, direct expansion evaporators, run-around coil outlet coils, and other coils where specified.

Manufacture condensate drip trays made from either, as indicated in the schedules or system specification:

- ~ 1.2 mm thick sheet steel welded or brazed at each corner and hot dipped galvanised
- ~ EN 1.4301/7 stainless steel in accordance with BS EN 10088-1 (mandatory requirement for healthcare applications)

Degrease the drip tray prior to installing class 0 fire-rated anti-condensation insulation, to all external surfaces of the drip tray.

Ensure that any jointing material used to seal the drip tray to the casing does not support microbial growth.

Ensure that the drip tray is not less than 15 mm deep and has a minimum fall of 1:20 to an integral condensate connection to prevent ponding.

Ensure that the drip tray is completely accessible for inspection and cleaning, or for smaller units, easily removable for inspection and cleaning.

Connect the drain system tubing, with an adequate diameter for the maximum potential flow to the condensate connection.

Condensate drainage will be by gravity.

All drip trays will be manufactured from stainless steel in both sections.

350 Condensate drainage system
351 Condensate pumped drainage system

Provide a factory-fitted condensate pumping system for the condensate drip trays, where indicated on the schedules or drawings, and provide the following major components:

- ~ a suitably-sized 240V AC condensate pump
- ~ electrical protection for the pump motor against thermal overload
- ~ a liquid sensing system and control system that provides step control for the pump
- ~ a high level alarm that closes the valve to the cooling (chilled) water coil or DX evaporator (whichever is appropriate) in the event of a high level alarm and also signals the BMS system

Refer to section R11 of the specification, as well as the clauses following, for information on condensate tubing systems.

Route individual condensate drain tubing from the drip tray to the packaged condensate pump collection chamber, then route the pump discharge to a common tundish connected to the foul drainage system through a waterless drain trap.

Provide sufficient air gap between the ends of the pump discharge tubing and the tundish to provide a type A air gap as defined in BS EN 13076.

Install 10 mm class 0 fire rated, closed cell, elastomeric, nitrile rubber foam insulation on the pump and tubing.

RHCYP+DCN**AIR HANDLING UNIT SPECIFICATION**

Y43 AIR HEATING AND COOLING COILS**352 Condensate gravity drainage system**

Provide a condensate gravity drainage system from each condensate drip tray, as described in specification section R11, including a suitably-sized water trap connected to the outlet from each drip tray, and condensate drain tubing as specified, routed to connect to the building's foul drainage system.

For healthcare applications comply with the enhanced requirements in specification section R11 and, in addition, install a viewing port and an IP55 internal light at the drip tray. Group all of the internal lights on a unit, so that they are operated by single light switch

400 COMMISSIONING AND TESTING**410 General**

Carry out testing and commissioning in accordance with specification sections Y51 and Y81, CIBSE commissioning Code R and the sub-clauses following:

- ~ Carry out and certify tests to verify the following in respect of ductwork installations and equipment:
 - ~ correct actuator or damper position
 - ~ correct operation of all refrigerant leakage / CHW leakage alarms
- ~ Carry out and certify tests to verify the following in respect of valve and pipework assemblies:
 - ~ manufacturer's pressure testing of the coil units during factory acceptance testing
 - ~ leak testing of the condensate drainage system
- ~ Carry out site acceptance testing (SAT) and commissioning of the coils in accordance with the equipment manufacturer's written instructions

END OF SECTION Y43

RHCYP+DCN**AIR HANDLING UNIT SPECIFICATION**

Y45 SILENCERS AND ACOUSTIC TREATMENT**CONTENTS**

100	REFERENCE DOCUMENTS
200	GENERAL
210	General requirements
220	Internal noise ratings
230	Typical design NR levels
300	PRODUCTS/MATERIALS
310	Attenuators
311	Rectangular absorptive acoustic attenuators
312	Cylindrical absorptive acoustic attenuators
313	Acoustic cross talk attenuators
320	Sound insulation
321	Acoustic duct lagging
400	ACOUSTIC COMMISSIONING TESTS
410	Summary
420	Specification for acoustic test equipment
430	Specification for off-site acoustic testing
440	Measurement of system's noise in internal areas

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y45 SILENCERS AND ACOUSTIC TREATMENT
100 REFERENCE DOCUMENTS

Comply fully with the edition (including replacements, amendments and normative references) of each of the following, current at the time of tender.

Where a standard referred to in this section conflicts with a standard referred to in an associated 'engineering system' section (eg S10, T31, V21, etc.) of this specification, the standard referred to in the engineering system section prevails.

BS 476-7	Method of test to determine the surface spread of flame
BS 4142	Rating industrial noise affecting mixed residential and industrial areas
BS 8233	Sound insulation and noise reduction for buildings
BS EN 61260	Specification for octave band and one-third octave band pass filters
BS EN 61672-1	Electroacoustics. Sound level meters. Specifications
BS EN ISO 354	Acoustics. Measurement of sound absorption in a reverberation room
BS EN ISO 7235	Acoustics. Laboratory measurement procedures for ducted silencers and air-terminal units. Insertion loss, flow noise and total pressure loss.
BS EN ISO 10140-2	Acoustics. Laboratory measurement of sound insulation of building elements. Measurement of airborne sound insulation
BCO Guide	Guide to specification
BE&S DW/144	Specification for sheet metal ductwork
Building Bulletin 93	Acoustic design of schools
CIBSE Guides	
HMCS	Court Standards and Design Guide
SHTM 08-01	Acoustics
SHTM 03-01	Part A Design and validation
SHTM 03-01	Part B Operational management and performance verification
SHTM 00	Policies and principles of healthcare engineering
SHTM 06-01	Electrical services supply and distribution
SHPN 04-01	Supplement 1

200 GENERAL
210 General requirements

Employ the services of a specialist manufacturer or acoustic consultant to provide the acoustic materials detailed herein.

Ensure that all noise and vibration levels specified for internal and external areas are not exceeded due to the operation of the engineering services installation. Give particular consideration to the following, as applicable:

- ~ Plant noise transmission to the conditioned space via the distribution ductwork
- ~ Plant noise breakout from ductwork distribution systems
- ~ Plant airborne noise transmission through the plant room structures
- ~ Plant structure borne noise and vibration transmission

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y45 SILENCERS AND ACOUSTIC TREATMENT

- ~ Plant noise transmission to exterior positions
- ~ Velocity generated noise within the ductwork distribution system
- ~ Noise from terminal fittings such as grilles, diffusers, etc
- ~ Noise and vibration transmission from fan-coil units
- ~ Acoustic crosstalk between separate areas
- ~ Maintaining sound insulation between rooms using crosstalk attenuation
- ~ Pipe borne noise
- ~ Noise from boilers and flues

Where noise and vibration control equipment is scheduled it is the minimum required to meet the specified noise and vibration levels and it will have been selected to suit the equipment on which the designs have been based. Irrespective of what has been drawn or scheduled, meet the acoustic requirements based on the final equipment selected. Provide details of the plant to be installed to the specialist manufacturer/acoustic consultant of acoustic products to ensure that the specified noise and vibration levels are achieved. Provide, at no extra cost to the Contract, sufficient noise and vibration control equipment to meet all specified noise and vibration criteria.

Provide a fully documented set of the specialist manufacturer's/acoustic consultants calculations to the Contract Administrator, with sufficient time for comment prior to ordering plant and noise and vibration control equipment, to demonstrate that the selected plant and the selected noise and vibration control equipment enable all specified noise and vibration criteria to be achieved.

Demonstrate all specified noise and vibration levels are satisfied. Carry out acoustic commissioning tests with all plant and machinery running normally and delivering the design conditions of ventilation, temperature and humidity. Measure internal noise levels in accordance with the procedures set out in clause 500. In the case of contractual deficiency, and if requested by the Contract Administrator, return at any time during the Contract to take additional readings at no additional cost to the Contract in order to demonstrate the satisfaction of all specified noise and vibration criteria.

220 Internal noise ratings

Ensure that noise levels produced within internal areas due to the operation of the engineering services installation are less than or equal to the specified noise ratings in the guidance documents listed in clause 100. Take due cognizance, where appropriate, for the overall noise target being a combination of noise ingress and services noise with an appropriate allowance in reduction of services noise intrusion to achieve the combined target internal noise level.

230 Typical design NR levels

Use the following general guidance only in the absence of other specific design criteria; the list is not exhaustive and should be used for initial reference only. Where a range of values are shown, use the lower value unless agreed with the Contract Administrator. Ensure that the noise from the engineering services is free from tonal content and operates without impulsivity; if this is not achievable then reduce the NR level targets by NR5 to account for this. The noise limits include both airborne and structure borne noise due to the operation of the engineering services.

Area/location	NR Index
~ Sound broadcasting (drama)	15
~ Sound broadcasting general, TV general	20
~ TV (audience studio)	25
~ Concert hall, theatre	20-25

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y45 SILENCERS AND ACOUSTIC TREATMENT

~ Lecture theatre, cinema	25-30
~ Operating theatres	40
~ Single-bed wards	30
~ Multi-bed wards	35
~ Restaurants	35-40
~ Retail store (main floor)	40-45
~ Open-plan offices	35-38
~ Cellular offices	35
~ Executive offices, small conference rooms	30-35
~ Boardroom, large conference room	25-30
~ Court room	25-30
~ Swimming pool, sports arena	40-50
~ Church	25-30
~ Classroom BB93	26 (32 dBA)
~ Lecture theatre (school) BB93	21 (27 dBA)
~ Laboratory, workshop	35-40
~ Corridor, gymnasium	35-45
~ Warehouse, garage	45-50
~ Workshop (light engineering)	45-55
~ Workshop (heavy engineering)	50-65
~ Bedroom	22-25
~ Living room	27-30

Ensure that noise levels produced at the boundary of the site by the engineering services installation do not exceed the environmental noise criteria specified by the Local Authority. If no criteria are available, then ensure that the rating level (L_{Ar}, Tr) of the plant installation does not exceed the lowest background noise level at any time at the most affected location.

300 PRODUCTS/MATERIALS
310 Attenuators
311 Rectangular absorptive acoustic attenuators

Supply and install rectangular absorptive acoustic attenuators where specified, and also wherever otherwise required, to achieve all specified noise criteria.

Use acoustic attenuators that are purpose built units constructed by the specialist manufacturer, so designed and installed in the ductwork that they maintain all acoustic criteria shown in this Specification, offer low resistance to airflow, have adequate strength and cohesion to resist erosion by airflow, and do not produce permit fibre migration.

RHCYP+DCN**AIR HANDLING UNIT SPECIFICATION**

Y45 SILENCERS AND ACOUSTIC TREATMENT

Provide the insertion losses expected from the attenuators for each of the 63 Hz to 8000 Hz octave frequency bands inclusive under the design operating conditions. Provide the flow noise expected by the attenuators for each of the 63 Hz to 8000 Hz octave frequency bands inclusive under the design operating conditions. Derive attenuator acoustic performance data from tests carried out in accordance with BS EN ISO 7235.

Provide the pressure losses expected from the installed attenuators at the design air volume flow rates in accordance with BS EN ISO 7235.

Provide attenuator outer casings constructed to comply with the relevant clauses of B&ES DW/144 "high velocity" ductwork, in accordance with the design operating pressures and velocities of the ductwork systems in which they are to be installed.

Use attenuator casings constructed from galvanized sheet steel with lock-formed and mastic sealed joints of sufficient rigidity to maintain integrity of the attenuator under all installed conditions. Use casing material of suitable gauge to control break in and break out noise. Use suitable flanges to maintain the integrity of the attenuator and achieve the required level of duct leakage. Use attenuators fitted with intermediate stiffeners, where required, to comply with the requirements of B&ES DW/144 and provide integrity to the casing.

Use aerodynamically shaped inlet sections of all baffle elements such that the specified pressure drops are minimized. Use baffle elements that are rigidly held in place within the attenuator casing, with half-width baffle elements fixed to each side wall of the attenuator. Normally, use baffle elements which are oriented vertically, parallel to the attenuator outer casing. However, where attenuators are located close to bends etc, ensure that the baffle elements are correctly orientated relative to the airflow. Where baffle elements are installed horizontally, use baffles which are suitably stiffened to prevent flexing and restriction of the airways under all conditions, including during the transit of the attenuators.

Use baffle elements containing sound absorbent material which is inert, non-flammable, non-hygroscopic and packed to a minimum density commensurate with the test data for the product. Use sound absorbent material faced with mineral fibre tissue, or equivalent, retained in position by perforated galvanized steel face sheets or flattened expanded galvanized Z5 steel to ensure that no egress of acoustic infill medium into the air stream will occur even under adverse airflow conditions. Use non-flammable adhesives and mastics. Ensure that all insulating materials and coverings are of non-combustible material covered with a material that complies with surface spread of flame requirements of BS 476 Part 7, Class 1. Ensure that all materials and coverings are to class 0 surface rating according to Building Regulations.

Install sound absorbent material so that exposed surfaces are bonded or covered to prevent erosion with air stream velocities of up to 25 metres per second. Draw to the Contract Administrator's attention any instance where the airway velocity in any installed attenuator is in excess of 10 metres per second.

If specified elsewhere, provide sound absorbent material which is hermetically sealed or faced, as required, with a "Melinex" or similar polyester wrapping to prevent erosion. Use perforated galvanized sheet metal or flattened expanded galvanized Z5 steel to protect the sealed fill.

Clearly mark the direction of airflow on the outer casing of each attenuator. Clearly mark each attenuator with a unit label which indicates the attenuator reference and location.

Block ends of silencers prior to deliver to site to prevent damage. Remove any damaged or soiled attenuators from the site and replace with factory new equipment at no additional cost to the contract. Site repairs are not acceptable.

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y45 SILENCERS AND ACOUSTIC TREATMENT
312 Cylindrical absorptive acoustic attenuators

Supply and install cylindrical absorptive acoustic attenuators where specified, and also wherever otherwise required, to achieve all specified noise criteria.

Use acoustic attenuators that are purpose built units constructed by the specialist manufacturer, so designed and installed in the ductwork that they maintain all acoustic criteria shown in this Specification, offer low resistance to airflow, have adequate strength and cohesion to resist erosion by airflow, and do not produce permit fibre migration.

Provide acoustic attenuators that are of the same internal diameter as the ductwork in which they are installed.

Provide the insertion losses expected from the attenuators in each of the 63 Hz to 8000 Hz octave frequency bands inclusive under the design operating conditions. Provide the flow noise expected by the attenuators for each of the 63 Hz to 8000 Hz octave frequency bands inclusive under the design operating conditions. Derive attenuator acoustic performance data from tests carried out in accordance with BS EN ISO 7235.

Provide the pressure losses expected from the installed attenuators at the design air volume flow rates in accordance with BS EN ISO 7235.

Use attenuator outer casings and pods, constructed to comply with the relevant clauses of B&ES DW/144 "high velocity" ductwork, in accordance with the design operating pressures and velocities of the ductwork systems in which they are to be installed.

Use attenuator casings constructed from galvanized sheet steel with lock-formed and mastic sealed joints of sufficient rigidity to maintain integrity of the attenuator under all installed conditions. Use casing material of suitable gauge to control break in and break out noise. Use suitable flanges to maintain the integrity of the attenuator and achieve the required level of duct leakage. Use attenuators fitted with intermediate stiffeners, where required, to comply with the requirements of B&ES DW/144 and provide integrity to the casing.

Use inlet sections of central pods which are aerodynamically shaped such that the specified pressure drops are minimized.

Use sound absorbent infill material used for central pods and side linings which is inert, non-flammable, non-hygroscopic and packed to a minimum density commensurate with the tested data for the product. Take particular care to avoid slumping of the linings within circular attenuators. Use sound absorbent material faced with mineral fibre tissue, or equivalent, retained in position by perforated galvanized steel face sheets or flattened expanded galvanized Z5 steel to ensure that no egress of acoustic infill medium into the air stream will occur even under adverse airflow conditions. Use non-flammable adhesives and mastics. Ensure that all insulating materials and coverings are of non-combustible material covered with a material that complies with surface spread of flame requirements of BS 476 Part 7, Class 1. Ensure that all materials and coverings are to class 0 surface rating according to Building Regulations.

Install sound absorbent material so that exposed surfaces are bonded or covered to prevent erosion with air stream velocities of up to 25 metres per second. Draw to the Contract Administrator's attention any instance where the airway velocity in any installed attenuator is in excess of 10 metres per second.

If specified elsewhere, provide sound absorbent material which is hermetically sealed or faced, as required, with a "Melinex" or similar polyester wrapping to prevent erosion. Use perforated galvanized sheet metal or flattened expanded galvanized Z5 steel to protect the sealed fill.

Clearly mark the direction of airflow on the outer casing of each attenuator. Clearly mark each attenuator with a unit label which indicates the attenuator reference and location.

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y45 SILENCERS AND ACOUSTIC TREATMENT

Block ends of silencers prior to deliver to site to prevent damage. Remove any damaged or soiled attenuators from the site and replace with factory new equipment at no additional cost to the contract. Site repairs are not acceptable.

313 Acoustic cross talk attenuators

Supply and install acoustic crosstalk attenuators where specified, and also wherever otherwise required, to prevent unacceptable levels of room to room sound transfer via common air transfer paths.

Provide at least the same degree of crosstalk attenuation via common ductwork between two rooms as the sound insulation offered by the building fabric separating those rooms.

Use crosstalk attenuators complying with the requirements of clauses 311 or 312, with maximum airway velocity of 4 m/s (dependent on selection).

320 Sound insulation
321 Acoustic duct lagging

Supply and install acoustic duct lagging where specified, and also wherever otherwise required, to achieve all specified noise criteria.

Use acoustic duct lagging comprising an inner layer of 25 mm thick, 80-100 kgm-3 mineral wool, wrapped around the duct, and an outer impermeable mass barrier having a minimum superficial density of 10 kgm-2. Ensure that the outer barrier does not contact the ductwork at any point. Overlap joints between sections by at least 100 mm and seal using either a non-hardening mastic or preferably duct jointing tape.

400 ACOUSTIC COMMISSIONING TESTS
410 Summary

Follow this test procedure for acoustic commissioning tests to establish room Noise Rating (NR) values due to the operation of the building environmental engineering systems.

420 Specification for acoustic test equipment

Make all sound measurements with a precision sound measurement system conforming to the Type 1 requirements of BS EN 60651, or better.

Ensure that the sound measurement system is complete with all the facilities required to enable the specified measurements to be obtained. As a minimum, ensure that the sound measurement system includes:

- ~ The facility to measure using both "slow" and "fast" time weighting characteristics
- ~ The facility to measure both "Linear" and "A" weighted sound levels over the frequency range 20 Hz to 20 kHz. The accuracy of the "A" weighting filter network must conform to the Type 1 requirements of BS EN 60651, or better
- ~ The facility to measure octave band filtered sound. The frequency weighting characteristics of the octave filter set employed must conform to the requirements of BS EN 61620

Acoustically calibrate the sound measurement system in absolute sensitivity at a reference frequency of 1000 Hz. Calibrate the sound measurement system immediately prior to, and immediately following, each series of test measurements. Record any variations in sensitivity of greater than 0.5dB.

430 Specification for off-site acoustic testing

Where plant items are tested off-site, apply the relevant current ISO series Standard.

RHCYP+DCN
AIR HANDLING UNIT SPECIFICATION

Y45 SILENCERS AND ACOUSTIC TREATMENT

Submit a comprehensive method statement to the Contract Administrator for comment, ensuring adequate time is allowed prior to commissioning the test.

440 Measurement of system's noise in internal areas

In order to minimize the effects of extraneous background noise, take all sound readings with the test area of the building evacuated, with the exception of essential test personnel. In addition, take every effort to minimize external noise intrusion to the building.

Take all sound readings under the two following conditions:

- ~ All plant and machinery running normally, delivering the design conditions of ventilation, temperature and humidity (system's + background noise)
- ~ All plant and machinery switched off (background noise only)

Record the sound level in each octave frequency band from 63 Hz to 8000 Hz inclusive at each measurement location. In addition, record the overall "A" weighted sound level at each measurement location.

Make all sound readings with the sound measurement system set to the "fast" timing weighting and the "LAeq" (equivalent continuous) setting.

In each area of the building tested, take sound readings at a minimum of five separate locations except where the room has a floor area of less than 9m². Choose the five measurement locations such that:

- ~ no measurement location is closer than 1.0m from any surface, including walls, floor, ceiling, desk or partition
- ~ no two measurement locations are closer than 1.0m to each other
- ~ in offices, a minimum of two measurement locations are at seated head height (~1.2m above floor level), and a minimum of two measurement locations are at standing head height (~1.8m above floor level).
- ~ in other areas, choose the measurement locations according to the expected normal position for occupants of the room.
- ~ no measurement location is closer than 1.0m to any ventilation system diffuser or grille.

Where the room has a floor area of between 4m² and 9m², take two measurements; and where the floor area is less than 4 m², take one measurement. Take these measurements either at seated head height (1.2m above floor level) or standing head height (1.8m above floor level) depending on the expected normal position for occupants of the room.

Average the octave band sound readings in each area over all measurement locations in that area. Plot the average sound level in each octave frequency band on a set of standard octave band Noise Rating (NR) curves. Plot the background noise levels and the system's + background noise levels on the same NR curve.

Where the system's + background noise level minus the background noise level lies between 3dB and 9dB in any octave frequency band, account for the effects of the background noise in the evaluation of the system's noise. Use the corrected system's noise level to check for contractual deficiencies in that area.

Where the system's + background noise level minus the background noise level is less than 3dB, then an accurate evaluation of the system's noise is not possible. In such cases, in the event of contractual deficiency, defer the sound readings until the background noise decreases to at least 3dB below the system's + background noise (eg during the evening or night time periods).

RHCYP+DCN**AIR HANDLING UNIT SPECIFICATION**

Y45 SILENCERS AND ACOUSTIC TREATMENT

The state of interior finish of the test area during the noise measurements will affect the measured noise levels. Where internal areas are not fitted out as per the occupied building, apply a correction factor (C) to the measured internal noise levels according to the equation:

$$C = 10 \log_{10} (T_f/T_u)$$

T_f is the measured or calculated reverberation time for the fully fitted out internal area under consideration

T_u is the measured or calculated reverberation time for the internal area under consideration at the time of the acoustic tests

Apply the correction factor, C, to each of the frequency bands measured. Do not apply the correction factor in cases where the measured noise level is dominated by direct rather than reverberant noise.

END OF SECTION Y45

RHCYP+DCN
IHS LOTHIAN

HVC107 AIR HANDLING UNIT SPECIFICATION -
REV. T1

HP40E45A (H)



STRATIS VATIS
PRINCIPAL ENGINEER



HOARELEA.COM

4th Floor
58 Waterloo Street
Glasgow
G2 7DA
Scotland

SUPPLEMENTAL AGREEMENT NO. 2

between

LOTHIAN HEALTH BOARD

and

IHS LOTHIAN LIMITED

Supplemental Agreement Number 2 relating Ventilation Works in respect of the Proc Agreement for the provision of RHSC and DCN at Little France

MACROBERTS

LLP

Table of Contents

Clause	Page No.
1	DEFINITIONS AND INTERPRETATION 3
2	CONDITIONS PRECEDENT 12
3	CHANGE PROTOCOL 13
4	COMMENCEMENT AND DURATION 14
5	AMENDMENTS TO PROJECT AGREEMENT 14
6	VENTILATION WORKS AND SERVICES POST COMPLETION 15
7	PAYMENT FOR VENTILATION WORKS 25
7A	INDEMNITY 26
8	GENERAL PROVISIONS 26
	SCHEDULE PART 1 43
	AMENDMENTS TO THE PROJECT AGREEMENT 43
	SCHEDULE PART 2 49
	THE VENTILATION WORKS CONTRACT 49
	SCHEDULE PART 3 134
	INDEMNITY 134
	SCHEDULE PART 4 143
	THE SERVICE CONTRACT AMENDMENT AGREEMENT 143
	SCHEDULE PART 5 174
	COLLATERAL WARRANTIES 174
	PART 1 174
	VENTILATION WORKS CONTRACTOR COLLATERAL WARRANTY 174
	SCHEDULE PART 5 183
	PART 2 183
	COLLATERAL WARRANTY FORMS FROM PROJECT MANAGER AND SUPERVISOR IN FAVOUR OF THE BOARD 183
	SCHEDULE PART 5 200
	PART 3 200
	VENTILATION WORKS SUB-CONTRACTOR COLLATERAL WARRANTY 200
	SCHEDULE PART 6 208
	INDEPENDENT TESTER VARIED SERVICES LETTER 208
	SCHEDULE PART 7 210
	INSURANCES 210
	SCHEDULE PART 8 224
	PAYMENTS 224
	SCHEDULE PART 9 227
	BOARD'S ADVISERS' DESIGN ASSURANCE STATEMENTS 227

Supplemental Agreement

between

- (1) **LOTHIAN HEALTH BOARD**, a health board constituted in Scotland under the National Health Service (Constitution of Health Boards) (Scotland) Order 1974 (S.I. 1974/267) as amended by the National Health Service (Constitution of Health Boards) (Scotland) Amendment Order 2003 (S.S.I. 2003/217) pursuant to Section 2 of the National Health Service (Scotland) Act 1990 and having its principal address at Waverley Gate, 2-4 Waterloo Place, Edinburgh, EH1 3EG (hereinafter referred to as "**the Board**") which term shall include all its successors and permitted assignees; and
- (2) **IHS LOTHIAN LIMITED** a company registered under number SC493676 whose registered office is 13 Queen's Road, Aberdeen, United Kingdom, AB15 4YL (and formerly was 15 Lauriston Place, Edinburgh, EH3 9EP) ("**Project Co**") which term shall include all its successors and permitted assignees;

RECITALS

WHEREAS:

- A An agreement was entered into between the Board and Project Co dated 12th and 13th February 2015, as amended, including as amended by SA1, setting out the terms and conditions of a project for the design, build, finance and maintenance of a project to re-provide services from the Royal Hospital for Sick Children, Child and Adolescent Mental Health Department and the Department of Clinical Neurosciences in a single building adjoining the Royal Infirmary of Edinburgh at Little France (the "**Project Agreement**");
- B. The Board wishes to amend the ventilation system within the Facilities from 4 air changes to 10 air changes per hour with an associated change to the pressure regime (all as described in the Board Change Notice).
- C. Accordingly, in accordance with Clause 33 of the Project Agreement and Schedule Part 16 of the Project Agreement the Board issued Project Co with a Board Change Notice in respect of the Ventilation Works.
- D. In addition, the Board has issued an Initial Engagement Agreement to Project Co instructing Project Co to proceed with the design and associated activities of the Ventilation Works.
- E. The purpose of this Agreement is to amend and supplement the Project Agreement pursuant to the Board Change Notice to enable: (a) the design, construction, testing, commissioning and completion of the Ventilation Works and (b) amendment to the Services to the Facilities as required as a result of the Ventilation Works.

IT IS AGREED as follows:

1 DEFINITIONS AND INTERPRETATION

- 1.1 This Agreement is supplemental to and amends the Project Agreement, and from the SA2 Effective Date, the Project Agreement shall be read and construed as supplemented

by the provisions of this Agreement. Save where expressly stated to the contrary, where words and expressions appear in capitalised terms in this Agreement including the Recitals, such words and expressions shall have the same meaning as is given to such words and expressions under the Project Agreement. In the event of any inconsistency existing between the provisions of this Agreement and any provision of the Project Agreement, the provisions of this Agreement shall prevail.

1.2 In this Agreement, the following definitions apply:-

“Advance Design Works” has the meaning given to it in the Initial Engagement Agreement;

“Agreement” means this Agreement between the parties including the Schedule;

“Appointments” means the Project Manager Appointment and the Supervisor Appointment;

“Audit Scotland” means the governmental body responsible for checking that public money is spent efficiently and effectively in Scotland;

“Board Change Notice” mean the Board Change Notice HVC107 dated 5 December 2019 as more fully set out in Par A of the Scope;

“CDM Regulations” means the Construction (Design and Management) Regulations 2015 or any amendment or re-enactment thereof;

“Certificate of Completion” means a certificate in the form set out in Part 8 of the Schedule to the Ventilation Works Contract;

“Consents” means (1) any planning permission and (2) any building regulations warrant and/or consent, in each case as required to be obtained in relation to the Ventilation Works;

“Collateral Warranties” means the Ventilation Works Contractor Collateral Warranty, the Ventilation Works Sub-Contractor Collateral Warranty, the Project Manager Collateral Warranty and the Supervisor Collateral Warranty;

“Completion” has the meaning given to it in the Ventilation Works Contract;

“Corrupt Act” means

- the offering, promising, giving, accepting or soliciting of an advantage as an inducement for an action which is illegal, unethical or a breach of trust or
- abusing any entrusted power for private gain;

“Defined Cost” has the meaning given to it in the Ventilation Works Contract;

“Delay Damages” means the sum of Five Thousand Pounds (£5000) per week or pro rata for any part of a week;

“Fire Tester” means Oakleaf Surveying Ltd a company registered in England & Wales, (number 06151373) with registered office at Peat House, 1 Waterloo Way, Leicester, England, LE1 6LP and/or Oakleaf Technical Services Ltd a company registered in England & Wales, (number 06151419) Peat House, 1 Waterloo Way, Leicester, England,

LE1 6LP or such substitute fire tester as may be nominated by the Board and notified to Project Co from time to time;

"General Data Protection Regulation" has the meaning given to it in clause 8.6;

"Guarantee Side Letter" means the agreement whereby the performance of the Service Contract as amended by the Service Contract Amendment Agreement and/or obligations of the Service Provider is guaranteed in whole or in part in favour of Project Co by any Guarantor of the Service Provider which as at the date of this Agreement is in the Agreed Form;

"Guarantor" means any Holding Company of the Ventilation Works Contractor or such alternative guarantor as is approved by the Board, providing the Parent Company Guarantee and/or means the guarantor under the Guarantee Side Letter;

Holding Company means, in relation to a company or corporation, any other company or corporation in respect of which that company or corporation is a Subsidiary;

"H&S Conviction" has the meaning given to it in clause 8.10.1 (b);

"Independent Inspector" means a suitably qualified and experienced inspector who is independent from and has no connection relationship or contract with Project Co, or the Service Provider or the Ventilation Works Contractor or the Board in connection with the Ventilation Works, is appointed to carry out the Ventilation Works Defect Survey;

"Independent Tester Varied Services" means the varied services to be provided by the Independent Tester pursuant to the Independent Tester Varied Services Letter;

"Independent Tester Varied Services Letter" means the letter signed by Project Co's Representative and the Board's Representative jointly instructing the Independent Tester to provide the varied services, issued pursuant to Clause 6.6 of this Agreement in the form contained in Schedule Part 6 (*Independent Tester Varied Services Letter*);

"Initial Engagement Agreement" means the letter issued by the Board to Project Co and dated by both parties on 12 December 2019 as amended from time to time by agreement between the parties, requesting Project Co to commence with the design and associated activities of the Ventilation Works;

"Others" are people or organisations who are not Project Co, the Project Manager, the Supervisor, the Adjudicator (as defined in the Ventilation Works Contract) or a member of the Dispute Avoidance Board (as such is defined in the Ventilation Works Contract), the Ventilation Works Contractor or any employee, subcontractor or supplier of the Ventilation Works Contractor;

"Parent Company Guarantee" means any agreement whereby the performance of any Ventilation Works Contract and / or obligations of any Ventilation Works Contractor is guaranteed in whole or in part in favour of Project Co by any Guarantor of any Ventilation Works Contractor which as at the date of this Agreement is in the Agreed Form;

"Period for Reply" means a period of one (1) calendar week except in relation to any matters being dealt with under the Ventilation Works Review Procedure in which event the period for reply is as detailed in the Ventilation Works Review Procedure;

"Price Adjustment" means the Annual Service Payment increase (at current 2020 prices) of £84,789.75 (exclusive of VAT);

"Project Manager" means the person appointed by Project Co to perform the role of Project Manager under the Ventilation Works Contract;

"Project Manager Appointment" means an agreement between Project Co and the Project Manager to undertake the duties and services of Project Manager under the Ventilation Works Contract or any replacement appointment;

"Project Manager Collateral Warranty" means the warranty from the Project Manager in favour of the Board in the form contained in Part 2 of the Schedule Part 5;

"Reviewable Design Data" means the items of design that remain to be reviewed as detailed in the Scope;

"SA1" means the agreement called the Settlement Agreement and Supplemental Agreement between the Board and Project Co amending and supplementing the Project Agreement dated 22 February 2019;

"SA2 Effective Date" is the date when both parties sign this Agreement;

"Schedule" means the schedule (in nine (9) parts) annexed to this Agreement;

"Scope" has the meaning set out in the Ventilation Works Contract;

"Scottish Futures Trust" means the executive non-departmental public body of the Scottish Government established with the aim of improving public infrastructure;

"Scottish Government" means the devolved government for Scotland with responsibilities including the provision of healthcare to the people of Scotland;

"Service Contract Amendment Agreement" means the agreement between Project Co and the Service Provider amending the Service Contract dated on or around the date of this Agreement in the form in Part 4 of the Schedule;

"Subcontract Initial Engagement Agreement" means the initial engagement letter between the Project Co and the Ventilation Works Contractor to carry out advance design works in relation to the Ventilation Works as amended and/or extended from time to time;

"Subsidiary" means a subsidiary within the meaning of section 1159 of the Companies Act 2006;

"Supervisor" means the person appointed by Project Co to perform the role of Supervisor under the Ventilation Works Contract;

"Supervisor Appointment" means an agreement between Project Co and the Supervisor to undertake the duties and services of a Supervisor under the Ventilation Works Contract or any replacement appointment;

"Supervisor Collateral Warranty" means the warranty from the Supervisor in favour of the Board in the form contained in Part 2 of the Schedule Part 5;

"Supplemental Agreement No. 2" means this Agreement;

"Ventilation Insurances" has the meaning given to it in paragraph 1 of Section 1 of the Schedule Part 7;

“Ventilation Tester” means Institute of Occupational Medicine, a company registered in Scotland (No.SC123972) with registered office at Research Avenue North, Riccarton, Edinburgh, EH14 4AP and/or IOM Consulting Limited a company registered in Scotland (No. SC205670) with registered office at Research Avenue North, Riccarton, Edinburgh, EH14 4AP or such substitute ventilation tester as may be nominated by the Board and notified to Project Co from time to time;

“Ventilation Works” means the ventilation works at the Facilities to change the ventilation from 4 air changes to 10 air changes per hour with an associated change to the pressure regime all as described in and as instructed under the Board Change Notice and as more fully described in the Scope;

“Ventilation Works Ancillary Documents” means the Service Contract Amendment Agreement, the Ventilation Works Contract, the Guarantee Side Letter, the Parent Company Guarantee, the Appointments and the Collateral Warranties;

“Ventilation Works Change” has the meaning given to it in clause 6.10;

“Ventilation Works Commencement Date” means 22 June 2020, or such other date as is agreed between the parties, provided that the SA2 Effective Date has occurred;

“Ventilation Works Completion Criteria” means the completion criteria applicable to the Ventilation Works as detailed in the Schedule Part 7 of the Ventilation Works Contract;

“Ventilation Works Completion Date” means the date that Completion of the Ventilation Works is certified by the Independent Tester pursuant to clause 35.3 of the Ventilation Works Contract;

“Ventilation Works Contract” means the contract entered into by Project Co and the Ventilation Works Contractor for the carrying out of the Ventilation Works dated on or around the date of this Agreement in the form in Part 2 of the Schedule or any replacement contract;

“Ventilation Works Contractor” means Imtech Engineering Services Central Limited (No 00443522) whose registered office is at G&H House, Hooton Street, Carlton Road, Nottingham NG3 5GL;

“Ventilation Works Contractor Collateral Warranty” means the warranty from the Ventilation Works Contractor in favour of the Board in the form contained in Part 1 of the Schedule Part 5;

“Ventilation Works Contractor Insolvency” means the occurrence of any of the following events in respect of the Ventilation Works Contractor or the Guarantor, namely:

- (a) any arrangement or composition with or for the benefit of creditors (including any voluntary arrangement as defined in the Insolvency Act 1986) being entered into by or in relation to the Ventilation Works Contractor or the Guarantor;
- (b) a receiver, administrator, administrative receiver or other encumbrancer taking possession of or being appointed over, or any distress, execution or other process being levied or enforced (and not being discharged within ten (10)

Business Days) upon, the whole or any material part of the assets of the Ventilation Works Contractor or the Guarantor;

- (c) the Ventilation Works Contractor ceasing to carry on business;
- (d) a petition being presented (and not being discharged within twenty (20) Business Days), or a resolution being passed or an order being made for the administration or the winding up, bankruptcy or dissolution of the Ventilation Works Contractor or the Guarantor; or
- (e) if the Ventilation Works Contractor the Guarantor shall suffer any event analogous to the events set out in paragraphs (a)-(d) in any jurisdiction on which it is incorporated or resident;

“Ventilation Works Defect” means any Defect as defined in clause 11.2(6) of the Ventilation Works Contract;

“Ventilation Works Dispute” has the meaning set out in clause 8.4.2;

“Ventilation Works Defects Survey” means the survey carried out by the Independent Inspector prior to the Ventilation Works Indemnity Expiry Date;

“Ventilation Works Longstop Date” is the date falling 16 weeks following the Ventilation Works Target Completion Date;

“Ventilation Works Programme” means the programme produced from time to time in accordance with clauses 31 and 32 of the Ventilation Works Contract;

“Ventilation Works Review Procedure” means the Request for Information Protocol in the Scope

“Ventilation Works Site” means the site(s) for the Ventilation Works which are detailed in the Scope;

“Ventilation Works Sub-Contract” means the agreement entered into between the Ventilation Works Sub-Contractor and the Ventilation Works Contractor;

“Ventilation Works Sub-Contractor” means Hoare Lea LLP (No OC407254) whose registered office is at 155 Aztec West, Almondsbury, Bristol, BS32 4UB;

“Ventilation Works Sub-Contractor Collateral Warranty” means the warranty from the Ventilation Works Sub-Contractor in favour of the Board in the form contained in Part 3 of the Schedule Part 5;

“Ventilation Works Target Completion Date” means the Completion Date stated in the Contract Data Part 1 in Schedule Part 2A of the Ventilation Works Contract as such date may be changed in accordance with the Ventilation Works Contract;

“Waiver Letter” means the waiver letter sent by Board to Project Co dated 12 December 2019

- 1.3 This Agreement shall be interpreted according to the following provisions, unless the context requires a different meaning:

- 1.3.1 The headings and marginal notes and references to them in this Agreement shall be deemed not to be part of this Agreement and shall not be taken into consideration in the interpretation of this Agreement;
- 1.3.2 Except where the context expressly requires otherwise, references to Clauses, Sub-clauses, paragraphs, sub-paragraphs and parts of the Schedule are references to Clauses, Sub-clauses, paragraphs, sub-paragraphs and parts of the Schedule to this Agreement and references to Sections (if any) are references to Sections to or contained in this Agreement;
- 1.3.3 The Schedule to this Agreement is an integral part of this Agreement and a reference to this Agreement includes a reference to the Schedule;
- 1.3.4 Words importing persons shall, where the context so requires or admits, include individuals, firms, partnerships, trusts, corporations, governments, governmental bodies, authorities, agencies, unincorporated bodies of persons or associations and any organisations having legal capacity;
- 1.3.5 Where the context so requires words importing the singular only also include the plural and vice versa and words importing the masculine shall be construed as including the feminine or the neuter or vice versa;
- 1.3.6 The language of this Agreement is English. All correspondence, notices, drawings, design, Reviewable Design Data, test reports, certificates, specifications and information shall be in English. All operating and maintenance instructions, name plates, identification labels, instructions and notices to the public and staff and all other written, printed or electronically readable matter required in accordance with, or for purposes envisaged by, this Agreement shall be in English;
- 1.3.7 Save where stated to the contrary, references to any agreement or document include (subject to all relevant approvals and any other provisions of this Agreement concerning amendments to agreements or documents) a reference to that agreement or document as amended, supplemented, substituted, novated or assigned;
- 1.3.8 References to any Law are to be construed as references to that Law as from time to time amended or to any Law from time to time replacing, extending, consolidating or amending the same;
- 1.3.9 Without prejudice to Clause 8.5.1 (*Assignment*), references to a public organisation (other than the Board) shall be deemed to include a reference to any successor to such public organisation or any organisation or entity which has taken over either or both the relevant functions and relevant responsibilities of such public organisation;
- 1.3.10 Without prejudice to Clause 8.5.1 (*Assignment*), references to other persons (other than the Board and Project Co) shall include their successors and assignees;
- 1.3.11 References to a deliberate act or omission of the Board or any Board Party shall be construed having regard to the interactive nature of the activities of the Board

and of Project Co and the expression shall exclude acts or omissions which were within the contemplation of the parties or which were otherwise provided for in this Agreement;

- 1.3.12 The words in this Agreement shall bear their natural meaning. The parties have had the opportunity to take legal advice on this Agreement and no term shall, therefore, be construed *contra proferentem*;
- 1.3.13 Reference to "parties" means the parties to this Agreement and references to "a party" mean one of the parties to this Agreement;
- 1.3.14 In construing this Agreement, the rule known as the *ejusdem generis* rule shall not apply nor shall any similar rule or approach to the construction of this Agreement and accordingly general words introduced or followed by the word "other" or "including" or "in particular" shall not be given a restrictive meaning because they are followed or preceded (as the case may be) by particular examples intended to fall within the meaning of the general words;
- 1.3.15 All of Project Co's obligations, duties and responsibilities shall be construed as separate obligations, duties and responsibilities owed to the Board and to be performed at Project Co' own cost and expense;
- 1.3.16 Reference to a document being in the Agreed Form is a reference to the form of the relevant document (or where appropriate, the form of relevant document on USB memory stick) agreed between the parties and for the purpose of identification initialled by each of them or on their behalf;
- 1.3.17 Words in parenthesis and italics appearing after a Clause reference or a reference to a Schedule Part are inserted for ease of reference only. If there is any discrepancy between the Clause reference and the words appearing in parenthesis and italics after the Clause reference, the Clause reference shall prevail;
- 1.3.18 Where this Agreement states that an obligation shall be performed "no later than" or "within" or "by" a prescribed number of Business Days after a stipulated date or event, or "no later than" or "by" a stipulated date or event which is a prescribed number of Business Days after a stipulated date or event, the latest time for performance shall be 5pm on the last Business Day for performance of the obligations concerned; and
- 1.3.19 Where this Agreement states that an obligation shall be performed "no later than" or "within" or "by" a prescribed number of days, which shall mean calendar days unless Business Days are expressly referred to, before a stipulated date or event, or "no later than" or "by" a stipulated date or event which is a prescribed number of days before a stipulated date or event, the latest time for performance shall be 5pm on the last day for performance of the obligations concerned; and
- 1.3.20 The operation of the Housing Grants, Construction and Regeneration Act 1996 (as amended from time to time) upon any Project Document shall not affect the rights or obligations of the parties under this Agreement.

- 1.4 The Board and Project Co agree that nothing in this Agreement shall be considered as setting any precedent for any other matters concerning or affecting the Project Agreement and/or the Facilities.
- 1.5 Each party shall do all things and execute all further documents necessary to give full effect to this Agreement. Nothing in this Agreement shall be construed as creating a partnership or as a contract of employment between the Board and Project Co. Save as expressly provided otherwise in this Agreement, Project Co shall not be, or be deemed to be, an agent of the Board and Project Co shall not hold itself out as having authority or power to bind the Board in any way.
- 1.6 The Board and Project Co shall act as stated in this Agreement and act in a spirit of mutual trust and co-operation.
- 1.7 If any provision of this Agreement shall be declared invalid, unenforceable or illegal by the courts of any jurisdiction to which it is subject, such provision may be severed and such invalidity, unenforceability or illegality shall not prejudice or affect the validity, enforceability and legality of the remaining provisions of this Agreement.
- 1.8 In the event of any conflict, discrepancy, divergence or difference between this Agreement and the Project Agreement or within this Agreement then such conflict, discrepancy, divergence or difference shall be resolved in accordance with the following hierarchy;
- (a) Law;
 - (b) British or European Standards and Good Industry Practice;
 - (c) the Ventilation Works Contract contained in the Schedule Part Two of this Agreement in relation to the Ventilation Works;
 - (d) this Agreement excluding the Schedule;
 - (e) the Schedule to this Agreement (excluding Schedule Part Two);
 - (f) the Project Agreement.
- 1.9 **Communications**
- 1.9.1 Unless otherwise stated in this Agreement if the Scope specifies the use of a communication system, a communication has effect when it is communicated through the communication system specified in the Scope.
- 1.9.2 If the Scope does not specify a communication system, a communication has effect when it is received at the last address notified by the recipient for receiving communications or, if none is notified, at the address of the recipient stated in Clause 64 of the Project Agreement or such other address as may be notified.
- 1.9.3 If this Agreement requires the Board or the Board's Representative to reply to a communication, unless otherwise stated in this Agreement such as the Ventilation Works Review Procedure, they reply within the Period for Reply.

- 1.9.4 Project Co shall provide to the Board for review any items which Project Co receives from the Ventilation Works Contractor and/or the Project Manager and any other Reviewable Design Data for review under the Ventilation Works Review Procedure and shall use reasonable endeavours to secure that the Ventilation Works Contractor and the Project Manager provide to the Board information that it is to be reviewed under the Ventilation Works Review Procedure. The Board is entitled to review, respond, comment on, approve, or withhold approval of a submission in accordance with the terms of the Ventilation Works Review Procedure.

2 CONDITIONS PRECEDENT

- 2.1 On or prior to the execution of this Agreement:

- 2.1.1 the Board shall deliver to Project Co the following documents (unless the requirement to deliver any such document is waived by Project Co by written notice to the Board):-

- (a) A certified copy of the resolution of the Board approving the Project Agreement being amended and supplemented by this Agreement and authorising a named person to execute this Agreement and any other documents to be delivered by the Board pursuant to this Agreement; and
- (b) A certificate of the relevant officer of the Board setting out the names and specimen signatures of the person or persons named in the resolution of the Board referred to in Clause 2.1.1(a); and
- (c) an externally financed development agreement certificate under the National Health Service (Private Finance) Act 1997;

- 2.1.2 Project Co shall deliver to the Board the following documents (unless the requirement to deliver any such document is waived by the Board by written notice to Project Co):-

- (a) Extracts of the minutes of the meeting of the board of directors (certified as true and accurate by the company secretary, director or authorised signatory of Project Co or Project Co's external legal advisers) of Project Co at which resolutions were passed approving the Project Agreement being amended and supplemented by this Agreement and authorising a named person to execute this Agreement and any other documents to be delivered by Project Co pursuant to this Agreement; and
- (b) A certificate certified by the company secretary, director or authorised signatory of Project Co or Project Co's external legal advisers, setting out the names and specimen signatures of the person or persons named in the relevant certified extract of the minute of meeting of the board of directors referred to in Clause 2.1.2(a); and
- (c) Electronic copies of the Ventilation Works Contract, the Appointments, the Collateral Warranties, the Parent Company Guarantee, Service

Contract Amendment Agreement, the funder consent and Guarantee Side Letter executed utilising DocuSign;

2.2 Following signature of this Agreement and not later than 10 Working Days after such signature, Project Co shall provide the Board with the following documentation:

- (a) Certified hard copies of necessary consents, validly executed, under the Funding Agreements, to the Board and Project Co entering into this Agreement and to Project Co and any Project Co Party entering into this Agreement and/or any Ventilation Works Ancillary Document in connection with this Agreement (certified as true and accurate by the company secretary, director or authorised signatory of Project Co or Project Co's external legal advisers);
- (b) Certified hard copies of the Ventilation Works Contract and the Appointments and the Parent Company Guarantee, and the Ventilation Works Sub-Contract validly executed (provided that the Ventilation Works Sub-Contract shall be provided within 20 Business Days after the appointment of the Ventilation Works Sub-Contractor and in any event no later than the Ventilation Works Completion Date), each validly executed by Project Co and the Ventilation Works Contractor, Project Manager or Supervisor, Guarantor and Ventilation Works Sub-Contractor (as appropriate) (certified as true and accurate by the company secretary, director or authorised signatory of Project Co or Project Co's external legal advisers);
- (c) electronic copy of the Ventilation Works Sub-Contractor Collateral Warranty executed using utilising DocuSign by Project Co, the Ventilation Works Contractor and the Ventilation Works Sub-Contractor;
- (d) Certified hard copies of the Service Contract Amendment Agreement and Guarantee Side Letter each validly executed by Project Co and the Service Provider and the Guarantor for the Guarantee Side Letter, (as appropriate) (certified as true and accurate by the company secretary, director or authorised signatory of Project Co or Project Co's external legal advisers);

2.3 Until the SA2 Effective Date neither party shall have any liability to the other pursuant to this Agreement

3 CHANGE PROTOCOL

- 3.1 Pursuant to Clause 33 (*Change Protocol*) of the Project Agreement and Schedule Part 16 (*Change Protocol*) of the Project Agreement, the Board has raised a Change set out in the Board Change Notice and pursuant to paragraph 1 (*High Value Changes*) of Section 4 (*High Value Changes*) of Schedule Part 16 (*Change Protocol*) of the Project Agreement.
- 3.2 Notwithstanding the requirements arising pursuant to Clause 33 of the Project Agreement and Section 3 of Schedule Part 16 of the Project Agreement, the Board and Project Co agree that this Agreement together with the Ventilation Works Contract, the

Appointments, the Collateral Warranties and the Parent Company Guarantee and the Service Contract as amended by the Service Contract Amendment Agreement and the Guarantee Side Letter are approved for the purposes of the Ventilation Works and Services changes associated with the Board Change Notice, and Project Co's entitlement to payment or compensation for the Ventilation Works and the associated Services changes is pursuant to this Agreement and not Section 3 of Schedule Part 16 of the Project Agreement,

- 3.3 Notwithstanding the requirements arising pursuant to Clauses 5.2 and 33 and Schedule Part 16 (*Change Protocol*) of the Project Agreement, in the case of the Board Change Notice, Project Co has agreed that the Ventilation Works shall be designed, constructed, commissioned and tested and completed in accordance with the Ventilation Works Contract and not Schedule Part 16 (*Change Protocol*) of the Project Agreement.
- 3.4 The parties agree that payment for the Ventilation Works shall be in accordance with Clause 7 and the Schedule Part 8 of this Agreement and not paragraph 12 (*Method of Payment of Board Contribution*) or paragraph 13 (*Adjustment to Annual Service Payment*) of Section 4 (*High Value Changes*) of Schedule Part 16 (*Change Protocol*) of the Project Agreement.

4 COMMENCEMENT AND DURATION

- 4.1 This Agreement and the rights and obligations of the parties shall commence on the SA2 Effective Date.
- 4.2 Prior to the SA2 Effective Date, the Board and Project Co entered into the Initial Engagement Agreement. Project Co acknowledges and agrees that the Advance Design Works form part of the Ventilation Works and notwithstanding the fact that the same have been carried out in whole or in part prior to the SA2 Effective Date pursuant to the Initial Engagement Agreement provided that for the avoidance of doubt clause 6.8.1 shall apply to any Advance Design Works. Any outstanding payments for the Advance Design Works and the Ventilation Works shall be regulated by this Agreement and not the Initial Engagement Agreement and the parties agree no further payment shall be made under the Initial Engagement Agreement.

5 AMENDMENTS TO PROJECT AGREEMENT

- 5.1 The parties agree that in order to give effect to the Ventilation Works and the amended Services, with effect from the SA2 Effective Date, the amendments and provisions supplemental to the Project Agreement shall be made to the Project Agreement, as set out in the Schedule Part 1 (*Amendments to Project Agreement*).
- 5.2 For the avoidance of doubt, except as expressly amended, varied or supplemented by this Agreement, the Project Agreement shall continue to have full force and effect. The Board and Project Co hereby acknowledge that save as expressly amended, varied or supplemented by this Agreement, nothing in this Agreement shall affect or alter the respective rights, duties and obligations and liabilities of the Board and Project Co under the Project Agreement provided that the Parties acknowledge and agree that the provisions of clause 4.7 of the Project Agreement shall be waived to the extent that the same would have applied to this Agreement.

6 VENTILATION WORKS AND SERVICES POST COMPLETION

6.1 Access for Ventilation Works

From the Ventilation Works Commencement Date until the Ventilation Works Target Completion Date, or if earlier (a) the date on which this Agreement is terminated in accordance with clause 8.10 or (b) the Board exercises step-in rights granted under the Collateral Warranties, the Board shall grant to Project Co and Project Co Parties, or procure that Project Co and the Project Co Parties are granted access to each part of Ventilation Works Site, which is necessary for the Ventilation Works in accordance with the access arrangements described in the access protocol contained within the Scope.

6.2 Design, Construction and Operation of the Ventilation Works

6.2.1 Project Co shall:

- (a) undertake its obligations as "Client" under the Ventilation Works Contract and the Appointments and as "Project Co" under the Service Contract Amendment Agreement; and
- (b) use reasonable endeavours to secure the performance of the Ventilation Works Contractor the Project Manager and the Supervisor to undertake their respective obligations under the Ventilation Works Contract, the Project Management Appointment and the Supervisor Appointment.

6.2.2 Project Co shall be entitled to rely on Part A of the Scope and shall not have liability for any errors or omissions contained within it. Prior to Project Co entering into the Ventilation Works Contract, the Board and its advisers have reviewed the content of Part B of the Scope as it exists as at 27 May 2020 and the Board has received assurances from its technical advisers that the design included in Part B of the Scope meets the requirements of Part A of the Scope. The Board's technical advisors assurance statements are provided at Schedule Part 9. For the purposes of the Ventilation Works Review Procedure, the Board and Project Co agree that with the exception of any items of Reviewable Design Data that remain as listed in the Scope the design contained in Part B of the Scope as it exists as at 27 May 2020 shall, be deemed to have been reviewed in accordance with the Ventilation Works Review Procedure.

6.2.3 Project Co shall notify the Board if it is aware of and/or is notified of an early warning by the Project Manager and/or the Ventilation Works Contractor and shall use reasonable endeavours to secure that the Project Manager and the Ventilation Works Contractor notify the Board of any early warning, pursuant to clause 15.1 of the Ventilation Works Contract, and Project Co shall provide to the Board and use reasonable endeavours to secure that the Project Manager and the Ventilation Works Contractor provide to the Board such information either of them has or receives related to the early warning and copies of the Early Warning Register (as defined in the Ventilation Works Contract) as the same may be updated from time to time.

6.3 Rights of Access of Board's Representative

6.3.1 Project Co shall provide access and use reasonable endeavours to secure that access is provided by the Ventilation Works Contractor to the Board, the Board's Representative, the Independent Tester, the Ventilation Tester and/or the Fire Tester, as required pursuant to clauses 25.4 and 27.2 of the Ventilation Works Contract.

6.3.2 Right to Open Up

- (a) If the Board's Representative (acting reasonably) requires Project Co to open up any part or parts of the Ventilation Works, he shall submit such a request to Project Co and the Supervisor, setting out detailed reasons. If the Supervisor agrees, exercising the level of skill and care required to be provided under the Supervisor Appointment and the Supervisor Collateral Warranty, that the request to open up is reasonable, Project Co shall use reasonable endeavours to secure the Supervisor instructs the Ventilation Works Contractor pursuant to clause 43 of the Ventilation Works Contract. If the opening up shows that the relevant part or parts of the Ventilation Work are not defective, then the provisions of clause 6.5.2(a) shall apply where the Ventilation Works Contractor issues a claim for a compensation event pursuant to clause 60.1(10) of the Ventilation Works Contract and the Project Manager assesses that the Ventilation Works Contractor is entitled to a compensation event in accordance with the terms of the Ventilation Works Contract, arising from the Board's exercise of its rights under this clause 6.3.2(a).
- (b) If, following an opening up pursuant to Clause 43 of the Ventilation Works Contract, the Board's Representative is of the opinion that the relevant part or parts of the Ventilation Works is or are defective and Project Co disputes such opinion, either party can refer the matter to be determined in accordance with Clause 8.4 (*Dispute Resolution*) provided that the parties agree to adjust the Ventilation Works Completion Date and reimburse any costs incurred by the Ventilation Works Contractor if and to the extent such are awarded in accordance with determination of the dispute in accordance with Clause 8.4 (*Dispute Resolution*).

6.4 Safety During Construction

6.4.1 Project Co shall act as the only "Client" for the purposes of the CDM Regulations and shall perform all the functions in such capacities as required by the CDM Regulations and make any necessary elections under Regulation 8 of the CDM Regulations in relation to the Ventilation Works. Project Co shall appoint the Ventilation Works Contractor as "Principal Designer" and "Principal Contractor" (as such have the meaning given to them in the CDM Regulations) for the purposes of all construction work to be performed pursuant to the Ventilation Works Contract, and Project Co shall use reasonable endeavours to secure the performance and observance by the Ventilation Works Contractor of its functions and duties under and the requirements and prohibitions imposed upon it by the CDM Regulations and any related approved code of practice and/or industry

guidance issued thereunder and all other statutory provisions pertaining to health and safety, all as may be amended from time to time.

6.4.2 Pursuant to Clause 27.4 of the Ventilation Works Contract and the requirements of the Scope, Project Co shall use reasonable endeavours to secure that the Ventilation Works Contractor shall provide to the Board's Representative:

- (a) in a substantially complete form on the Ventilation Works Completion Date; and;
- (b) in final form within five (5) Business Days of the Ventilation Works Completion Date,

one electronic copy (on computer disk, tape or other format) of each and every health and safety file and construction phase plan prepared by the Ventilation Works Contractor in its role as "Principal Designer" pursuant to the CDM Regulations in relation to the Ventilation Works.

6.5 Programme and Dates for Completion of the Ventilation Works

6.5.1 Date for Completion

- (a) Project Co shall, exercising its rights under the Ventilation Works Contract, use reasonable endeavours to secure that the Ventilation Works Contractor carries out the Ventilation Works so that Completion of all of the Ventilation Works is achieved on or before the Ventilation Works Target Completion Date.
- (b) Project Co acknowledges that pursuant to clauses 41.3 and 41.8 of the Ventilation Works Contract the Board and the Board's technical advisers shall be entitled to exercise its rights to attend and witness any relevant tests and inspections and to make reasonable and proper representations. Project Co shall use reasonable endeavours to secure that any reasonable and proper representations made by the Board and the Board's technical advisers shall be taken into consideration;
- (c) Project Co shall use reasonable endeavours to secure that the Project Manager and the Supervisor issue copies of certificates which either of them issue to Project Co and/or the Ventilation Works Contractor under the Ventilation Works Contract, and Project Co shall send copies of any certificates it receives from the Project Manager and/or the Supervisor to the Board, the Board's Representative and the Independent Tester.

6.5.2 Compensation Events

- (a) If the Ventilation Works Contractor is entitled to claim for a compensation event pursuant to clause 60 of the Ventilation Works Contract, Project Co shall be entitled to equivalent relief and compensation under this Agreement and shall notify the Board and following the assessment by the Project Manager pursuant to clause 64 of the Ventilation Works Contract, the Board confirms that as soon as reasonably practicable following the notification by the Project Manager of the changes to the

Prices, the Completion Date and the Key Dates as applicable (each as defined in the Ventilation Works Contract) pursuant to clause 66.2 of the Ventilation Works Contract, it shall reimburse Project Co for any costs claimed by the Ventilation Works Contractor and grant to Project Co an extension of time to the Ventilation Works Target Completion Date commensurate with the change to the Completion Date implemented pursuant to clause 66 of the Ventilation Works Contract provided that, notwithstanding anything to the contrary in the Ventilation Works Contract Project Co shall not be entitled to reimbursement for any costs payable in respect of a compensation event to the extent that the compensation event arises from the negligence, error or default of Project Co or any of its persons.

- (b) If the Board's Representative declines to fix a revised Ventilation Works Target Completion Date, or Project Co considers that a different Ventilation Works Target Completion Date, should be fixed, or there is a dispute as to whether a compensation event has occurred and/or its assessment, then, subject to clause 6.5.2(c), where the dispute raises issues which, in the opinion of Project Co, are substantially the same as or connected with issues raised in a dispute or difference arising out of or relating to the Ventilation Works Contract or the Appointments ("Related Dispute") then Project Co shall use reasonable endeavours to resolve such issue or difference in accordance with the dispute resolution provisions contained in the Ventilation Works Contract or the Appointments, as applicable, and the Board agrees if that such Related Dispute is referred to adjudication in accordance with the terms of the Ventilation Works Contract or the Appointments, as applicable then this shall be treated as a Related Adjudication under the Project Agreement, and once determined as a Related Adjudication the parties agree to adjust the Ventilation Works Completion Date and reimburse any costs incurred by the Ventilation Works Contractor if and to the extent such remedies are awarded following the determination of the dispute by the Related Adjudicator.
- (c) If there is a Dispute arising in relation to the existence of negligence, error or default of Project Co or any of its persons pursuant to 6.5.2(a), then either party shall be entitled to refer the matter for determination in accordance with the procedures referred to in Clause 8.4 (*Dispute Resolution*).

6.5.3 The Programme for Ventilation Works

- (a) The Board acknowledges Project Co's and the Ventilation Works Contractor's obligations in relation to the Ventilation Works Programme for the Ventilation Works under Core Clause 3 (Time) of the Ventilation Works Contract and Project Co shall use reasonable endeavours to exercise its rights under the Ventilation Works Contract so as to ensure the Ventilation Works are delivered in accordance with the Ventilation Works Programme.

- (b) Any adjustments to the Ventilation Works Programme shall be made in accordance with the Ventilation Works Review Procedure and the Board shall provide such assistance or contribution as is required pursuant to the Ventilation Works Review Procedure, provided that any amendment to the Ventilation Works Target Completion Date shall only be made under the Ventilation Works Contract, and determined as a Related Adjudication under the Project Agreement in accordance with clause 6.5.2.

6.5.4 Board's right to stop the carrying out of the Ventilation Works

- (a) The Board's Representative shall have the right at any time to verbally or in writing instruct Project Co to stop the relevant part or parts of the Ventilation Works and to allow the Board and the Board's Representative to inspect the relevant part or parts of the Ventilation Works if the Board reasonably believes that:
 - (i) the carrying out of the relevant part or parts of the Ventilation Works has or is likely to:
 - (A) have a potentially adverse impact on the clinical services and/or operation of the Facilities and/or RIE Facilities; or
 - (B) give rise to an immediate and serious threat to the health and safety of any user of the Facilities and/or the RIE Facilities; or
 - (ii) a Major Incident has occurred.
- (b) In the event that Project Co receives an instruction from the Board to stop the relevant part or parts of the Ventilation Works pursuant to clause 6.5.4(a), Project Co shall use all reasonable endeavours to secure that the Ventilation Works Contractor stops the relevant part or parts of the Ventilation Works until such time as Project Co and the Board have agreed any actions as are necessary to remedy the situation and minimise the adverse impact on the clinical services and/or operation of the Facilities and/or the RIE Facilities, and/or remove the threat to health and safety or the Board has confirmed that Project Co is able to re-start the relevant part or parts of the Ventilation Works.
- (c) Where the Ventilation Works Contractor issues a claim for a compensation event pursuant to clause 60.1(24) of the Ventilation Works Contract and the Project Manager assesses that the Ventilation Works Contractor is entitled to a compensation event in accordance with the terms of the Ventilation Works Contract, arising from the Board's exercise of its rights under this clause 6.5.4, the provisions of clause 6.5.2(a) shall apply.

6.5.5 Delay Damages

Where and to the extent that the Ventilation Works Contractor is liable to pay the Delay Damages or any part thereof under the Ventilation Works Contract to Project Co, Project Co shall use reasonable endeavours to enforce its rights under the Ventilation Works Contract in relation to such Delay Damages in accordance with the terms of the Ventilation Works Contract and whether Completion has occurred by the Ventilation Works Longstop Date or not, Project Co shall pay to the Board the Delay Damages which Project Co deducts from, recovers from and/or is paid by the Ventilation Works Contractor within 14 days of deducting, recovering and/or receiving payment from the Ventilation Works Contractor.

6.6 Independent Tester

6.6.1 The Board and Project Co undertake and agree to jointly instruct the Independent Tester to provide such testing and certification services as are required pursuant to this Agreement and the Ventilation Works Contract, as further described in the Independent Tester Varied Services Letter.

6.6.2 Project Co undertakes and agrees to instruct Project Co's Representative and the Board undertakes and agrees to instruct the Board's Representative to sign and issue the Independent Tester Varied Services Letter to the Independent Tester within 5 Business Days of the SA2 Effective Date.

6.6.3 The fee for the Independent Tester Varied Services shall be paid by the Board.

6.7 Defects

Project Co shall use reasonable endeavours to secure that the Ventilation Works Contractor rectifies Ventilation Works Defects in accordance with its obligations at clauses 41 and 44 of the Ventilation Works Contract.

6.8 Limits on Project Co's Liability in respect of the Ventilation Works

6.8.1

- (a) Subject to clause 6.8.1(b), Project Co's aggregate liability to the Board in respect of the Ventilation Works until the date occurring after the expiry of 12 years after the Ventilation Works Completion Date as a result of breach of, or termination of, this Agreement, whether caused by any act or omission of Project Co and/or any Project Co Party (including any such liability arising under or in connection with this Agreement or arising in tort, delict (including any liability for negligence)) shall be limited to the amounts which can be recovered by Project Co from the Ventilation Works Contractor, the Project Manager, the Supervisor and any other consultants or sub-contractors appointed in relation to the carrying out of the Ventilation Works together with any amounts recovered (without any requirement to commence legal proceedings against the insurer but provided that Project Co shall otherwise use reasonable commercial endeavours to recover such amounts and further provided that Project Co shall be able to reclaim any costs incurred in doing so) by Project Co

under the insurances to be maintained in accordance with this Agreement and the Ventilation Works Contract.

- (b) The Parties acknowledge that:
- (i) Project Co's obligation is to provide the Services in accordance with the Project Agreement as amended pursuant to clause 6.12;
 - (ii) the Board's remedies in respect of the Services only include its entitlement to make Deductions as set out in Schedule 14 of the Project Agreement other than Deductions in relation to the Ventilation Works which are limited by the indemnity in clause 7A until the Ventilation Works Indemnity Expiry Date;
 - (iii) the terms of the indemnity in clause 7A and Schedule Part 3 shall apply to the Ventilation Works and the Services until the Ventilation Works Indemnity Expiry Date,

6.8.2 For the avoidance of doubt acknowledging Project Co's obligation to provide the Services in accordance with the Project Agreement as amended pursuant to clause 6.12 and the Board's remedies in respect of the Services only including its entitlement to make Deductions as set out in Schedule Part 14 of the Project Agreement (other than Deductions in relation to the Ventilation Works which are limited by the indemnity in clause 7A until the Ventilation Works Indemnity Expiry Date), Project Co shall be under no greater liability, until the date occurring after the expiry of 12 years after the Ventilation Works Completion Date, than the Ventilation Works Contractor owes to Project Co under the Ventilation Works Contract and the Project Manager and Supervisor owe to Project Co under the Project Manager Appointment and Supervisor Appointment respectively and any equivalent rights of defence, exclusions or limitations on the liability of the Ventilation Works Contractor, Project Manager and Supervisor contained in the Ventilation Works Contract the Project Manager Appointment and the Supervisor Appointment shall apply to this Agreement.

6.9 Insurance

Prior to commencing the Ventilation Works, Project Co shall:

- 6.9.1 provide evidence that the third party and products liability insurance in paragraph 3 of Section 2 of Schedule Part 15 of the Project Agreement covers subcontractors of Project Co, including without limitation the Ventilation Works Contractor, the Project Manager and the Supervisor and consultants for their site activities, and covers liability arising out of or in connection with the Ventilation Works;
- 6.9.2 provide evidence that the property damage insurance in paragraph 1 of Section 2 of Schedule Part 15 of the Project Agreement is not impacted by the Ventilation Works and will continue to apply in full notwithstanding the Ventilation Works;

- 6.9.3 take out and maintain the insurances in accordance with the Schedule Part 7 Section 2 Part A and subject to and in accordance with the requirements in the Schedule Part 7 Section 1 and Section 3;
- 6.9.4 use reasonable endeavours to secure that (a) the Ventilation Works Contractor obtains and maintains the insurances it is required to obtain and maintain pursuant to Core Clause 8 (Liabilities and Insurance) of the Ventilation Works Contract, in each case as the same are further detailed either in Core Clause 8 as amended and/or in the Contract Data Part One in the Schedule Part 2A of the Ventilation Works Contract, and (b) the Project Manager and the Supervisor obtain and maintain the insurances each are respectively required to obtain and maintain pursuant to the Appointments; and
- 6.9.5 use reasonable endeavours to provide evidence that the professional indemnity insurance to be maintained in terms of the Ventilation Works Contract and the Appointments and Collateral Warranties and the Ventilation Works Sub-Contract is in place (provided that the evidence for the Ventilation Works Sub-Contractor Collateral Warranty and Ventilation Works Sub-Contract can be provided at the same time as the Ventilation Works Sub-Contractor Collateral Warranty and Ventilation Works Sub-Contract).

6.10 **Ventilation Works Changes**

The Board's Representative shall be entitled to instruct changes to the Ventilation Works including without limitation a Key Date and/or the Scope ("**Ventilation Works Change**"). Project Co shall, where requested by the Board, instruct the Project Manager to exercise its rights to instruct a change pursuant to clause 14.3 of the Ventilation Works Contract and, where applicable, to instruct the Project Manager and the Supervisor to carry out any additional services pursuant to clause 6.5 of the Appointments necessary as a result of the Ventilation Works Change. The provisions of clause 6.5.2(a) shall apply where the Ventilation Works Contractor issues a claim for a compensation event pursuant to clause 60.1(1) of the Ventilation Works Contract and the Project Manager assesses that the Ventilation Works Contractor is entitled to a compensation event in accordance with the terms of the Ventilation Works Contract, arising from the Ventilation Works Change under this clause 6.10 and any additional costs properly incurred by Project Co pursuant to clause 6.5 of the Appointments arising from such Ventilation Works Change shall be reimbursed by the Board subject to and in accordance with Schedule Part 8. Project Co may not give an instruction to, nor permit the Project Manager to give an instruction to the Ventilation Works Contractor which changes or allows to be treated as changed (a) the Scope (including without limitation so that a Ventilation Works Defect does not have to be corrected) or (b) a Key Date or (c) the Ventilation Works Longstop Date, without first having obtained the consent of the Board's Representative provided that this shall not preclude a Key Date or Ventilation Works Target Completion Date or Ventilation Works Longstop Date being adjusted for a compensation event in accordance with clause 6.5.2(a).

6.11 **Ventilation Works Consents**

Project Co shall use reasonable endeavours to secure that the Ventilation Works Contractor obtains the Consents required in relation to the Ventilation Works

6.12 Services to the Ventilation Works

- 6.12.1 From the Ventilation Works Completion Date, the Ventilation Works shall form part of the Facilities and Project Co shall accordingly provide (or procure that the Service Provider provides) the Services in relation to the Facilities (including the Ventilation Works), and the amendments identified in the Service Contract Amendment Agreement shall have effect and the Board shall pay for such Services (including any reasonable and proper costs incurred by the Service Provider in attending any tests or inspections carried out pursuant to the Ventilation Works Contract) pursuant to Clause 34 (*Payment*) of the Project Agreement. If the Ventilation Works Completion Date falls on a day other than the first day of a Contract Month, limbs (a) to (f) of Clause 34.2.1 of the Project Agreement shall apply to the Contract Month in which the Ventilation Works Completion Date falls.
- 6.12.2 Project Co shall, six (6) months before the Ventilation Works Indemnity Expiry Date, appoint the Independent Inspector to carry out the Ventilation Works Defects Survey, and, Project Co shall use reasonable endeavours to secure that the Ventilation Works Contractor rectifies all Ventilation Works Defects identified by the Ventilation Works Defects Survey before the Ventilation Works Indemnity Expiry Date. The costs of the Ventilation Works Defects Survey shall be payable by the Board on an open book basis with a total cost not exceeding £10,000.
- 6.12.3 Without prejudice to Clause 51.2 of the Project Agreement (as amended by this Agreement) Project Co shall not be obliged to provide Services to the Facilities that are directly affected by the carrying out of the Ventilation Works provided that:
- (a) Project Co shall provide Services to remaining existing building services and all building services and equipment subject to statutory inspections and utilities as required, including the water systems, pipes and ancillary water systems equipment, including flushing the water systems; and
 - (b) such relief shall only apply from the commencement of the Ventilation Works until the earlier of:
 - (i) the termination of this Agreement; or
 - (ii) the Ventilation Works Completion Date.
- 6.12.4 The Parties acknowledge that under the Waiver Letter the Board:
- (a) has waived £280,000 (exclusive of VAT) of Deductions that were accrued in accordance with the Project Agreement up to including 30 September 2019 and that such payment has been validly paid by the Board to Project Co in accordance with the terms of the Waiver Letter. The Parties agree that there shall be no further adjustment in calculating the Deductions of any nature whatsoever for the period from up to and including 30 September 2019;

- (b) is required to pay the sum of £120,000 (exclusive of VAT) to Project Co within 10 Business Days of the last date of execution of this Agreement; and
- (c) has waived any and all accrued rights pursuant to Clause 40.1.3, 40.1.4, 40.1.8 and 40.1.9 of the Project Agreement in accordance with the terms of the Waiver Letter. For the avoidance of doubt, said waiver is entirely without prejudice to any future rights available to the Board pursuant to clause 40 of the Project Agreement (other than any rights in relation to the matters covered by the Waiver Letter).

6.12.5 The Parties acknowledge and agree a revised Annual Service Payment will not be calculated until the date on which the Financial Model is next re-run at a time to be agreed between the Parties and the Financial Model will be re-run on the following basis:

- (a) the Price Adjustment; and
- (b) an increase in the Lifecycle Cost (at current 2020 prices) of £2,063,338.80 (excluding VAT).

In relation to any period between the Ventilation Works Completion Date and the next re-run of the Financial Model the Parties acknowledge that an amount equal to 1/12th of the Price Adjustment shall be added each month to the Monthly Service Payment.

6.13 **Corrupt Acts**

Project Co uses reasonable endeavours to secure that the Ventilation Works Contractor, the Project Manager and the Supervisor do not do a Corrupt Act. In relation to the Ventilation Works Contractor, the Project Manager and the Supervisor, this obligation shall apply and clause 44 of the Project Agreement shall not apply.

6.14 **Ventilation Works Ancillary Documents**

- 6.14.1 Project Co shall not terminate or agree to the termination of the Ventilation Works Contract without first having notified the Board of Project Co's intention to terminate and the relevant provision of the Ventilation Works Contract given as the reason for termination, provided that termination for Ventilation Works Contractor Insolvency shall be dealt with in accordance with Section B of Schedule Part 3.
- 6.14.2 Project Co shall not make or agree to any material variation to any Ventilation Works Ancillary Document.
- 6.14.3 No amendment, waiver or exercise of a right under any Ventilation Works Ancillary Document shall have the effect of increasing the Board's liabilities on early termination of this Agreement unless Project Co has obtained the prior written consent of the Board to such increased liability.

6.15 Exclusion of Board's liability for delict

The Board shall not be liable in delict to Project Co in respect of any negligent act or omission of the Board and/or any Board Party relating to or in connection with this Agreement. Project Co has accepted this on the basis that will cover the risk of negligent acts or omissions by insurance or in such other manner as it (or they) may think fit.

6.16 Recovery of Costs

6.16.1 Any claims, proceedings, compensation and costs which the Board or a Campus Party has suffered or incurred or will suffer or incur or has paid or will be payable by the Board and/or Campus Parties to Others, as a result of an event for which the Ventilation Works Contractor is liable pursuant to clause 81 of the Ventilation Works Contract shall be paid by Project Co to the Board to the extent that the amounts can be recovered by Project Co from the Ventilation Works Contractor pursuant to clause 82.1 of the Ventilation Works Contract.

6.16.2 Any claims, proceedings, compensation and costs which the Ventilation Works Contractor has paid or will pay as a result of:

(a) any claim for or in respect of, the death and/or personal injury of any employee of or person engaged by the Board or any Board Party (notwithstanding any act or omission of Project Co, any Project Co Party the Project Manager or the Supervisor) for which Project Co is liable under the first bullet point of clause 80.1 of the Ventilation Works Contract due to an act or omission of the Board; and/or

(b) an event, other than that referred to in 6.16.2(a) above for which Project Co is liable under clause 80.1 of the Ventilation Works Contract due to an act or omission of the Board (save where caused or contributed to by an act or omission of Project Co or any Project Co Party, the Project Manager or the Supervisor)

shall be paid by the Board to Project Co who shall then pay such amounts to the Ventilation Works Contractor pursuant to clause 82.2 of the Ventilation Works Contract.

6.16.3 The right of the Board to recover the costs referred to in clauses 6.16.1 is reduced if an event for which it was liable contributed to the costs. The reduction is in proportion to the extent that the event for which that the Board is liable contributed, taking into account its responsibilities under this Agreement.

7 PAYMENT FOR VENTILATION WORKS

In consideration of Project Co procuring the design, construction, testing, commissioning, and completion, maintenance, repair, renewal and replacement of the Ventilation Works, the Board shall pay Project Co in accordance with the Schedule Part 8, subject to any Ventilation Works Changes instructed, and Clause 34 and Schedule Part 14 (*Payment Mechanism*) of the Project Agreement shall not apply to the Ventilation Works. The Board's obligation to pay under this clause 7 shall include any other entitlement to payment under this Agreement including any compensation payable pursuant to clause 6.5.2.

7A INDEMNITY

The Board indemnifies Project Co in accordance with and subject to the terms of the Schedule Part 3.

8 GENERAL PROVISIONS

8.1 Entire Agreement

8.1.1 Except where expressly provided otherwise in this Agreement, this Agreement constitutes the entire agreement between the parties in connection with its subject matter and supersedes all prior representations, communications, negotiations and understandings (including but not limited to the Initial Engagement Agreement) concerning the subject matter of this Agreement.

8.1.2 Each of the parties acknowledges that:

- (a) it does not enter into this Agreement on the basis of and does not rely, and has not relied, upon any statement or representation (whether negligent or innocent) or warranty or other provision (in any case whether or I, written, express or implied) made or agreed to by any person (whet er a par y to this Agreement or not) except those expressly repeated or referred to in this Agreement and the only remedy or remedies available in respect of any misrepresentation or untrue statement made to it shall be any remedy available under this Agreement; and
- (b) this Clause shall not apply to any statement, representation or warranty made fraudulently, or to any provision of this Agreement which was induced by fraud, for which the remedies available shall be all those available under the law governing this Agreement.

8.2 Third Party Rights

Save to the extent expressly provided in this Agreement and, to avoid doubt, without prejudice to the terms of the Collateral Warranties or the rights of any permitted successor to the rights of the Board and/or Project Co or of any permitted successor or assignee (including the Senior Funders and the Security Trustee), it is expressly declared that no rights shall be conferred under and arising out of this Agreement upon any person other than the Board and Project Co and without prejudice to the generality of the foregoing, there shall not be created by this Agreement a *jus quaesitum tertio* nor any rights under the Contract (Third Party Rights) (Scotland) Act 2017 in favour of any person whatsoever.

8.3 Severability

If any provision of this Agreement shall be declared invalid, unenforceable or illegal by the courts of any jurisdiction to which it is subject, such provision may be severed and such invalidity, unenforceability or illegality shall not prejudice or affect the validity, enforceability and legality of the remaining provisions of this Agreement.

8.4 Dispute Resolution

- 8.4.1 The parties agree that, subject to clause 8.4.2 below, the provisions of Clause 56 (*Dispute Resolution Procedure*) and Schedule Part 20 (*Dispute Resolution Procedure*) of the Project Agreement shall apply in respect of any dispute under or arising out of or in connection with this Agreement.
- 8.4.2 Where a dispute arises in relation to the Ventilation Works Contract or the Appointments (a "**Ventilation Works Dispute**"):
- (a) where requested by Project Co, the Board shall send such persons with specific knowledge of the underlying issues as may be necessary to meetings between Project Co and the Ventilation Works Contractor, the Project Manager and/or the Supervisor (as appropriate) to resolve any such Ventilation Works Dispute;
 - (b) the provisions of paragraphs 4.11 (as amended), 4.12 and 4.13 of Schedule Part 20 (*Dispute Resolution Procedure*) of the Project Agreement shall apply to such Ventilation Works Dispute; and
 - (c) the Board acknowledges and agrees that the provisions of paragraph 4.14 of Schedule Part 20 (*Dispute Resolution Procedure*) of the Project Agreement shall not apply and where Project Co requests a dispute between the Board and Project Co is consolidated with an adjudication in relation to a Ventilation Works Dispute, such dispute shall be consolidated without the Board's prior approval of the identity of the adjudicator appointed to hear the Ventilation Works Dispute.

8.5 Assignment and subcontracting

8.5.1 Assignment

Project Co shall not assign, novate, transfer, subcontract or otherwise dispose of any interest in this Agreement, the Ventilation Works Contract, the Project Manager Appointment and/or the Supervisor Appointment without the prior written consent of the Board save that the Board consents to an assignment in security by Project Co to the Senior Funders which may only be perfected by the Senior Funders (by way of assignment to any step-in representative or replacement Project Co appointed pursuant to the Funders' Direct Agreement) following the Ventilation Works Completion Date or the date on which the Board steps into the Ventilation Works Contract (whichever is the earlier) provided that such perfecting of the assignment is without prejudice to the Board's ability to step-in under the Collateral Warranties and the Board's rights pursuant to clause 8.10.8 of this Agreement. The Board shall be entitled to assign, transfer or dispose of the whole of this Agreement and/or any other agreement entered into in connection with this Agreement and the Scottish Ministers will have the right to effect a statutory transfer. This Agreement and any other agreement in connection with the Project to which both the Board and Project Co are a party shall be binding on, and shall enure to the benefit of, Project Co and the Board and their respective statutory successors and permitted transferees and assignees.

8.5.2 Sub-contractors

- (a) The Board consents (for all purposes of the Project Agreement) to Project Co entering into the Ventilation Works Contract and the Appointments in connection with this Agreement and without prejudice to any other rights and remedies of the Board under, arising out of and/or in connection with the Project Agreement (provided that such rights or remedies shall not apply to the carrying out of the Ventilation Works to the extent their application has been excluded, limited or otherwise restricted by the provisions set out in this Agreement, the Ventilation Works Contract and the Appointments) and/or this Agreement the Board confirms that Project Co (and the counterparties) entering into the Ventilation Works Contract and the Appointments and carrying out the Ventilation Works in accordance with the relevant terms shall not constitute or give rise to a breach of Project Co's obligations under the Project Agreement; and
- (b) The Board consents (for all purposes of the Project Agreement) to the Ventilation Works Contractor under the Ventilation Works Contract sub-contracting part of the carrying out of the Ventilation Works to the Ventilation Works Sub-Contractor; and
- (c) Project Co enters into and procures the entry into and delivery of the Collateral Warranties set out in Schedule Part 5 (Collateral Warranties) of this Agreement.
- (d) If the Project Manager Appointment and/or Supervisor Appointment at any time lapse, terminate or otherwise cease to be in full force and effect (whether by reason of expiry or otherwise), prior to the first to occur of (a) the Ventilation Works Longstop Date or (b) termination of the this Agreement or (c) termination of Project Agreement, with the effect that any counterparty shall cease to act in relation to the Ventilation Works, Project Co shall unless the Board has exercised its rights to step into Collateral Warranties, forthwith appoint a replacement and Project Co shall enter into a replacement appointments upon the same or substantially similar terms as the person so replaced (including without limitation pricing on an open book basis and sufficiently transparent and broken down to permit value for money analysis and to comply with the payment requirements as detailed in the Clause 7 and the Schedule Part 8) and shall also enter into collateral warranties on the same or substantially the same terms as the Collateral Warranties entered into by the person so replaced, and provide a certified true copy of the relevant appointment and evidence that the professional indemnity insurance to be maintained in terms of the relevant appointment and Collateral Warranties as applicable is in place. Each such appointment and Collateral Warranty must be duly delivered to the Board by the earlier of (a) twenty (20) Business Days after the appointment of the replacement person or (b) the Ventilation Works Completion Date, and the identity of any replacement shall require prior written consent of the Board, such consent not to be unreasonably delayed or withheld.

8.6 Data Protection

8.6.1 For the purposes of this clause 8.6, the term "personal data", "personal data breach" and "data subject" shall have the meaning given to it in Regulation (EU) 2016/679 (the "**General Data Protection Regulation**").

8.6.2 Project Co undertakes to the Board that it shall comply with the obligations of a "data controller" under the provisions of the General Data Protection Regulation and the Data Protection Act 2018. In addition, Project Co:

- (a) warrants that it has, or will have at all material times (and it shall use best endeavours to procure that all Sub-Contractors (and their agents and sub-subcontractors of any tier have or will have at all material times) the appropriate technical and organisational measures in place against unauthorised or unlawful processing of personal data and against accidental loss or destruction of, or damage to, personal data held or processed by it and that it has taken, or will take at all material times, all reasonable steps to ensure the reliability of any of its staff which will have access to personal data processed as part of the Ventilation Works;
- (b) undertakes that, where it is required to process any personal data made available to it by or on behalf of the Board, it will act only on the instructions of the Board;
- (c) undertakes that it will only obtain, hold, process, use, store and disclose personal data as is necessary to perform its obligations under this Agreement and that such data will be processed, used, stored and disclosed only in accordance with the Data Protection Act 2018, the General Data Protection Regulation and any other applicable Law;
- (d) undertakes to allow the Board access to any relevant premises on reasonable notice to inspect the procedures described in Clause 8.6.2(a);
- (e) undertakes to notify the Board promptly (and in any event within forty-eight (48) hours upon becoming aware of any actual, suspected, threatened or "near miss" personal data breach, and:
 - (i) inform the Board with the known facts as regards to the above;
 - (ii) implement any measures necessary to restore the security of compromised personal data; and
 - (iii) assist the Board to make any required notifications to the Scottish Information Commissioner's Office (or any successor or replacement body from time to time) and affected data subjects.

Such obligations to notify and keep the Board informed shall continue until such actual or suspected, threatened or "near miss" personal data breach is fully rectified and/or is no longer threatened.

8.7 Confidentiality

8.7.1 The Board shall, subject to Clause 8.7.2 be entitled to make the documents and information listed in this Clause 8.7.1 freely available to the public (which may include, without limitation, publication on the Board's website):-

- (a) this Agreement
- (b) the Independent Tester Varied Services Letter
- (c) the Collateral Warranties
- (d) the payment and performance report and Financial Model (to the extent the same are updated in respect of the Ventilation Works)

and Project Co acknowledges and agrees that, subject to the exclusion of information referred to in Clause 8.7.2(b), the provision or publication of the documents and information listed in this Clause 8.7.1 shall not give rise to any liability under the terms of the Project Agreement and/or this Agreement or otherwise. The Board shall notify Project Co in writing not less than ten (10) Business Days prior to any intended provision or publication of information pursuant to this Clause 8.7.1.

8.7.2

- (a) The parties agree that the provisions of this Agreement, and each Ancillary Document shall, subject to Clause 8.7.2(b) below, not be treated as Confidential Information and may be disclosed without restriction and Project Co acknowledges that the Board shall, subject to Clause 8.7.2(b) below, be entitled to make this Agreement, and each Ancillary Document available in the public domain.
- (b) Clause 8.7.2(a) shall not apply to provisions of this Agreement, or an Ancillary Document designated as Commercially Sensitive Information and listed in Schedule Part 26 (*Commercially Sensitive Information*) to the Project Agreement which shall, subject to Clause 8.7.3 be kept confidential for the periods specified in that Schedule Part 26 (*Commercially Sensitive Information*) of the Project Agreement.
- (c) The parties shall keep confidential all the Confidential Information received by one party from the other party relating to this Agreement and the Ventilation Works Contract and the Facilities and shall use all reasonable endeavours to prevent its employees and agents from making any disclosure to any person of any such Confidential Information.

8.7.3 Clause 8.7.2(b) and 8.7.2(c) shall not apply to:

- (a) any disclosure of information that is reasonably required by any person engaged in the performance of their obligations under this Agreement for the performance of those obligations;

- (b) any matter which a party can demonstrate is already or becomes generally available and in the public domain otherwise than as a result of a breach of this clause;
- (c) any disclosure required to enable a determination of a dispute under this Agreement or in connection with a dispute between Project Co and any of its Sub-Contractors;
- (d) any disclosure required pursuant to any legal or parliamentary obligation placed upon the party making the disclosure or the rules of any stock exchange or governmental or regulatory authority having the force of law or, if not having the force of law, compliance with which is in accordance with the general practice of persons subject to the stock exchange or governmental or regulatory authority concerned;
- (e) any disclosure of information which is already lawfully in the possession of the receiving party, prior to its disclosure by the disclosing party;
- (f) any provision of information to the parties' own professional advisers or insurance advisers or to the Senior Funders or the Senior Funders' professional advisers;
- (g) any disclosure by the Board of information relating to the design, construction, operation and maintenance of the Facilities and such other information as may be reasonably required for the purpose of conducting a due diligence exercise, to any proposed new contractor, its advisers and lenders, should the Board decide to retender the Project Agreement;
- (h) any registration or recording of the Consents and property registration required;
- (i) any disclosure of information by the Board to any other department, office or agency of the Government or Scottish Government or their respective advisers or to the Scottish Futures Trust or to any person engaged in providing services to the Board for any purpose related to or ancillary to the Project Agreement;
- (j) any disclosure for the purpose of:
 - (i) the examination and certification of the Board's or Project Co's or the Ventilation Works Contractor's, Project Manager's and/or Supervisor's accounts;
 - (ii) any examination pursuant to section 6(1) of the National Audit Act 1983 of the economy, efficiency and effectiveness with which the Board has used its resources;
 - (iii) complying with a proper request from either party's insurance adviser or insurer on placing or renewing any insurance policies;
or

(iv) (without prejudice to the generality of clause 8.7.3(d)) compliance with the FOI(S)A and the Environmental Information (Scotland) Regulations;

(k) any disclosure to the extent required pursuant to Clause 8.7.1; or

(l) any disclosure to the extent required pursuant to Clause 8.9.2.

Provided that, to avoid doubt, neither Clause 8.7.3(j)(iv) nor Clause 8.7.3(d) above shall permit disclosure of Confidential Information otherwise prohibited by clause 8.7.2(c) where that information is exempt from disclosure under section 36 of the FOI(S)A.

- 8.7.4 Where disclosure is permitted under clause 8.7.3, other than under clauses 8.7.3(b), 8.7.3(d), 8.7.3(e), 8.7.3(h) and 8.7.3(j), the party providing the information shall procure that the recipient of the information shall be subject to the same obligation of confidentiality as that contained in this Agreement.
- 8.7.5 Project Co shall not make use of this Agreement or any information issued or provided by or on behalf of the Board in connection with this Agreement otherwise than for the purpose of this Agreement, except with the written consent of the Board.
- 8.7.6 Where Project Co, in carrying out its obligations under this Agreement, is provided with information relating to any Board Party, Project Co shall not disclose or make use of any such information otherwise than for the purpose for which it was provided, unless Project Co has obtained the prior written consent of that person and has obtained the prior written consent of the Board.
- 8.7.7 On or before the Expiry Date or Termination Date or if earlier termination of this Agreement or in the event the Board exercises step-in rights granted under the Collateral Warranties, Project Co shall ensure that all documents or computer records in its possession, custody or control which contain information relating to any patient or any Board Party including any documents in the possession, custody or control of the Ventilation Works Contractor or any of its sub-contractors, the Project Manager and/or Supervisor, are delivered up to the Board.
- 8.7.8 The parties acknowledge that Audit Scotland has the right to publish details of this Agreement (including any Commercially Sensitive Information) in its relevant reports to Parliament or the Scottish Parliament.
- 8.7.9 The provisions of this clause 8.7 are without prejudice to the application of the Official Secrets Acts 1911 to 1989.
- 8.7.10 Unless otherwise required by any Law or any regulatory or governmental authority (but only to that extent), neither party shall make or permit or procure to be made any public announcement or disclosure (whether for publication in the press, the radio, television, screen or any other medium) of any Confidential Information or in the case of Project Co of its interest in the Ventilation Works or, in any such case, any matters relating thereto, without the prior written consent of the other party (which shall not be unreasonably withheld or delayed).

8.8 Freedom of Information

8.8.1 Project Co acknowledges that the Board is subject to the requirements of the FOI(S)A and the Environmental Information (Scotland) Regulations and shall assist and cooperate with the Board to facilitate the Board's compliance with its Information disclosure requirements pursuant to the same in the manner provided for in Clauses 8.8.2 to 8.8.8.

8.8.2 Where the Board receives a Request for Information in relation to Information that Project Co is holding on its behalf and which the Board does not hold itself the Board may refer to Project Co such Request for Information and Project Co shall:

(a) provide the Board with a copy of all such Information in the form that the Board requires as soon as practicable and in any event within five (5) Business Days (or such other period as the Board acting reasonably may specify) of the Board's request; and

(b) provide all necessary assistance as reasonably requested by the Board in connection with any such Information, to enable the Board to respond to the Request for Information within the time for compliance set out in section 10 of the FOI(S)A or Regulation 5 of the Environmental Information (Scotland) Regulations.

8.8.3 Following notification under Clause 8.8.2, and up until such time as Project Co has provided the Board with all the Information specified in Clause 8.8.2(a), Project Co may make representations to the Board as to whether or not or on what basis Information requested should be disclosed, and whether further information should reasonably be provided in order to identify and locate the information requested, provided always that the Board shall be responsible for determining at its absolute discretion:

(a) whether Information is exempt from disclosure under the FOI(S)A and the Environmental Information (Scotland) Regulations and

(b) whether Information is to be disclosed in response to a Request for Information, and

in no event shall Project Co respond directly, or allow any Sub-Contractor to respond directly, to a Request for Information unless expressly authorised to do so by the Board.

8.8.4 Project Co shall ensure that all Information held on behalf of the Board is retained for disclosure for the remainder of the Project Term and for an additional seven (7) years (from the date it is acquired) and shall permit the Board to inspect such Information as requested from time to time.

8.8.5 Project Co shall transfer to the Board any Request for Information received by Project Co as soon as practicable and in any event within two (2) Business Days of receiving it.

- 8.8.6 Project Co acknowledges that any lists provided by it listing or outlining Confidential Information are of indicative value only and that the Board may nevertheless be obliged to disclose Confidential Information in accordance with the requirements of FOI(S)A and the Environmental (Scotland) Regulations.
- 8.8.7 In the event of a request from the Board pursuant to Clause 8.8.2 Project Co shall as soon as practicable, and in any event within five (5) Business Days of receipt of such request, inform the Board of Project Co's estimated costs of complying with the request to the extent these would be recoverable, if incurred by the Board, under section 13(1) of the FOI(S)A and Fees Regulations. Where such costs (either on their own or in conjunction with the Board's own such costs in respect of such Request for Information) will exceed the appropriate limit referred to in section 12(1) of the FOI(S)A and as set out in the Fees Regulations (the "**Appropriate Limit**") the Board shall inform Project Co in writing whether or not it still requires Project Co to comply with the request and where it does require Project Co to comply with the request the five (5) Business Days period for compliance shall be extended by such number of additional days for compliance as the Board is entitled to under section 10 of the FOI(S)A. In such case, the Board shall notify Project Co of such additional days as soon as practicable after becoming aware of them and shall reimburse Project Co for such costs as Project Co incurs in complying with the request to the extent it is itself entitled to reimbursement of such costs in accordance with its own FOI(S)A policy from time to time.
- 8.8.8 Project Co acknowledges that (notwithstanding the provisions of clause 8.7) the Board may, acting in accordance with the Scottish Ministers Code of Practice on the Discharge of Functions of Public Authorities under Part 6 of the Freedom of Information (Scotland) Act 2002 (the "Code"), and/or having full regard to any guidance or briefings issued by the Scottish Information Commissioner or the Scottish Ministers, be obliged under the FOI(S)A, or the Environmental Information (Scotland) Regulations to disclose Information concerning Project Co or the Ventilation Works:
- (a) in certain circumstances without consulting with Project Co; or
 - (b) following consultation with Project Co and having taken their views into account,
- provided always that where Clause (a) above applies the Board shall, in accordance with the recommendations of the Code, draw this to the attention of Project Co prior to any disclosure.
- 8.8.9 In the event that Project Co is or becomes subject to Environmental Information (Scotland) Regulations or FOI(S)A it shall comply with its obligations under Environmental Information (Scotland) Regulations and FOI(S)A. In doing so, it will use reasonable endeavours to consult the Board before disclosing Information about them or any agreement entered into between the Board and Project Co in relation to the Ventilation Works.

8.9 Information and Audit Access

8.9.1 Project Co shall provide to the Board all information, documents, records and the like in the possession of, or available to, Project Co (and to this end Project Co shall use all reasonable endeavours to procure that all such items in the possession of any Sub-Contractor shall be available to it and Project Co has included, or shall include, relevant terms in all subcontracts with the Sub-Contractors to this effect) as may be reasonably requested by the Board for any purpose in connection with this Agreement.

8.9.2 For the purpose of:

- (a) the examination and certification of the Board's accounts; or
- (b) any examination pursuant to section 23 of the Public Finance and Accountability (Scotland) Act 2000 of the economy, efficiency and effectiveness with which the Board has used its resources,

the Auditor General for Scotland may examine such documents as he may reasonably require which are owned, held or otherwise within the control of Project Co (and Project Co shall procure that any person acting on its behalf who has such documents and/or other information shall also provide access) and may require Project Co to produce such oral or written explanations as he considers necessary.

8.9.3 Project Co shall provide and shall procure that its Sub-Contractors shall provide such information as Project Co and the Board may reasonably require from time to time to enable them to meet their obligations to provide reports and returns pursuant to regulations, directions or guidance applicable to the Board including, without limitation, reports and returns regarding the physical condition of buildings occupied by the Board, health and safety, under the firecode, relating to environmental health and to comply with requirements for the provision of information relating to achievement of customer service targets.

8.10 Termination

8.10.1 This Agreement may be terminated giving written notice:

- (a) by either party
 - (i) if the Ventilation Works are terminated for any of the reasons listed in clause 91 of the Ventilation Works Contract;
 - (ii) at any time after the Ventilation Works Longstop Date if the Ventilation Works are not completed at the Ventilation Works Longstop Date,
 - (iii) if the Board exercises its rights to step-in under the Collateral Warranties; or
 - (iv) if the Project Agreement is terminated pursuant to clause 41 (*Termination due to Force Majeure*);

- (b) by the Board if
- (i) the Project Agreement is terminated pursuant to clause 40 (*Project Co Events of Default*), or Clause 42 (*Board Voluntary Termination*), or Clause 44.3 (*Remedies*) or clause 45 (*Breach of NPD Requirements*) of the Project Agreement; and / or
 - (ii) if Project Co or its directors, officers or employees (but not, for the avoidance of doubt the Ventilation Works Contractor, Project Manager or Supervisor) commits a material breach of its obligations under this Agreement (other than as a consequence of a breach by the Board of its obligations under this Agreement) which results in the criminal investigation, prosecution and conviction of Project Co or any Project Co Party (but not, for the avoidance of doubt the Ventilation Works Contractor, Project Manager or Supervisor) or the Board under the Health and Safety Regime (an "**H&S Conviction**") provided that an H&S Conviction of a Project Co Party (but not, for the avoidance of doubt the Ventilation Works Contractor, Project Manager or Supervisor) or the Board shall not entitle the Board to terminate this Agreement if, within ninety (90) Business Days from the date of the H&S Conviction (whether or not the H&S Conviction is subject to an appeal or any further judicial process), the involvement in the Ventilation Works and / or Project Operations of each relevant Project Co Party (which in the case of an individual director, officer or employee shall be deemed to include the Project Co Party of which that person is a director, officer or employee) is terminated and a replacement is appointed by Project Co in accordance with this Agreement and/or Clause 57.5 (Sub contracting) of the Project Agreement (as the case may be);

In determining whether to exercise any right of termination or right to require the termination of the engagement of a Project Co Party, the Board shall:

- (A) act in a reasonable and proportionate manner having regard to such matters as the gravity of any offence and the identity of the person committing it;
 - (B) give all due consideration, where appropriate, to action other than termination of this Agreement; and
 - (C) not be entitled to exercise its right under this clause 8.10.1 (ii) in relation to any Project Co Party that is also engaged under the Project Agreement unless the equivalent rights under clause 40.1.5 of the Project Agreement are also being exercised.
- (iii) Project Co fails to maintain the insurances in accordance with the Schedule Part 7 Section 2 Part A and subject to and in accordance with the requirements in the Schedule Part 7 Section

1 and Section 3 provided that prior to such termination, the Board has served a notice of default on Project Co requiring Project Co to remedy this failure within twenty (20) Business Days of such notice of default;

- (c) by Project Co if
- (i) a Board Event of Default occurs pursuant to clause 39 (*Board Events of Default*) of the Project Agreement; or
 - (ii) the Board fails to pay any sum or sums due to Project Co under this Agreement (which sums are not in dispute) and (1) such failure continues for thirty (30) Business Days from receipt by the Board of a notice of non-payment from Project Co and (2) following receipt of a further notice from Project Co to be dated not earlier than the thirtieth Business Day, such failure continues for a further three (3) Business Days;

8.10.2 Without prejudice to the Board's right to step-in pursuant to the terms of the Collateral Warranties, in the event of a termination of this Agreement pursuant to:-

- (a) Clause 8.10.1(a)(i) where the Ventilation Works Contract is terminated pursuant to:
- (i) clauses 91.2, 91.3, 91.9; or
 - (ii) 91.6 where the instruction is due to the default of the Ventilation Works Contractor or
 - (iii) 91.10 where the termination of this Agreement arises due to a failure by the Ventilation Works Contractor to comply with his obligations under the Ventilation Works Contract
- (b) Clause 8.10.1(a)(ii); or
- (c) Clause 8.10.1(a)(iii); or

and the Project Agreement is not terminated (in which case clause 8.10.7 applies), and this Agreement is not terminated pursuant to clause 8.10.1(b)(ii) or 8.10.1(b)(iii) (in which case clause 8.10.7 applies), then the provisions of clauses 92 and 93 of the Ventilation Works Contract shall apply and the Board shall pay Project Co for any costs:

- (i) assessed under A1 and A3 of clause 93 of the Ventilation Works Contract if such assessment shows an amount properly payable to the Ventilation Works Contractor on such termination, and if the assessment shows that there is any amount overpaid to the Ventilation Works Contractor and/or any amount is due to Project Co on such termination, then Project Co shall pay such amounts as are recovered from the Ventilation Works Contractor (and less any costs reasonably and properly incurred by Project Co in relation to the recovery of such sums provided that payment

will be made without any deduction for Project Co's costs where termination arises from the negligence, error or default of Project Co or any of its persons (and not the Ventilation Works Contractor)) to the Board within 10 Business Days of such amount being paid by the Ventilation Works Contractor to Project Co ; and

- (ii) properly payable to the Project Manager and the Supervisor under the Project Manager Appointment and the Supervisor Appointment respectively up to the date of termination;

8.10.3 Without prejudice to the Board's right to step-in pursuant to the terms of the Collateral Warranties, in the event of a termination of this Agreement pursuant to Clause 8.10.1(a)(i) where the Ventilation Works Contract is terminated pursuant to clause 91.8 and the Project Agreement is not terminated (in which case clause 8.10.7 applies) and this Agreement is not terminated pursuant to clause 8.10.1(b)(ii) or 8.10.1(b)(iii) (in which case clause 8.10.7 applies), then the provisions of clauses 92 and 93 of the Ventilation Works Contract shall apply and the Board shall pay Project Co for any costs

- (i) assessed under A1 and A3 of clause 93 of the Ventilation Works Contract if such assessment shows an amount properly payable to the Ventilation Works Contractor on such termination, and if the assessment shows that there is any amount overpaid to the Ventilation Works Contractor and/or any amount is due to Project Co on such termination, then Project Co shall pay such amounts as are recovered from the Ventilation Works Contractor (and less any costs reasonably and properly incurred by Project Co in relation to the recovery of such sums) to the Board within 10 Business Days of such amount being paid by the Ventilation Works Contractor to Project Co and
- (ii) properly payable to the Project Manager and the Supervisor under the Project Manager Appointment and the Supervisor Appointment respectively up to the date of termination save where the Project Manager and/or the Supervisor has committed a Corrupt Act.

8.10.4 Without prejudice to the Board's right to step-in pursuant to the terms of the Collateral Warranties, in the event of a termination of this Agreement pursuant to clause 8.10.1(a)(i) where the Ventilation Works Contract is terminated by the Ventilation Works Contractor pursuant to (i) clause 91.4 of the Ventilation Works Contract and the reason Project Co has not paid the Contractor an amount due is because clause 8.10.1(c)(ii) applies, or (ii) clause 91.6 of the Ventilation Works Contract because of a default of Project Co and such default is caused by an equivalent default of the Board under this Agreement and the Project Agreement is not terminated (in which case clause 8.10.7 applies), and this Agreement is not terminated pursuant to clause 8.10.1(b)(ii) or 8.10.1(b)(iii) (in which case clause 8.10.7 applies), then the provisions of clauses 92 and 93 of the Ventilation Works Contract shall apply and the Board shall pay Project Co for any costs:

- (i) assessed under A1 , A2 and A4 of clause 93 of the Ventilation Works Contract if such assessment shows an amount properly payable to the Ventilation Works Contractor on such termination;

- (ii) properly payable to the Project Manager and the Supervisor under the Project Manager Appointment and the Supervisor Appointment respectively up to the date of termination; and
 - (iii) any other costs reasonably and properly incurred by Project Co provided that there shall be no double counting of any sums under this Agreement and any sums payable under the Project Agreement.
- 8.10.5 Without prejudice to the Board's right to step-in pursuant to the terms of the Collateral Warranties, in the event of a termination of this Agreement pursuant to clause 8.10.1(a)(i) where the Ventilation Works Contract is terminated pursuant to (i) clause 91.5 or (ii) clause 91.6 because of an instruction due to any other reason (and not default of the Ventilation Works Contractor nor default of Project Co), (iii) clause 91.7 or (iv) clause 91.10 and where the termination of this Agreement (and consequently the Ventilation Works Contract) is not due to a failure by the Ventilation Works Contractor to comply with his obligations under the Ventilation Works Contract and the Project Agreement is not terminated (in which case clause 8.10.7 applies), and this Agreement is not terminated pursuant to clause 8.10.1(b)(ii) or 8.10.1(b)(iii) (in which case clause 8.10.7 applies), then the provisions of clauses 92 and 93 of the Ventilation Works Contract shall apply and the Board shall pay Project Co for any costs:
- (i) assessed under A1 and A2 of clause 93 of the Ventilation Works Contract if such assessment shows an amount properly payable to the Ventilation Works Contractor on such termination; and
 - (ii) properly payable to the Project Manager and the Supervisor under the Project Manager Appointment and the Supervisor Appointment respectively up to the date of termination;
 - (iii) any other costs reasonably and properly incurred by Project Co provided that there shall be no double counting of any sums under this Agreement and any sums payable under the Project Agreement.
- 8.10.6 In the event of a termination of this Agreement pursuant to clause 8.10.1(a)(i) where the Ventilation Works Contract is terminated by Project Co pursuant to clause 91.1 for Ventilation Works Contractor Insolvency and the Project Agreement is not terminated (in which case clause 8.10.7 applies), and this Agreement is not terminated pursuant to clause 8.10.1(b)(ii) or 8.10.1(b)(iii) (in which case clause 8.10.7 applies), the provisions of clause 7A.1 and Section B of Schedule Part 3 of this Agreement shall apply and the Board shall pay Project Co for any costs:
- (i) assessed under A1 and A3 of clause 93 of the Ventilation Works Contract if such assessment shows an amount properly payable to the Ventilation Works Contractor on such termination, and if the assessment shows that there is any amount overpaid to the Ventilation Works Contractor and/or any amount is due to Project Co on such termination, then Project Co shall pay to the Board such amounts as are due by the Ventilation Works Contractor to Project Co, within 10 days of such amount being paid by the Ventilation Works Contractor to Project Co;

- (ii) properly payable to the Project Manager and the Supervisor under the Project Manager Appointment and the Supervisor Appointment respectively up to the date of termination; and
- (iii) all Direct Losses sustained by Project Co as a result of or in relation to Ventilation Works Contractor Insolvency provided and to the extent only that Project Co complies with the Section B of the Schedule Part 3.

8.10.7 Without prejudice to the Board's right to step-in pursuant to the terms of the Collateral Warranties, in the event of a termination of this Agreement pursuant to (a) Clause 8.10.1(b)(ii) or (b) Clause 8.10.1(b)(iii) or (c) in the event of termination under Clauses 8.10.1(a)(iv), 8.10.1(b)(i) or 8.10.1(c)(i) because the Project Agreement is terminated pursuant to clause 39, 40, 41, 42, 44.3 or 45 of the Project Agreement, then if the Project Agreement is terminated the provisions of clauses 46.2, 46.3, 46.4 or 46.5 of the Project Agreement shall apply as appropriate and, following termination of the Ventilation Works Contract pursuant to clause 91.10 by reason only of the fact that the Project Agreement is terminated or because this Agreement is terminated pursuant to Clause 8.10.1(b)(ii) or Clause 8.10.1(b)(iii), clauses 92 and 93 of the Ventilation Works Contract shall apply and the Board shall pay Project Co for any costs:

- (i) assessed under A1 and A2 of clause 93 of the Ventilation Works Contract if termination of the Ventilation Works Contract pursuant to clause 91.10 is by reason only of the fact that the Project Agreement is terminated under clause 39, 41 or 42 of the Project Agreement or because this Agreement is terminated pursuant to Clause 8.10.1(b)(ii) or Clause 8.10.1(b)(iii) and (as applicable) if such assessment shows an amount properly payable to the Ventilation Works Contractor on such termination, or
- (ii) assessed under A1 and A3 of clause 93 of the Ventilation Works Contract if termination of the Ventilation Works Contract pursuant to clause 91.10 is by reason only of the fact that the Project Agreement is terminated under clause 40, 44.3 or 45 of the Project Agreement and at the point of termination of the Project Agreement this Agreement could be terminated pursuant to clause 8.10.2 or 8.10.3 or 8.10.6, and if such assessment shows an amount properly payable to the Ventilation Works Contractor on such termination, and if the assessment shows that there is any amount overpaid to the Ventilation Works Contractor and/or any amount is due to Project Co on such termination, then Project Co shall pay such amounts as are recovered from the Ventilation Works Contractor (and less any costs reasonably and properly incurred by Project Co in relation to the recovery of such sums provided that payment will be made without any deduction for Project Co's costs where termination arises pursuant to clauses 40, 44.3 or 45 of the Project Agreement) to the Board within 10 Business Days of such amount being paid by the Ventilation Works Contractor to Project Co;
- (iii) properly payable to the Project Manager and the Supervisor under the Project Manager Appointment and the Supervisor Appointment respectively up to the date of termination; and

- (iv) save where termination arises pursuant to clauses 8.10.1(b)(ii), 8.10.1(b)(iii) or clauses 40, 44.3 or 45 of the Project Agreement, any other costs reasonably and properly incurred by Project Co provided that there shall be no double counting of any sums under this Agreement and any sums payable under the Project Agreement.

8.10.8 On termination of this Agreement under Clause 8.10, except for termination under Clause 8.10.1(c) (Board Default), or in the event that the Board exercises its step-in rights under the Collateral Warranties the Board may complete the Ventilation Works itself or employ other people to do so and he may use any Plant and Materials (as defined in the Ventilation Works Contract) to which Project Co has title pursuant to clause 92.1 of the Ventilation Works Contract and any Equipment (as defined in the Ventilation Works Contract) to which the Ventilation Works Contractor has title pursuant to clause 92.2 of the Ventilation Works Contract, to complete the Ventilation Works (which Project Co shall use reasonable endeavours to see is removed from the Ventilation Works Site when the Board's Representative informs Project Co that the Board no longer requires it to complete the Ventilation Works) and Project Co shall assign to the Board the benefit of any subcontract, the Parent Company Guarantee or other contract related to performance of this Agreement to the Board and Project Co shall and shall use reasonable endeavours to secure that the Ventilation Works Contractor vacates the Ventilation Works Site.

8.11 Mitigation

Each of the Board and Project Co shall at all times take all reasonable steps to minimise and mitigate any loss and/or costs for which the relevant party is entitled to bring a claim against the other party pursuant to this Agreement.

8.12 Governing Law and Jurisdiction

- 8.12.1 This Agreement shall be considered as a contract made in Scotland and shall be subject to the laws of Scotland.
- 8.12.2 Subject to the provisions of Clause 8.4 (Dispute Resolution), both parties agree that the courts of Scotland shall have exclusive jurisdiction to hear and settle any action, suit, proceeding or dispute in connection with this Agreement and irrevocably submit to the jurisdiction of those courts.

8.13 Counterparts

This Agreement may be executed in any number of counterparts in accordance with the Legal Writings (Counterparts and Delivery) (Scotland) Act 2015 (the "2015 Act"). No counterpart shall be effective until all counterparts have been executed and one part has been delivered to MacRoberts LLP from each of the Board and Project Co. The Board and Project Co agree MacRoberts LLP shall be the nominated person in terms of section 2(1) of the 2015 Act. Delivery by electronic transmission in a pdf format shall be permitted.

IN WITNESS WHEREOF these presents typewritten on this and the preceding forty-one (41) pages together with the Schedule in nine (9) Parts are executed by the parties hereto as follows:

SIGNED for and on behalf of
LOTHIAN HEALTH BOARD

by  DocuSigned by:
..... Authorised Signatory
Susan Goldsmith
..... Full Name
Edinburgh
at
on 5 aug 2020 2020

 DocuSigned by:
..... Authorised Signatory
Calum Campbell
..... Full Name
at Edinburgh
on 5/8/2020 2020

SIGNED for and on behalf of
IHS LOTHIAN LIMITED

by  DocuSigned by:
..... Director
Matthew Templeton
..... Full Name
at 
on 5 August 2020

 Director/Company Secretary
Vivienne Cockburn
..... Full Name
at Duns
on 5 August 2020 2020

This is the Schedule referred to in the foregoing Agreement between Lothian Health Board and IHS Lothian Limited relative to Ventilation Works at the Little France Campus

Schedule Part 1

Amendments to the Project Agreement

With effect from the date of this Agreement, the provisions of the Project Agreement shall be amended as set out in this Part 1 (Amendments to Project Agreement) of the Schedule and construed accordingly.

1A The following definitions shall be inserted and/or deleted and restated, as applicable, in Schedule Part 1 (*Definitions and Interpretations*) of the Project Agreement, as follows:

“Board Change Notice” has the meaning given to it in Supplemental Agreement No. 2;

“Board’s Construction Requirements” means the requirements of the Board set out or identified in Section 3 (*Board’s Construction Requirements*) of Schedule Part 6 (*Construction Matters*) of the Project Agreement and as amended by the Board Change Notice and Part A of the Scope in Supplemental Agreement No. 2, and as amended from time to time;

“Completion Criteria” means the Completion Tests as defined in Appendix B of Schedule Part 10 of the Project Agreement or, in respect of the Ventilation Works, the Ventilation Works Completion Criteria;

“Performance Guarantees” means the guarantees to Project Co in respect of the Construction Contract, the Service Contracts which, as at the date of this Agreement are in the Agreed Form and any Parent Company Guarantees to Project Co in respect of the Ventilation Works Contract which, as at the date of Supplemental Agreement No. 2 are in the Agreed Form;

“Physical Damage Policies” means the policies of insurance referred to in paragraph 1 (*Contractors’ ‘All Risk’ Insurance*) of Section 1 (*Policies to be Taken Out by Project Co and Maintained During the Design and Construction Phase*) and paragraph 1 (*Property Damage*) of Section 2 (*Policies to be Taken Out By Project Co and Maintained from the Actual Completion Date*) of Schedule Part 15 (*Insurance Requirements*) and the policy referred to in clause 6.9.3 and Schedule Part 7 Section 2 Part A of Supplemental Agreement No.2;

“Plant” means the infrastructure systems, building systems, fixed, and immovable equipment systems, installed as part of the Works and the Ventilation Works or under a Project Co Change as replaced from time to time;

“Project Manager” has the meaning given to it in Supplemental Agreement No. 2;

“Project Manager Appointment ” has the meaning given to it in Supplemental Agreement No. 2;

“Project Co’s Proposals” means Section 4 (Project Co Proposals) of Schedule Part 6 (Construction Matters) of the Project Agreement and the Scope (under exception of Part A of the Scope) in Supplemental Agreement No. 2, as amended from time to time;

“Reviewable Design Data” means the Design Data listed at Section 5 (*Reviewable Design Data*) of Schedule Part 6 (*Construction Matters*) and/or Reviewable Design Data detailed in the Scope;

“Room Data Sheets” means the room data sheets contained in Section 6 of the Schedule Part 6 (*Construction Matters*) and room data sheets amended to reflect the parts of the Facilities affected by the Ventilation Works;

“Scope” has the meaning given to it in Supplemental Agreement No. 2;

“Supervisor” has the meaning given to it in Supplemental Agreement No. 2;

“Supervisor Appointment” has the meaning given to it in Supplemental Agreement No. 2;

“Supplemental Agreement No. 2” means the agreement between the Board and Project Co with such name amending the Project Agreement between the Board and Project Co;

“Ventilation Works” has the meaning given to it in Supplemental Agreement No. 2;

“Ventilation Works Completion Criteria” has the meaning given to it in Supplemental Agreement No. 2;

“Ventilation Works Completion Date” has the meaning given to it in Supplemental Agreement No. 2;

“Ventilation Works Contract” means the design and build contract dated on or around the date of Supplemental Agreement No. 2 between Project Co and the Ventilation Works Contractor (which, as at the date of Supplemental Agreement No. 2, is in the Agreed Form) as amended or replaced from time to time in accordance with this Agreement and/or Supplemental Agreement No. 2;

“Ventilation Works Contractor” has the meaning given to it in Supplemental Agreement No. 2;

“Ventilation Works Defects” has the meaning given to it in Supplemental Agreement No. 2.”
and

“Ventilation Works Review Procedure” has the meaning given to it in Supplemental Agreement No. 2;

1B Clause 9.2.2 shall be amended to read as follows:-

“remedying Defects and carrying out Snagging Matters and exercising its rights under Clause 23.15 (*Board’s Maintenance Obligations*) and carrying out the Ventilation Works and, following the Ventilation Works Completion Date, remedying any Ventilation Works Defects;”

1C Clause 23.23 shall be amended to read as follows:-

"Subject to Clause 23.24, the Board is entitled to be reimbursed by Project Co for costs incurred by the Board for Utilities supplied to the Facilities during the Operational Term, and in respect of the Ventilation Works, following the Ventilation Works Indemnity Expiry Date, that are consumed in the process of Project Co or any Project Co Party and/or the Ventilation Works Contractor carrying out operations to rectify an Availability Failure."

1D A new clause 39A shall be inserted as follows:-

"The Board and Project Co acknowledge that any events or circumstances that are solely attributable to the carrying out of the Ventilation Works shall be disregarded for the purposes of determining whether any of the termination events described in clauses 39, 40, 41, 42, 44.3 or 45 has occurred and neither party shall be entitled to terminate this Agreement to the extent that the termination events described in the following clauses 39, 40, 41, 42, 44.3 or 45 are solely attributable to the Ventilation Works."

1E A new clause 46.13 shall be amended to read as follows:-

"46.13 Subject to the provisions of paragraph 2.1 of Section 5 (*General*) of Schedule Part 17 (*Compensation on Termination*) and subject to Clause 39A:

46.13.1 any compensation paid pursuant to this Clause shall be in full and final settlement of any claim, demand and/or proceedings of Project Co in relation to any termination of this Agreement and/or any Project Document (and the circumstances leading to such termination) and Project Co shall be excluded from all other rights and remedies in respect of any such termination;

46.13.2 any payments made by the Board pursuant to clause 8.10 of Supplemental Agreement No. 2 shall be in full and final settlement of any claim, demand and/or proceedings of Project Co in relation to any termination of Supplemental Agreement No. 2 and/or any Ventilation Works Ancillary Documents (and the circumstances leading to such termination) and Project Co shall be excluded from all other rights and remedies in respect of any such termination; and

46.13.3 the compensation and/or sums payable (if any) pursuant to this Clause 46 (*Compensation on Termination*) above and/or 8.10 of Supplemental Agreement No. 2 shall be the sole remedy of Project Co in relation to the relevant termination and Project Co shall not have any other right or remedy in respect of such termination."

1F Clause 47.2.5 shall be amended to read as follows:-

"if the Board so elects, Project Co shall procure that any of the Construction Contract, the Service Contracts, the Ventilation Works Contract, the Independent Tester Contract, the Project Manager Appointment and/or the Supervisor Appointment shall be novated or assigned to the Board, provided that where termination occurs under Clause 39 (*Board Events of Default*) the consent of the Contractor, the Service Provider, the Ventilation Works Contractor, the Project Manager, the Supervisor or the Independent Tester (as the case may be) shall be required

1G Clause 51.2.1 shall be amended as follows:

"any breach of any express provision of this Agreement by the Board or any Board Party (unless, and to the extent, caused or contributed to by Project Co or any Project Co Party and following the Ventilation Works Indemnity Expiry Date the Ventilation Works Contractor);"

1H Clause 51.2 shall be amended to include a new limb 51.2.10 as follows:

"the carrying out of the Board Change Notice HVC107 and any other changes instructed pursuant to clause 6.10 of Supplemental Agreement No.2 in relation to the Ventilation Works in accordance with the terms of Supplemental Agreement No.2."

1I Clause 51.2 shall be amended to include a new limb 51.2.11 as follows:

"the performance of the Ventilation Works by the Board following the exercise of their rights of step-in under the Collateral Warranties as defined in Supplemental Agreement No. 2 where, in so doing, the Board:

- (a) prevents Project Co from providing the Services and/or performing other obligations; or
- (b) otherwise causes:
 - (i) material adverse consequence on the provision of the Services and/or other obligations; or
 - (ii) a material adverse effect on the ability of Project Co to provide the Services and/or performing other obligations"

1J Clause 51.3 shall be amended as follows:

"Without prejudice to Clause 53 (Insurance), Project Co shall not be entitled to any payment which would not have been due under this Agreement but for Clause 51 (Excusing Causes) to the extent that Project Co:

51.3.1 is or should be able to recover under any policy of insurance required to be maintained by Project Co or any Project Co Party in accordance with this Agreement (whether or not such insurance has in fact been effected or, if effected, has been vitiated as a result of any act or omission of Project Co (or any Project Co Party), including but not limited to non-disclosure or under insurance) or has any other policy of insurance which Project Co has taken out and maintained; and

51.3.2 in relation to the Ventilation Works in the period prior to the twelfth anniversary of the Ventilation Works Completion Date, has recovered (without any requirement to commence legal proceedings against the insurer but provided that Project Co shall otherwise use reasonable commercial endeavours to recover such amounts and further provided that Project Co shall be able to reclaim any costs incurred in doing so) such amounts under the insurances to be maintained by Project Co or the Ventilation Works Contractor in accordance with the Ventilation Works Contract provided that in relation to the period following the twelfth anniversary of the Ventilation Works Completion Date clause 51.3.1 applies."

1K Clause 57.2 shall be amended to read as follows:-

"Subject to Clause 57.3 and clause 8.5.1 of Supplemental Agreement No.2 Project Co shall not, without the prior written consent of the Board, assign, novate transfer, sub-contract or otherwise dispose of any interest in this Agreement, the Independent Tester Contract, the Construction Contract, the Service Contracts, the Ventilation Works Contract, the Project Manager Appointment, the Supervisor Appointment and any other contract entered into by Project Co for the purposes of performing its obligations under this Agreement".

2. Schedule Part 5 (Land Matters)

Paragraph 5 shall be amended to read as follows:

"Project Co, any Project Co Parties, the Ventilation Works Contractor, the Project Manager, the Supervisor and its or their sub-contractors of any tier shall not be permitted to use any part of the Campus Site (including, without prejudice to the foregoing generality, the car parks, shops, restaurants, toilets, concourses and corridors forming the Campus Site except (a) as otherwise provided for in this Agreement, or (b) with the express permission of the Board, or (c) with regard to the accident and emergency department within the RIE Facilities, in the case of a medical emergency).

3. Schedule Part 8 (Review Procedure)

In Paragraph 3.3.3 after "any existing Approved RDD Item" insert "and the Ventilation Works"

4. Section 2, Schedule Part 12 (Method Statements)

In Paragraph 1.6.4.3 in the section headed "Technical Records" in the fourth paragraph commencing "'Project Co shall keep safe....", in the third sub-paragraph commencing "Test Certificates...." in line 2 after "Works" insert "and the Ventilation Works"

5. Schedule Part 14 (Payment Mechanism)

In Section 1 (Interpretation) amend the definition of "External Utility Failure" to add at the end after "Project Co Party" "or, subject to the operation of the Schedule Part 3 of the Supplemental Agreement No.2, the Ventilation Works Contractor."

6. Schedule Part 19 (Record Provisions)

In Section 2 (Records to be Kept):

- (a) in paragraph 2.2, after "payments to Sub-Contractors", insert ", the Ventilation Works Contractor, the Project Manager, the Supervisor"; and
- (b) at the end of paragraph 6 insert "and the Ventilation Works Review Procedure".

7. **Schedule 20 (Dispute Resolution Procedure)**

Paragraph 4.2.1 shall be amended to read as follows:

"there shall be two (2) panels of adjudicators, one in respect of construction matters (the "Construction Panel") and one in respect of operational and maintenance matters (the "Operational Panel"). All the adjudicators on each panel shall be wholly independent of Project Co, the Board, the relevant Sub-Contractor, the Ventilation Works Contractor, the Project Manager and the Supervisor, and any major competitors of Project Co, the relevant Sub-Contractor, the Project Manager or the Supervisor."

Add new paragraphs 4.11.4, 4.11.5 and 4.11.6 as follows:-

"4.11.4 Project Co and the Ventilation Works Contractor;

4.11.5 Project Co and the Project Manager for the Ventilation Works;

4.11.6 Project Co and the Supervisor for the Ventilation Works"

Paragraph 8 shall be amended to read as follows:

"Where the Board would otherwise be expressly liable to make payment to Project Co of sums which include amounts payable in turn by Project Co to any Sub-Contractor, the Ventilation Works Contractor, the Project Manager or the Supervisor, the Board shall not be entitled to withhold, reduce or avoid any such payment to Project Co in reliance only on the fact that the amount which is due from Project Co to the Sub-Contractor, the Ventilation Works Contractor, the Project Manager or the Supervisor (as appropriate) or the entitlement of the Sub-Contractor, the Ventilation Works Contractor, the Project Manager or the Supervisor (as appropriate) to payment of such amount as a result of the circumstances giving rise to the Board's obligation to pay, is conditional on the entitlement of, or receipt of, payment by Project Co from the Board."

8. **Schedule 26 (Commercially Sensitive Information)**

In the eleventh row of the table, amend the text in the first column as follows:

"Information on Project Co's costing mechanisms including information obtained from Project Co relating to project risks and pricing of the same and cost information relating to third party contractors, the Sub-Contractors, the Ventilation Works Contractor, the Project Manager and the Supervisor."

Schedule Part 2
The Ventilation Works Contract

In Pro

(1) IHS LOTHIAN LIMITED

(2) IMTECH ENGINEERING SERVICES CENTRAL LIMITED

In Pro

AGREEMENT FOR

VENTILATION WORKS

**BASED ON THE NEC4 ECC OPTION E AND ADDITIONAL
CONDITIONS OF CONTRACT (OPTION Z)**



THIS CONTRACT AGREEMENT IS MADE BETWEEN:

- (1) **IHS LOTHIAN LIMITED**, a company registered in Scotland with number SC493676 and having its registered office at 13 Queens Road, Aberdeen, AB15 4YL (the "**Client**" which expression includes its successors and permitted assignees); and
- (2) **IMTECH ENGINEERING SERVICES CENTRAL LTD**, a company registered in England and Wales with company number 00443522 and having its registered office at G&H House, Hooton Street, Carlton Road, Nottingham NG3 5GL (the "**Contractor**").

IT IS AGREED AS FOLLOWS:

1. The *Client* wishes to have the following *works* provided: the design, construction and installation, testing, commissioning and completion of a new ventilation system and associated other works as further described in the Contract Data part one and the Scope) at the Hospital.
2. The *Client* pays the *Contractor* the amount due and carries out his duties in accordance with the conditions of contract identified in the Contract Data.
3. The *Contractor* Provides the Works in accordance with the whole terms and conditions of contract, and the rights and obligations of the *Client* and *Contractor* shall be regulated by such terms and conditions of contract, which comprise:
 - 3.1 this Contract Agreement (incorporating a Schedule in 9 Parts);
 - 3.2 Additional Conditions of Contract (Option Z) contained in the Schedule Part 1;
 - 3.3 the NEC4 Engineering and Construction contract June 2017 Option E;
 - 3.4 the Contract Data part one contained in the Schedule Part 2A;
 - 3.5 the Contract Data part two contained in the Schedule Part 2B;
 - 3.6 the Scope contained in the Schedule Part 3;
 - 3.7 the Site Information contained in the Schedule Part 4;
 - 3.8 the Working Areas contained in the Schedule Part 5;
 - 3.9 the Forms of collateral warranty contained in the Schedule Part 6
 - 3.10 the Request for Information Protocol in Part D of the Scope
 - 3.11 the Completion Criteria contained in the Schedule Part 7
 - 3.12 the Certificate of Completion contained in the Schedule Part 8

and in the event of a conflict between the requirements of Clauses 3.1 to 3.12, the requirements shall have precedence in numerical order in this Clause 3.
4. The *Contractor* acknowledges that the *works* are identified as "healthcare critical" and must be carried out with all reasonable speed and priority.

5. This Agreement may be executed in any number of counterparts in accordance with the Legal Writings (Counterparts and Delivery) (Scotland) Act 2015 ("the 2015 Act"). No counterpart shall be effective until all counterparts have been executed and one part has been delivered to Pinsent Masons LLP from each of the *Client* and the *Contractor*. The *Client* and the *Contractor* agree Pinsent Masons LLP shall be the nominated person in terms of section 2(1) of the 2015 Act.

IN WITNESS WHEREOF these presents consisting of this and the preceding page together with the documents referred to at clause 3 above and annexed to this Agreement (totalling 78 pages) are executed as follows:

SUBSCRIBED for and on behalf of
IHS LOTHIAN LIMITED

by

..... Director

..... Full Name

at
on the
of

day
2020

In Pr ces

..... Director/Company Secretary

..... Full Name

at
on the
of

day
2020

SUBSCRIBED for and on behalf of
IMTECH ENGINEERING SERVICES CENTRAL LTD

by

..... Director/ Authorised Signatory

..... Full Name

at
on the
of

day
2020

..... Director/Company Secretary/Authorised Signatory

..... Full Name

at
on the
of

day
2020

In Pr ces

This is the Schedule Part 1 referred to in the foregoing Contract Agreement between **IHS LOTHIAN LIMITED** and **IMTECH ENGINEERING SERVICES CENTRAL LTD.**

ADDITIONAL CONDITIONS OF CONTRACT (OPTION Z)

In Pr ces

ADDITIONAL CONDITIONS OF CONTRACT (OPTION Z)**Z1 Additions and Amendments to the core clauses**

CLAUSE	PROVISION
1	GENERAL
11	Identified and defined terms
11.2(2)	In the definition of Completion insert the following additional bullet points: <ul style="list-style-type: none"> • “met all the Completion Criteria; and • supplied all the documents and information which the Scope states he is to supply by the Completion Date
11.2(13)	after “ <i>Client</i> ” insert “(which expression shall include its successors in title and assignees)”
11.2	<p>Add the following defined terms:</p> <p>“(35) Advance Design Works has the meaning given to it in the Subcontract Initial Engagement Letter.</p> <p>(36) Associated Client Company is any subsidiary of the <i>Client</i> or other company within the same group of companies as the <i>Client</i>.</p> <p>(37) Audit Scotland means the governmental body responsible for checking that public money is spent efficiently and effectively in Scotland.</p> <p>(38) Beneficiaries are each of:</p> <ul style="list-style-type: none"> • any Associated Client Company; • the Board; <p>(and “Beneficiary” is any one of them).</p> <p>(39) Board is Lothian Health Board/NHS Lothian a health board constituted in Scotland under the National Health Service (Constitution of Health Boards) (Scotland) Order 1974 (S.I. 1974/267) as amended by the National Health Service (Constitution of Health Boards) (Scotland) Act 1978 as amended by section 28 of the National Health Service and Community Care Act 1990 and having its principal address at Waverley Gate, 2-4 Waterloo Place, Edinburgh EH1 3EG and its successors and assignees of the Project Agreement and/or Supplemental Agreement (No. 2)</p> <p>(40) Business Day is any day other than a Saturday, Sunday or a bank holiday in Scotland.</p> <p>(41) Certificate of Completion means the certificate in the form in Schedule Part 8</p> <p>(42) CDM Regulations are the Construction (Design and Management) Regulations 2015 together with any guidance issued from time to time by the Health and Safety Executive.</p> <p>(43) Commercially Sensitive Information means:</p> <ul style="list-style-type: none"> • information about the <i>Contractor’s</i> processes, methodologies, working methods and information relating to the development of new processes

	<p>and methodologies which amount to a trade secret or which, if disclosed, could reasonably be considered to provide a commercial advantage to the <i>Contractor's</i> competitors;</p> <ul style="list-style-type: none"> • the <i>Contractor's</i> bank account information; • breakdown of prices within the overall Fee; or • information on the <i>Contractor's</i> costing mechanisms including information obtained from the <i>Contractor</i> relating to risks related to the works and pricing of the same and cost information relating to third party contractors and any sub-contractors. <p>(44) Completion Criteria means the criteria contained in the Schedule Part 7.</p> <p>(45) Confidential Information means:</p> <p>(a) information that ought to be considered as confidential (however it is conveyed or on whatever media it is stored) and may include information whose disclosure would, or would be likely to, prejudice the commercial interests of any person, trade secrets, Intellectual Property and know-how of either party and all personal data and sensitive personal data within the meaning of the Data Protection Act 2018;</p> <p>(b) any Commercially Sensitive information.</p> <p>(46) Consents are (1) any planning permission and (2) any building regulations warrant and/or consent, in each case as required to be obtained in relation to the <i>works and</i> "Consent" is one of them).</p> <p>(47) COVID-19 is the Corona Virus Disease 2019"</p> <p>(48) A COVID-19 Trigger Event is any of the following events if caused or contributed to by the occurrence of COVID-19:</p> <p>(a) a change in Scottish law; a new requirement, to comply with any existing Scottish law of the country; or existing Scottish laws is located ceasing to apply or new Government direction or advice in each case so far as such laws, directions or advice are applicable to the Hospital and/or the works;</p> <p>(b) the imposition of, or a change to access to the Site or Working Areas , opening hours of the Hospital by any local or public authority (including, without limitation, the national government, bodies governed by public law and central government authorities) or by agreement with the <i>Client</i> and/or the Board from the access to the Site or Working Areas and opening hours which existed at the Contract Date, which change of access to the Site or Working Areas or hours impedes or prevents the <i>Contractor</i> Providing the Works as envisaged at the Contract Date;</p> <p>(c) an event including a change in the programming that delays or prevents the <i>Contractor</i> from obtaining or receiving any Equipment, Plant and Materials, or unavailability of labour to the extent the same has a material and/or adverse impact on the carrying out of the <i>works</i>;</p> <p>(d) the change to or the imposition of a new requirement for any licence or</p>
--	---

	<p>consent required by the <i>Contractor</i> to Provide the Works which was not required at the Contract Date;</p> <p>(e) a change unforeseeable at the Contract Date to the business or economic environment in which the <i>Contractor</i> operates which is not caused by one of the other COVID-19 Trigger Events in this definition.</p> <p>(49) Fire Tester means Oakleaf Surveying Ltd a company registered in England & Wales, (number 06151373) with registered office at Peat House, 1 Waterloo Way, Leicester, England, LE1 6LP and/or Oakleaf Technical Services Ltd a company registered in England & Wales, (number 06151419) Peat House, 1 Waterloo Way, Leicester, England, LE1 6LP or such substitute fire tester as may be nominated by the Board and notified to the <i>Contractor</i> from time to time.</p> <p>(50) FOI(S)A means the Freedom of Information (Scotland) Act 2002 (and any subordinate legislation (as defined in section 73 of the Freedom of Information (Scotland) Act 2002) made under the Freedom of Information (Scotland) Act 2002 from time to time together with any guidance and/or codes of practice issued by the Scottish Information Commissioner or the relevant Government department in relation to such Act</p> <p>(51) Good Industry Practice means using standards, practices, methods and procedures conforming to the Law and exercising that degree of skill and care, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled and experienced person engaged in a similar type of undertaking under the same or similar circumstances as the <i>works</i>.</p> <p>(52) Guarantor has the meaning set out in clause 91.1.</p> <p>(53) Hospital means Royal Hospital for Children & Young People (RHCYP) & Department of Clinical Neurosciences (DCN), Edinburgh.</p> <p>(54) Human Resources are all persons involved in the management of this contract and in Providing the Works whether employed or engaged by the <i>Contractor</i>, any Subcontractor or otherwise.</p> <p>(55) Independent Tester means Arcadis LLP (registered under company number OC368843) whose registered office is at Arcadis House, 34 York Way, London N1 9AB or such substitute independent tester as may be appointed by the <i>Client</i> and the Board and notified to the Contractor from time to time.</p> <p>(56) Information has the meaning under section 73 of the FOI(S)A.</p> <p>(57) Intellectual Property means all registered or unregistered trademarks, service marks, patents, registered designs, utility models, applications for any of the foregoing, copyrights, unregistered designs, the <i>sui generis</i> rights of extraction relating to databases, trade secrets and other confidential information or know-how.</p> <p>(58) Law(s) means:</p> <p>(a) any applicable statute or proclamation or any delegated or subordinate legislation;</p> <p>(b) any enforceable community right within the meaning of section 2(1) of the European Communities Act 1972 as the same may be varied</p>
--	--

	<p>amended, replaced or repealed following the exit of the United Kingdom from the European Union;</p> <p>(c) any applicable guidance, direction or determination with which the Board, the <i>Client</i> or the <i>Contractor</i> is bound to comply to the extent that the same are published and publicly available or the existence or contents of them have been notified to the <i>Client</i> by the <i>Contractor</i>; and</p> <p>(d) any applicable judgement of a relevant court of law which is binding precedent in Scotland,</p> <p>in each case in force in Scotland.</p> <p>(59) Longstop Date is the date falling 12 weeks following the Completion Date.</p> <p>(60) Major Incident is the widely accepted term used by the emergency services to describe any emergency that requires the implementation of special arrangements by one or more of the emergency services, the NHS, the Board or local authority;</p> <p>(61) Project Agreement is the project agreement dated 12th and 13th February 2015 and entered into between the Board and the <i>Client</i> as varied by Supplemental Agreement (No.1) and Supplemental Agreement (No.2).</p> <p>(62) Request for Information has the meaning set out in the FOI(S)A or the Environmental Information Regulations as relevant (where the meaning set out for the term "request" shall apply).</p> <p>(63) Request for Information Protocol means the procedure for approval of the detailed designs developed, any revised Programme, and proposals for dealing with an emergency or matters under clause Z4.2, any proposed change to the Scope and/or any other items to be a submitted item pursuant to this contract, as contained in the Scope.</p> <p>(64) Reviewable Design Data has the meaning set out in clause 21A.1.</p> <p>(65) Scottish Futures Trust means the executive non-departmental public body of the Scottish Government established with the aim of improving public infrastructure.</p> <p>(66) Scottish Government means the devolved government for Scotland with responsibilities including the provision of healthcare to the people of Scotland.</p> <p>(67) Senior Funders are any parties providing finance in relation to the Hospital.</p> <p>(68) Service SA2 means the agreement which is supplemental to a contract for the provision of services in relation to the Hospital between the <i>Client</i> and the Service Provider.</p> <p>(69) Service Provider means Bouygues E&S Solutions Limited (registered under number 04243192) (formerly known as Bouygues E&S FM UK Limited) whose registered office is Becket House, 1 Lambeth Palace Road, London, SE1 7EU.</p> <p>(70) Subcontract Initial Engagement Letter means the initial engagement letter between the <i>Client</i> and the <i>Contractor</i> to carry out advance design works in relation to the <i>works</i> as amended and/or extended from time to time.</p>
--	--

	<p>(71) Supplemental Agreement (No.2) means the second supplemental agreement to the Project Agreement entered into between the Board and the <i>Client</i> in relation to the procurement of the <i>works</i>.</p> <p>(72) University is the University Court of the University of Edinburgh or any successor or permitted assignee acquiring an interest in the existing university site, buildings or facilities at the Hospital.</p> <p>(73) Ventilation Tester means The Institute of Occupational Medicine, a company registered in Scotland (No.SC123972) with registered office at Research Avenue North, Riccarton, Edinburgh, EH14 4AP and/or IOM Consulting Limited a company registered in Scotland (No. SC205670) with registered office at Research Avenue North, Riccarton, Edinburgh, EH14 4AP or such substitute ventilation tester as may be nominated by the Board and notified to the <i>Contractor</i> from time to time."</p>
12	Interpretation and the law
12.4	<p>Before the full stop, insert:</p> <p>"and supersedes any pr or nego ations an agreements between the Parties (including, but not limited to the Subcontract Initial Engagement Letter) in connection with the <i>works</i>. Each Party acknowledges that it has not entered into this contract in reliance on any representation or undertaking given by the other Party or any other person (whether written or oral) which is not expressly incorporated into this contract."</p>
12.5	<p>Insert a new clause as follows:</p> <p>"12.5 To the extent that any services or works relating to the <i>works</i> were carried out prior to or otherwise than under this contract including, but not limited to the Advance Design Works provided pursuant to the Subcontract Initial Engagement Letter, the <i>Contractor</i> confirms that it shall be deemed to have carried out such services or works subject to and in accordance with this contract."</p>
12.6	<p>Insert a new clause as follows:</p> <p>"12.6 Without prejudice to clause 12.4, the <i>Contractor</i> is not entitled to rely upon any survey, report or other document (whether included in the Site Information or not) prepared or provided to the <i>Contractor</i> by or on behalf of the <i>Client</i> regarding the Site or the <i>works</i> save for Part A of the Scope, and any documents referred to in it which the Contractor shall be entitled to rely on. Save for Part A of the Scope and any documents referred to in it, the <i>Client</i> makes no representation or warranty as to the accuracy or completeness of any such survey, report or document or any representation or statement, whether negligently or otherwise made, therein contained. The <i>Client</i> has no liability (save in respect of any fraudulent misrepresentation by the <i>Client</i>) arising out of or in relation to any such survey, report or document or from any representation or statement, contained in such survey, report or other document."</p>

12.7	<p>Insert a new clause as follows:</p> <p>"12.7 Without prejudice to the rights of the Beneficiaries under the collateral warranties, nothing in this contract confers or purports to confer any right to enforce any of its terms on any person who is not a party to it and without prejudice to the foregoing, this shall not in any circumstances be any rights which the Contract (Right of Third Party) Act 1999 granted by this contract."</p>
12.8	<p>Insert a new clause as follows:</p> <p>"12.8 In this contract, unless specified otherwise, reference to days shall mean calendar days."</p>
12.9	<p>Insert a new clause as follows:</p> <p>"12.9 Each party shall do all things and execute all further documents necessary to give full effect to this contract. Nothing in this contract shall be construed as creating a partnership or as a contract of employment between the <i>Client</i> and the <i>Contractor</i>."</p>
12.10	<p>Insert a new clause as follows:</p> <p>"12.10 If any provision of this contract shall be declared invalid, unenforceable or illegal by the courts of any jurisdiction to which it is subject, such provision may be severed and such invalidity, unenforceability or illegality shall not prejudice or affect the validity, enforceability and legality of the remaining provisions of this contract."</p>
12.11	<p>Insert a new clause as follows:</p> <p>"12.11 Reference to a document being in the Agreed Form is a reference to the form of the relevant document (or where appropriate, the form of relevant document on USB memory stick) agreed between the parties and for the purpose of identification initialled by each of them or on their behalf."</p>
13	<p>Communications</p>
13.1	<p>At the end insert the following sentence:</p> <p>"All communications may be given by e-mail provided that the email shall clearly specify the nature of the communication and the specific provisions of the Contract to which it relates and provided the communications are subsequently confirmed in writing."</p>
13.6	<p>Insert "and the Board and the Independent Tester" at the end of the first sentence and at the end of the second sentence.</p>

14	The <i>Project Manager</i> and the <i>Supervisor</i>
14.1	<p>Delete the existing text and replace with the following</p> <p>“No</p> <ul style="list-style-type: none"> • communication (including instructions, the Defects Certificate or other certificates), • acceptance of a communication from the <i>Contractor</i>, • failure to withhold acceptance of, express disapproval of or otherwise approve, review or comment on a submission or the <i>works</i> carried out by the <i>Contractor</i> or • enquiry, inspection, test, review, comment, consent, decision, approval, sanction or acceptance of the <i>Contractor's</i> work <p>by the <i>Client</i>, the <i>Project Manager</i> or the <i>Supervisor</i> excludes, limits or otherwise diminishes or changes the <i>Contractor's</i> liability under this contract, including the <i>Contractor's</i> responsibility to Provide the Works, his liability for Defects and for the design.</p> <p>Any relaxation, forbearance, indulgence or delay of any party in exercising any right shall not be construed as a waiver of the right and shall not affect the ability of that party subsequently to exercise that right or to pursue any remedy</p>
15	Early warning
15.2	<p>At the end of the sentence commencing "The <i>Project Manager</i> or the <i>Contractor</i> may instruct other people to attend...", insert:</p> <p>"provided that the <i>Client</i>, the Board and the Independent Tester shall be invited to and shall be entitled to attend every early warning meeting."</p>
15.5	<p>Insert a new clause:</p> <p>"15.5 The Early Warning Register does not allocate risk to anyone and/or change the rights and obligations of the parties."</p>
16	Contractor's Proposals
16.3	<p>Delete the full stop at the end of the second bullet point and add an "or" after "contract". Insert a new bullet point as follows:</p> <p>"used for any other services or activities of the <i>Client</i> or Board or any Others, subject to where access can be provided in accordance with the access protocol contained within the Scope"</p>
17	Requirements for instructions

17.1	<p>Delete clause 17.1 and replace with the following:</p> <p>"(a) The <i>Contractor</i> examines the Scope and all other documents forming this contract and confirms to the <i>Client</i> that he is not aware of any ambiguity or inconsistency:</p> <p>(i) with the exception of Part A of the Scope, within; or</p> <p>(ii) between</p> <p>any of the contract documents which might adversely affect the carrying out of the <i>works</i>.</p> <p>(b) The <i>Project Manager</i> or the <i>Contractor</i> notifies the other and the <i>Client</i> and the Board as soon as either becomes aware of any such ambiguity or inconsistency:</p> <p>(i) other than Part A of the Scope, within; or</p> <p>(ii) between</p> <p>the documents which are part of this contract or between the documents which form part of this contract and consents required for the works or applicable Law or relevant statutory requirements. The <i>Project Manager</i> gives an instruction resolving the ambiguity or inconsistency, unless such instruction arises due to a change in law under X2, and after the matter has been discussed at an early warning meeting."</p>
2	The Contractor's main responsibilities
20	Providing the Works
20.1	<p>Delete the existing text and replace with the following</p> <p>"The <i>Contractor</i> Provides the Works, both before and after the Contract Date in accordance with the Scope, so as not to put the Client in breach of, and so that the completed <i>works</i> will comply with each of:</p> <ul style="list-style-type: none"> • the Scope, • the other provisions of this contract, • the Laws, • the Consents, • Good Industry Practice and • Supplemental Agreement (No.2) <p>so that the various elements of the <i>works</i> are compatible and are properly co-ordinated and integrated with each other.</p>
20.3	In the first line, after " <i>Project Manager</i> " insert "with copies of any such advice sent to the <i>Client</i> and the Board on the same date".
20.4	In the second line on the second occasion insert "with copies of any such advice sent to the <i>Client</i> and the Board on the same date".

21	The Contractor's design
21.1	<p>Delete the existing text and replace with:</p> <p>"21.1.1 The <i>Contractor</i> designs the whole of the <i>works</i>. The <i>Contractor</i> accepts sole and exclusive responsibility for the design of the <i>works</i> and for the selection and standards of all materials, goods and workmanship forming part of the <i>works</i>, including without limitation any and all design undertaken before or after the Contract Date;</p> <p>21.1.2 The <i>Contractor</i> warrants and undertakes that once the <i>works</i> are completed they will meet any performance specification and/or requirements for the <i>works</i> set out in Part A of the Scope and without prejudice to this the <i>Contractor</i> warrants and undertakes that the design of the <i>works</i> (save for any designs contained in Part A of the Scope) has been and shall be carried out in accordance with Good Industry Practice and as a competent professional designer exercising reasonable skill and care and diligence and experienced in carrying out design activities of a similar nature, scope and complexity to those comprised in the <i>works</i>;</p> <p>21.1.3 The <i>Contractor</i> warrants and undertakes that it will exercise the same standard of skill and care and diligence referred to in clause 21.1.2 to see that it shall not specify and has not specified (and it will ensure all Subcontractors or others carrying out work for which the <i>Contractor</i> is responsible have not specified and shall not specify) for use nor use any prohibited materials which are not in accordance with the existing British and/or European Standards or Codes of Practice at the time of specification or the guidelines contained in the edition of the publication "Good Practice in Selection of Construction Materials" (Ove Arup & Partners) current at the date of their specification; and</p> <p>21.1.4 The design of the <i>works</i> will comply with the Laws, the Consents, Good Industry Practice (save for any designs contained in Part A of the Scope) and the other requirements of the contract."</p>
21A	Development of detailed design
21A.1	<p>Insert new clause 21A as follows:</p> <p>"21A.1 The <i>Client</i> and the <i>Contractor</i> acknowledge that elements of design of the <i>works</i> require review following the Contract Date as identified in the Scope ("Reviewable Design Data") and remain to be reviewed.</p> <p>21A.2 The <i>Contractor</i> shall submit the Reviewable Design Data for approval by the <i>Client</i> and the Board in accordance with the Request for Information Protocol, and shall provide all such reasonable assistance as the <i>Client</i> or the Board may require in relation to the review and approval of the detailed designs pursuant to the Request for Information Protocol.</p>
22	Using the Contractor's design

22.1	<p>Delete the existing text and replace with:</p> <p>“22.1 The <i>Contractor</i> shall (and shall procure that the owner who can grant the same shall):</p> <p style="padding-left: 40px;">22.1.1 make available to the <i>Client</i> and the Board without charge all data, materials and documents acquired or brought into existence in any manner whatsoever by the <i>Contractor</i> for the purposes of the <i>works</i> and which might reasonably be required by the <i>Client</i> and/or the Board for the purposes of exercising their rights or carrying out their duties under the Project Agreement and/or the construction, installation, commissioning testing, completion, handback, maintenance, repair, renewal, replacement, reinstatement, of the <i>works</i>, and/or the Hospital and/or carrying out their duties under the Project Agreement and/or carrying out any statutory duty and/or operation of the Hospital, and</p> <p style="padding-left: 40px;">22.1.2 make available to <i>Client</i> such data, materials and documents acquired or brought into existence by third parties for the purposes of the <i>works</i> as may reasonably be required by the <i>Client</i> and/or the Board for the purposes referred to in clause 22.1.1.</p> <p>22.2 The <i>Contractor</i> hereby grants (and shall procure that the owner who can grant the same shall grant) to the <i>Client</i> with immediate effect upon the coming into existence of any such data, materials and documents and/or such Intellectual Property a perpetual, transferable, non-exclusive, royalty-free licence (carrying the right to grant sub-licences) in all and any data, materials and documents and/or Intellectual Property which is or becomes vested in the <i>Contractor</i> for any purpose relating to the construction, installation, commissioning testing, completion, handback, maintenance, repair, renewal, replacement, reinstatement, of the <i>works</i>, and/or the Hospital and/or carrying out their duties under the Project Agreement and/or any statutory duty and/or operation of the Hospital.</p> <p>22.3 The <i>Client</i> shall be entitled to assign their rights in relation to the Intellectual Property and all other intellectual property to any third party without the consent of the <i>Contractor</i>.</p> <p>22.4 The <i>Contractor</i> shall indemnify the <i>Client</i> against any and all losses, costs, claims, demands, actions, damages, awards, liabilities, expenses, compensation, court and/or tribunal orders and all other liabilities howsoever arising (including any legal expenses) suffered or sustained by the <i>Client</i> arising as a result of any infringement of any intellectual property rights of any third parties as a result of the <i>works</i>, the completed <i>works</i> and/or the Hospital and/or use or reproduction of the Intellectual Property and/or data, materials and documents so far as they relate to the Scope.</p>
24	People
24.1	<p>After the first full stop insert: “The <i>Contractor</i> does not replace a key person unless the <i>Project Manager</i> agrees” and</p> <p>Before the last full stop insert: “or that his character or behaviour does not conform to the</p>

	<i>Client's</i> policies or standards. The <i>Contractor</i> shall ensure that all persons employed in performing the <i>works</i> are properly trained, qualified and supervised."
24.2	Delete clause 24.2 and replace with: "The <i>Project Manager</i> may having stated his reasons, instruct the <i>Contractor</i> to remove any of the Human Resources. The <i>Contractor</i> then arranges that, after one (1) day, the Human Resources in question have no further connection with the <i>works</i> . The <i>Project Manager</i> may require the removal from Site of persons who are in the <i>Project Manager's</i> opinion (acting reasonably) incompetent, negligent or who misconduct themselves or whose presence poses or is reasonably believed to pose a risk to the health of any staff, patients or visitors at the Hospital. Any such instruction does not result in an increase in the Prices or any delay to the Completion Date or to any Key Date."
25	Working with the <i>Client</i> and Others
25.4	Insert, as a new clause: "25.4 In regard to any work or services not forming part of this contract to be carried out by or on behalf o the <i>Client</i> or by O hers and whether on Site or the Working Areas or not, the <i>Contractor</i> sh l: <ul style="list-style-type: none"> • permit the execution of such work; • allow access to the Site in accordance with the access protocol contained within the Scope; • co-ordinate every aspect of the carrying out and completion of the <i>works</i> with the carrying out and completion of the design and construction of such work so as to minimise interference, delay and disruption to the <i>works</i> and to such works; and • provide such supplies, access and facilities to the Board, the Independent Tester, the Ventilation Tester and the Fire Tester as set out or referred to in the Scope, Provided always that: <ul style="list-style-type: none"> • to the extent that such works are described in the Scope, no such permitting, allowing, co-ordination and/or provision constitutes a compensation event; and • the execution of such works shall not be deemed to amount to the <i>Client</i> taking over any part of the <i>works</i> affected by those works."
26	Subcontracting
26.1	At the beginning insert: "The <i>Contractor</i> shall not place any sub-contracts or materials supply orders in connection with the <i>works</i> other than the appointment of Hoare Lea LLP (registered number OC407254) without first obtaining written consent from the <i>Client</i> (such consent not to unreasonably withheld or delayed)."
26.3	After the words " <i>Project Manager</i> " where they appear on line 2 and line 6 insert the words "and

	<p>the <i>Client</i>".</p> <p>Delete the first two bullet points and the text of them and replace with: "the <i>Project Manager</i> and the <i>Client</i> have agreed that no submission is required." and</p> <p>Before the first remaining bullet point insert:</p> <ul style="list-style-type: none"> "• they do not require the Subcontractor to maintain professional indemnity insurance at a level acceptable to the <i>Client</i> acting reasonably, • they contain unreasonable exclusions of or limitations upon the liability of the Subcontractor in respect of its obligations under the subcontract, and/or • the basis of pricing under the subcontract is not sufficiently transparent and broken down to permit value for money analysis and/or comply with the payment requirements as detailed in Core Clause 5 (Payment) and the Scope."
26.5	<p>Insert new clause:</p> <p>"26.5 The <i>Contractor</i> does not terminate the employment of a Subcontractor or agree to amend the terms of an accepted subcontract or waive any rights under it without the <i>Client</i>'s prior written approval."</p>
27	Other responsibilities
27.2	In the second bullet point after "the <i>Supervisor</i> " insert "the Board, the Ventilation Tester, the Fire Tester and the Independent Tester"
	<p>After 27.4 insert the following new clauses:</p> <p>"27.5 The <i>Contractor</i> obtains all Consents. The <i>Contractor</i> supplies the <i>Client</i> with copies of all relevant documentation in a timely manner, and co-ordinating and managing interface issues affecting the <i>works</i> with Others. Compliance with this clause by the <i>Contractor</i> is not a compensation event.</p> <p>27.6 The <i>Contractor</i> shall be a "Designer", the "Principal Designer" and the "Principal Contractor" under the CDM Regulations for the purposes of the <i>works</i>, and warrants that:</p> <ul style="list-style-type: none"> • it has, and shall maintain, all the skills, knowledge experience and organisational capacity to fulfil the role of "Designer", "Principal Designer" and "Principal Contractor" in a manner which secures the health and safety of any person affected by the Project, all pursuant to the CDM Regulations; • liaise and co-operate with any other designers or consultants engaged in relation to the <i>works</i> and with the <i>Client</i> to allow such parties to fulfil the obligations incumbent upon them pursuant to the CDM Regulations; • shall perform and observe its functions and duties under and the requirements and prohibitions imposed upon them by the CDM Regulations and any related approved code of practice and/or industry guidance issued thereunder and all other statutory provisions pertaining to health and safety all as may be amended from time to time; • comply with the instructions given pursuant to the CDM Regulations by the

	<p><i>Client</i>;</p> <ul style="list-style-type: none"> • take account of and/or apply the general principles of prevention as required by the CDM Regulations; and • shall provide to the <i>Client</i> and the Board: <ul style="list-style-type: none"> • in a substantially complete form on the Completion Date; and • in final form within five (5) Business Days of the Completion Date one electronic copy (on computer disk, tape or other format) of each and every health and safety file and construction phase plan prepared by the <i>Contractor</i> in its role as "Principal Designer" pursuant to the CDM Regulations in relation to the <i>works</i>.
28	Delete the title " Assignment " and replace with " Assignment and collateral warranties "
28	<p>Insert a new clause 28.2 as follows:</p> <p>"28.2 Within fourteen (14) days of request from either the <i>Client</i> or the Project Manager, the <i>Contractor</i> delivers to the <i>Client</i> collateral warranties executed in a self proving manner (under the Requirements of Writing Scotland Act 1995 as the same may be amended, replaced and/or supplemented from time to time from:</p> <ul style="list-style-type: none"> • the <i>Contractor</i> in favour of each and any Beneficiary and/or Beneficiaries, in the form set out in the Schedule Part 6 Part A with only such amendments approved by the <i>Client</i>, such approval not to be unreasonably delayed or withheld, and the <i>Client</i> shall not be liable to make any payment under this contract until such collateral warranty is provided to the <i>Client</i>; and • using best endeavours to secure from any Subcontractor engaged by the <i>Contractor</i> in favour of the <i>Client</i> and the Board, in the form set out in the Schedule Part 6 Part B within twenty (20) Business Days after the appointment of the relevant Subcontractor and in any event no later than the Completion Date."
29	Disclosure
	<p>Delete the existing clause 29 and insert the following:</p> <p>"29.1 The <i>Contractor</i> acknowledges that the Board shall, subject to Clause 29.2 be entitled to make the documents and information listed in this Clause 29.1 freely available to the public (which may include, without limitation, publication on the Board's website):</p> <ul style="list-style-type: none"> • the collateral warranty provided in its favour pursuant to clause 28.2; • the payment and performance report and financial model produced in relation to the Project Agreement (to the extent the same are updated in respect of the Ventilation Works) <p>and the <i>Contractor</i> acknowledges and agrees that, subject to the exclusion of information referred to in Clause 29.2(b), the provision or publication of the documents and information listed in this Clause 29.1 shall not give rise to any liability under the terms of the this contract or otherwise. The <i>Client</i> shall notify the <i>Contractor</i> in writing not less than five (5) Business Days prior to any intended</p>

	<p>provision or publication of information pursuant to this Clause 29.1.</p> <p>29.2</p> <p>a) The parties agree that the provisions of this contract and the collateral warranty provided pursuant to clause 28.2 shall, subject to Clause 29.2(b) below, not be treated as Confidential Information and may be disclosed without restriction and the <i>Contractor</i> acknowledges that the Board shall, subject to Clause 29.2(b) below, be entitled to make this contract and the collateral warranty provided pursuant to clause 28.2 available in the public domain.</p> <p>b) Clause 28.2(a) shall not apply to provisions of this contract designated as Commercially Sensitive Information which shall, subject to Clause 29.3 be kept confidential by the Board until 2nd July 2042 (or, if earlier, the date of termination of the Project Agreement) save for any information could reasonably be considered to provide a commercial advantage to the <i>Contractor's</i> competitors which shall be kept confidential for five years from the date on which the information is produced to the Board</p> <p>c) The parties shall keep confidential all the Confidential Information received by one party from the other party relating to this contract and the Hospital and shall use all reasonable endeavours to prevent its employees and agents from making any disclosure to any person of any such Confidential Information.</p> <p>29.3 Clause 29.2(b) and (c) shall not apply to:</p> <p>a) any disclosure of information that is reasonably required by any person engaged in the performance of their obligations under this contract for the performance of those obligations;</p> <p>b) any matter which a party can demonstrate is already or becomes generally available and in the public domain otherwise than as a result of a breach of this clause;</p> <p>c) any disclosure required to enable a determination of a dispute under this contract or Supplemental Agreement (No.2) or in connection with a dispute between the <i>Client</i> and the Service Provider or any of its other contractors;</p> <p>d) any disclosure required pursuant to any legal or parliamentary obligation placed upon the party making the disclosure or the rules of any stock exchange or governmental or regulatory authority having the force of law or, if not having the force of law, compliance with which is in accordance with the general practice of persons subject to the stock exchange or governmental or regulatory authority concerned;</p> <p>e) any disclosure of information which is already lawfully in the possession of the receiving party, prior to its disclosure by the disclosing party;</p> <p>f) any provision of information to the parties' own professional advisers or</p>
--	---

	<p>insurance advisers or to the Board or the Senior Funders or the Board's or the Senior Funders' professional advisers or insurance advisers;</p> <p>g) any disclosure by the Board or the <i>Client</i> of information relating to the design, construction, operation and maintenance of the Hospital and such other information as may be reasonably required for the purpose of conducting a due diligence exercise, to any proposed new contractor, its advisers and lenders, should the Board decide to retender the Project Agreement;</p> <p>h) any registration or recording of the Consents and property registration required;</p> <p>i) any disclosure of information by the Board to any other department, office or agency of the Government or Scottish Government or their respective advisers or to the Scottish Futures Trust or to any person engaged in providing services to the Board for any purpose related to or ancillary to the Project Agreement;</p> <p>j) any disclosure for the purpose of:</p> <p>(i) the examination and certification of the Board's or the <i>Client's</i> or the <i>Contractor's</i> accounts;</p> <p>(ii) any examination pursuant to section 6(1) of the National Audit Act 1983 of the economy, efficiency and effectiveness with which the Board has used its resources;</p> <p>(iii) complying with a proper request from either party's insurance adviser or insurer on placing or renewing any insurance policies; or</p> <p>(iv) (without prejudice to the generality of clause 29.3(d)) compliance with the FOI(S)A and the Environmental Information (Scotland) Regulations;</p> <p>k) any disclosure to the extent required pursuant to Clause 29.1; or</p> <p>l) any disclosure to the extent required pursuant to Clause 29B.2.</p> <p>Provided that, to avoid doubt, neither Clause 29.3(j)(iv) nor Clause 29.3(d) above shall permit disclosure of Confidential Information otherwise prohibited by Clause 29.2(c) where that information is exempt from disclosure under section 36 of the FOI(S)A.</p> <p>29.4 Where disclosure is permitted under clause 29.3, other than under clauses 29.3(b), 29.3(d), 29.3(e), 29.3(h) and 29.3(j), the party providing the information shall procure that the recipient of the information shall be subject to the same obligation of confidentiality as that contained in this contract.</p> <p>29.5 The <i>Contractor</i> shall not make use of this contract or any information issued or provided by or on behalf of the <i>Client</i> or the Board in connection with this contract otherwise than for the purpose of this contract, except with the written consent of the</p>
--	--

	<p><i>Client.</i></p> <p>29.6 Where the <i>Contractor</i>, in carrying out its obligations under this contract, is provided with information relating to any of the <i>Client's</i> or the Board's agents, contractors and sub-contractors of any tier and its or their directors, officers and employees and/or any of the University's agents, contractors, sub-contractors of any tier, tenants and its or their directors, officers, employees, consultants, researchers, students, staff, workmen, licensees, permitted occupiers, tenants, users, visitors, sub-contractors (of any tier), any patients (whether of the University or of the University's tenants), and any other person for whom the University is responsible for, the Contractor shall not disclose or make use of any such information otherwise than for the purpose for which it was provided, unless the <i>Contractor</i> has obtained the prior written consent of that person and has obtained the prior written consent of the <i>Client</i>.</p> <p>29.7 On or before termination of this contract or in the event that the Board exercises its step-in rights granted under the Collateral Warranties, the Contractor shall ensure that all documents or computer records in its possession, custody or control which contain information relating to any patient or any of the parties referred to in clause 29.5 including a y document in the possession, custody or control of a Subcontractor, are delivered up to the <i>Client</i>.</p> <p>29.8 The parties acknowledge that Audit Scotland has the right to publish details of this contract (including any commercially sensitive information) in its relevant reports to Parliament or the Scottish Parliament.</p> <p>29.9 The provisions of this clause 29 are without prejudice to the application of the Official Secrets Acts 1911 to 1989.</p> <p>29.10 Unless otherwise required by any Law or any regulatory or governmental authority (but only to that extent), neither party shall make or permit or procure to be made any public announcement or disclosure (whether for publication in the press, the radio, television, screen or any other medium) of any Confidential Information or in the case of the <i>Contractor</i> of its interest in the works and/or the Hospital or, in any such case, any matters relating thereto, without the prior written consent of the other party (which shall not be unreasonably withheld or delayed)."</p>
29A	Freedom of Information
	<p>Insert new clause 29A:</p> <p>"29A.1 The <i>Contractor</i> acknowledges that the Board is subject to the requirements of the FOI(S)A and the Environmental Information (Scotland) Regulations 2004 and shall assist and cooperate with the Board to facilitate the Board's compliance with its Information disclosure requirements pursuant to the same in the manner provided for in Clauses 29A.2 to 29A.8.</p>

	<p>29A.2 Where the Board receives a Request for Information in relation to Information that the <i>Contractor</i> via the <i>Client</i> is holding on its behalf and which the Board does not hold itself the Board or the <i>Client</i> may refer to the <i>Contractor</i> such Request for Information and the <i>Contractor</i> shall:</p> <p>a) provide the Board and the <i>Client</i> with a copy of all such Information in the form that the Board or the <i>Client</i> requires as soon as practicable and in any event within three (3) Business Days (or such other period as the Board acting reasonably may specify) of the Board's request; and</p> <p>b) provide all necessary assistance as reasonably requested by the Board or the <i>Client</i> in connection with any such Information, to enable the Board to respond to the Request for Information within the time for compliance set out in section 10 of the FOI(S)A or Regulation 5 of the Environmental Information (Scotland) Regulations 2004.</p> <p>29A.3 Following notification under Clause 29A.2, and up until such time as the <i>Contractor</i> has provided the Board and the <i>Client</i> with all the Information specified in Clause 29A.2(a), the <i>Contractor</i> may make representations to the Board as to whether or not or on what basis Information requested should be disclosed, and whether further information should reasonably be provided in order to identify and locate the information requested, provided always that the Board shall be responsible for determining at its absolute discretion:</p> <p>a) whether Information is exempt from disclosure under the FOI(S)A and the Environmental Information (Scotland) Regulations 2004; and</p> <p>b) whether Information is to be disclosed in response to a Request for Information, and</p> <p>in no event shall the <i>Contractor</i> respond directly, or allow any Subcontractor to respond directly, to a Request for Information unless expressly authorised to do so by the Board.</p> <p>29A.4 The <i>Contractor</i> shall ensure that all Information held on behalf of the Board is retained for disclosure for at least seven (7) years (from the date it is acquired), and shall permit the Board and the <i>Client</i> to inspect such Information as requested from time to time. Following the expiry of this seven year period, such Information shall be returned to the <i>Client</i> for them to hold on behalf of the Board for the remainder of the term of the Project Agreement.</p> <p>29A.5 The <i>Contractor</i> shall transfer to the <i>Client</i> any Request for Information received by the <i>Contractor</i> as soon as practicable and in any event within one (1) Business Days of receiving it.</p> <p>29A.6 The <i>Contractor</i> acknowledges that any lists provided by it listing or outlining</p>
--	--

	<p>Confidential Information are of indicative value only and that the Board may nevertheless be obliged to disclose Confidential Information in accordance with the requirements of FOI(S)A and the Environmental (Scotland) Regulations.</p> <p>29A.7 In the event of a request from the Board pursuant to Clause 29A.2 the <i>Contractor</i> shall as soon as practicable, and in any event within three (3) Business Days of receipt of such request, inform the Board and the <i>Client</i> of the <i>Contractor's</i> estimated costs of complying with the request to the extent these would be recoverable, if incurred by the Board, under section 13(1) of the FOI(S)A and the Freedom of Information (Fees for Required Disclosure (Scotland)) Regulations 2004. Where such costs (either on their own or in conjunction with the Board's own such costs in respect of such Request for Information) will exceed the appropriate limit referred to in section 12(1) of the FOI(S)A and the Freedom of Information (Fees for Required Disclosure (Scotland)) Regulations 2004 (the "Appropriate Limit") the Board informs the <i>Client</i> in writing whether or not it still requires the <i>Client</i> to comply with the request and when it does require the <i>Client</i> to comply with the request the <i>Client</i> shall so inform the <i>Contractor</i> and the three (3) Business Days period for compliance shall be extended by such number of additional days for compliance as the Board is entitled to under section 10 of the FOI(S)A. In such case, the <i>Client</i> shall notify the <i>Contractor</i> of such additional days as soon as practicable after becoming aware of them and shall reimburse the <i>Contractor</i> for such costs as the <i>Contractor</i> incurs in complying with the request to the extent it is itself entitled to reimbursement of such costs in accordance with the Board's own FOI(S)A policy from time to time.</p> <p>29A.8 The <i>Contractor</i> acknowledges that (notwithstanding the provisions of clause 29) the Board may, acting in accordance with the Scottish Ministers Code of Practice on the Discharge of Functions of Public Authorities under Part 6 of the Freedom of Information (Scotland) Act 2002 (the "Code"), and/or having full regard to any guidance or briefings issued by the Scottish Information Commissioner or the Scottish Ministers, be obliged under the FOI(S)A, or the Environmental Information (Scotland) Regulations to disclose Information concerning the <i>Client</i> or the <i>works</i>:</p> <ul style="list-style-type: none"> a) in certain circumstances without consulting with the <i>Client</i> or the <i>Contractor</i>; or b) following consultation with the <i>Client</i> and having taken their views into account, <p>provided always that where Clause 29A.8(a) above applies the <i>Client</i> shall where notified by the Board, in accordance with the recommendations of the Code, draw this to the attention of the <i>Contractor</i> prior to any disclosure.</p> <p>29A.9 In the event that the <i>Contractor</i> becomes subject to the Environmental Information</p>
--	--

	(Scotland) Regulations 2004 or FOI(S)A, it shall comply with its obligations under the Environmental Information (Scotland) Regulations 2004 or FOI(S)A. In doing so, it shall consult the <i>Client</i> before disclosing information about it or the Board or any agreement entered into between the Board and the <i>Client</i> or the <i>Client</i> and the <i>Contractor</i> in relation to the Ventilation Works."
29B	Information and Audit
	<p>Insert new clause 29B:</p> <p>"29B.1 The <i>Contractor</i> shall provide to the <i>Client</i> all information, documents, records and the like in the possession of, or available to, the <i>Contractor</i> (and to this end the <i>Contractor</i> shall use all reasonable endeavours to procure that all such items in the possession of any Subcontractor shall be available to it and the <i>Contractor</i> has included, or shall include, relevant terms in all subcontracts with the Subcontractors to this effect) as may be reasonably requested by the <i>Client</i> for any purpose in connection with this contract.</p> <p>29B.2 For the purpose of:</p> <ol style="list-style-type: none"> a) the examination and certification of the Board's accounts; or b) any examination pursuant to section 23 of the Public Finance and Accountability (Scotland) Act 2000 of the economy, efficiency and effectiveness with which the Board has used its resources, <p>the Auditor General for Scotland may examine such documents as he may reasonably require which are owned, held or otherwise within the control of the <i>Contractor</i> (and the <i>Contractor</i> shall procure that any person acting on its behalf who has such documents and/or other information shall also provide access) and may require the <i>Contractor</i> to produce such oral or written explanations as he considers necessary.</p> <p>29B.3 The <i>Contractor</i> shall provide and shall procure that its Subcontractors shall provide such information as the <i>Client</i> and the Board may reasonably require from time to time to enable them to meet their obligations to provide reports and returns pursuant to regulations, directions or guidance applicable to the Board including, without limitation, reports and returns regarding the physical condition of buildings occupied by the Board, health and safety, under the firecode, relating to environmental health and to comply with requirements for the provision of information relating to achievement of customer service targets."</p>
29C	Data Protection

	<p>Insert new clause 29C:</p> <p>"29C.1 For the purposes of this clause 29C, the term "personal data", "personal data breach" and "data subject" shall have the meaning given to it in Regulation (EU) 2016/679 (the "General Data Protection Regulation").</p> <p>29C.2 The <i>Contractor</i> warrants that it has, or will have at all material times (and it shall use best endeavours to procure that all Subcontractors (and their agents and subsubcontractors of any tier have or will have at all material times) the appropriate technical and organisational measures in place against unauthorised or unlawful processing of personal data and against accidental loss or destruction of, or damage to, personal data held or processed by it and that it has taken, or will take at all material times, all reasonable steps to ensure the reliability of any of its staff which will have access to personal data processed as part of the <i>works</i>.</p> <p>29C.3 The <i>Contractor</i> undertakes that, where it is required to process any personal data made available to it by or on behalf of the <i>Client</i>, it will act only on the instructions of the <i>Client</i>.</p> <p>29C.4 The <i>Contractor</i> undertakes that it will only obtain, hold, process, use, store and disclose personal data as is necessary to perform its obligations under this contract and that such data will be processed, used, stored and disclosed only in accordance with the Data Protection Act 2018, the General Data Protection Regulation and any other applicable Law.</p> <p>29C.5 The <i>Contractor</i> undertakes to allow the <i>Client</i> and the Board access to any relevant premises on reasonable notice to inspect the procedures described in 29C.2.</p> <p>29C.5 The <i>Contractor</i> undertakes to notify the <i>Client</i> promptly (and in any event within twenty-four (24) hours upon becoming aware of any actual, suspected, threatened or "near miss" personal data breach, and:</p> <ul style="list-style-type: none">(a) inform the <i>Client</i> with the known facts as regards to the above;(b) implement any measures necessary to restore the security of compromised personal data; and(c) assist the <i>Client</i> to make any required notifications to the Scottish Information Commissioner's Office (or any successor or replacement body from time to time) and affected data subjects. <p>Such obligations to notify and keep the <i>Client</i> informed shall continue until such actual or suspected, threatened or "near miss" personal data breach is fully rectified and/or is no longer threatened.</p> <p>29C.6 The <i>Contractor</i> shall indemnify the <i>Client</i> on demand and keep the <i>Client</i> indemnified</p>
--	--

	from and against all losses suffered or incurred by the <i>Client</i> arising out of or in connection with any claims and proceedings arising from any breach by the <i>Contractor</i> or any of its sub-processors or Subcontractors of their respective obligations under this clause 29C and/or the Data Protection Act 2018, the General Data Protection Regulation and any other applicable Law."
3	Time
30	Starting, Completion and Key Dates
30.1	Before the full stop insert: "and Provides the Works regularly and diligently"
30.2	Delete and substitute "The <i>Project Manager</i> decides the date of Completion and issues a certificate to the Independent Tester for the Certificate of Completion to be issued by the Independent Tester in accordance with clause 35.3".
31	The programme
31.3	Delete the "or" in the third bullet point and the full stop at the end of the fourth bullet point and insert the following additional bullet points after the fourth bullet point: "• that the revised programme would not (on the balance of probabilities) enable the <i>works</i> to be completed by the Completion Date if implemented; or • where in the opinion of the <i>Client</i> the revised programme that has been provided pursuant to this clause will not result in the Completion Date occurring by the Longstop Date if implemented."
32A	Progress Meetings
32A.1	Insert a new clause 32A.1 entitled "Progress Meetings" as follows: "32A.1 Without prejudice to the <i>Contractor's</i> obligation to provide and update the programme, the <i>Contractor</i> sends representatives to weekly or fortnightly progress meetings and/or other meetings specified and at the frequency specified in Part D of the Scope, requested by the <i>Client</i> and shall have due regard to any representations made by the <i>Client</i> , the Board and/or its representatives, the Service Provider, the Independent Tester or any of the consultants engaged by the <i>Client</i> in relation to the <i>works</i> ."
33	Access to and use of Site
33.1	Delete text and replace with the following: "33.1 The <i>Contractor</i> acknowledges that it will not have exclusive access to the Site and/or the Working Areas. Insofar as the <i>Client</i> has the right to do so, it shall where possible, allow access to and use of each part of Site and/or the Working Areas to the <i>Contractor</i> which is necessary for the <i>works</i> in accordance with the access

	<p>arrangements described in the access protocol contained within the Scope. Where the <i>Contractor</i> receives an instruction that access to and use of a part of the Site and/or the Working Areas required by the <i>Contractor</i> is not available when required in accordance with the Accepted Programme and/or in accordance with the access arrangements described in the access protocol contained within the Scope, the <i>Contractor</i> is obliged to carry out other works where possible at a part of the Site and/or the Working Areas that is available. Where the <i>Contractor</i> suffers a delay as a result of any unavailability in accordance with this clause 33.1, the <i>Contractor</i> may be entitled to a Compensation Event pursuant to clause 60.1(1), provided the <i>Contractor</i> has mitigated the extent of any such delay as far as possible."</p>
35	Take over
35.3	<p>Delete clause 35.3 and replace with the following:</p> <p>"35.3 The Independent Tester certifies Completion using the form of Certificate of Completion on the date when the Independent Tester receives a certificate from the <i>Project Manager</i> certifying that the whole of the works have achieved Completion in accordance with this contract and all of the Completion Criteria have been complied with;"</p>
41	Tests and Inspections
41.3	<p>Delete clause 41.3 and replace with the following:</p> <p>"41.3 The <i>Contractor</i>, the <i>Supervisor</i>, and the Independent Tester inform each other of each of their tests and inspections and informs the Service Provider, the Board, the Ventilation Tester and the Fire Tester before the test or inspection starts and afterwards informs each other and the Independent Tester, the Service Provider, the Board, the Ventilation Tester and the Fire Tester of the results. The <i>Contractor</i> informs the <i>Supervisor</i> and the Independent Tester of a test or inspection to be arranged and does not do any work which would obstruct the test or inspection. The <i>Supervisor</i>, the Service Provider and the Independent Tester, the Board, the Ventilation Tester and the Fire Tester may watch any test done by the <i>Contractor</i>."</p>
41.5	<p>At the beginning of the clause delete "The <i>Supervisor</i> does" and insert "The <i>Supervisor</i>, the <i>Project Manager</i> and the Independent Tester do".</p> <p>In the first bullet point, delete "The <i>Supervisor</i> has" and insert "The <i>Supervisor</i> and the Independent Tester have"</p>
41.8	<p>Insert new clause as follows:</p> <p>"41.8 The <i>Contractor</i> and the <i>Supervisor</i> shall notify the <i>Client</i>, the Board the <i>Project Manager</i>, the Service Provider, the Senior Funders, the Senior Funders' technical advisor and the Independent Tester, the Ventilation Tester and the Fire Tester giving not less than ten (10) Business Days' notice, of their intention to carry out any tests and inspections in relation to any part of the works and/or the Site. For the purpose of issuing each relevant certificate under this clause 41 and confirming all Defects have been corrected at the end of each <i>defect correction period</i> the Board, the Board's technical advisor the Senior Funders, the Senior Funders' technical advisor</p>

	(if applicable), the Service Provider, the Independent Tester, the Ventilation Tester and the Fire Tester shall have the right to attend and witness any relevant tests and inspections and the <i>Contractor</i> and the <i>Supervisor</i> shall ensure that any reasonable and proper instructions or representations made by the <i>Client</i> , the Board and/or the Board's technical advisors or the Service Provider shall be taken into consideration."
41.6	After "incurred by the <i>Client</i> " insert "and/or the Board"
41.7	After "incurred by the <i>Client</i> " insert "and/or the Board"
44	Correcting Defects
44.2	Delete clause and replace with the following <p>"44.2 The <i>Contractor</i> corrects a notified Defect before the end of the <i>defect correction period</i> (or such longer period as may be agreed by the Board and the <i>Client</i> pursuant to paragraph 1.2 of Section 4 (Temporary Repairs) of Schedule Part 14 (Payment Mechanism) of the Project Agreement) causing the minimum amount of interference and disruption as is reasonably possible for the carrying out of other works at the Site and the use and/or occupation of the Site, in accordance with programmes and methods of work ng reasonably required by the <i>Project Manager</i> and, in any event and without prejudice to the generaliy of the foregoing, to the extent and within the time frames set out in the Scope given the type of defect, shrinkage, fault or damage as reasonably determined by the <i>Project Manager</i>. The <i>defect correction period</i> begins at Completion for Defects notified before Completion and when the Defect is notified for other Defects."</p>
44.2A	Insert new clause as follows: <p>"44.2A In addition to its obligations under clause 44.2, during the <i>defect correction period</i>, the <i>Contractor</i> takes action to correct a Defect that prevents the system from operating (a "critical defect") that is notified to them within 72 hours of receiving such notification. In the event the <i>Contractor</i> does not take action to correct a critical defect within the required timescale the <i>Client</i> or the <i>Project Manager</i> shall instruct a third party to take action and the <i>Contractor</i> shall pay the cost of remediation by such third party. The <i>Client</i> shall take reasonable steps to ensure such costs are reasonably incurred and properly mitigated."</p>
44.3	Delete "the earlier of" and insert "the later of".
45	Accepting Defects
45.1	Insert at the end of the clause "In the case of the <i>Project Manager</i> , no change may be proposed without the <i>Project Manager</i> first obtaining the consent of the <i>Client</i> and the Board to the change."
45.2	After "consider the change, " in the first line, insert "and provided that the <i>Client</i> has first obtained the prior consent of the Board to the change,".
46	Uncorrected Defects
46.1	Before the first full stop insert:

	“or such cost shall be recoverable as a debt. The <i>Client</i> shall take reasonable steps to ensure such costs are reasonably incurred and properly mitigated.”
46.2	Before the first full stop insert: “or such cost shall be recoverable as a debt. The <i>Client</i> shall take reasonable steps to ensure such costs are reasonably incurred and properly mitigated.”
50	Assessing the amount due
50.2	In the first line, after " <i>Project Manager</i> ", insert "seven (7) days" In the second line, after "assessment date", insert "with a copy sent to the Board on the same date".
50.4	Delete the clause in its entirety and insert "Not Used".
50.9	In the first and penultimate lines of the clause, in each case after " <i>Project Manager</i> " insert "with copies sent to the <i>Client</i> and the Board on the same date". In the eighth line after "requested" delete " r advises the" and insert "by the Project Manager to the Project Manager with copies sent to the <i>Client</i> and the Board on the same date or advises the Project Manager, with copies sent to the Client and the Board on the same date, of any".
51	Payment
51.2	Delete the first sentence.
51.4	Delete "and is compounded annually".
	Insert the following new clauses at the end of clause 51: “51.6 Subject to Y2.3, the <i>Client</i> may deduct from any money due to the <i>Contractor</i> under this contract any sum due to the <i>Client</i> from the <i>Contractor</i> under this contract. The <i>Client</i> may deduct from any money due to the <i>Contractor</i> under this contract any sum required by any applicable Law to be deducted.” 51.7 The <i>Contractor</i> allows the <i>Client</i> , the <i>Project Manager</i> and their respective agents at any reasonable times to inspect and take copies of, and extracts from, the <i>Contractor’s</i> records showing the Defined Cost of any work for the purpose of assessing any compensation event. 51.8 Nothing contained in this contract shall remove or limit any right of the <i>Client</i> under any statute or Law or of equity in the nature of set off or abatement of price.”
6	Compensation events
60	Compensation events
60.1(1)	before the bullet points, insert

	<p>"a change made in order to accommodate the <i>Contractor's</i> method of working or" and in the original second bullet point delete "for his design".</p>
60.1(2)	Delete the word "The" at the beginning of the first line and insert in its place the words "Subject to clause 33.1, the".
60.1(5)	<p>Delete "The <i>Client</i> or Others" and replace with "Subject to clause 25.4, the <i>Client</i> or Others".</p> <p>Delete the full stop and insert, not as a bullet point:</p> <p>"provided that where the Other in question is the Board, the <i>Contractor</i> notifies the <i>Client</i> and the Board, giving not less than 4 weeks notice, of when the Board is required to carry out any activities necessary for the <i>Contractor</i> to be able to carry out the <i>works</i> in the relevant part of the Hospital in accordance with the Schedule Part 4 (Site Information) and the requirement to share the Working Areas with the Client or Others pursuant to clause 25.1 and subject to the access protocol contained within the Scope, the Accepted Programme and that the <i>Contractor</i> does all that it reasonably can to co-ordinate the activities of that Other with the <i>works</i> so as to avoid any delay or disruption to the <i>works</i>."</p>
60.1(7)	Delete and insert "Not Used"
60.1(13)	Replace "A <i>weather measurement</i> is recorded" with "Subject to clause 63.1A, a <i>weather measurement</i> is recorded"
60.1(19)	replace "An event" with: "Subject to clause 63.1A, an event".
60.1(22)	<p>Insert a new clause 60.1(22) as follows:</p> <p>"A delay arising from a delay by the Board or the Client in reviewing the Reviewable Design Data".</p>
60.1(23)	<p>Insert a new clause 60.1(23) as follows:</p> <p>"A COVID-19 Trigger Event".</p>
60.1(24)	<p>Insert a new clause 60.1(24) as follows:</p> <p>"A notice is issued by the Board to the <i>Client</i> and the <i>Contractor</i> to stop the carrying out of the <i>works</i> pursuant to clause Z4.2".</p>
60.1	<p>At the end of the clause, insert the following new paragraph:</p> <p>"Notwithstanding anything to the contrary:</p> <ul style="list-style-type: none"> • nothing is a compensation event to the extent that it arises from the breach, negligence, error, and/or default of the <i>Contractor</i> or any of its persons; and • the <i>Contractor</i> will only be entitled to a compensation event if the <i>Contractor</i> takes all reasonable steps to minimise and mitigate losses following any delay or additional costs as a result of the events listed in this clause 60.1".
61	Notifying compensation events

61.3	In the second sentence, delete “within eight weeks of becoming aware of the event” and replace with: “within four weeks of the earlier of the <i>Contractor</i> becoming aware of the event and such event becoming reasonably apparent”.
61.4	In the third bullet point after “fault” insert “breach, negligence, error, and/or default”
61.7	Insert at the end of the clause: “The <i>Project Manager</i> shall not assess any compensation event notified after the relevant <i>defects date</i> . The <i>Contractor</i> shall not be entitled to any changes to the Prices, the Completion Date and the Key Dates for compensation events which are not notified before the relevant <i>defects date</i> .”
61.8	Insert new clause "Notwithstanding any other provision of this contract, the <i>Contractor</i> shall not be entitled to recover compensation or make a claim under this contract in respect of any loss and/or costs that it has incurred or for any failure by the <i>Client</i> to the extent that it has already been compensated in respect of that loss, cost or failure pursuant to this contract."
62.1	In the second line after " <i>Project Manager</i> " insert "after seeking approval from the <i>Client</i> and the Board". In the third line after " <i>Project Manager</i> " insert "with copies sent to the <i>Client</i> and the Board on the same date".
62.5	In the first line after " <i>Project Manager</i> " insert "after seeking approval from the <i>Client</i> and the Board".
63	Assessing compensation events
63.1A	Insert a new clause: “63.1A Notwithstanding clauses 63.1 and 63.4, the Prices are not increased for any compensation event referred to in clauses 60.1(13) and/or 60.1(19).”
64	The <i>Project Manager</i>’s assessments
64.3	In the first line after “ <i>Contractor</i> ” insert “and the <i>Client</i> and the Board on the same date”
7	Title
70	The <i>Client</i>’s title to Plant and Materials
	After clause 70.2 insert the following new clauses: “70.3 The Price for Work Done to Date includes the cost of Plant and Materials within the Working Areas only to the extent that the <i>Project Manager</i> is satisfied that title to it

	<p>vests unconditionally in the <i>Contractor</i> and that unconditional title will transfer to the <i>Client</i> immediately on payment.</p> <p>70.4 The Price for Work Done to Date includes the cost of Plant and Materials outside the Working Areas only to the extent that</p> <ul style="list-style-type: none"> • the <i>Project Manager</i> is satisfied that title to it vests unconditionally in the <i>Contractor</i> and that unconditional title will transfer to the <i>Client</i> immediately on payment, • it is set aside and clearly marked as being for this contract, • it is adequately protected against weather, theft and vandalism.
8	Liabilities and Insurance
83	Insurance Cover
83.1A	<p>After clause 83.1 insert the following clause:</p> <p>“83.1A The <i>Contractor</i> shall maintain professional indemnity insurance in an amount not less than £10,000 000 00 (TEN MILL ON POUNDS STERLING) for any one claim and in the aggregate sub ject to unlimited reins atements fr m the <i>starting date</i> until 12 years after Completion including after termination of this contract provided that such insurance remains available to contractors generally in the United Kingdom insurance market on reasonable terms and at commercially reasonable premium rates.</p> <p>If such insurance is not available to contractors generally in the United Kingdom insurance market on reasonable terms and at commercially reasonable premium rates the <i>Contractor</i> immediately notifies the <i>Client</i> and the <i>Contractor</i> insures at the maximum level which is so available.</p> <p>The maintenance of (or failure to maintain) the insurances required by this contract does not relieve the <i>Contractor</i> of his other obligations and liabilities under this contract.”</p>
83.3	<p>After “has been issued” insert:</p> <p>“and are:</p> <ul style="list-style-type: none"> • without excesses save as agreed by the <i>Client</i>, • with reputable insurers lawfully carrying on business in the United Kingdom, • without any conditions or exclusions which are unusual in the United Kingdom insurance market and • without any terms <ul style="list-style-type: none"> ○ to the effect that an insured must discharge any liability before being entitled to recover from insurers or ○ which might adversely affect the rights of any person to recover from insurers under any applicable Law relating to the rights of third parties (other than the insured, and including the <i>Client</i>) against insurers.”

84	Insurance policies						
84.1	<p>After "the <i>starting date</i>" insert ", otherwise as the <i>Project Manager</i> requires".</p> <p>In line 2 after "<i>Project Manager</i>" insert "with copies to the <i>Client</i> and the Board on the same date"</p>						
85	If the <i>Contractor</i> does not insure						
85.1	<p>after "insure if" insert:</p> <p>"the <i>Contractor</i> does not maintain insurance as required by this contract or".</p>						
90	Termination						
90.2	<p>In the first row of the Termination Table delete "R1-R15, R18 or R22" and insert "R1-R15, R18, R22 or R23".</p> <p>Insert a new row in The Client terminating party section as follows:</p> <table border="1"> <thead> <tr> <th>Reason</th> <th>Procedure</th> <th>Amount Due</th> </tr> </thead> <tbody> <tr> <td>R24</td> <td>P1 and P4 save where the <i>Contractor</i> has failed to comply as provided for in clause 93.4, where P1, P2 and P3 applies</td> <td>A1 and A2 save where the <i>Contractor</i> has failed to comply as provided for in clause 93.4, where A1 and A3 apply</td> </tr> </tbody> </table>	Reason	Procedure	Amount Due	R24	P1 and P4 save where the <i>Contractor</i> has failed to comply as provided for in clause 93.4, where P1, P2 and P3 applies	A1 and A2 save where the <i>Contractor</i> has failed to comply as provided for in clause 93.4, where A1 and A3 apply
Reason	Procedure	Amount Due					
R24	P1 and P4 save where the <i>Contractor</i> has failed to comply as provided for in clause 93.4, where P1, P2 and P3 applies	A1 and A2 save where the <i>Contractor</i> has failed to comply as provided for in clause 93.4, where A1 and A3 apply					
91	Reasons for termination						
91.1	<p>At the end of the first sentence, insert "and the <i>Client</i> may also terminate if the company providing the guarantee pursuant to clause X4 (the "Guarantor") has done one of the following or its equivalent.";</p> <p>In the first bullet point after "other Party" insert "and/or the Guarantor"; and</p> <p>In the second bullet point after "other Party" insert "and/or the Guarantor".</p>						
91.2	<p>Delete clause and replace with:</p> <p>"91.2 The <i>Client</i> may terminate if</p> <ul style="list-style-type: none"> • the <i>Project Manager</i> has notified that the <i>Contractor</i> has substantially failed to comply with his obligations in relation to the <i>works</i> and has either not corrected the failure within four weeks of the notification or fails to mitigate and/or make safe any failure within one (1) day if the matter is an emergency and/or relates to any health and safety matter or would affect or put at risk clinical services and users of the Hospital and/or the Royal Infirmary Edinburgh, having corrected the failure, has at any subsequent time substantially failed to comply with his obligations in the same or a similar manner (R11), • the <i>Contractor</i> has not provided a guarantee which this contract requires 						

	<p>(R12), or</p> <ul style="list-style-type: none"> the <i>Contractor</i> has assigned or charged any rights and benefits arising out of this contract (R12).
91.6	<p>Insert the following paragraph at the end of clause</p> <p>"The <i>Contractor</i> does not terminate unless he has notified the <i>Project Manager</i> of his intention to do so and the <i>Project Manager</i> has not given an instruction allowing the <i>works</i> to re-start or start within four weeks of the notification."</p>
91.9	<p>Insert a new clause 91.9 as follows:</p> <p>"91.9 The <i>Client</i> may terminate if Completion does not occur by the Longstop Date (R23)."</p>
91.10	<p>"91.10 Subject to the Board exercising a right to step-in in accordance with the terms of its collateral warranty this contract shall terminate forthwith if Supplemental Agreement (No.2) or the Project Agreement are terminated (R24)."</p>
92	Procedures on termination
92.1	<p>Delete clause and replace with:</p> <p>"92.1 On termination, the <i>Client</i> may complete the <i>works</i> himself or employ other people to do so and may use any Plant and Materials to which he has title (P1)."</p>
93	Payment on termination
93.1	<p>Delete the second sub-bullet in the second main bullet in clause 93.1 and replace with:</p> <p>"• to which the <i>Client</i> has title and which the <i>Contractor</i> delivers to the Working Areas or to another location reasonably instructed by the <i>Project Manager</i>,".</p>
93.2	<p>Delete amount A3 in clause 93.2 and replace with:</p> <p>"A3 A deduction of the forecast of the additional cost to the <i>Client</i> and/or the Board of completing the whole of the <i>works</i> and/or any costs, expenses losses and/or damage (including but not limited to reasonably allocated overheads and other internal costs) suffered and/or incurred by the <i>Client</i> and/or the Board as a result of the termination or the event giving rise to it."</p>
93.3	<p>Insert, as a new clause 93.3:</p> <p>"In the event of any termination, notwithstanding any other provision of the contract but save as provided for in clause 93 the <i>Client</i> shall not be liable for and the <i>Contractor</i> shall not be entitled to any sum in respect of loss of anticipated profit, loss of contract or any other losses and/or expenses arising by reason of or in connection with such termination."</p>
93.4	<p>Insert, as new clause 93.4:</p> <p>"In the event of termination of Supplemental Agreement (No.2) under clause 91.10, if the reason for termination of Supplemental Agreement (No.2) or of the <i>Client's</i> employment under Supplemental Agreement (No.2) is that the <i>Contractor</i> has failed to comply with his obligations under this contract, the amount due on termination of the contract includes A1 and A3.</p>

	Otherwise, the amount due on termination of the contract includes A1 and A2 only."
PART Z2	AMENDMENTS TO DISPUTE RESOLUTION OPTION W2
W2.3(2)	<p>Insert the following after the third sentence:</p> <p>"The <i>Contractor</i> acknowledges and agrees that the <i>Client</i> may request that where the dispute raises issues which, are substantially the same as or connected with issues raised in a dispute or difference arising out of or relating to Supplemental Agreement (No. 2) that the Board is joined in any adjudication brought pursuant to this clause W2.3 subject to the agreement of the <i>Adjudicator</i>".</p>
W2.3(11)	<p>Delete clause and replace with:</p> <p>The <i>Adjudicator's</i> decision under this contract or, in the event that the <i>Adjudicator</i> orders that a dispute under Supplemental Agreement (No. 2) be consolidated with a dispute with which he is dealing under this contract (a "Consolidated Dispute"), is binding on the Parties and in the case of a Consolidated Dispute, the <i>Adjudicator's</i> decision is also binding on the Board unless and until revised by the <i>tribunal</i> and is enforceable as a matter of contractual obligation between the Parties and/or the Board and not as an arbitral award."</p>
W2.4	<p>Insert as new clause W2.4:</p> <p>"Where a dispute arises under Supplemental Agreement (No.2) between the Board and <i>Client</i> in relation to a decision made by the <i>Client</i>, the <i>Project Manager</i> or the <i>Supervisor</i> pursuant to this contract, including but not limited to:</p> <ul style="list-style-type: none"> • assessments of defects following an inspection pursuant to clause 43; or • any change to the Prices, the Completion Date or the Key Dates (as applicable) pursuant to clause 66.2; <p>the <i>Contractor</i> acknowledges and agrees that any adjustments shall not take effect until such disputes are resolved pursuant to Supplemental Agreement (No.2) and the Contractor shall proceed regularly and diligently with the works (as far as reasonably practicable) until such dispute is resolved."</p>
PART Z3	ADDITIONS AND AMENDMENTS TO SECONDARY OPTION CLAUSES
Option X7	Delay Damages
X7.4	<p>Insert a new clause as follows:</p> <p>"X7.4 If Completion has not occurred by the Longstop Date then whether or not delay damages have been paid and without affecting the <i>Contractor's</i> obligation to pay further delay damages the <i>Client</i> shall be entitled to terminate the <i>Contractor's</i> obligation to Provide the Works immediately in accordance with clause 90.1 and the provision of clauses 92, 93 and P1, P2 and P3 will apply and the amount due following termination will be A1 and A3."</p>
Option X18	Limitation of Liability

X18.5	<p>In the first bullet point after "Client's" insert "and/or the Board's"</p> <p>Delete the "and" at the end of the third bullet point and the full stop at the end of fourth bullet point and insert a comma at the end of each bullet point. Insert the following new bullet points after the fourth bullet point:</p> <ul style="list-style-type: none"> • liability for death or personal injury caused or contributed to by the <i>Contractor</i>, • liability in respect of the indemnities given by the <i>Contractor</i> under the contract, • liability in respect of fraud, wilful misconduct or wilful default, fraudulent misrepresentation, Corrupt Acts, or breach of statutory duty on the part of the <i>Contractor</i>, and • liabilities of the <i>Contractor</i> (if any) to the extent that such liabilities are or should be covered by the insurances to be taken out and maintained pursuant to clause 83."
Option Y(UK)2:	The Housing, Grants, Construction and Regeneration Act 1996
Y2.2	<p>Delete " The final date for payment is fourteen (14) days after the date on which payment becomes due or a different period for payment if stated in the Contract Data" and insert "The final date for payment is twenty one (21) days after the date on which payment becomes due, save for payments made in December where the final date for payment is twenty three (23) days after the date on which payment becomes due".</p>
PART Z4 –	ADDITIONAL CLAUSES
Z4.1	<p>Insert the following clause:</p> <p>“Z4.1 Advertising</p> <p>In addition to its obligations under clause 27, the <i>Contractor</i> agrees not to use any trading relationship between the <i>Client</i>, its name and trading style or any registered or unregistered trade mark which the <i>Client</i> may use, for any marketing or advertising purposes, without first obtaining the <i>Client's</i> written authorisation.</p> <p>The terms and conditions of this clause shall survive any termination, cancellation or expiration of the Contract.”</p>
Z4.2	<p>Insert the following clause:</p> <p>Z4.2 Board's right to stop the carrying out of the works</p> <p>Z4.2(1) The <i>Contractor</i> acknowledges that pursuant to clause 6.5.4 of the Supplemental Agreement (No.2), the Board has the right at any time through its representative to verbally or in writing instruct the <i>Client</i> to stop the relevant part or parts of the <i>works</i> and to allow the Board and/or its representatives to inspect the relevant part or parts of the <i>works</i> if the Board reasonably believes that:</p> <ul style="list-style-type: none"> (i) the carrying out of the relevant part or parts of the <i>works</i> has or is likely to: <ul style="list-style-type: none"> (A) have a potentially adverse impact on the clinical services and/or

	<p>operation of the Hospital and/or the Royal Infirmary Edinburgh; or</p> <p>(B) give rise to an immediate and serious threat to the health and safety of any user of the Hospital and/or the Royal Infirmary Edinburgh</p> <p>(ii) a Major Incident has occurred.</p> <p>Z4.2(2) In the event that the <i>Client</i> receives an instruction from the Board to stop the relevant part or parts of the <i>works</i> pursuant to clause Z4.2(1), the <i>Project Manager</i> notifies the <i>Contractor</i> and the <i>Contractor</i> immediately stops the relevant part or parts of the <i>works</i> until such time as the <i>Project Manager</i> gives an instruction to take any actions as are necessary to remedy the situation and minimise the adverse impact on the clinical services and/or operation of the Hospital and/or the Royal Infirmary Edinburgh and/or remove the threat to health and safety, or the <i>Project Manager</i> confirms that the <i>Contractor</i> is able to re-start the relevant part or parts of the <i>works</i>.</p>
--	--

In Pr ces

This is the Schedule Part 2A referred to in the foregoing Contract Agreement between **IHS LOTHIAN LIMITED** and **IMTECH ENGINEERING SERVICES CENTRAL LTD.**

CONTRACT DATA PART ONE

In Pr ces

Contract Data

PART ONE –

Completion of the data in full, according to the Options chosen, is essential to create a complete contract.

1 General

The *conditions of contract* are the core clauses, the clauses for main Option E, the following Option for resolving and avoiding disputes and secondary Options of the NEC4 Engineering and Construction Contract June 2017

Option for resolving and avoiding disputes

Secondary Options

The *works* are

The *Client* is

Name

Address for communications

Address for electronic communications

The *Project Manager* is

Name

Address for communications

Address for electronic communications

The *Supervisor* is

Name

Steven Halmshaw or such replacement person as the *Client* shall notify to the *Contractor*

Address for communications

2nd Floor Victoria Wharf
4 The Embankment
Sovereign Street
Leeds
LS1 4BA

Address for electronic communications

[Redacted] or such alternative address as the *Client* shall notify to the *Contractor*

The Scope is in

The Schedule Part 3

The Site Information is in

The Schedule Part 4

The *boundaries of the site* are

See the Schedule Part 3

The *language of the contract* is

English

The *law of the contract* is the law of

Scotland

The *period for reply* is

2 weeks (fourteen (14) days)

except that

~~The *period for reply* for~~

[Redacted]

is

[Redacted]

~~The *period for reply* for~~

[Redacted]

is

[Redacted]

The following matters will be included in the Early Warning Register

- Working within a live hospital environment.
 - (a) Any matter which arises which is adverse to health and safety and/or to staff, patients, visitors or other users of the Hospital and/or to the delivery of services and/or clinical services at the Hospital
 - (b) Any medical and/or clinical emergencies, and/or Major Incidents
- Budget over-run
- Impact of Brexit
- Impact of COVID-19
- Programme – any compensation events, any adverse impact on key dates and/or the Completion Date and/or Longstop Date - any revised programme submitted and impact on any of the foregoing and whether quotations for compensation events are to be requested

- Use of incumbent sub-contractors to retain project wide consistency
- Any ambiguities, inconsistencies, impossible or illegal requirements in Part A of the Scope
- Any proposal to change/amend the Scope
- Any comment or objection arising from the Request for Information Protocol
- Any proposal to change the Working Areas

Early warning meetings are to be held at intervals no longer than

2 The Contractor's main responsibilities

If the *Client* has identified work which is set to meet a stated *condition* by a *key date*

The *key dates* and *conditions* to be met are

	<i>condition</i> to be met	Key date
(1)	The ventilation works shall be complete, tested and commissioned	25 January 2021
(2)	<input type="text"/>	<input type="text"/>
(3)	<input type="text"/>	<input type="text"/>

The *Contractor* prepares forecasts of the total Defined Cost for the whole of the *works* at intervals no longer than

3 Time

The *starting date* is

The *access dates* are

	part of the Site	date
(1)	Pre surveys and design work	November 2019 on wards
(2)	<input type="text"/>	<input type="text"/>
(3)	<input type="text"/>	<input type="text"/>

The *Contractor* submits revised programmes at intervals no longer than

If the *Client* has decided the *completion date* for the whole of the *works*

The *completion date* for the whole of the *works* is

Taking over the *works* before the Completion Date

The *Client* ~~is~~ *is not* willing to take over the *works* before the Completion Date (Delete as applicable)

If no programme is identified in part two of the Contract Data

The period after the Contract Date within which the Contractor is to submit a first programme for acceptance is

1 week

4 Quality management

The period after the Contract Date within which the Contractor is to submit a quality policy statement and quality plan is

4 weeks

The period between Completion of the whole of the works and the defects date is

12 months / 52 weeks

The defect correction period is Ten (10) Business Days except that

The defect correction period for Emergency is One (1) day

The defect correction period for

In Process

5 Payment

The currency of the contract is the Pound (£) Sterling

The assessment interval is Monthly

The interest rate is 2 % per annum (not less than 2) above the

the London Inter-bank Offered Rate (LIBOR)

If there are additional compensation events

These are additional compensation events

See Amended Z Clauses, within the Schedule Part 1

8 Liabilities and insurance

If there are additional Client's liabilities

These are additional Client's liabilities

- (1)
- (2)
- (3)

The minimum amount of cover for insurance against death of or bodily injury to employees of the Contractor arising out of and in the course of their employment in connection with

the contract for any one event is £10,000,000

If the *Client* is to provide Plant and Materials

The insurance against loss of or damage to the works, Plant and Materials is to include cover for Plant and Materials provided by the *Client* for an amount of

N/A

If the *Client* is to provide any of the insurances stated in the Insurance Table

The *Client* provides these Insurances from the Insurance Table

(1) Insurance against Loss or damage to the works, Plant and Materials

Minimum amount of cover is At all times an amount not less than the full reinstatement or replacement value

The deductibles are Not to exceed £150,000 each and every claim in respect of defective design, £25,000 in respect of water damage, 20% or £100,000 whichever is the greater in respect of additional costs of completion and £10,000 all other losses

(2) Insurance against Loss or damage to property (except the works, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) or interference to property or any easement, right of air, light, water or way or enjoyment or use thereof by obstruction, trespass, nuisance, loss of amenities, or any like cause arising from or in connection with the Contractor Providing the Works

Minimum amount of cover is Not less than £100,000,000 in respect of any one occurrence, the number of occurrences being unlimited, but in the aggregate in respect of pollution liability

The deductibles are £10,000 for each and every occurrence of property damage (Personal injury claims will be paid in full)

(3) Insurance against N/A

Minimum amount of cover is

The deductibles are

If additional insurances are to be provided

The *Client* provides these additional insurances

(1) Insurance against

Minimum amount of cover is

The deductibles are

(2) Insurance against

Minimum amount of cover is

The deductibles are

(3) Insurance against

Minimum amount of cover is

The deductibles are

~~The Contractor provides these additional insurances~~

(1) Insurance against	<input type="text"/>
Minimum amount of cover is	<input type="text"/>
The deductibles are	<input type="text"/>
(2) Insurance against	<input type="text"/>
Minimum amount of cover is	<input type="text"/>
The deductibles are	<input type="text"/>
(3) Insurance against	<input type="text"/>
Minimum amount of cover is	<input type="text"/>
The deductibles are	<input type="text"/>

Resolving and avoiding disputes

The tribunal is

If the ~~tribunal~~ is arbitration The ~~arbitration procedure~~ is

The place where arbitration is to be held is

~~The person or organisation who will choose an arbitrator if the Parties cannot agree a choice or if the arbitration procedure does not state who selects an arbitrator is~~

If Option W1 or W2 is used The Senior Representatives of the Client are

Name (1)

Address for communications

Address for electronic communications

Name (2)

Address for communications

Address for electronic communications

The *Adjudicator* is

Name

Address for communications

Address for electronic communications

The *Adjudicator nominating body* is

If Option W3 is used — The number of members of the *Dispute Avoidance Board* is one/three (Delete as applicable)

If Option W3 is used and the number of members of the *Dispute Avoidance Board* is three

The *Client's* nomination for the *Dispute Avoidance Board* is

Name

Address for electronic communications

The *Dispute Avoidance Board* visit the Site at intervals no longer than months

The *Dispute Avoidance Board nominating body* is

X5: Sectional Completion

If Option X5 is used — The *completion date* for each *section* of the works is

Section	Description	completion date
(1)	<input type="text" value="N/A"/>	<input type="text" value="N/A"/>
(2)	<input type="text" value=""/>	<input type="text" value=""/>
(3)	<input type="text" value=""/>	<input type="text" value=""/>

(4)

Two empty rectangular boxes for input.

X6: Bonus for early Completion

If Option X6 is used without Option X5 The bonus for the whole of the works is [] per day
If Option X6 is used with Option X5 The bonus for each section of the works is

Section	Description	amount per day
(1)	[]	[]
(2)	[]	[]
(3)	[]	[]
(4)	[]	[]
The bonus for the remainder of the works		[]

X7: Delay damages

If Option X7 is used without Option X5 Delay damages for completion of the whole of the works are £5 000 per week

If Option X7 is used with Option X5 Delay damages for each section of the works are

Section	Description	amount per day
(1)	[]	[]
(2)	[]	[]
(3)	[]	[]
(4)	[]	[]
The delay damages for the remainder of the works are		[]

X8: Undertakings to the Client or Others

If Option X8 is used The undertakings to Others are

provided to

Two empty rectangular boxes for input.

The Subcontractor undertaking to Others are

works provided to

Two rows of empty rectangular boxes for input, with 'N/A' in the first box of the first row.

The Subcontractor undertaking to the Client are

works

96

N/A

In Pr ces

X10: Information modelling

If Option X10 is used

If no *information execution plan* is identified in part two of the Contract Data

The period after the Contract Date within which the Contractor is to submit a first Information Execution Plan for acceptance is

The minimum amount of insurance cover for claims made against the Contractor arising out of its failure to use the skill and care normally used by professionals providing information similar to the Project Information is, in respect of each claim

The period following Completion of the whole of the works or earlier termination for which the Contractor maintains insurance for claims made against it arising out of its failure to use the skill and care is

X12: Multiparty collaboration not used with Option X20)

If Option X12 is used

The *Promoter* is

The Schedule of Partners is in

The *Promoter's objective* is

The Partnering Information is in

X13: Performance bond

If Option X13 is used The amount of the performance bond is

X14: Advanced payment to the Contractor

If Option X14 is used The amount of the advanced payments is

The period after the Contract Date from which the Contractor repays the instalments in assessments is

The instalments are
(either an amount or a percentage of the payment otherwise due)

Advanced payment bond An advanced payment bond ~~is~~is not required (Delete as applicable)

In Process

X15: The Contractor's design

If Option X15 is used The ~~period for retention~~ following Completion of the whole of the works or earlier termination is

The ~~minimum amount of insurance cover for claims made against the Contractor arising out of its failure to use the skill and care normally used by professionals designing works similar to the works~~ is, in respect of each claim

The ~~period following Completion of the whole of the works or earlier termination for which the Contractor maintains insurance for claims made against it arising out of its failure to use the skill and care~~ is

X16: Retention

If Option X16 is used The ~~retention free~~ amount is

The ~~retention~~ percentage is %

Retention bond The Contractor ~~may~~may not give the Client a retention bond (Delete as applicable)

X17: Low performance damages

If Option X17 is used The amounts for low performance damages are
amount _____ performance level
 for

	for	
	for	
	for	

X18: Limitation of liability

If Option X18 is used

The *Contractor's* liability to the *Client* for indirect or consequential loss is limited to

£5,000,000

For any one event, the *Contractor's* liability to the *Client* for loss of or damage to the *Client's* property is limited to

£5,000,000

The *Contractor's* liability for Defects due to its design which are not listed on the Defects Certificate is limited to

£5,000,000

The *Contractor's* total liability to the *Client* for all matters arising under or in connection with the contract, other than exclude matters is limited to

100% final contract Prices

The *end of liability date* is 12 years after the Completion of the whole of the works

X20: Key Performance Indicators (not used with Option X12)

If Option X20 is used

The *incentive schedule* for Key Performance Indicators is in

A report of performance against each Key Performance Indicator is provided at intervals of

months

X22: Early Contractor involvement (only used with Options C and E)

If Option X22 is used

The Budget is

<i>item</i>	<i>description</i>	<i>amount per day</i>
-------------	--------------------	-----------------------

(1)		
(2)		
(3)		
(4)		
Total		

The *Contractor* prepares forecasts of the total Defined Cost of the work to be done in Stage One at intervals no longer than

The *Contractor* prepares forecasts of the total Project Cost at intervals no longer than

If there are additional events which could change the Budget

These are additional events which could change the Budget

- (1)
- (2)
- (3)

The fee percentage is % of the saving

Y(UK)1: Project Bank Account

Charges made and interest paid by the project bank

The Contractor is not to pay any charges made and to be paid any interest paid by the project bank (Delete as applicable)

Y(UK)2: The Housing Grants, Construction and Regeneration Act 1996

If Option Y(UK)2 is used and the final date for payment is not fourteen days after the date on which payment becomes due

The Period for payment is (twenty one) days after the date on which payment becomes due
save for payments made in December where the final date for payment is twenty three (23) days after the date on which payment becomes due

Y(UK)3: The Contracts (Rights of Third Parties) Act 1999

If Option Y(UK)3 is used

term	beneficiary
<input type="text"/>	<input type="text"/>

If Y(UK)3 is used with
Y(UK)1 the following entry
is added to the table for
Y(UK)3

Term

beneficiary

Z: Additional conditions of contract

If Option Z is used

The *additional conditions of contract* are

Contained within the Schedule Part 1 of this contract

In Pro

This is the Schedule Part 2B referred to in the foregoing Contract Agreement between **IHS LOTHIAN LIMITED** and **IMTECH ENGINEERING SERVICES CENTRAL LTD.**

CONTRACT DATA PART TWO

In Pro

Contract Data

PART TWO – DATA PROVIDED BY THE CONTRACTOR

Completion of the data in full, according to the Options chosen, is essential to create a complete contract.

1 General

The Contractor is

Name

Address for communications

Address for electronic communications

The fee percentage is %

The working areas are

The key persons are

Name (1)

Job

Responsibilities

Qualification

Experience

Name (2)

Job

Responsibilities

Qualifications

Experience

The following matters will be included in the Early Warning Register

- Working within a live hospital environment.
 - (c) Any matter which arises which is adverse to health and safety and/or to staff, patients, visitors or other users of the Hospital and/or to the delivery of services and/or clinical services at the Hospital
 - (d) Any medical and/or clinical emergencies, and/or Major Incidents
- Budget over-run
- Impact of Brexit
- Impact of COVID-19
- Programme – any compensation events, any adverse impact on key dates and/or the Completion Date and/or Longstop Date - any revised programme submitted and impact on any of the foregoing and whether quotations for compensation events are to be requested
- Use of incumbent sub-contractors to retain project wide consistency
- Any ambiguities, inconsistencies, impossible or illegal requirements in Part A of the Scope
- Any proposal to change/amend the Scope
- Any comment or objection arising from the Request for Information Protocol
- Any proposal to change the Working Areas

2 The Contractor's main responsibilities

If the Contractor is to provide Scope for its design

The Scope provided by the Contractor for its design is in

The Schedule Part 3

3 Time

If a programme is to be Identified in the Contract Data

The programme identified in the Contract Data is

Contained in the Appendix to this Contract Data Part Two

~~If the Contractor is to decide the completion date for the whole of the works~~

~~The completion date for the whole of the works is~~

Resolving and avoiding disputes

If Option W1 or W2 is used

The Senior Representatives of the Contractor are

Name (1)

David Keenan

Address for communications

Intech Engineering Services Scotland
The Hub,
East Gateway
Beancross Road
Grangemouth
FK3 8WH

Address for electronic communications

Name (2)

Mark Simpson

Address for communications

Hooton Street
Carlton Road
Nottingham
NG3 5GL

Address for electronic communications



If Option W3 is used — The Contractor's nomination for the Dispute Avoidance Board is

Name

Address for electronic communications

X10: Information modelling

If Option X10 is used

If an ~~information execution plan~~ is to be identified in the Contract Data

The ~~information execution plan~~ identified in the Contract Data is

X22: Early Contractor involvement (only used with Options C and E)

If Option X22 is used — The Stage One ~~key persons~~ are

Name (1)

Job

Responsibilities

Qualifications

Experience

Name (2)

Job

Responsibilities

Qualifications

Experience

The Pricing Information is in

Y(UK)1: Project Bank Account

If Option Y(UK)1 is used — The ~~project bank~~ is

~~named suppliers~~ are

--

Data for the Schedule of Cost Components

The listed items of Equipment purchased for work on the contract, with an on cost charge, are

Generally as detailed below however actual cost is scheduled and detailed on a cost reimbursable basis, the details below are outline headings that will be developed through the project duration;

Equipment	Time-related on cost charge	Per time period
Site Tool and Plant Purchase	Rates as per supplier	Rates as per supplier
Site Tool and Plant Hire	Rates as per supplier	Rates as per supplier
Site Storage	Rates as per supplier	Rates as per supplier
Site Accommodation	Rates as per supplier	Rates as per supplier

The rates for special Equipment are

Equipment	Rate
Air Handling Units	Rates as per supplier
Chillers	Rates as per supplier
Heater Batteries	Rates as per supplier
Attenuators	Rates as per supplier
Grilles	Rates as per supplier
Gas Tight Dampers	Rates as per supplier
Calorifiers	Rates as per supplier
Pressurisation Units	Rates as per supplier
General Pipework Distribution	Rates as per supplier
General Electrical Distribution	Rates as per supplier

The rates for Defined Cost of manufacture and fabrication outside the Workings Areas by the Contractor are

category of Subcontractor	Rate
Air Handling Units	Rates as per supplier
Chillers	Rates as per supplier
Heater Batteries	Rates as per supplier
Attenuators	Rates as per supplier
Grilles	Rates as per supplier
Gas Tight Dampers	Rates as per supplier
Calorifiers	Rates as per supplier
Pressurisation Units	Rates as per supplier
General Pipework Distribution	Rates as per supplier
General Electrical Distribution	Rates as per supplier
Air Handling Units	Rates as per supplier
Chillers	Rates as per supplier
Heater Batteries	Rates as per supplier

107

Attenuators	Rates as per supplier
Grilles	Rates as per supplier

The rates for Defined Cost of design outside the Workings Areas are

category of person	Rate
Regional Director	£ 813.69 per day
Contracts Manager	£ 813.69 per day
Project Manager	£ 525.24 per day
Pre-Construction Manager	£ 525.24 per day
Site Manager	£ 414.27 per day
Design Engineer	£ 567.09 per day
Contracts Engineer	£ 414.27 per day
Foreman	£ 378.45 per day
Cost Planner	£ 463.59 per day
Document Controller	£ 215.73 per day
CAD / Draughtsman	£ 431.55 per day
Commercial Lead	£ 525.24 per day
Quantity Surveyor	£ 463.59 per day
Healthcare P anne	£ 567.09 per day
Procurement Manager	£ 525.24 per day
Skilled Operatives	£ 315.00 per day
Unskilled Operatives	£ 270.00 per day

The categories of design people whose travelling expenses to and from the Working Areas are included as a cost of design of the *works* and Equipment done outside the Working Areas are

Hoare Lea Rates; Partner £ 131.25 per hour Director £ 103.13 per hour Associate Director £ 93.75 per hour Senior Associate £ 89.06 per hour Associate £ 79.69 per hour Principal Engineer £ 76.88 per hour Senior Engineer £ 60.94 per hour Engineer £ 51.56 per hour Graduate £ 42.19 per hour Admin £ 37.50 per hour
--

APPENDIX
PROGRAMME

The Programme is as set out on the USB memory stick in the Agreed Form identified as the Programme with reference "HVC 107 Technical Data", referred to in and forming part of this contract

In Pro

This is the Schedule Part 3 referred to in the foregoing Contract Agreement between **IHS LOTHIAN LIMITED** and **IMTECH ENGINEERING SERVICES CENTRAL LTD.**

SCOPE

The Scope is as set out on the USB memory stick in the Agreed Form identified as the Scope with reference "HVC 107 Technical Data", referred to in and forming part of this contract

In Pro

This is the Schedule Part 4 referred to in the foregoing Contract Agreement between **IHS LOTHIAN LIMITED** and **IMTECH ENGINEERING SERVICES CENTRAL LTD.**

SITE INFORMATION

The Site Information is as set out on the USB memory stick in the Agreed Form identified as the Site Information with reference "HVC 107 Technical Data", referred to in and forming part of this contract

In Pro

This is the Schedule Part 5 referred to in the foregoing Contract Agreement between **IHS LOTHIAN LIMITED** and **IMTECH ENGINEERING SERVICES CENTRAL LTD.**

WORKING AREAS

The Working Areas are as set out on the USB memory stick in the Agreed Form identified as the Working Areas with reference "HVC 107 Technical Data", referred to in and forming part of this contract

In Pro

112

This is the Schedule Part 6 referred to in the foregoing Contract Agreement between **IHS LOTHIAN LIMITED** and **IMTECH ENGINEERING SERVICES CENTRAL LTD**

PART A

Form of Contractor Collateral Warranty

Collateral warranty

AMONG

IHS LOTHIAN LIMITED

and

IMTECH ENGINEERING SERVICES CENTRAL LTD

In Pro
and

LOTHIAN HEALTH BOARD

relating to the Design, construction and installation and completion of a new ventilation system and associated other works to serve the Paediatric Critical Care and Haematology and Oncology areas on the 1st and 3rd floors respectively at Royal Hospital for Children & Young People (RHCYP) & Department of Clinical Neurosciences(DCN), Edinburgh

AGREEMENT**AMONG**

- (1) **LOTHIAN HEALTH BOARD**, a health board constituted in Scotland under the National Health Service (Constitution of Health Boards) (Scotland) Order 1974 (S.I. 1974/267) as amended by the National Health Service (Constitution of Health Boards) (Scotland) Amendment Order 2003 (S.S.I. 2003/217) pursuant to Section 2 of the National Health Service (Scotland) Act 1978 as amended by Section 28 of the National Health Service and Community Care Act 1990 and having its principal address at Waverley Gate, 2-4 Waterloo Place, Edinburgh EH1 3EG (the "**Beneficiary**", which term shall include all its successors and permitted assignees);
- (2) **IMTECH ENGINEERING SERVICES CENTRAL LTD**, (No 00443522) whose registered office is at G&H House, Hooton Street, Carlton Road, Nottingham NG3 5GL (the "**Contractor**"); and
- (3) **IHS LOTHIAN LIMITED**, (company number SC493676) whose registered office is at 13 Queen's Road, Aberdeen, AB15 4YL (the "**Client**").

RECITALS

- (A) The Contractor has entered into or is about to enter into a contract on or around the date hereof (the "**Contract**" (which shall be deemed to include any supplement, variation and/or amendment thereto agreed by the Contractor)) with the Client to carry out the design, construction, installation, commissioning and testing and completion of a new ventilation system and associated other works to serve Paediatric Critical Care and Haematology and Oncology areas on the 1st and 3rd floors respectively, (hereinafter together collectively referred to as the "**Works**") at Royal Hospital for Children & Young People (RHCYP) & Department of Clinical Neurosciences (DCN), Edinburgh of which the Works form part (hereinafter referred to as the "**Project**").
- (B) It is a condition of the Contract that the Contractor enters into this Agreement with the Beneficiary.

IT IS HEREBY AGREED AS FOLLOWS:**1. WARRANTY**

- 1.1 The Contractor warrants and undertakes to the Beneficiary that:
 - (a) it has complied with and shall continue to comply with the terms of the Contract; and
 - (b) without prejudice to the generality of clause 1.1(a) the design of the Works has been and shall be carried out in accordance with the reasonable skill and care and diligence as may be expected of a properly qualified designer of the appropriate disciplines for such design, experienced in carrying out work of a similar scope, nature, timescale and complexity and on a similar site or at similar locations to the Works; and
 - (c) it has and will exercise the same standard of skill and care and diligence referred to in clause 1.1.(b) above to ensure that it shall not and has not (and it will ensure all sub-contractors or

others carrying out work for which the Contractor is responsible have not and shall not) specify for use or use any prohibited materials which are not in accordance with the existing British Standards and Codes of Practice at the time of specification or the guidelines contained in the edition of the publication "Good Practice in Selection of Construction Materials" (2011: British Council for Offices) or any amended or updated version as at the *starting date* (as such term is defined in the Contract) and that the Contractor shall use the duty of care set out in clause 1.1.(b) above, along with what is generally known to the Contractor and/or within his profession in the United Kingdom and in accordance with British Standards and Codes of Practice regarding any material, substance, building practice or techniques known to be deleterious or hazardous to health and safety or to the durability of the property to ensure that those materials, substances, building practice or techniques specified for use or used in the Works will be in accordance with such guidance.

1.2 Without limiting clause 1.1 or any other obligation, duty and/or liability of the Contractor under or pursuant to this Agreement, the Contractor undertakes and agrees:-

- (a) to comply with the Contractor's obligations in relation to the rectification and/or making good of any defects, shrinkages or other faults (including, without limitation, any omissions or incomplete work) in the Works for which the Contractor is responsible pursuant to the Contract (hereinafter referred to as "Defects"); and
- (b) the Contractor shall be liable for and shall pay to the Beneficiary all reasonably demonstrated costs, expenses, losses, damages, claims, demands and/or other liabilities suffered and/or incurred by the Beneficiary which arise as a result of or in connection with any Defects including without *limitation for, rectifying and/or making good and/or procuring the rectification and/or making good of Defects.*

2. ENQUIRIES AND INSPECTION

The obligations and liabilities of the Contractor under this Agreement shall not be limited or excluded by any enquiry or inspection into any matter which may be made or carried out by the Beneficiary or by the appointment of any person, firm or company by the Beneficiary to make or carry out any enquiry or inspection and whether or not any independent liability of any such person, firm or company to the Beneficiary arises in connection therewith.

3. COPYRIGHT LICENCE

The Contractor hereby grants (and shall procure that the owner who can grant the same shall grant) to the Beneficiary an irrevocable, transferable, non-exclusive, royalty-free licence (carrying the right to grant sub-licences) in all and any material provided by the Contractor for any purpose relating to the Project including (but without limitation) the construction, completion, installation, commissioning, testing, completion, handback, maintenance, repair, renewal, replacement, operation, letting, sale, promotion, advertisement, reinstatement, repair and renewal and any extension of the property which is the subject of the Project (hereinafter referred to as "**Intellectual Property**") which is or becomes vested in the Contractor for any purpose relating to the design, construction, completion, installation, commissioning, testing and/or completion of the Project. The Contractor shall on reasonable demand provide the Beneficiary and those authorised by the Beneficiary copies of the Intellectual Property. The Beneficiary

shall be entitled to assign their rights in relation to the Intellectual Property and all other intellectual property to any third party without the consent of the Contractor.

The Contractor shall indemnify the Beneficiary against any and all losses, costs, claims, demands, actions, damages, awards, liabilities, expenses, compensation, court and/or tribunal orders and all other liabilities howsoever arising (including any legal expenses) suffered or sustained by the Beneficiary arising as a result of any infringement of any intellectual property rights of any third parties as a result of the Works, the Project and/or use or reproduction of the Intellectual Property.

4. STEP-IN RIGHTS

4.1

4.1.1 A "**Step-In Notice**" means a written notice from the Beneficiary to the Contractor:

- (a) requiring the Contractor to continue the performance of its obligations under the Contract in relation to the Works;
- (b) acknowledging that the Beneficiary (or its appointee) is assuming performance of the Client's obligations including payment of any fees and expenses properly incurred, due and payable and which are outstanding at the date of the Step-In Notice; and
- (c) accepting liability for payment of the fees and expenses payable after Step-In to the Contractor under the Contract.

4.1.2 An "**Entitlement**" means any:

- (a) right to terminate its engagement under the Contract and/or discontinue the performance of any of its obligations in relation to the Works; and/or
- (b) right to treat the Contract as repudiated.

4.2 The Contractor undertakes with the Beneficiary that it shall not exercise any Entitlement before the lapse of 21 days from receipt by the Beneficiary of a notice in writing of the Contractor's intention to do so.

4.3 Within the period referred to in clause 4.2 the Beneficiary may give a Step-In Notice. The Contractor shall be entitled to rely on a notice given to the Contractor by the Beneficiary under this clause 4.3 as conclusive evidence for the purposes of this Agreement that the Beneficiary is entitled to do so.

4.4 Upon the Beneficiary giving a Step-In Notice:

- 4.4.1 the Contract shall continue in full force and effect as if no Entitlement had arisen and in all respects as if the Contract had been made between the Contractor and the Beneficiary (or its appointee) to the exclusion of the Client; and
- 4.4.2 the parties (and any such appointee) shall enter into an agreement for the novation of the Contract by the Client to the Beneficiary (or such appointee), such agreement to be in terms to be agreed between the parties, such agreement not to be unreasonably delayed or withheld.

4.5 Notwithstanding any Entitlement, the Contractor may not exercise any Entitlement unless and until the end of the period of notice required by this clause 4.

4.6 Compliance by the Contractor with the provisions of this clause 4 shall not be treated as a waiver of any breach, act or omission giving rise to any Entitlement nor otherwise prevent the Contractor from exercising its rights after the expiration of the period referred to in clause 4.2 unless the right to exercise any Entitlement shall have ceased under the provisions of this clause 4.

- 4.7 The Client has agreed to be a party to this Agreement for the purpose of acknowledging that the Contractor in acting in accordance with the provisions of clause 4 shall not by doing so incur any liability to the Client.
- 4.8 If any Step In Notice given by the Beneficiary under this clause 4 requires the Contractor to accept the instructions of the Beneficiary's appointee, the Beneficiary shall, subject to the parties agreeing the terms for the novation agreement referred to in clause 4.4.2, be liable pursuant to any such agreement to the Contractor as guarantor for the payment of all sums from time to time due to the Contractor from the Beneficiary's appointee.

5. ASSIGNATION

- 5.1 This Agreement, the benefit hereof and/or the rights arising hereunder (whether or not accrued) may be assigned by the Beneficiary on two occasions without the Contractor's consent to any party to whom the Beneficiary is entitled to assign and nothing shall restrict the rights of the Scottish Ministers to affect a statutory transfer, without the consent of the Contractor or the Client being required.
- 5.2 The Contractor agrees that it shall not at any time assert that any permitted assignee in terms of the Agreement is precluded from recovering any loss resulting from any breach of this Agreement by reason that such assignee is not an original party to this Agreement or that no loss or a different loss has been suffered by such assignee.
- 5.3 The Contractor may not assign its rights or obligations under this Agreement and the Client may assign its rights or obligations under this Agreement only with the prior written consent of the Beneficiary.

6. EXCLUSION OF THIRD PARTY RIGHTS

The Contract (Third Party Rights) (Scotland) Act 2017 (the "Act") shall not apply to this Agreement and no person other than the parties to this Agreement (which term shall for the purposes of this clause include all permitted assignees or transferees or successors in title) shall have any rights under the Act, nor shall this Agreement be enforceable under the Act by any person other than the parties to it.

7. PROFESSIONAL INDEMNITY INSURANCE

The Contractor warrants that he has and shall maintain throughout the period that it retains liability and/or potential liability under, arising out of and/or in connection with this Agreement professional indemnity insurance to cover claims hereunder or in connection herewith in an amount of not less than TEN MILLION POUNDS STERLING (£10,000,000) for any one claim and in the aggregate in any one year, subject to unlimited reinstatements (provided such insurance is available generally in the market to contractors at commercially reasonable rates). Any increased or additional premium required by reason of the Contractor's own claims record or other acts, omissions, matters or things particular to any sub-contractor shall be deemed to fall within commercially reasonable rates. Such insurance shall be with well-established United Kingdom insurance offices or underwriters of good repute. As and when it is reasonably required to do so by the Beneficiary, the Contractor shall produce for inspection documentary evidence to show that the insurance required is being maintained properly.

8. COLLATERAL WARRANTIES

The Contractor shall, within ten days of each request made from time to time by the Beneficiary, execute and deliver an agreement or agreements in the form of this Agreement (save for this clause 8) in favour of any one or more party entitled in terms of the Contract.

9. GOVERNING LAW AND JURISDICTION

This Agreement (and any dispute, controversy, proceedings or claim of whatever nature arising out of or in any way relating to this Agreement or its formation) shall be governed by and construed in accordance with Scots law and the parties hereby irrevocably submit to the exclusive jurisdiction of the Scottish courts.

10. LIABILITY AND DEFENCES

- 10.1 The Contractor shall have no greater duties and obligations to the Beneficiary under this Agreement than as it would have if the Beneficiary was named as joint "Client" with the Client under the Contract.
- 10.2 The Contractor shall be entitled in any action or proceedings by the Beneficiary to rely on any limitation in the Contract and to raise the equivalent rights in defence of liability as it would have under the Contract, declaring however that the Contractor (a) will not seek to rely on any defence in the event of a claim being made against it by Beneficiary pursuant to this Agreement that the Beneficiary was not an original party to the Contract and (b) shall not at any time assert that the Beneficiary is precluded from recovering any loss resulting from any breach of this Agreement by reason that the Beneficiary has suffered no loss or a different loss has been suffered by the Client and (c) the Contractor shall not be entitled to raise any retention, counterclaim or set-off under this Agreement in respect of any sums due under the Contract.
- 10.3 The Contractor shall be liable for any breach and/or default of any obligation of the Contractor arising under, out of or in connection with this Agreement provided that the Beneficiary shall have commenced an action and/or proceedings in respect thereof on or before the expiry of 12 years from the date of Completion (as defined in the Contract) of the whole of the Works. No action or proceedings arising under, out of or in connection with this Agreement shall be commenced against the Contractor after the expiry of 12 years from the date of Completion (as defined in the Contract) of the whole of the Works.

11. NOTICES

- 11.1 Any notice to be given hereunder shall be sufficiently served if in writing and delivered personally or sent by pre-paid first class recorded delivery post to the Beneficiary, the Client and the Contractor at their respective addresses specified in the preamble to this Agreement or such other address notified in writing by any party to all of the other parties.
- 11.2 In proving service it shall be sufficient to prove that the envelope containing the notice was properly addressed and either delivered personally or posted as a pre-paid first class recorded delivery letter.

12. COUNTERPART

This Agreement may be executed in any number of counterparts in accordance with the Legal Writings (Counterparts and Delivery) (Scotland) Act 2015 (“the 2015 Act”). No counterpart shall be effective until all counterparts have been executed and one part has been delivered to MacRoberts LLP from each of the Client, the Contractor, and the Beneficiary. The Client, the Contractor, and the Beneficiary agree MacRoberts LLP shall be the nominated person in terms of section 2(1) of the 2015 Act.

IN WITNESS WHEREOF these presents consisting of this and the preceding five (5) pages are executed as follows

SUBSCRIBED for and on behalf of **LOTHIAN HEALTH BOARD**

..... Authorised Signatory

..... Full Name

at

on

In Pro

..... Authorised Signatory

..... Full Name

at

on

SUBSCRIBED for and on behalf of **IMTECH ENGINEERING SERVICES CENTRAL LTD**

by

..... Director/Authorised Signatory

..... Full Name

at

on

..... Director/Company Secretary/Authorised Signatory

..... Full Name

at

on



SUBSCRIBED for and on behalf of **IHS LOTHIAN LIMITED**

by

..... Director

..... Full Name

at

on

..... Director/Company Secretary

..... Full Name

at

on

120

PART B

Form of Subcontractor Collateral Warranty

CONSULTANT'S COLLATERAL WARRANTY

relating to a project at

ROYAL HOSPITAL FOR SICK CHILDREN & YOUNG PEOPLE + DCN

In Process between

HOARE LEA LLP

and

[LOTHIAN HEALTH BOARD][IHS LOTHIAN LIMITED]

THIS AGREEMENT is executed as a Deed and is dated

PARTIES

- (1) **HOARE LEA LLP (registered number OC407254)** of 155 Aztec West, Almondsbury, Bristol, England, BS32 4UB (**Consultant**).

And

- (2) **[LOTHIAN HEALTH BOARD** a health board constituted in Scotland under the National Health Service (Constitution of Health Boards) (Scotland) Order 1974 (S.I. 1974/267) as amended by the National Health Service (Constitution of Health Boards) (Scotland) Amendment Order 2003 (S.S.I. 2003/217) pursuant to Section 2 of the National Health Service (Scotland) Act 1990 and having its principal address at Waverley Gate, 2-4 Waterloo Place, Edinburgh, EH1 3EG] **OR [IHS LOTHIAN LIMITED** of 13 Queen's Road, Aberdeen, AB15 4YL] (**Beneficiary which term shall include its successors and assignees**).

BACKGROUND

- (A) The Client (who is described as the "Contractor" in the Professional Appointment) has engaged the Consultant to perform the Services in relation to the Project.
- (B) The Beneficiary has an interest in the Project.
- (C) The Consultant has agreed to enter into this collateral warranty in favour of the Beneficiary.
- (D) The Beneficiary has paid £1 to the Consultant as consideration under this agreement.

AGREED TERMS

1. INTERPRETATION

The following definitions and rules of interpretation apply in this agreement and the Background.

1.1 Definitions:

Business Day: a day other than a Saturday, Sunday or public holiday in Scotland when banks are open for business.

Professional Appointment: an agreement in writing dated 24th February 2020 between the Client and the Consultant.

Project: means the design construction, commissioning and completion of Ventilation Works associated with Board Change Notice HVC107.

Property: Royal Hospital for Children & Young People + DCN.

Services: the services defined in the Professional Appointment, performed by or on behalf of the Consultant for the Client pursuant to the Professional Appointment.

Client: IMTECH ENGINEERING SERVICES CENTRAL LTD, (No 00443522) whose registered office is at G&H House, Hooton Street, Carlton Road, Nottingham NG3 5GL.

- 1.2 A reference to **writing** or **written** includes fax but not e-mail.
- 1.3 A reference to a document is a reference to that document as varied or novated (in each case, other than in breach of this agreement) at any time.
- 1.4 References to clauses are to the clauses of this agreement.
- 1.5 Any reference to a English legal term for any action, remedy, method of judicial proceeding, legal document, legal status, court, official or any legal concept or thing shall, in respect of any jurisdiction other than England, be deemed to include a reference to that which most nearly approximates to the English legal term in that jurisdiction.
- 1.6 Any words following the terms **including, include, in particular, for example** or any similar expression shall be construed as illustrative and shall not limit the sense of the words, description, definition, phrase or term preceding those terms.

2. COMPLY WITH PROFESSIONAL APPOINTMENT

- 2.1 The Consultant warrants to the Beneficiary that it has complied with and shall continue to comply with its obligations under the Professional Appointment and shall provide the Services. The Consultant warrants that in relation to the Services, the Consultant has exercised and will continue to exercise the degree of skill, care and diligence of an experienced, appropriately qualified and competent professional person holding himself out as experienced and competent to perform those services in relation to projects of a similar size, scope and nature as the Project when performing the Services in Properties of a similar size, scope and nature as the Property.
- 2.2 Not Used.
- 2.3 In proceedings for breach of this clause **2**, the Consultant may:
- (a) rely on any limit of liability or other term of the Professional Appointment; and
 - (b) raise equivalent rights of defence as it would have had and have no greater liability than it would have had if the Beneficiary had been named as a joint client, with the Client, under the Professional Appointment,

provided that the Consultant (a) will not seek to rely on any defence in the event of a claim being made against it by Beneficiary pursuant to this agreement that the Beneficiary was not an original party to the Professional Appointment and (b) shall not at any time assert that the Beneficiary is precluded from recovering any loss resulting from any breach of this Agreement by reason that the Beneficiary has suffered no loss or a different loss has been suffered by the Client and (c) shall not be entitled to raise any retention, counterclaim or set-off under this agreement in respect of any sums due under the Professional Appointment

- 2.4 Notwithstanding the foregoing, the Consultant's liability shall be limited to the reasonable cost of repair, renewal and/or reinstatement of the Project, up to a maximum of £10,000,000 (Ten million pounds) in

the aggregate to the extent that the Beneficiary incurs that cost, and the Consultant shall not be liable for the Beneficiary's other costs and losses.

2.5 PROHIBITED MATERIALS

2.5.1 The Consultant warrants that it has exercised and will continue to exercise the same degree of reasonable skill and care referred to in Clause 2.1 in:

- (a) the materials selected or specified by or on its behalf are in accordance with the guidance contained in the Good Practice Guidance and this Clause 2.5; and
- (b) only materials and goods which are new and of sound and satisfactory quality shall be specified for use in connection with the Project; and
- (c) there shall not be specified for use or permitted to be used in the Project any materials or substances which are expressly prohibited by the Professional Appointment or the Sub-Contract (as defined in the Professional Appointment) or which are generally known not to be in accordance with British Codes of Practice at the time of specification or use, or any materials or substances which are deleterious to health and safety or to the durability of buildings and/or other structures and/or finishes and/or plant and machinery in the particular circumstances in which they are used, or any materials or substances identified as deleterious, unsatisfactory or unsuitable in the relevant circumstances in the Good Practice Guidance and, in addition to and separate from the foregoing, any substances or combination of substances publicised prior to the time of construction in any Building Research Establishment Limited (BRE) publications issued as part of the BRE Professional development service which the BRE recommend are not used for building purposes or for the type of buildings comprised in the Project.

2.5.2 For the purposes of Clause 2.5.1, "Good Practice Guidance" means the edition of the publication entitled "Good practice in the selection of construction materials" (British Council for Offices (BCO): 2011) or any amended or updated version as at the date of the Professional Appointment; and

2.6 Notwithstanding the terms of the appointment, the Consultant shall maintain professional indemnity insurance of at least £10,000,000 (Ten million pounds) in the aggregate in respect of any liability that the Consultant may have to the Beneficiary pursuant to this agreement and for a period not less than 12 years from the date of the Professional Appointment. When reasonably requested by the Beneficiary to produce for inspection documentary evidence that its professional indemnity insurance cover is being maintained. Evidence of insurance will be provided in the form of a standard insurance broker's certificate.

2.7 COPYRIGHT

2.7.1 The copyright in all drawings, reports, models, specifications, bills of quantities, calculations and other documents and information prepared by or on behalf of the Consultant in connection with the Project ("the **Documents**") shall remain vested in the Consultant but the Beneficiary and its assignees and successors shall have an irrevocable, non-exclusive, transferable and royalty-free licence, to copy and use the Documents and to reproduce the designs contained in them for any purpose relating to the Project and/or the Property including without limitation the construction, completion, alteration, maintenance, letting, promotion, advertisement, reinstatement, repair and extension of the Project and/or Property.

2.7.2 Such licence shall permit the use and reproduction of the Documents for the extension of the Project but shall not permit the reproduction of the designs contained in the Documents for any extension of the Project.

2.7.3 Such licence shall carry the right to grant sub-licences and shall subsist notwithstanding that the Professional Appointment is terminated or the obligations and duties thereunder have been completed.

- 2.7.4 The Beneficiary shall be entitled to assign their rights in relation to the Documents to any third party without the consent of the Consultant.
- 2.7.5 The Consultant shall not be liable for any use by the Beneficiary or its assignees of any Documents for any purpose other than that for which the same was prepared and provided by the Consultant.
- 2.7.6 The Consultant shall on request provide proper copies of the Documents to the Beneficiary or its assignees or successors subject to our reasonable costs being met by the Beneficiary .

3. LIABILITY PERIOD

The Beneficiary may not commence any legal action against the Consultant under this agreement after the date which occurs after the expiry of 12 years from the date of the Professional Appointment.

4. ASSIGNMENT

The Beneficiary may assign the benefit of this agreement no more than twice, provided the Consultant is notified of each such assignment. Additional assignments shall be agreed with the Consultant in advance. The Consultant agrees that it shall not at any time assert that any permitted assignee in terms of this agreement is precluded from recovering any loss resulting from any breach of this agreement by reason that such assignee is not an original party to this agreement or that no loss or a different loss has been suffered by such assignee.

5. NOTICES

5.1 A notice given to a party under or in connection with this agreement:

- (a) shall be in writing in English;
- (b) shall be signed by or on behalf of the party giving it;
- (c) shall be sent to the party for the attention of the contact and at the address listed in clause 5.2;
- (d) shall be sent by a method listed in clause 5.4; and
- (e) unless proved otherwise is deemed received as set out in clause 5.4 if prepared and sent in accordance with this clause.

5.2 The parties' addresses and contacts are as set out in this table:

Party	Contact	Address
Consultant	Paul Winning Project Director Hoare Lea LLP	58 Waterloo Street Glasgow G2 7DA

Beneficiary	[IHS Lothian] [Lothian Health Board]	[13 Queen's Road, Aberdeen, AB15 4YL] [Waverley Gate, 2-4 Waterloo Place, Edinburgh, EH1 3EG]
-------------	---	---

5.3 A party may change its details given in the table in clause 5.2 by giving notice, the change taking effect for the party notified of the change at 9.00 am on the later of:

- (a) the date, if any, specified in the notice as the effective date for the change; or
- (b) the date five Business Days after deemed receipt of the notice.

5.4 This table sets out:

- (a) delivery methods for sending a notice to a party under this agreement; and
- (b) for each delivery method, the corresponding delivery date and time when delivery of the notice is deemed to have taken place provided that all other requirements in this clause have been satisfied:

Delivery method	Delivery date and time
Delivery by hand.	On signature of a delivery receipt or at the time the notice is left at the address on a Business Day and if left on a day which is not a Business Day then the first occurring Business Day after the notice is left
Pre-paid first class recorded delivery post or other next working day delivery service providing proof of delivery.	9.00 am on the second Business Day after posting or at the time recorded by the delivery service.

5.5 For the purpose of clause 5.4 and calculating deemed receipt all references to time are to local time in the place of deemed receipt.

5.6 A notice given under or in connection with this agreement is not valid if sent by e-mail.

6. THIRD PARTY RIGHTS

A person who is not a party to this agreement shall not have any rights under the Contracts (Rights of Third Parties) Act 1999 to enforce any term of this agreement.

7. GOVERNING LAW

This agreement and any dispute or claim arising out of or in connection with it or its subject matter or formation (including non-contractual disputes or claims) shall be governed by and construed in accordance with the law of England and Wales.

8. JURISDICTION

Each party irrevocably agrees that the courts of England and Wales shall have non-exclusive jurisdiction to settle any dispute or claim arising out of or in connection with this agreement or its subject matter or formation (including non-contractual disputes or claims) provided that nothing shall prevent any action being taken in any court of competent jurisdiction.

9. COUNTERPARTS

This agreement may be executed in any number of counterparts and by each of the Parties on separate counterparts.

In Pro

EXECUTED as a deed but with the intention that it only be delivered when dated.

EXECUTED (but not delivered)
until the date hereof))
AS A DEED by)
HOARE LEA LLP)
acting by:-)

Member

Name printed:

Member

Name printed:

127

EXECUTED (but not delivered)
 until the date hereof)
AS A DEED by)
[LOTHIAN HEALTH BOARD][IHS LOTHIAN)
LIMITED])
 acting by:-

Authorised Signatory.....

Name printed:

Authorised Signatory.....

Name printed:

In Pro

This is the Schedule Part 7 referred to in the foregoing Contract Agreement between **IHS LOTHIAN LIMITED** and **IMTECH ENGINEERING SERVICES CENTRAL LTD**

COMPLETION CRITERIA

Terminology

In this Completion Criteria document:-

The term 'Project Co' means the "*Client*" as described in the NEC4 contract (otherwise called the "Ventilation Works Contract"); and

The term "Ventilation Works Contractor" means the "*Contractor*" as described in the NEC4 contract; and

The terms "Critical Care and Haematology and Oncology Works", "Haematology and Oncology Works" and "Fire Works" and "Critical Care and Haematology and Oncology and Fire Works" and "Critical Care Works" separately and collectively mean the "*works*" as defined in the NEC4 Contract (otherwise called the "Ventilation Works"); and

The term "Facilities" means the "Facilities" as defined in the Project Agreement as amended by the *works*.

Completion Criteria

Project Co and the Ventilation Works Contractor shall demonstrate that the following criteria, the Critical Care and Haematology and Oncology Completion Criteria have been achieved:

General

- 1.1 The Critical Care and Haematology and Oncology Works are designed, constructed, installed, tested, commissioned and completed as required in accordance with Schedule Part 3 (Critical Care and Haematology and Oncology Ventilation Scope of Works) and all post contract RFIs through the Request For Information Protocol agreed between the Board and Project Co/Ventilation Works Contractor.
- 1.2 The room conditions are proven against the required parameters set out in the HVC 107 Environmental Matrix in Schedule Part 3 (Scope) or as amended through the Request For Information Protocol in order to ensure the specified room conditions are achieved in all relevant accommodation. This is also to include all rooms affected by the Haematology and Oncology Works identified in white in the HVC 107 Environmental Matrix in Schedule Part 3 (Critical Care and Haematology and Oncology Ventilation Scope of Work).
- 1.3 The Isolation Room[s] room conditions are proven against the required testing regimes set out in the construction methodology and commissioning methodology (including Method Statements) as agreed between the Board and Project Co/Ventilation Works Contractor through the Request for Information FI Protocol in order to ensure the specified conditions are achieved. This includes proving the differential pressure requirements in the rooms.
- 1.4 The Critical Care and Haematology and Oncology Works incorporate comments from the room review process.
- 1.5 The Critical Care and Haematology and Oncology Works are reinstated in accordance with the as built drawings and Part B (Dilapidation Survey) of Schedule Part 3 (Critical Care and Haematology and Oncology Ventilation Scope of Works).

Ventilation

- 1.6 The Critical Care and Haematology and Oncology Works have been tested, commissioned, and operate satisfactorily in accordance with the following;
 - 1.6.1 The ventilation requirements as set out in Schedule Part 3 (Critical Care and Haematology and Oncology Ventilation Scope of Works);
 - 1.6.2 Post contract RFIs as agreed between the Board and Project Co/Ventilation Works Contractor through the Request for Information Protocol.

- 1.6.3 The construction methodology and commissioning methodology (and Method Statements) as agreed between the Board and Project Co/Ventilation Works Contractor through the Request for Information Protocol;
 - 1.6.4 All manufacturers testing, commissioning and operating requirements;
 - 1.6.5 All other relevant terms of the Project Agreement (as amended by this SA 2).
- 1.7 Project Co and the Ventilation Works Contractor shall certify that Critical Care and Haematology and Oncology Works have been installed, tested and commissioned in accordance with the requirements of Schedule Part 3 (Critical Care and Haematology and Oncology Ventilation Scope of Works), the post contract RFIs through the Request for Information Protocol and all relevant guidance.

Equipment

- 1.8 All Group 1, Group 1A, Group 2A, Group 2B and Group 3A (Patient Entertainment) equipment is to be reinstated as previously installed, tested and commissioned in accordance with as built drawings, Part B (Dilapidation Survey) of Schedule Part 3 (Critical Care and Haematology and Oncology Ventilation Scope of Works), manufacturers testing, commissioning and operating requirements and all other relevant terms of the Project Agreement (as amended by Supplemental Agreement No2).

Affected Services

- 1.9 All services and building fabric that are affected by the Critical Care and Haematology and Oncology and Fire Works are tested, re-commissioned, and operating satisfactorily in accordance with the following:
- 1.9.1 The Construction and Commissioning Methodologies as agreed between the Board and Project Co/Ventilation Works Contractor through the Request for Information Protocol.
 - 1.9.2 Any manufacturers' testing, commissioning and operating requirements,
 - 1.9.3 All other relevant terms of the Project Agreement (as amended by this SA 2).
- 1.10 Provide proof of the necessary approval by the relevant Authorising Engineer or competent person (insurance inspector) responsible for the affected service being obtained for the Critical Care Works in connection with the modification and reinstatement of all services affected by the Critical Care and Haematology and Oncology and Fire Works. This should include but not limited to;
- 1.10.1 Medical Gases
 - 1.10.2 LV
 - 1.10.3 Water
 - 1.10.4 Ceiling Hoists

Construction activity

- 1.11 Project Co and the Ventilation Works Contractor shall ensure the Critical Care and Haematology and Oncology Ventilation and Fire Works shall be free from all surplus materials, plant and equipment and shall comply with the standards and requirements of Handover Clean as set out in the section entitled "**Handover Clean**" below.
- 1.12 Project Co and the Ventilation Works Contractor shall ensure all elements of the Handover Clean, are complete.
- 1.13 Project Co and the Ventilation Works Contractor shall ensure the following finishing works are completed;
- (a) Removal of Site establishment;
 - (b) Cap off and completely remove temporary site services and record positions;
 - (c) Removal of temporary materials, including surfacing, complete with full reinstatement;
- 1.14 Project Co and the Ventilation Works Contractor shall reinstate the work areas of the Site and/or rooms where the Critical Care and Haematology and Oncology Ventilation and Fire Works are being undertaken to the standard set out in the Project Agreement (as amended and supplemented pursuant to Supplemental Agreement No2 and SA1).

Handover Clean

On completion of the Critical Care and Haematology and Oncology Ventilation and Fire Works, Project Co and the Ventilation Works Contractor shall, using their own cleaning materials and equipment, remove all building materials, equipment and debris, and clean all areas of the Facilities including plant rooms, to the standard defined below:

1.15 All surfaces (floors, walls, doors, ceilings, fixtures and fittings etc)

All surfaces should be free of paint, glue, plaster, stains, spots, scuffs, debris, soil, graffiti and other substances.

1.16 Floors

1.16.1 All floors are cleaned to remove dust, dirt, grit, lint, litter, water, and other liquids.

1.16.2 All carpets, vinyl and other floor coverings are clean and vacuumed.

1.16.3 Vinyl Floors coverings specifically:

- Remove any residual debris.
- Suction clean using vacuum with at least 3-stage filter, one of which must be a hepa filter.
- Wet mop using solution of suitable detergent ensuring all dust and stains are removed leaving surfaces visibly clean and thoroughly dry.

1.16.4 Carpet floor coverings specifically:

- Remove protection where applicable from carpet.
- Remove any residual debris.
- Suction clean using vacuum with at least 3 stage filter one of which must be a hepa filter.

1.16.5 Barrier matting zones are vacuumed and wells free of debris.

1.17 Fixtures and Fittings

1.17.1 Sanitary Ware - including Toilets, sinks, basins, baths, taps, porcelain, cubicle rails, shower screens, plastic and metal surfaces, mirrors, any other fixtures (including dispensers, toilet holders, paper dispensers, grab rails and the like):

- free of all labels, tape and sticky marks removed
- Damp wiped clean to remove any dust, dirt, grit, lint using a fresh solution of suitable detergent and rinse leaving surfaces visibly clean.

1.17.2 All pieces of fixed furniture, equipment and appliances including shelves, bench tops, cupboards and wardrobes free of all labels, tape and sticky marks and litter, cleaned inside and out and are free of dust, dirt, grit, lint and litter leaving surfaces visibly clean.

1.17.3 Blinds, curtains, screens including hanging rails, hooks and fixings wiped clean to remove any dust, dirt, grit, lint using a fresh solution of suitable detergent and rinse leaving surfaces visibly clean.

1.17.4 Protective film is removed from all hard surfaces, equipment and appliances unless otherwise requested by the Service Provider.

1.17.5 Air vents, grilles and other ventilation outlets and pipes are unblocked and cleaned to remove dust, dirt, grit, lint, soil, scuffs and other marks and visibly clean.

1.17.6 Light switches and electrical sockets are wiped clean and light fittings are cleaned to remove dust, dirt, grit, lint, film leaving surfaces visibly clean.

1.18 Paintwork, Ceilings, Walls, Doors and Windows

- All marks, stains, spots and scuffing to be removed from all paintwork, ceilings, walls and doors, windows which are to be damp wiped cleaned to remove any dust, dirt, grit, lint leaving surfaces visibly clean.
- windows (glass inside and out) must be damp cleaned leaving surfaces visibly clean and no streaks/smears.
- All windows, ironmongery, vents, window frames and sills are damp cleaned leaving surfaces visibly clean.
- all internal glass on both sides including glass panels on doors and mirrors must be damp cleaned leaving surfaces visibly clean and leaving no streaks/smears.
- Wall tiles wiped damp wiped cleaned to remove any dust, dirt, grit, lint and film leaving surfaces visibly clean.
- edges, corners, folds and crevices are cleaned to remove dust, dirt, grit, lint, film leaving surfaces visibly clean.
- Door tracks and door jambs are cleaned to remove dust, dirt, grit, lint, film and other debris.
- Doors and doorframes are cleaned to remove dust, dirt, grit, lint and film leaving surfaces visibly clean.

1.19 High Level Surfaces

- dust all high level surfaces including walls, ledges, edges, corners, ceilings, coving, all ceiling lights, pipes, edges and corners to remove dust, dirt, grit, lint, film and stains leaving surfaces visibly clean.

1.20 Low Level Surfaces

- Damp clean all low level surfaces, including skirtings using solution of suitable detergent ensuring all dust, dirt, grit, lint, film and stains are removed leaving surfaces visibly clean.

Documentation

Project Co and the Ventilation Works Contractor shall provide all documentation to the Independent Tester in accordance with Supplemental Agreement No. 2 and the Ventilation Works Contract and including;

1.21 Project Co and the Ventilation Works Contractor shall, on completion of the Critical Care and Haematology and Oncology Ventilation and Fire Works, update the as-built drawings, the Health and Safety File, operating and maintenance manuals (including BIM model) as necessary to reflect the requirements of Schedule Part 3 (Critical Care and Haematology and Oncology Scope of Works). (containing, as a minimum, all the testing and commissioning information including as-built drawings / test results) to allow the Facilities to be operated safely;

1.22 Project Co, the Service Provider and/or the Ventilation Works Contractor shall provide updated Schedule Part 12 (Service Requirements) Section 4 (Energy Strategy) incorporating final plant selection sizing and efficiencies as identified in manufacturers' data sheets and commissioning activities and as reviewed and agreed between the Board and Project Co/Ventilation Works Contractor as per the Request for Information Protocol;

1.23 Project Co and the Ventilation Works Contractor shall update the Room Data Sheets for all rooms and areas included in Schedule Part 3 (Critical Care and Haematology and Oncology Scope of Works) within the Facilities including the environmental data contained in the Environmental Matrix in Schedule Part 3 (Critical Care and Haematology and Oncology Ventilation Scope of Works) or as amended through the Request for Information Protocol. These Room Data Sheets shall be complete in all respects.

1.24 In addition, Project Co and the Ventilation Works Contractor shall also provide the following as a minimum, however noting this a non exhaustive list of documents;

- Building warrant completion certificates.
- Evidence that all conditions for which Project Co and/or the Ventilation Works Contractor is responsible have been addressed.

- Planning Approval have been discharged to the satisfaction of the relevant local authority.
- Flushing cleaning and chlorination test certificates.
- Ductwork systems pressure test and volume flow rate certificates if appropriate.
- Room air pressure / permeability tests certificates.
- Machine (generator/ups etc) specialist commissioning and factory test sheets.
- Air distribution systems test certificates in accordance with CIBSE Commissioning Code A.
- BSRIA BG49/2015 Commissioning air systems.
- Fire Alarm Test Certificate.
- Ductwork physical cleaning certification in accordance with SHTM 03-01 and the BESA TR19 Third Edition 2019.
- Legionella / TVC / Pseudomonas clear testing results in accordance with SHTM 04-01.
- AHU Specific Fan Power calculations as EU Directive ErP2018 Ecodesign Regulation 1253/2014.
- Independent CSFD installation certificates.
- Records of pressure testing and balancing for the water systems, (LTHW, Chilled Water, Domestic Water Services).
- Electrical Test Certificates including IPS test certificates.

In Pro

This is the Schedule Part 8 referred to in the foregoing Contract Agreement between **IHS LOTHIAN LIMITED** and **IMTECH ENGINEERING SERVICES CENTRAL LTD**

CERTIFICATE OF COMPLETION

Certificate of Completion of Ventilation Works

Issued by: Independent Tester – []

Address: []

Project Co: **IHS LOTHIAN LIMITED**

Address: []

Board: **LOTHIAN HEALTH BOARD**

Address: []

Ventilation Works Contractor: **IMTECH ENGINEERING SERVICES CENTRAL LIMITED**

Address: []

Issue date:

Ventilation Works:

Situated at:

Supplemental Agreement (No 2). dated:

Under the terms of the above-mentioned Supplemental Agreement (No 2).

I/we certify that the Ventilation Works Completion Date was achieved on [].

To be signed by or for the issuer named above.

Signed.....

[INDEPENDENT TESTER]

Schedule Part 3

Indemnity

Section A

For the purposes of this Part 3 of the Schedule, in addition to the matters in Clause 1 of the Agreement, the following capitalised terms shall be defined as provided for below:-

Insolvent Contractor means any Ventilation Works Contractor which is subject to any Ventilation Works Contractor Insolvency;

Interim Indemnified Losses has the meaning given to it in paragraph 1.1.2 of Section A of this Part 3 of the Schedule;

Joint Decision Making has the meaning given to it in paragraph 2 of Section A of this Part 3 of the Schedule;

Joint Steering Group has the meaning given to it in paragraph 8 of Section A of this Part 3 of the Schedule;

"Material Proceedings Step" means any of the following in relation to any Ventilation Works Interface Claim:

- (a) commencing any Dispute Resolution Procedure either by way of Adjudication or Court proceedings;
- (b) commencing any appeal against any judgement, order or other decision of the Court or an adjudicator or commencing any defence of any appeal lodged by the opposing party;
- (c) commencing a proof before answer;
- (d) commencing the enforcement of any judgement, order or other decision of the Court or an adjudicator;
- (e) amending any claim to include or omit a head of claim or alter the legal basis of any claim;
- (f) making an admission in relation to any defence which adversely impacts on the prospects of successfully pursuing any claim; or
- (g) agreeing any settlement.

Performance Bond means any agreement whereby the obligations of any Ventilation Works Contractor are guaranteed in whole or in part in favour of Project Co by any bondsman;

Replacement Contractor means any contractor who is appointed to carry out and complete any Ventilation Works in substitution or replacement for any Insolvent Contractor;

Ventilation Works Contractor Excluded Liability means any entitlement that Project Co would have had to make any claim or recover any Direct Losses under the Ventilation Works Contract were it not for the existence of a cap or exclusion or limitation of liability including a maximum aggregate cap on liability.

Ventilation Works Indemnity Expiry Date means the date falling five (5) years after the Ventilation Works Completion Date save in relation to any claims notified in accordance with paragraph 1 of Section A of this Part 3 of the Schedule before the Ventilation Works Indemnity Expiry Date but which claims remain undischarged at such date;

Ventilation Works Interface Claim means in respect of a claim made by Project Co acting in accordance with Good Industry Practice and not acting frivolously or vexatiously against the Contractor, the Service Provider or any Ventilation Works Contractor, arising out of or in connection with:

- (a) the Works;
- (b) the Ventilation Works;
- (c) a Defect or a Ventilation Works Defect; and /or
- (d) a Service Event,

where and to the extent the Works or the Services have been altered or impacted by the Ventilation Works; where the Contractor, the Ventilation Works Contractor or the Service Provider (as the case may be) disputes liability for such claim on the following basis or operation of the Ventilation Works in accordance with the design of the Ventilation Works:-

- (i) in the case of the Contractor that the claim has been caused by performance by the Ventilation Works Contractor of its obligations under the Ventilation Works Contract;
- (ii) in the case of the Ventilation Works Contractor, that the claim has been caused by the performance by the Contractor of its obligations under the Construction Contract or that the claim has been caused by the performance by the Service Provider of its obligations under the Service Contract; and/or
- (iii) in the case of the Service Provider that the claim has been caused by (i) the performance of the Ventilation Works Contractor of its obligations under the Ventilation Works Contract or (ii) the performance of the Ventilation Works in accordance with their design;

Ventilation Works Interface Issue means any claim in respect of or arising out of or in connection with the Ventilation Works which is not an Ventilation Works Contractor Excluded Liability and which is not recoverable under the Construction Contract or the Service Contract or the Ventilation Works Contract;

1. Indemnity

- 1.1 The Board shall with effect from the Ventilation Works Commencement Date until the Ventilation Works Indemnity Expiry Date indemnify and keep Project Co indemnified at all times from and against:
 - 1.1.1 all Direct Losses sustained by Project Co as a result of or in relation to:-
 - (a) any unplanned interruption to (a) the utilities infrastructure at the Facilities and/or (b) the provision of the Project Operations at the Facilities, or the requirement for unplanned installation of any apparatus to provide connectivity to any utilities supply networks, as a result of the Ventilation Works or a Ventilation Works Defect;
 - (b) Ventilation Works Interface Issue;
 - (c) Ventilation Works Contractor Excluded Liability;
 - (d) Ventilation Works Contractor Insolvency provided and to the extent only that Project Co complies with the Section B of this Part 3 of the Schedule.
 - 1.1.2 all Direct Losses ("**Interim Indemnified Losses**") sustained by Project Co as a result of or in relation to any Ventilation Works Interface Claim.
- 1.2 Notwithstanding any other provisions of this Supplemental Agreement No.2 and/or the Project Agreement:-

- 1.2.1 Project Co shall not be entitled to recover or make a claim pursuant to paragraph 1.1 of this Section A to the extent that:
- (a) Project Co has otherwise been compensated for the relevant Direct Losses pursuant to the Initial Engagement Agreement, this Supplemental Agreement No 2, the Project Agreement, the Construction Contract, the Service Contract, any Ventilation Works Contract or to any extent that the risk or circumstance to which the Direct Losses relate is insured against by any of the insurances which Project Co or the Board have to maintain pursuant to the Initial Engagement Agreement and/ or this Supplemental Agreement No 2 and/or the Project Agreement; and/or
 - (b) the Direct Losses have been caused or contributed to (whether by act, omission which constitutes a breach or default), breach, default or otherwise) by Project Co.
- 1.2.2 The indemnity in paragraph 1.1 of this Section A shall put Project Co in no better and no worse position than it would have been in had the circumstance giving rise to the claim under the indemnity not occurred; and
- 1.2.3 Project Co shall pursue any relevant claims under the Ancillary Documents, the Subcontract Initial Engagement Agreement and the Ventilation Works Contracts and any relevant insurance policy promptly; and
- 1.2.4 Project Co shall mitigate any Direct Losses suffered by Project Co in relation to which the Board has indemnified Project Co under paragraph 1.1 of this Section A; and
- 1.2.5 in connection with any claim under the indemnity in paragraph 1.1 of this Section A, Project Co shall give notice in writing to the Board as soon as practicable setting out:
- (a) the circumstances which give rise to the Direct Losses together with such supporting information as is reasonably requested by the Board's Representative;
 - (b) details of all amounts claimed in respect of the Direct Losses together with such supporting information including invoices as is reasonably requested by the Board's Representative;
 - (c) any consequential effects of the circumstances giving rise to the Direct Losses; and
 - (d) details of the measures which Project Co has adopted or intends to adopt to mitigate the Direct Losses in accordance with paragraph 1.2.4 of this Section A.

2.

- 2.1 Where the indemnity in paragraph 1.1.2 of this Section A applies, in addition to the provisions in paragraph 1 of this Section A, Project Co shall give notice in writing to the Board setting out details of any notice, demand, letter or other document concerning any Ventilation Works Interface Claim for which it appears that Project Co is, or may become, entitled to indemnification under paragraph 1.1.2 of this Section A as soon as practicable. In addition, Project Co shall:
- (a) regularly keep the Board informed of the progress of any Ventilation Works Interface Claim and consult with the Board at all relevant stages of the Ventilation Works Interface Claim and provide the Board with copies of all documentation relevant to any Ventilation Works Interface Claim reasonably requested by the Board as soon as reasonably practicable; and
 - (b) not bring the name of the Board into disrepute; and

- (c) not pay or settle an Ventilation Works Interface Claim without the prior consent of the Board, such consent not to be unreasonably withheld or delayed; and
 - (d) notify the Board, where practicable sufficiently far in advance of and so as to enable the Board to jointly decide with Project Co, any Material Proceedings Step ("**Joint Decision Making**"). If Project Co and the Board do not agree on any Joint Decision Making matter then the Board and Project Co agree to refer such matter to the Joint Steering Group. If the Joint Steering Group does not agree the matter then the Board shall be entitled to take over the conduct of the claim; and
 - (e) Where an Ventilation Works Interface Claim is agreed or determined to be the liability of a party other than Project Co, the provisions of paragraph 4 of this Section A shall apply; and
 - (f) Where an Ventilation Works Interface Claim is agreed or determined to be the liability of Project Co then subject to paragraph 1.2 of this Section A the Ventilation Works Interface Claim shall be deemed to be an Ventilation Works Interface Issue.
3. Project Co shall inform the Board in advance of its estimate of any Direct Losses which it anticipates it will incur from time to time that would be covered by the indemnity in paragraph 1.1 of this Section A, and shall issue the Board with an invoice in relation to said Direct Losses. The Board shall make payment of any such invoice within 7 days of receipt of the same.
4. Where the Board pays to Project Co an amount in respect of an indemnity under paragraph 1.1 of this Section A and Project Co subsequently recovers from the Ventilation Works Contractor, Construction Contractor or the Services Provider or insurances a sum which is directly referable to the fact, matter, event or circumstances giving rise to the claim under the indemnity pursuant to paragraph 1.1 of this Section A, Project Co shall as soon as practicable repay to the Board whichever is the lesser of:
- (a) an amount equal to the sum recovered less any costs and expenses reasonably and properly incurred by Project Co in recovering the same; and
 - (b) the amount paid to Project Co by the Board in respect of the relevant Direct Losses under paragraph 3 of this Section A.
5. With effect from the Ventilation Works Commencement Date the Board shall not apply, levy or deduct or issue to Project Co (as applicable) any Deduction, a notice in respect of a Service Event, a Warning Notice or Project Co Event of Default as a result of and to the extent caused by or materially contributed to by:
- 5.1 an Ventilation Works Interface Issue and an Ventilation Works Contractor Excluded Liability;
 - 5.2 an Ventilation Works Interface Claim (save in respect of Deductions which are covered by paragraph 1.1.2 of this Section A);
 - 5.3 any unplanned interruption to and/or failure of (a) the utilities infrastructure at the Facilities and/ or (b) the provision of the Project Operations at the Facilities, or the requirement for unplanned installation of any apparatus to provide connectivity to any utilities supply networks which have failed, in each such case as a result of the Ventilation Works or a Ventilation Works Defect;
 - 5.4 an Ventilation Works Contractor Excluded Liability; and
 - 5.5 an Ventilation Works Contractor Insolvency

where the restriction on the Board to apply, levy, deduct or issue any such Deduction or notice in respect of a Service Event, Warning Notice or Project Co Event of Default first arose as a result of

a Service Event which occurred prior to the Ventilation Works Indemnity Expiry Date and irrespective as to whether such Service Event is still subsisting at or following the Ventilation Works Indemnity Expiry Date.

6.

6.1 In the event of any dispute between the Board and Project Co in connection with paragraphs 1 or 2 of this Section A either party may refer the matter to adjudication until otherwise agreed or determined by the Courts pursuant to Schedule 20 (Dispute Resolution Procedure) of the Project Agreement which shall apply *mutatis mutandis* to this Supplemental Agreement No. 2.

6.2 Project Co may at any time ask that additional parties shall be joined in the adjudication. Joinder of additional parties shall be subject to the agreement of the Adjudicator and the existing and additional parties. An additional party shall have the same rights and obligations as the parties, unless otherwise agreed by the adjudicator and the parties. Such adjudication shall be carried out in accordance with the rules and procedures set out in Schedule Part 20 (Dispute Resolution Procedure) of the Project Agreement.

6.3 Number not used.

6.4 Without prejudice to the foregoing generality, Project Co shall at all times comply with its general obligations pursuant to Clause 22.1 and 22.2 of the Project Agreement to provide the Services under this Supplemental Agreement No 2 (as the same may be amended or adjusted in accordance with this Supplemental Agreement No 2) without limiting Project Co's right to be indemnified under paragraph 1.1 of this Section A.

7. **Rectification Of Defects**

7.1 The parties further agree:

7.1.1 where a Ventilation Works Defect or other Defect in the ventilation system which have been the subject of the Ventilation Works arises, Project Co will use reasonable endeavours to mobilise to:

- (a) where relevant Make Safe and will use reasonable endeavours to do so within the relevant Response Period, and
- (b) rectify that Defect or Ventilation Works Defect and will use reasonable endeavours to do within the Rectification Period,

but the Board acknowledges that it is not entitled to levy any Deductions to the extent this indemnity applies, and

7.1.2 where a Permanent Repair is required (whether or not a temporary repair has been undertaken)

- (a) Project Co shall use reasonable endeavours to undertake the works by the Permanent Repair Deadline (agreed between the parties, acting reasonably) and where Project Co cannot complete the relevant Permanent Repair by such Permanent Repair Deadline, such Permanent Repair Deadline shall be deemed to be extended by such additional period as Project Co may, using reasonable endeavours, require to complete the Permanent Repair; and
- (b) in any circumstances where Project Co has not complied with 7.1.2(a) above and the Permanent Repair is not undertaken by the Permanent Repair Deadline then a Performance Failure or, as the case may be, an Availability Failure, will occur at that date and time and the provisions of paragraph 2 (Deductions for Performance Failures), paragraph 4 (Deductions for Availability Failures) and, if applicable,

paragraph 5 (Repeated Failures) of Section 3 (Deductions from Monthly Service Payments) of Schedule Part 14 (Payment Mechanism) of the Project Agreement shall apply and the indemnity in respect of Deductions (without prejudice to the other Direct Losses which the Board shall remain obliged to indemnify Project Co pursuant to this Supplemental Agreement No. 2) shall cease to apply from the Permanent Repair Deadline until Rectification.

8. Joint Steering Group

- 8.1 Project Co and the Board shall establish a joint steering group to provide executive management and guidance over the key deliverables of the completion of the Ventilation Works and the commissioning of the Facilities until completion of the Ventilation Works. The members of the joint steering group will meet at least once per month (or more or less regularly as required) to review progress against the Ventilation Works Programme for the Ventilation Works and assist in resolving any matters which have become an issue or blockage in achieving the deliverables.
- 8.2 The initial members of the joint steering group shall be:
- 8.2.1 the Board: Jim Crombie and Susan Goldsmith; and
- 8.2.2 Project Co: Matthew Templeton and Viv Cockburn.
- 8.3 Roger Thompson of Project Co will chair the joint steering group and will also be a member. In the case of each of Project Co and the Board, no more than two members shall attend any meeting in addition to the chair. The parties may remove their members and appoint replacements, by written notice delivered to the other party at any time. A member on the joint steering group may appoint and remove an alternate (who may be another representative of the applicable Party, as applicable) by written notice to all other members.
- 8.4 The joint steering group may adopt such procedures and practices for the conduct of the activities of the joint steering group as they consider appropriate, from time to time, provided that:
- 8.4.1 only decisions that are made unanimously by all of the members present at meetings shall have any effect; and
- 8.4.2 the quorum for a meeting of the joint steering committee shall be two members comprising one member from each of the Board and Project Co.
- 8.5 Accurate written minutes of all quorate meetings of the joint steering group, which are approved by all members attending the applicable meeting shall be taken and kept by the joint steering group chair, and copies circulated promptly to the parties. A full set of accurate and agreed written minutes shall be kept by Project Co and shall be open to inspection by the parties at any time, upon request.
- 8.6 Neither the Board nor Project Co shall rely on any act or omission of the joint steering group nor any members acting in that capacity, so as to give rise to any waiver or personal bar in respect of any right, benefit, or claim and/or obligation and/or liability of any Party.

Schedule Part 3

Section B

1 Ventilation Works Contractor Insolvency

- 1.1 Project Co shall at any time from the Ventilation Works Commencement Date until and including the Ventilation Works Indemnity Expiry Date, notify the Board's Representative in writing immediately if Project Co becomes aware of any Ventilation Works Contractor Insolvency.
- 1.2 Project Co shall at any time from the Ventilation Works Commencement Date until and including the Ventilation Works Indemnity Expiry Date notify the Board's Representative in writing immediately if Project Co terminates the employment of the Ventilation Works Contractor under any Ventilation Works Contract by reason of Ventilation Works Contractor Insolvency.
- 1.3 During the period from the Ventilation Works Commencement Date until and including the Ventilation Works Indemnity Expiry Date and where either paragraph 1.1 of this Section B and/or paragraph 1.2 of this Section B applies, Project Co shall take reasonable measures to ensure that the Facilities, the Ventilation Works Site and any site materials for use in the Ventilation Works are adequately protected, and that such site materials are retained on the Ventilation Works Site.
- 1.4 Where paragraph 1.2 of this Section B applies and (as at the date of termination of the Insolvent Contractor's employment) the Ventilation Works Completion Date has not been achieved, the Board and Project Co shall meet no later than eight (8) Business Days from the date of termination of the Insolvent Contractor's employment, so that the Board may decide whether the Ventilation Works or incomplete part should be carried out and completed; and if there is a requirement for the Ventilation Works or incomplete part to be carried out and completed, Project Co shall properly operate the provisions of the Ventilation Works Contract on termination for Ventilation Works Contractor Insolvency and paragraph 1.5 of this Section B shall apply; and if it is decided not to have the Ventilation Works or incomplete part carried out and completed, then Project Co shall properly operate the provisions of the Ventilation Works Contract on termination for Ventilation Works Contractor Insolvency and Project Co shall procure that (a) any statement sent to the Insolvent Contractor pursuant to such termination provisions is copied to the Board's Representative and (b) there is prepared and sent to the Board's Representative a statement setting out on an open book basis:
- 1.4.1 the total value of the work properly executed at the earlier of either (1) the date of termination or (2) the date on which the Ventilation Works Contractor Insolvency occurred, ascertained in accordance with the payment provisions in Clause 7 and the Schedule Part 8 of this Supplemental Agreement No. 2 as if the Insolvent Contractor's employment had not been terminated, together with any amounts due to Project Co under this Supplemental Agreement No. 2 not included in such total; and
- 1.4.2 the aggregate amount of any costs and/or expenses properly incurred, vouched and mitigated by the Board and/or any claim, costs, loss and/or damage caused to the Board (such costs, losses and/or damage to be properly substantiated and mitigated in accordance with clause 59 of the Project Agreement), whether arising as a result of the termination of the Insolvent Contractor's employment or otherwise;

and after taking into account amounts previously paid to Project Co under this Supplemental Agreement No.2, if the amount stated under paragraph 1.4.2 of this Section B exceeds the amount stated under paragraph 1.4.1 of this Section B the difference shall be a debt payable by Project Co to the Board or if the amount stated in paragraph 1.4.1 of this Section B is less than paragraph 1.4.2 of this Section B the difference shall be a debt payable by the Board to Project Co.

1.5 Where pursuant to paragraph 1.4 of this Section B the Board requires the Ventilation Works to be carried out and completed,

1.5.1 Project Co shall:-

- (a) mitigate the effects of the Ventilation Works Contractor Insolvency on the carrying out and completion of the Ventilation Works including the costs of and the time for completion of the Ventilation Works and the provisions of clause 49.3 and 49.4 of the Project Agreement shall apply *mutatis mutandis*; and
- (b) appoint as expeditiously as possible, and in any event not later than 2 months from the date of termination of the Insolvent Contractor's employment, a Replacement Contractor to commence the carrying out, within the said 2 month period, and to complete, the Ventilation Works, and to rectify any Ventilation Works Defects in the Ventilation Works, on reasonably similar terms and conditions as those in the Ventilation Works Contract with the Insolvent Contractor, subject to such reasonable adjustment to the Ventilation Works Target Completion Date for the Ventilation Works and that part of the Defined Cost for those parts of the Ventilation Works which are incomplete at the date of termination of the Insolvent Contractor's employment as is reasonably required by the Replacement Contractor to carry out and complete the Ventilation Works as soon as reasonably practicable after appointment. In determining the terms and conditions of the Ventilation Works Contract with the Replacement Contractor the Board and Project Co shall as necessary and appropriate meet to agree such amendments as are reasonable and appropriate having regard to the Ventilation Works and accepted Good Industry Practice, for the replacement Ventilation Works Contract. The terms of this Supplemental Agreement No. 2 shall apply *mutatis mutandis* in respect of any Replacement Contractor save where the parties acting reasonably, agree otherwise in writing; and

1.5.2 The Board shall pay Project Co its reasonable and properly incurred and vouched costs of complying with paragraph 1.5.1(b) of this Section B except to the extent:-

- (a) such costs and/or other sums are recoverable from the Insolvent Contractor pursuant to the Ventilation Works Contract; and/or
- (b) such costs and/or any other sums are recoverable by Project Co pursuant to any Performance Bond and/or any Parent Company Guarantee for Ventilation Works; and
- (c) provided that Project Co has mitigated any costs in accordance with paragraph 1.5.1(a) of this Section B; and

Project Co and the Board agree that in determining whether in relation to paragraph 1.5.2(a) of this Section B costs and/or other sums are recoverable and whether

accordingly court or other legal proceedings should be commenced with a view to making recovery, the parties shall meet as necessary to agree what remedies (including court or other legal proceedings) Project Co may have against the Insolvent Contractor, what costs and/or other sums have already been recovered by Project Co and what costs and/or other sums have not been recovered, the steps already taken to make recovery and if steps have been taken, then details of the steps taken, and a fair and reasonable estimate by Project Co of the time and costs which Project Co reasonably estimates would be associated with any such court or other legal proceedings, so that the Board having regard to this information together with the costs and/or other sums referred to in paragraph 1.5.2(a) of this Section B to the extent not already recovered by Project Co, are likely to be recoverable and/or whether the time and/or cost of court or other legal proceedings to make recovery is disproportionate to the time and/or costs involved in pursuing such court or other legal proceedings

In Pro

Schedule Part 4
The Service Contract Amendment Agreement

In Pro

(1) IHS LOTHIAN LIMITED

(2) BOUYGUES E&S SOLUTIONS LIMITED

AMENDMENT AGREEMENT

**RELATING TO THE SERVICES CONTRACT FOR THE
PROVISION**

OF RHSC AND DCN AT LITTLE FRANCE



1 **DEFINITIONS AND INTERPRETATION 146**

2 **COMMENCEMENT AND DURATION 148**

3 **AMENDMENTS TO THE SERVICES CONTRACT 148**

4 **VENTILATION WORKS 148**

5 **AMENDMENTS TO OTHER PROJECT DOCUMENTS 150**

6 **RECTIFICATION OF DEFECTS 151**

7 **WAIVER LETTER 152**

8 **SERVICE PROVIDER RELIEF 152**

9 **CONTRACTS (THIRD PARTY RIGHTS) (SCOTLAND) ACT 2017 152**

10 **VARIATION 153**

11 **ENTIRE AGREEMENT 153**

12 **COUNTERPARTS AND DELIVERY 153**

13 **GOVERNING LAW AND JURISDICTION 154**

In Pro

THIS AGREEMENT is made

BETWEEN:

- (1) **IHS LOTHIAN LIMITED** (registered under number SC493676) whose registered office is 13 Queen's Road, Aberdeen, AB15 4YL ("**Project Co**"); and
- (2) **BOUYGUES E&S SOLUTIONS LIMITED** (formerly BOUYGUES E&S FM UK LIMITED) (registered under number 04243192) whose registered office is Becket House, 1 Lambeth Palace Road, London, SE1 7EU (the "**Service Provider**").

WHEREAS

- A. An agreement was entered into between the Board and Project Co dated 12th and 13th February 2015 setting out the terms and conditions of a project for the design, build, finance and maintenance of a project to re-provide services from the Royal Hospital for Sick Children, Child and Adolescent Mental Health Department and the Department of Clinical Neurosciences in a single building adjoining the Royal Infirmary of Edinburgh at Little France ("**Hospital**") as amended by the amendment agreement ("**SA1**") between the Board and Project Co dated 22 February 2019 (the "**Project Agreement**").
- B. An agreement was entered into between Project Co and the Service Provider dated 13th February 2015 setting out the terms and conditions for the maintenance and performance of life-cycle for the project (the "services contract").
- C. On 22 February 2019 Project Co sent the Service Provider a letter pursuant to clause 4.7 of the Services Contract containing certified copies of the PA Settlement Agreement and the Construction Contract Settlement Agreement (defined therein) both of which amended the Project Documents.
- D. The Board and Project Co entered into an agreement to amend the Project Agreement on or about the date of this Agreement to enable the design, construction, testing, commissioning and the provision of services in relation to the completion of the ventilation works (the "**PA SA2**").
- E. An agreement was entered into between project co and the ventilation works contractor dated on or about the date of this Agreement setting out the terms and conditions for the ventilation works at the hospital (the "**Ventilation Works Contract**").
- F. Project Co and the Service Provider have entered into this agreement to pass down relevant amendments concerning the provision of services in relation to the ventilation works and to reflect the necessary changes required to the services contract.

THE PARTIES AGREE AS FOLLOWS:-

1. DEFINITIONS AND INTERPRETATION

1.1 This Agreement amends the Services Contract which, save as amended in accordance with this Agreement, continues in full force and effect. From the Effective Date, the Services Contract shall be read and construed as amended by the provisions of this Agreement. Save where expressly stated to the contrary in this Agreement, where words and expressions appear in capitalised terms in this Agreement, such words and expressions shall have the same meaning as is given to such words and expressions under the Services Contract.

1.2 In this Agreement, the following expressions shall have the following meanings:

"Board Change Notice"

means the Board Change Notice HVC107 dated 5 December 2019 as more fully set out in Part A of the Scope;

"Completion"	has the meaning given to it in the Ventilation Works Contract;
"Effective Date"	means the date of this Agreement;
"Independent Inspector"	means a suitably qualified and experienced inspector who is independent from and has no connection, relationship or contract with Project Co, or the Service Provider or the Ventilation Works Contractor or the Board in connection with the Ventilation Works, and is appointed to carry out the Ventilation Works Defect Survey;
"PA SA2"	has the meaning given in Recital D, the agreed form of which is attached as Schedule Part 1 to this Agreement;
"Request for Information Protocol"	has the meaning given to it in the Scope;
"Reviewable Design Data"	has the meaning given to it in the Scope;
"Schedule"	means the schedule (in six (6) parts) annexed to this Agreement;
"Scope"	has the meaning set out in the Ventilation Works Contract;
"Ventilation Works"	means the ventilation works to amend the ventilation system within the Facilities from 4 air changes to 10 air changes per hour with an associated change to the pressure regime (all as described in the Board Change Notice and as more particularly described in the Scope);
"Ventilation Works Completion Date"	means the date that Completion of the Ventilation Works is certified by the Independent Tester pursuant to Clause 35.3 of the Ventilation Works Contract;
"Ventilation Works Contract"	has the meaning given in Recital E, the agreed form of which is attached as Schedule Part 2 to this Agreement;
"Ventilation Works Contractor"	means Imtech Engineering Services Central Limited (No 00443522) whose registered office is at G&H House, Hooton Street, Carlton Road, Nottingham NG3 5GL;
"Ventilation Works Defect"	means any defect as defined in clause 11.2(6) of the Ventilation Works Contract;
"Ventilation Works Defect Survey"	means the survey carried out by the Independent Inspector on the completed Ventilation Works prior to the Ventilation Works Indemnity Expiry Date (with the scope of such survey to be agreed between the Parties acting reasonably);
"Ventilation Works Indemnity Expiry Date"	shall have the meaning given to it in Schedule Part 3 of the PA SA2;
"Ventilation Works Site"	means the Site (as such term is defined in the Ventilation Works Contract) and/or Working Areas (as such is defined in the Ventilation Works Contract) for the Ventilation Works which are detailed in the Scope.

"Waiver Letter" means the waiver letter sent by Project Co to the Service Provider dated 20 December 2019.

2. COMMENCEMENT AND DURATION

- 2.1 This Agreement shall be effective from the Effective Date.
- 2.2 Without prejudice to Clauses 47.6 (Continuing Obligations) of the Services Contract, this Agreement shall terminate automatically on the expiry of the Project Term.
- 2.3 The Parties agree that all such amendments as set out in this Agreement:
- 2.3.1 shall, in the event of any inconsistency with the provisions of the Services Contract, take precedence over the Services Contract; and
- 2.3.2 shall be deemed to have been agreed in accordance with the Services Contract, and that the entry into of this Agreement shall not constitute a breach by either Party of the Services Contract.
- 2.4 Without prejudice to the terms of this Agreement, the Service Provider shall carry out its obligations pursuant to the Services Contract as amended by this Agreement.
- 2.5 On or prior to the execution of this Agreement, the Service Provider shall deliver to Project Co the following documents (unless the requirement to deliver any such documents were by Project Co by written notice to the Service Provider):
- 2.5.1 extracts from the minutes of the meeting of the board of directors (certified as true and accurate by the Secretary, Director or authorised signatory of the relevant company) of the Service Provider at which resolutions were passed approving the execution, delivery and performance of this Agreement and authorising a named person or persons to execute and deliver such document and any other documents to be delivered by it pursuant to it;
- 2.5.2 a confirmation side letter from the Guarantor in a form agreed between the parties confirming that the obligations of the Guarantor contained in the Parent Company Guarantee continue to apply in full force and effect notwithstanding the entry of the Service Provider into this Agreement and cover the obligations of the Service Provider under this Agreement.

3. AMENDMENTS TO THE SERVICES CONTRACT

- 3.1 From the Ventilation Works Completion Date, the Service Provider shall perform the Maintenance Works in accordance with the Service Level Specification and Method Statements.
- 3.2 From the Ventilation Works Completion Date, the Price Adjustment as set out in Schedule Part 3 shall apply.
- 3.3 The Parties acknowledge and agree that notwithstanding Clause 3.2, a revised Annual Service Payment will not be calculated until the date on which the Financial Model is next re-run at a time to be agreed between the Parties. In relation to any period between the Ventilation Works Completion Date and the next re-run of the Financial Model the Parties acknowledge that 1/12th of the Annual Service Cost detailed in Schedule Part 3 shall be added each month to the Monthly Service Payment.
- 3.4 From the Effective Date, the Services Contract shall be amended as set out in this Agreement (including for the avoidance of doubt Schedule Part 4).

4. VENTILATION WORKS

- 4.1 The Service Provider confirms that it has reviewed the Ventilation Works and Scope and confirms that with effect from the Ventilation Works Completion Date that the Service Provider can perform the Services to the Facilities as amended by the Ventilation Works in the manner described in the Service Level Specification and Method Statements as set out in the Services Contract.
- 4.2 The Service Provider acknowledges and agrees that the Ventilation Works are being carried out by the Ventilation Works Contractor after the Actual Completion Date.
- 4.3 Clause 51.2 of the Services Contract shall be amended by inserting a new limb 51.2.10 as follows:
- "the carrying out of the Board Change Notice in relation to the Ventilation Works in accordance with the terms of the PA SA2".*
- 4.4 For the avoidance of doubt, from the Ventilation Works Completion Date, the Ventilation Works shall form part of the Facilities.
- 4.5 The Parties agree that the Ventilation Works shall be deemed to have been submitted, reviewed, approved and agreed in accordance with Clause 12 (The Design Construction and Commissioning Process) of the Services Contract. The Service Provider shall send representatives to weekly progress meetings for the Ventilation Works requested by Project Co and shall advise on any Price Adjustment that may be required as a result of any material changes to the Ventilation Works between the date of this Agreement and the date of completion of the Ventilation Works. With effect from the date at which any item of Reviewable Design Data is or becomes agreed in accordance with the Request for Information Protocol it shall be deemed to have satisfied the requirements of the Service Provider in that the Service Provider will be able to perform the Services in the manner described in the Method Statements.
- 4.6 During the carrying out and completion of the Ventilation Works, where there is any period of joint occupation of the Site (as defined in the Ventilation Works Contract) in accordance with the access protocol contained in the Scope, and/or joint occupation of the Working Areas (as defined in the Ventilation Works Contract), the Service Provider and the Service Provider Parties shall, exercising Good Industry Practice, ensure that it does not prevent, impede or interfere with the Ventilation Works Contractor carrying out the Ventilation Works. Where the Service Provider or a Service Provider Party fails to do so, the Service Provider shall be liable to Project Co for all reasonably and properly incurred amounts payable to the Ventilation Works Contractor under the Ventilation Works Contract as a result of such failure.
- 4.7 Notwithstanding clause 4.3 and the provisions of Clause 51.2 of the Services Contract, the Service Provider shall not be obliged to provide Services to the Facilities that are directly affected by the carrying out of the Ventilation Works provided that:
- 4.7.1 the Services Provider shall provide Services to remaining existing building services and all building services and equipment subject to statutory inspections and utilities as required, including the water systems, pipes and ancillary water systems equipment, including flushing the water systems; and
- 4.7.2 such relief shall only apply from the commencement of the Ventilation Works until the earlier of
- (a) the termination of PA SA2 provided that if termination of PA SA2 occurs before the Ventilation Works Completion Date this relief shall apply until the date on which the Ventilation Works Site has been returned to an operational state in which the Services can be performed; and
- (b) the Ventilation Works Completion Date.

- 4.8 The Service Provider shall assist, co-operate and co-ordinate with Project Co, any Project Co Party, the Supervisor (as defined in the Ventilation Works Contract), the Independent Tester (as defined in the Ventilation Works Contract), the Board's technical adviser and the Ventilation Works Contractor with their operations and performance of their obligations on the Site.
- 4.9 Project Co shall procure that the Ventilation Works Contractor and the Supervisor shall notify the Service Provider, giving not less than 10 working days notice, of their intention to carry out any tests and inspections in relation to any part of the Site in relation to the Ventilation Works and the Service Provider shall be entitled to attend any such tests and inspections and to make reasonable representations to the Project Manager (as defined in the Ventilation Works Contract). The Project Manager shall have due and proper regard to any representations the Service Provider makes but for the avoidance of doubt Project Co shall not be obliged to comply with the Service Provider's representations.
- 4.10 To the extent that the same can be recovered by Project Co from the Board under Clause 6.12.1 of the PA SA2 and subject to the Service Provider providing Project Co with valid VAT invoices evidencing the costs incurred, the Service Provider shall be entitled to recover their costs for attending the tests and inspections under Clause 4.9 from Project Co at the rates set out in Schedule Part 5.
- 4.11 The Service Provider acknowledges, approves and hereby consents for all purposes (including pursuant to [Clauses 4.7 (Delivery), 4.8 (Delivery) and] Clause 4A.1 (Service Provider's due diligence) of the Services Contract (as revised pursuant to this Agreement) to: (i) the amendments to the Project Agreement made pursuant to the PA SA2 and the entering into of the Ventilation Works Contract (together the "Amended and New Project Documents") and confirms that the entry by Project Co, the Board and the Ventilation Works Contractor into the Amended and New Project Documents, and the amendment of the Project Agreement and entering into the Ventilation Works Contract shall not constitute a breach of Project Co's obligations under the Services Contract.
- 4.12 The Parties agree that the provisions of Clauses 4.7 and 4.8 of the Services Contract (Delivery) have been satisfied prior to the entry into of the Amended and New Project Documents and the Service Provider waives any right:
- 4.12.1 to receive conformed copies of the Project Agreement as amended by PA SA2 pursuant to clause 4.7 on the basis that Project Co does not intend to produce such conformed copies but provided that if Project Co does produce such copies the Parties acknowledge that the Service Provider will be entitled to its own set of such copies;
- 4.12.2 to make representations to Project Co pursuant to such provisions; and
- 4.12.3 specifically pursuant to Clause 4.8 of the Services Contract (Delivery), to notify Project Co that the Amended and New Project Documents will have a material adverse effect on the Service Provider's obligations under the Services Contract or will cause a material increase in the cost of the Service Provider providing the Services;

and Project Co shall not be obliged to issue a Project Co Change Notice in respect of the Amended and New Project Documents.

5. **AMENDMENTS TO OTHER PROJECT DOCUMENTS**

- 5.1 The Service Provider acknowledges that the provisions of the Project Agreement were amended as set out in PA SA2 with effect from the date referred to in Recital D above.
- 5.2 The Service Provider acknowledges that all such amendments as set out in the PA SA2 and the terms of the Ventilation Works Contract shall, in the event of any inconsistency with the provisions of the Project Agreement, take precedence over the Project Agreement or other such document (as applicable).

- 5.3 Subject to Clause 8 of this Agreement, the Service Provider shall have no claim whatsoever against Project Co arising as a result of the PA SA2 and/or the Ventilation Works Contract.
- 5.4 The Service Provider acknowledges that Project Co has provided to the Service Provider copies of the agreed form Amended and New Project Documents prior to the date of this Agreement. The Service Provider shall be deemed to have studied the same and to be fully aware of the obligations and liabilities assumed by Project Co thereunder and upon receipt of notice therefor of any modification, consolidation, amendment or replacement thereto.

6. RECTIFICATION OF DEFECTS

- 6.1 Following the Service Provider undertaking their obligations pursuant to clause 6.3.2, Project Co shall use reasonable endeavours to secure that the Ventilation Works Contractor rectifies Ventilation Works Defects in accordance with its obligations at clauses 41 and 44 of the Ventilation Works Contract up to and including the date 12 years following the Ventilation Works Completion Date.
- 6.2 In the event that the Ventilation Works Contractor fails to rectify any Ventilation Works Defects under Clause 6.1, the Service Provider shall carry out the Permanent Repair of such Ventilation Works Defects if so required by Project Co and the provisions of Clause 8.2 shall apply. Where the Service Provider carries out a Permanent Repair (whether or not a Temporary Repair has been undertaken) pursuant to this clause 6.2:
- 6.2.1 the Service Provider shall use reasonable endeavours to undertake the works by the Permanent Repair Deadline (agreed between the parties, acting reasonably) and where the Service Provider cannot complete the relevant Permanent Repair by such Permanent Repair Deadline, such Permanent Repair Deadline shall be deemed to be extended by such additional period as the Service Provider may, using reasonable endeavours, require to complete the Permanent Repair; and
- 6.2.2 in any circumstances where the Service Provider has not complied with Clause 6.2.1 above and the Permanent Repair is not undertaken by the Permanent Repair Deadline then a Performance Failure or, as the case may be, an Availability Failure, will occur at that date and time and the provisions of paragraph 2 (Deductions for Performance Failures), paragraph 4 (Deductions for Availability Failures) and, if applicable, paragraph 5 (Repeated Failures) of Section 3 (Deductions from Monthly Service Payments) of Schedule Part 14 (Payment Mechanism) of the Services Contract shall apply and there shall be no entitlement to make a claim under the indemnity at Clause 8.2 in relation to such Performance Failure or Availability Failure (without prejudice to any other entitlement to claim under the indemnity at Clause 8.2) from the Permanent Repair Deadline until Rectification.
- 6.3 From the Effective Date the Service Provider shall:
- 6.3.1 provide any additional services that are required at the Facilities and which are outside the Ventilation Works Site where such additional services are required due to the acts or omissions of the Ventilation Works Contractor; and
- 6.3.2 mitigate, make safe any adverse effects or damage caused by any Ventilation Works Defects that arise from the Ventilation Works and carry out any Temporary Repair that may be required.
- 6.4 Project Co shall, six (6) months before the Ventilation Works Indemnity Expiry Date, appoint the Independent Inspector to carry out the Ventilation Works Defects Survey, and, subject to Clause 6.1, Project Co shall use reasonable endeavours to secure that the Ventilation Works Contractor rectifies all Ventilation Works Defects identified by the Ventilation Works Defects Survey before the Ventilation Works Indemnity Expiry Date.

- 6.5 Project Co and the Service Provider acknowledge that pursuant to paragraph 5 of Schedule Part 3 of the PA SA2, where a Service Event occurs in relation to the Ventilation Works prior to the Ventilation Works Indemnity Expiry Date and is still subsisting following the Ventilation Works Indemnity Expiry Date the Board will not be entitled to issue a Deduction or Warning Notice and accordingly Project Co will not allocate the same under this Agreement.
- 6.6 The Parties acknowledge that Project Co's remedies in respect of the Services include its entitlement to make Deductions as set out in Schedule Part 14 of the Services Contract other than Deductions in relation to the Ventilation Works which are limited by the indemnity in Clause 8.2 until the Ventilation Works Indemnity Expiry Date.

7. WAIVER LETTER

- 7.1 The Parties acknowledge that under the Waiver Letter Project Co:
- 7.1.1 has waived £280,000 (exclusive of VAT) of Deductions that were accrued in accordance with the Services Contract up to including 30 September 2019 and that such payment has been validly paid by Project Co to the Service Provider in accordance with the terms of the Waiver Letter. The Parties agree that there shall be no further adjustment in calculating the Deductions of any nature whatsoever for the period from up to and including 30 September 2019;
- 7.1.2 is required to pay the sum of £120,000 (exclusive of VAT) to the Service Provider within 10 Business Day of the last date of execution of PA SA2; and
- 7.1.3 has waived any and all accrued rights pursuant to Clause 40.1.3, 40.1.4, 40.1.8 and 40.1.9 of the Services Contract in accordance with the terms of the Waiver Letter. For the avoidance of doubt, said waiver is entirely without prejudice to any future rights available to Project Co pursuant to clause 40 of the Services Contract (other than any rights in relation to the matters covered by the Waiver Letter).

8. SERVICE PROVIDER RELIEF

- 8.1 Notwithstanding any other provision of this Agreement, the Parties agree that Clause 4C (Equivalent Project Relief) and any related provisions or definitions in the Services Contract are validly incorporated into this Agreement. The Service Provider agrees that its rights (whether in contract, delict or otherwise) in respect of any Price Adjustment or Project Relief (not resulting from Project Co Price Adjustment Event) shall be limited to as set out in and governed by Clause 4C (Equivalent Project Relief) of the Services Contract.
- 8.2 Project Co shall indemnify the Service Provider in relation to its due proportion of any loss which the Service Provider suffers to the extent that Project Co is itself able to claim under the indemnity contained in Schedule Part 3 of the PA SA2 for an amount in relation to the same loss.
- 8.3 Where the Service Provider suffers any loss to which Project Co is entitled to relief or remedy from the Ventilation Works Contractor under the Ventilation Works Contract, Project Co shall use reasonable endeavours to obtain such relief or remedy and the Service Provider shall be entitled to the benefit of the due proportion of any amount to which Project Co becomes entitled to under or in connection with the Ventilation Works Contract.

9. CONTRACTS (THIRD PARTY RIGHTS) (SCOTLAND) ACT 2017

This Agreement does not create any rights in favour of third parties under the Contracts (Third Party Rights) (Scotland) Act 2017 to enforce or otherwise invoke any provision of this Agreement.

10. VARIATION

Any variation of this Agreement shall be in writing and signed by or on behalf of each Party.

11. ENTIRE AGREEMENT

11.1 Except where expressly provided otherwise in this Agreement, this Agreement constitutes the entire agreement between the Parties in connection with its subject matter and supersedes all prior representations, communications, negotiations and understandings concerning the subject matter of this Agreement.

11.2 Each of the Parties acknowledges that:

11.2.1 it does not enter into this Agreement on the basis of and does not rely, and has not relied, upon any statement or representation (whether negligent or innocent) or warranty or other provision (in any case whether oral, written, express or implied) made or agreed to by any person (whether a party to this Agreement or not) except those expressly repeated or referred to in this Agreement and the only remedy or remedies available in respect of any misrepresentation or untrue statement made to it shall be any remedy available under this Agreement; and

11.2.2 this Clause shall not apply to any statement, representation or warranty made fraudulently, or to any provision of this Agreement which was induced by fraud, for which the remedies available shall be all those available under the law governing this Agreement.

12. COUNTERPARTS AND DELIVERY

This Agreement may be executed in any number of counterparts and by each of the Parties on separate counterparts.

13. **GOVERNING LAW AND JURISDICTION**

13.1 This Agreement shall be considered as a contract made in Scotland and shall be subject to the laws of Scotland.

13.2 Subject to the provisions of the Dispute Resolution Procedure, both parties agree that the courts of Scotland shall have exclusive jurisdiction to hear and settle any action, suit, proceeding or dispute in connection with this Agreement and irrevocably submit to the jurisdiction of those courts.

IN WITNESS WHEREOF these presents typewritten on this and the preceding nine (9) pages together with the Schedule in four (4) Parts are executed by the Parties hereto as follows:

SUBSCRIBED FOR AND ON BEHALF OF

IHS LOTHIAN LIMITED

by

..... Director

..... Full Name

at [●]

on [●]

..... Director/Company Secretary

..... Full Name

at [●]

on [●]

SUBSCRIBED FOR AND ON BEHALF OF

BOUYGUES E&S SOLUTIONS LIMITED

by

..... Director

..... Full Name

at [●]

on [●]

..... Director/Company Secretary

..... Full Name

at [●]

on [●]

SCHEDULE

PART 1

PA SA2

In Pro

PART 2
VENTILATION WORKS CONTRACT

In Pro

**PART 3
PRICE ADJUSTMENT**

- The Total Contract Term LCF Cost (current 2020 prices) shall be **£2,063,338.80 exc. VAT;**
- The Annual Service Cost (current 2020 prices) shall be **£84,789.75 exc. VAT**



In Process

Ver A: 2015/16

QUOTE FORM

Service	HARD FM	Building	
BYES Contact Name	Royal Hospital for Sick Children & Young People + DCN	Client Name	IHSL
BYES Cost Code		Client Cost Centre (if required)	
BYES PO Number		Client Order Number (if required)	

Ref: **HVC107**

Specification of Work | **Supplementary Ventilation Works**

BYes Comments;

Further Breakdown attached

SA2 Preparation & attendances ****All charges as per the agreed Schedule of Rates and or contract****

Type	working time / quantum	charge	Total non normal working hours	Hourly Rate	Total Cost
Senior Technical Manager (hrs)	20	£89.89			£1,797.80
External consultant support (days)	4	£1,008.00			£4,032.00

112012789.45\jo07

157

Legal support	1	£25,000.00			£25,000.00
Further design review and commissioning witnessing / testing by BYES (cost is indicative & subject to confirmation of Imtech programme)	1	£20,000.00			£20,000.00
					£0.00
					£0.00
					£0.00
Total Preparation Costs					£50,829.80

SUBCONTRACTOR / MATERIALS FOR WORK

Description	Quantity	Unit Price	% Markup	Total Cost
N/A see "Summary of LCF & OPEX Build-up" detailed below				£0.00
				£0.00
				£0.00
				£0.00
				£0.00
				£0.00
				£0.00
				£0.00
				£0.00
				£0.00
				£0.00
Total Work (Material / Subcontractor)				£0.00

LIFE CYCLE/OPEX ANNUAL COSTS AS A RESULT OF THE WORK		RPI (Contract Year) :	<input type="text" value="1.0000"/>
Total Contract Term LCF Cost :	<input type="text" value="£2,063,338.80"/>	Total Contract Term LCF Cost (current prices) :	<input type="text" value="£2,063,338.80"/>
Annual LCF Cost :	<input type="text" value="£82,533.55"/>	Annual LCF Cost (current prices) :	<input type="text" value="£82,533.55"/>
Annual Service Cost :	<input type="text" value="£84,789.75"/>	Annual Service Cost (current prices) :	<input type="text" value="£84,789.75"/>

Quote accepted

BYES Authorisation to proceed with work (according to authorisation levels):			
BYES signature: _____	Print name: _____	Date: _____	Email Attached: (Tick if applicable) <input type="checkbox"/>
1st Authorisation to proceed with work:			
Client signature: _____	Print name: _____	Date: _____	Email Attached: (Tick if applicable) <input type="checkbox"/>
2nd Authorisation to proceed with work:			
Client signature: _____	Print name: _____	Date: _____	Email Attached: (Tick if applicable) <input type="checkbox"/>
Job completed and cleared to invoice:			
Client signature: _____	Print name: _____	Date: _____	Email Attached: (Tick if applicable) <input type="checkbox"/>

In Process

Summary of LCF & OPEX Build up

Project:	RHSC
Project Ref:	HVC107
Client:	IHSL
Contract Start	22-Feb-19
Concession Term (yrs):	23.4
Life-Cycle Start Date:	03-Jul-17
Life-Cycle Period (yrs):	25
Contract end:	Jul-42

Prelims & OH&P	12%
Reactive Allowance	0%
Low Volume Replacement	2%
Risk	1%
Disposal / Removal	1%

In Process

CIBSE Ref.	Sub	Element	Component & Description	Quantity	Unit	Rate	Total	Life Exptncy from New	Replacement factor	Low Vol/Risk/Prelims/Dispo/Removal	No. of Cycle	Total			
Key	Sub		Component & Description		(No)	(£/Unit)	(£)	(Yrs)	(%)	(%)	(No)	(£)			
			Extension to Energy Centre	1		£90,000.00	£90,000.00	30 Yrs	10 %	0.16 %	1	£10,620.00			
5.8.3.1.1.1			Luminaires (1 No. Emergency)	2		£120.00	£240.00	20 Yrs	100 %	0.16 %	1	£283.20			
5.8.3.1.1.1			Lamps	4		£20.00	£80.00	3 Yrs	100 %	0.16 %	8	£755.20			
5.6.2.1.1.5			Local Heating - Radiant Heaters	2		£350.00	£700.00	8 Yrs	100 %	0.16 %	3	£2,478.00			
5.6.3.1.14.2			AHU's Serving Level 01 Isolation Rooms (Internal)	4		£65,000.00	£260,000.00	20 Yrs	50 %	0.16 %	1	£153,400.00			
5.6.3.1.14.1			AHU's Serving Level 02 Isolation Rooms (External)	5		£65,000.00	£325,000.00	15 Yrs	100 %	0.16 %	1	£383,500.00			
5.12.3.1.1			AHU Control Panel	2		£5,850.00	£11,700.00	15 Yrs	100 %	0.16 %	1	£13,806.00			

DocuSign Envelope ID: 3C2B05B3-7E36-45C1-8D91-A3086C80DEBC

Supplementary List		Heating / Cooling / Frost Coils	27		£3,000.00	£81,000.00	15 Yrs	100 %	0.16 %	1	£95,580.00			
Supplementary List		Thermal Wheel	9		£1,500.00	£13,500.00	15 Yrs	100 %	0.16 %	1	£15,930.00			
		Additional Heating Pipework, incl. Labour	100	40.00	£4,000.00	£4,000.00	35 Yrs	5 %	0.16 %	1	£236.00			
		Additional Chilling Pipework, incl. Labour	100	40.00	£4,000.00	£4,000.00	35 Yrs	5 %	0.16 %	1	£236.00			
Supplementary List		Flexible Ductwork	60	38.00	£2,280.00	£2,280.00	15 Yrs	75 %	0.16 %	1	£2,017.80			
Supplementary List		Fans / Motors	18		£4,500.00	£81,000.00	15 Yrs	100 %	0.16 %	1	£95,580.00			
Supplementary List		Variable speed drives	18		£500.00	£9,000.00	15 Yrs	100 %	0.16 %	1	£10,620.00			
		Doors / Locks / Ironmongery	36		£500.00	£18,000.00	10 Yrs	50 %	0.16 %	2	£21,240.00			
		Glass Traps	9		£200.00	£1,800.00	30 Yrs	20 %	0.16 %	1	£424.80			
Supplementary List		Grilles / Diffusers	38		£200.00	£7,600.00	30 Yrs	5 %	0.16 %	1	£448.40			
5.6.3.1.5.5		Air Cooled Chiller Unit	2		£50,000.00	£100,000.00	20 Yrs	100 %	0.16 %	1	£118,000.00			
5.6.3.1.5.5		New Chillers Level 02	2		£50,000.00	£100,000.00	20 Yrs	100 %	0.16 %	1	£118,000.00			
Supplementary List		Chiller Pump	2		£6,500.00	£13,000.00	20 Yrs	100 %	0.16 %	1	£15,340.00			
5.12.3.1.1		Chiller Control Panel	2		£3,750.00	£7,500.00	15 Yrs	100 %	0.16 %	1	£8,850.00			
Supplementary List		Compressors	4		£2,500.00	£10,000.00	20 Yrs	100 %	0.16 %	1	£11,800.00			
		Degasser	2		£4,000.00	£8,000.00	15 Yrs	100 %	0.16 %	1	£9,440.00			

112012789.45\jo07

161

161/235

A46520937

DocuSign Envelope ID: 3C2B05B3-7E36-45C1-8D91-A3086C80DEBC

		Air / Dirt Separator / Inline filter	2		£8,000.00	£16,000.00	15 Yrs	100 %	0.16 %	1	£18,880.00			
Supplementary List		Pressurisation Unit	2		£4,000.00	£8,000.00	15 Yrs	100 %	0.16 %	1	£9,440.00			
5.4.3.1.9		Expansion Vessel	2		£5,000.00	£10,000.00	15 Yrs	100 %	0.16 %	1	£11,800.00			
5.4.5.1.9		Buffer Vessel	2		£5,000.00	£10,000.00	15 Yrs	100 %	0.16 %	1	£11,800.00			
5.3.2.1.8		Chemical Dosing Pot	2		£1,000.00	£2,000.00	10 Yrs	100 %	0.16 %	2	£4,720.00			
5.6.1.1.20		Heater Battery	28		£1,500.00	£42,000.00	10 Yrs	100 %	0.16 %	2	£99,120.00			
Supplementary List		Valves; Motorised Valves; Strainers; Filters etc.	20	150	£3,000.00	£3,000.00	15 Yrs	75 %	0.16 %	1	£2,655.00			
5.12.3.1.2.4		Gauges; Sensors; Switches etc.	30		£90.00	£2,700.00	10 Yrs	100 %	0.16 %	2	£6,372.00			
Supplementary List		Filters - Primary - Disposable	9	325	£2,925.00	£2,925.00	0.5 Yrs	100 %	0.16 %	46	£158,769.00			
Supplementary List		Filters - Secondary - Bag Type	9	585	£5,265.00	£5,265.00	1.0 Yrs	100 %	0.16 %	23	£142,892.10			
Supplementary List		Backdraft Dampers	18		£2,000.00	£36,000.00	15 Yrs	100 %	0.16 %	1	£42,480.00			
		Sliders - Filter Holders	18		£120.00	£2,160.00	10 Yrs	100 %	0.16 %	2	£5,097.60			
Supplementary List		Damper Actuators	18		£300.00	£5,400.00	0.5 Yrs	50 %	0.16 %	46	£146,556.00	Based on actual Replacements to Date	CIBSE	10 Yrs
Supplementary List		Flowcon Actuator+ cartridge	9		£225.00	£2,025.00	0.25 Yrs	50 %	0.16 %	92	£109,917.00	Based on actual Replacements to Date	CIBSE	10 Yrs

112012789.45\jo07

162

DocuSign Envelope ID: 3C2B05B3-7E36-45C1-8D91-A3086C80DEBC

5.4.1.1.6		Trace Heating	4		£200.00	£800.00	20 Yrs	100 %	0.16 %	1	£944.00			
5.4.1.1.3		New Meters	4		£250.00	£1,000.00	20 Yrs	100 %	0.16 %	1	£1,180.00			
Supplementary List		Automatic Fire / Smoke Dampers	10		£425.00	£4,250.00	15 Yrs	50 %	0.16 %	1	£2,507.50			
Supplementary List		Volume Control Dampers	10		£285.00	£2,850.00	20 Yrs	20 %	0.16 %	1	£672.60			
Supplementary List		Remove Heating Pumps P1 & P2	2		£2,800.00	£5,600.00	20 Yrs	100 %	0.16 %	1	£5,608.00			
Supplementary List		Replacement Heating Pumps P1 & P2	2		£3,600.00	£7,200.00	20 Yrs	100 %	0.16 %	1	£8,496.00			
Supplementary List		Remove Heating Pumps P3 & P4	2		£2,800.00	£5,600.00	20 Yrs	100 %	0.16 %	1	£5,608.00			
Supplementary List		Replacement Heating Pumps P3 & P4	2		£3,600.00	£7,200.00	20 Yrs	100 %	0.16 %	1	£8,496.00			
Supplementary List		New LTHW Pumps - P20 & P21	2		£3,600.00	£7,200.00	20 Yrs	100 %	0.16 %	1	£8,496.00			
5.12.3.1.1		Pump Control Panel	1		£6,595.00	£6,595.00	15 Yrs	100 %	0.16 %	1	£7,782.10			
5.8.1.1.3.1		New TP&N 100A Switches	12		£65.00	£780.00	20 Yrs	10 %	0.16 %	1	£92.04			
5.8.2.1.4		New Metered Distribution Boards	9		£350.00	£3,150.00	20 Yrs	10 %	0.16 %	1	£371.70			
5.8.2.1.4		New Split Metered Distribution Board	3		£2,250.00	£6,750.00	20 Yrs	50 %	0.16 %	1	£3,982.50			
5.8.2.1.4		New Primary & Secondary DB's	2		£2,250.00	£4,500.00	20 Yrs	50 %	0.16 %	1	£2,655.00			
5.8.1.1.3.1		125 A Isolator	12		£56.00	£672.00	20 Yrs	10 %	0.16 %	1	£79.30			

112012789.45\jo07

163

DocuSign Envelope ID: 3C2B05B3-7E36-45C1-8D91-A3086C80DEBC

5.8.1.1.3.1		RCD's	158		£75.00	£11,850.00	20 Yrs	20 %	0.16 %	1	£2,796.60			
5.4.1.1.3		New Meters	16		£275.00	£4,400.00	20 Yrs	100 %	0.16 %	1	£5,192.00			
		Labour Associated with All of the Above LCR Works	1		£138,752.00	£138,752.00		100 %	0.16 %	1	£163,727.36			

£1,492,624.00

Total £2,063,338.80

Maintenance task (freq)	Qty	No. of Hours	Labour rate £/hour	Total Labour	Contractor Costs	Mark Up	Total Contract Costs	Consumable	Mark Up	Total Consumables Costs	Annual cost	LCF years	£ total for remaining contract
Luminaires (1 No. Emergency)	2	2	0.4	£40.56	£64.90					£0.00	£64.90	23	£1,518.57
Lamps	03	4	0.5	£40.56	£24.34			£ 80.00	12%	£89.60	£113.94	23	£2,666.10
Lighting Management	12	2	0.4	£40.56	£389.38					£0.00	£389.38	23	£9,111.40
Local Heating - Radiant Heaters	1	2	0.5	£40.56	£40.56					£0.00	£40.56	23	£949.10
Maintenance of AHU's	12	9	2	£81.12	£17,521.92					£0.00	£17,521.92	23	£410,012.93
AHU Control Panel	2	2	0.5	£40.56	£81.12					£0.00	£81.12	23	£1,898.21
Heating / Cooling / Frost Coils	2	27	1	£40.56	£2,190.24			£ 60.30	12%	£67.54	£2,257.78	23	£52,831.96
Thermal Wheel	2	9	1	£40.56	£730.08					£0.00	£730.08	23	£17,083.87
Ductwork & Flexible Ductwork - Inspection & Testing	Outsourced	60			£5,000.00	12%	£5,600.00			£0.00	£5,600.00	23	£131,040.00
Fans / Motors	2	18	0.5	£40.56	£730.08					£0.00	£730.08	23	£17,083.87
Variable speed drives	1	18	0.6	£40.56	£438.05					£0.00	£438.05	23	£10,250.32
Doors / Locks / Ironmongery		incl. in AHU Maintenance								£0.00	£0.00	23	£0.00

112012789.45\jo07

164

164/235

A46520937

DocuSign Envelope ID: 3C2B05B3-7E36-45C1-8D91-A3086C80DEBC

Glass Traps		incl. in AHU Maintenance								£0.00	£0.00	23	£0.00
Grilles / Diffusers	1	38	0.4	£40.56	£616.51					£0.00	£616.51	23	£14,426.38
Air Cooled Chiller Units	Outsourced	4				£4,385.00	12%	£4,911.20		£0.00	£4,911.20	23	£114,922.08
Chiller Pump	2	2	1.5	£40.56	£243.36					£0.00	£243.36	23	£5,694.62
Chiller Control Panel	2	2	0.5	£40.56	£81.12					£0.00	£81.12	23	£1,898.21
Compressors	2	4	0.6	£40.56	£194.69					£0.00	£194.69	23	£4,555.70
Degasser	1	2	1	£40.56	£81.12					£0.00	£81.12	23	£1,898.21
Air / Dirt Separator / Inline filter	12	2	1	£40.56	£973.44					£0.00	£973.44	23	£22,778.50
Pressurisation Unit	2	2	1	£40.56	£162.24					£0.00	£162.24	23	£3,796.42
Expansion Vessel	12	2	1	£40.56	£973.44					£0.00	£973.44	23	£22,778.50
Buffer Vessel	2	2	1	£40.56	£162.24					£0.00	£162.24	23	£3,796.42
Chemical Dosing Pot	2	2	1	£40.56	£162.24					£0.00	£162.24	23	£3,796.42
Heater Battery	2	28	1	£81.12	£4,542.72					£0.00	£4,542.72	23	£106,299.65
Valves; Motorised Valves; Strainers; Filters etc.	2	20	1.5	£40.56	£2,433.60					£0.00	£2,433.60	23	£56,946.24
Gauges; Sensors; Switches etc.	52	30	0.1	£40.56	£6,327.36					£0.00	£6,327.36	23	£148,060.22
Filters - Primary - Disposable	2	9	0.4	£40.56	£292.03					£0.00	£292.03	23	£6,833.55
Filters - Secondary - Bag Type	2	9	0.5	£40.56	£365.04					£0.00	£365.04	23	£8,541.94
Backdraft Dampers	2	18	0.4	£40.56	£584.06					£0.00	£584.06	23	£13,667.10
Sliders - Filter Holders	incl	18								£0.00	£0.00	23	£0.00
Damper Actuators	2	18	0.5	£40.56	£730.08					£0.00	£730.08	23	£17,083.87
Flowcon Actuator+ cartridge	2	9	0.5	£40.56	£365.04					£0.00	£365.04	23	£8,541.94

112012789.45\jo07

165

165/235

A46520937

DocuSign Envelope ID: 3C2B05B3-7E36-45C1-8D91-A3086C80DEBC

Trace Heating	4	4	0.4	£40.56	£259.58					£0.00	£259.58	23	£6,074.27
New Meters	2	incl. in DB Maintenance								£0.00	£0.00	23	£0.00
Automatic Fire / Smoke Dampers & Control Panels	Outsourced	10				£950.00	12%	£1,064.00		£0.00	£1,064.00	23	£24,897.60
Volume Control Dampers	1	10	0.25	£40.56	£101.40					£0.00	£101.40	23	£2,372.76
New LTHW Pumps - P20 & P21	2	2	1	£40.56	£162.24					£0.00	£162.24	23	£3,796.42
Pump Control Panel	2	1	0.5	£40.56	£40.56					£0.00	£40.56	23	£949.10
New TP&N 100A Switches	incl.	12								£0.00	£0.00	23	£0.00
New Metered Distribution Board	Outsourced	9				£3,500.00	12%	£3,920.00		£0.00	£3,920.00	23	£91,728.00
New Split Metered Distribution Board	incl.	3								£0.00	£0.00	23	£0.00
125 A Isolator	incl.	12								£0.00	£0.00	23	£0.00
RCD's	4	158	0.1	£81.12	£5,126.78					£0.00	£5,126.78	23	£119,966.75
New Primary & Secondary DB's	incl.	2								£0.00	£0.00	23	£0.00
New Meters	incl.	16								£0.00	£0.00	23	£0.00
Ventilation Annual Validation	Outsourced		0	£0.00		£1,200.00	12%	£1,344.00		£0.00	£1,344.00	23	£31,449.60
Schneider Maintenance	Outsourced		0	£0.00		£3,000.00	12%	£3,360.00		£0.00	£3,360.00	23	£78,624.00
Fixed Wiring - Periodic Testing	Outsourced		0	£0.00		£1,500.00	12%	£1,680.00		£0.00	£1,680.00	23	£39,312.00
Ductwork Cleaning	Outsourced		0	£0.00		£3,500.00	12%	£3,920.00		£0.00	£3,920.00	23	£91,728.00
Roof Maintenance	1	1	1	£38.37	£38.37					£0.00	£38.37	23	£897.86
Cladding Cleaning	Outsourced					£200.00	12%	£224.00		£0.00	£224.00	23	£5,241.60
Additional	Outsourced					£455.00	12%	£509.60		£0.00	£509.60	23	£11,924.64

112012789.45\jo07

166

166/235

A46520937

Insurance Inspections (Zurich)														
Uplift on Water Management Activities	4	1	2	£81.12	£648.96						£0.00	£648.96	23	£15,185.66
General Reactive Allowance											£0.00	£7,420.92	23	£173,649.50
Consumables, generally	1	1		£0.00	£0.00				£ 2,500.00	12%	£2,800.00	£2,800.00	23	£65,520.00

Labour sub total	£47,878.89
-------------------------	-------------------

total per annum at current prices	£84,789.75	Concession Total	£1,984,080.03
--	-------------------	-------------------------	----------------------

Life Cycle Description RHSC

HFM LCF

- 1 SUBSTRUCTURE
 - 1 Substructure
- 2 SUPERSTRUCTURE
 - 2.1 Frame
 - 2.2 Upper Floors
 - 2.3 Roof
 - 2.4 Stairs and Ramps
 - 2.5 External Walls
 - 2.6 Windows and External Doors
 - 2.7 Internal Walls and Partitions
 - 2.8 Internal Doors
- 3 FINISHES
 - 3.1 Wall Finishes
 - 3.2 Floor Finishes
 - 3.3 Ceiling Finishes

- 1 - SUBSTRUCTURE
 - 1 - Substructure
- 2 - SUPERSTRUCTURE
 - 2.1 - Frame
 - 2.2 - Upper Floors
 - 2.3 - Roof
 - 2.4 - Stairs and Ramps
 - 2.5 - External Walls
 - 2.6 - Windows and External Doors
 - 2.7 - Internal Walls and Partitions
 - 2.8 - Internal Doors
- 3 - FINISHES
 - 3.1 - Wall Finishes
 - 3.2 - Floor Finishes
 - 3.3 - Ceiling Finishes

4	FITTINGS, FURNISHINGS & EQUIPMENT	4 - FITTINGS, FURNISHINGS & EQUIPMENT
4.1	General Fittings Fixtures and Furnishings	4.1 - General Fittings Fixtures and Furnishings
4.2	Special Fittings Fixtures and Furnishings	4.2 - Special Fittings Fixtures and Furnishings
4.3	Internal Planting	4.3 - Internal Planting
4.4	Bird and Vermin Control	4.4 - Bird and Vermin Control
5	SERVICES INSTALLATIONS	5 - SERVICES INSTALLATIONS
5.1	Sanitary Appliances	5.1 - Sanitary Appliances
5.2	Services Equipment	5.2 - Services Equipment
5.3	Disposal Installations	5.3 - Disposal Installations
5.4	Water Installations	5.4 - Water Installations
5.5	Specialist lighting	5.5 - Specialist lighting
5.6	Space Heating and Air Conditioning	5.6 - Space Heating and Air Conditioning
5.7	Ventilating Systems	5.7 - Ventilating Systems
5.8	Electrical Installations	5.8 - Electrical Installations
5.9	Gas and Other Fuel Installations	5.9 - Gas and Other Fuel Installations
5.10	Lift and Conveyor Installations	5.10 - Lift and Conveyor Installations
5.11	Fire and Lightning Protection	5.11 - Fire and Lightning Protection
5.12	Communications, Security and Control Installations	5.12 - Communications, Security and Control Installations
5.13	Specialist installations	5.13 - Specialist installations
5.14	Builder's Work in Connection with Services	5.14 - Builder's Work in Connection with Services
5.15	Testing and Commissioning of Services	5.15 - Testing and Commissioning of Services
6	COMPLETE BUILDINGS	6 - COMPLETE BUILDINGS
6.1	Prefabricated Buildings	6.1 - Prefabricated Buildings
7	WORK TO EXISTING BUILDINGS	7 - WORK TO EXISTING BUILDINGS
7.1	Minor Demolition works and alteration work	7.1 - Minor Demolition works and alteration work
8	EXTERNAL WORKS	8 - EXTERNAL WORKS
8.1	Site Preparation Works	8.1 - Site Preparation Works
8.2	Roads, Paths and Pavings	8.2 - Roads, Paths and Pavings
8.3	Planting	8.3 - Planting
8.4	Fencing, Railings and Walls	8.4 - Fencing, Railings and Walls
8.5	Site/Street furniture and Equipment	8.5 - Site/Street furniture and Equipment

- 8.6 External Drainage
- 8.7 External Services
- 8.8 Minor Building works and Ancillary Buildings
- Sub-Total
- 9 VARIATIONS
- 9.1 Variations Agreed with the Board 12/11/2014

- 8.6 - External Drainage
- 8.7 - External Services
- 8.8 - Minor Building works and Ancillary Buildings
- Sub-Total
- 9 - VARIATIONS
- 9.1 - Variations Agreed with the Board 12/11/2014

In Proce

PART 4**AMENDMENTS TO THE SERVICES CONTRACT – SERVICES CONTRACT****1A SCHEDULE PART 1**

Amend and/or add the following definitions

“Board Change Notice”

has the meaning given to it in PA SA2;

“Board’s Construction Requirements”

means the requirements of the Board set out or identified in Section 3 (*Board's Construction Requirements*) of Schedule Part 6 (*Construction Matters*) of the Project Agreement and as amended by the Board Change Notice and Part A of the Scope, and as amended from time to time;

“Completion Criteria”

means the Completion Tests as defined in Appendix B of Schedule Part 10 of the Project Agreement, or in respect of the Ventilation Works, the Ventilation Works Completion Criteria;

“Service Contract Amendment Agreement”

means the amendment agreement between Project Co and the Service Provider with such name amending the Service Contract between Project Co and the Service Provider

“PA SA2”

has the meaning given in the Service Contract Amendment Agreement;

“Plant”

means the infrastructure systems, building systems, fixed, and immovable equipment systems, installed as part of the Works and the Ventilation Works or under a Project Co Change as replaced from time to time;

“Project Agreement”

means the Project Agreement between Project Co and the Board dated on or around the date of the Services Contract as amended by Supplemental Agreement No. 1 dated 22 February 2019 and PA SA2;

“Project Co’s Proposals”

means Section 4 (Project Co Proposals) of Schedule Part 5 (Construction Matters) of the Project Agreement and the Scope (under exception of Part A of the Scope), as amended from time to time;

“Project Documents”

means the Project Agreement, this Agreement, the Construction Contract, the Ventilation Works Contract, the Interface Agreement, the Service Provider Collateral Agreement, the Funder's Direct Agreement, the Services Provider Direct Agreement, the Parent Company Guarantee, all as the same may be amended or replaced from time to time;

"Services"	means the services to be provided, managed and/or procured by Service Provider for Project Co in relation to the Facilities in accordance with Schedule Part 12 (Service Requirements) and such other additional services to be provided in accordance with the Service Contract Amendment Agreement, as subsequently amended or adjusted in accordance with this Agreement;
"Scope"	has the meaning given in PA SA2;
"Ventilation Works"	has the meaning given to it in PA SA2;
"Ventilation Works Completion Criteria"	has the meaning given in PA SA2;
"Ventilation Works Completion Date"	has the meaning given to it in PA SA2;
"Ventilation Works Contract"	has the meaning given to it in PA SA2;
"Ventilation Works Contractor"	has the meaning given to it in PA SA2; and
"Ventilation Works Defects"	has the meaning given to it in PA SA2.

1B Clause 9.3 shall be amended to read as follows:-

"After the occurrence of the Actual Completion Date, the Service Provider agrees and acknowledges that the Contractor, the Contractor Parties and the Ventilation Works Contractor may enter and remain on the Site or Off-Site for the purposes of remedying Defects and carrying out Snagging Matters and carrying out the Ventilation Works and, following the Ventilation Works Completion Date, remedying any Ventilation Works Defects. Project Co shall not be responsible or liable to the Service Provider for any act or omission of the Contractor, the Contractor Parties or the Ventilation Works Contractor in remedying such Defects, carrying out such Snagging Matters, carrying out the Ventilation Works or remedying any Ventilation Works Defects. This Clause 9.3 shall not prejudice any rights which the Service Provider may possess directly against the Contractor under the Interface Agreement or which the Service Provider may possess pursuant to Clause 8 of the Service Contract Amendment Agreement."

1C Clause 51.2 shall be amended to include a new limb 51.2.10 as follows:

"the carrying out of the Board Change Notice HVC107 and any other changes instructed pursuant to clause 6.10 of PA SA2 in relation to the Ventilation Works in accordance with the terms of PA SA2."

1D Clause 51.2 shall be amended to include a new limb 51.2.11 as follows:

"the performance of the Ventilation Works by the Board following the exercise of their rights of step-in under the Collateral Warranties as defined in PA SA2 where, in so doing, the Board:

(a) prevents the Service Provider from providing the Services and/or performing other obligations; or

(b) otherwise causes:

(i) material adverse consequence on the provision of the Services and/or other obligations; or

(ii) material adverse effect on the ability of the Service Provider to provide the Services and/or performing other obligations."

1E Clause 51.3 shall be amended as follows:

"Without prejudice to Clause 53 (Insurance), the Service Provider shall not be entitled to any payment which would not have been due under this Agreement but for Clause 51 (Excusing Causes) to the extent that the Service Provider:

51.3.1 is or should be able to recover under any policy of insurance required to be maintained by Project Co in accordance with this Agreement (whether or not such insurance has been vitiated as a result of any act or omission of the Service Provider (or any Service Provider Party), including but not limited to non-disclosure or under insurance) or has any other policy of insurance which the Service Provider has taken out and maintained; and

51.3.2 in relation to the Ventilation Works in the period prior to the twelfth anniversary of the Ventilation Works Completion Date, has recovered (without any requirement to commence legal proceedings against the insurer but provided that the Service Provider shall otherwise use reasonable commercial endeavours to recover such amounts and further provided that the Service Provider shall be able to reclaim any costs incurred in doing so) such amounts under the insurances to be maintained by Project Co pursuant to this Agreement or the Ventilation Works Contractor in accordance with the Ventilation Works Contract provided that in relation to the period following the twelfth anniversary of the Ventilation Works Completion Date clause 51.3.1 applies."

2 **Schedule Part 8 (Review Procedure)**

In Paragraph 3.3.3 after "any existing Approved RDD Item" insert "and the Ventilation Works"

PART 5**SERVICE PROVIDER RATES FOR ATTENDING TESTS AND INSPECTION**

In respect of Schedule of rates the following categories of staff shall be charged at the following rates, all of which are current 2020 based prices;

BYES additional attendance Rates	
<i>Board Director</i>	£131.25
<i>Regional Director</i>	£103.13
<i>Contract Director</i>	£93.75
<i>General Manager</i>	£89.06
<i>Contract Manager</i>	£79.69
<i>Design Interface Manager</i>	£76.88
<i>Engineering / Estates Manager</i>	£60.94
<i>Graduate Manager</i>	£51.56
<i>Admin</i>	£37.50

In Pro

Schedule Part 5

Collateral Warranties

Part 1

Ventilation Works Contractor Collateral Warranty

In Pro

Collateral warranty

AMONG

IHS LOTHIAN LIMITED

and

IMTECH ENGINEERING SERVICES CENTRAL LTD

and

LOTHIAN HEALTH BOARD

In Pro
relating to the Design construction and installation and completion of a new ventilation system and associated other works to serve Paediatric Critical Care and Haematology and Oncology areas on the 1st and 3rd floors respectively at Royal Hospital for Children & Young People (RHCYP) & Department of Clinical Neurosciences(DCN), Edinburgh

AGREEMENT**AMONG**

- (1) **LOTHIAN HEALTH BOARD**, a health board constituted in Scotland under the National Health Service (Constitution of Health Boards) (Scotland) Order 1974 (S.I. 1974/267) as amended by the National Health Service (Constitution of Health Boards) (Scotland) Amendment Order 2003 (S.S.I. 2003/217) pursuant to Section 2 of the National Health Service (Scotland) Act 1978 as amended by Section 28 of the National Health Service and Community Care Act 1990 and having its principal address at Waverley Gate, 2-4 Waterloo Place, Edinburgh EH1 3EG (the "**Beneficiary**", which term shall include all its successors and permitted assignees);
- (2) **IMTECH ENGINEERING SERVICES CENTRAL LTD**, (No 00443522) whose registered office is at G&H House, Hooton Street, Carlton Road, Nottingham NG3 5GL (the "**Contractor**"); and
- (3) **IHS LOTHIAN LIMITED**, (company number SC493676) whose registered office is at 13 Queen's Road, Aberdeen, AB15 4YL (the "**Client**").

RECITALS

- (A) The Contractor has entered into or is about to enter into a contract on or around the date hereof (the "**Contract**" (which shall be deemed to include any supplement, variation and/or amendment thereto agreed by the Contractor)) with the Client to carry out the design, construction, installation, commissioning and testing and completion of a new ventilation system and associated other works to serve Paediatric Critical Care and Haematology and Oncology areas on the 1st and 3rd floors respectively, (hereinafter together collectively referred to as the "**Works**") at Royal Hospital for Children & Young People (RHCYP) & Department of Clinical Neurosciences (DCN), Edinburgh of which the Works form part (hereinafter referred to as the "**Project**").
- (B) It is a condition of the Contract that the Contractor enters into this Agreement with the Beneficiary.

IT IS HEREBY AGREED AS FOLLOWS:**1. WARRANTY**

- 1.1 The Contractor warrants and undertakes to the Beneficiary that:
 - (a) it has complied with and shall continue to comply with the terms of the Contract; and
 - (b) without prejudice to the generality of clause 1.1(a) the design of the Works has been and shall be carried out in accordance with the reasonable skill and care and diligence as may be expected of a properly qualified designer of the appropriate disciplines for such design, experienced in carrying out work of a similar scope, nature, timescale and complexity and on a similar site or at similar locations to the Works; and
 - (c) it has and will exercise the same standard of skill and care and diligence referred to in clause 1.1.(b) above to ensure that it shall not and has not (and it will ensure all sub-contractors or others carrying out work for which the Contractor is responsible have not

and shall not) specify for use or use any prohibited materials which are not in accordance with the existing British Standards and Codes of Practice at the time of specification or the guidelines contained in the edition of the publication "Good Practice in Selection of Construction Materials" (2011: British Council for Offices) or any amended or updated version as at the *starting date* (as such term is defined in the Contract) and that the Contractor shall use the duty of care set out in clause 1.1.(b) above, along with what is generally known to the Contractor and/or within his profession in the United Kingdom and in accordance with British Standards and Codes of Practice regarding any material, substance, building practice or techniques known to be deleterious or hazardous to health and safety or to the durability of the property to ensure that those materials, substances, building practice or techniques specified for use or used in the Works will be in accordance with such guidance.

1.2 Without limiting clause 1.1 or any other obligation, duty and/or liability of the Contractor under or pursuant to this Agreement, the Contractor undertakes and agrees:-

- (a) to comply with the Contractor's obligations in relation to the rectification and/or making good of any defects, shrinkages or other faults (including, without limitation, any omissions or incomplete work) in the Works for which the Contractor is responsible pursuant to the Contract (hereinafter referred to as "Defects"); and
- (b) the Contractor shall be liable for and shall pay to the Beneficiary all reasonably demonstrated costs, expenses, losses, damages, claims, demands and/or other liabilities suffered and/or incurred by the Beneficiary which arise as a result of or in connection with any Defects including without limitation for, rectifying and/or making good and/or procuring the rectification and/or making good of Defects.

2. ENQUIRIES AND INSPECTION

The obligations and liabilities of the Contractor under this Agreement shall not be limited or excluded by any enquiry or inspection into any matter which may be made or carried out by the Beneficiary or by the appointment of any person, firm or company by the Beneficiary to make or carry out any enquiry or inspection and whether or not any independent liability of any such person, firm or company to the Beneficiary arises in connection therewith.

3. COPYRIGHT LICENCE

The Contractor hereby grants (and shall procure that the owner who can grant the same shall grant) to the Beneficiary an irrevocable, transferable, non-exclusive, royalty-free licence (carrying the right to grant sub-licences) in all and any material provided by the Contractor for any purpose relating to the Project including (but without limitation) the construction, completion, installation, commissioning, testing, completion, handback, maintenance, repair, renewal, replacement, operation, letting, sale, promotion, advertisement, reinstatement, repair and renewal and any extension of the property which is the subject of the Project (hereinafter referred to as "**Intellectual Property**") which is or becomes vested in the Contractor for any purpose relating to the design, construction, completion, installation, commissioning, testing and/or completion of the Project. The Contractor shall on reasonable demand provide the Beneficiary and those authorised by the

Beneficiary copies of the Intellectual Property. The Beneficiary shall be entitled to assign their rights in relation to the Intellectual Property and all other intellectual property to any third party without the consent of the Contractor.

The Contractor shall indemnify the Beneficiary against any and all losses, costs, claims, demands, actions, damages, awards, liabilities, expenses, compensation, court and/or tribunal orders and all other liabilities howsoever arising (including any legal expenses) suffered or sustained by the Beneficiary arising as a result of any infringement of any intellectual property rights of any third parties as a result of the Works, the Project and/or use or reproduction of the Intellectual Property.

4. STEP-IN RIGHTS

4.1

4.1.1 A "**Step-In Notice**" means a written notice from the Beneficiary to the Contractor:

- (a) requiring the Contractor to continue the performance of its obligations under the Contract in relation to the Works;
- (b) acknowledging that the Beneficiary (or its appointee) is assuming performance of the Client's obligations including payment of any fees and expenses properly incurred, due and payable and which are outstanding at the date of the Step-In Notice; and
- (c) accepting liability for payment of the fees and expenses payable after Step-In to the Contractor under the Contract.

4.1.2 An "**Entitlement**" means any:

- (a) right to terminate its engagement under the Contract and/or discontinue the performance of any of its obligations in relation to the Works; and/or
- (b) right to treat the Contract as repudiated.

4.2 The Contractor undertakes with the Beneficiary that it shall not exercise any Entitlement before the lapse of 21 days from receipt by the Beneficiary of a notice in writing of the Contractor's intention to do so.

4.3 Within the period referred to in clause 4.2 the Beneficiary may give a Step-In Notice. The Contractor shall be entitled to rely on a notice given to the Contractor by the Beneficiary under this clause 4.3 as conclusive evidence for the purposes of this Agreement that the Beneficiary is entitled to do so.

4.4 Upon the Beneficiary giving a Step-In Notice:

- 4.4.1 the Contract shall continue in full force and effect as if no Entitlement had arisen and in all respects as if the Contract had been made between the Contractor and the Beneficiary (or its appointee) to the exclusion of the Client; and
- 4.4.2 the parties (and any such appointee) shall enter into an agreement for the novation of the Contract by the Client to the Beneficiary (or such appointee), such agreement to be in

terms to be agreed between the parties, such agreement not to be unreasonably delayed or withheld.

- 4.5 Notwithstanding any Entitlement, the Contractor may not exercise any Entitlement unless and until the end of the period of notice required by this clause 4.
- 4.6 Compliance by the Contractor with the provisions of this clause 4 shall not be treated as a waiver of any breach, act or omission giving rise to any Entitlement nor otherwise prevent the Contractor from exercising its rights after the expiration of the period referred to in clause 4.2 unless the right to exercise any Entitlement shall have ceased under the provisions of this clause 4.
- 4.7 The Client has agreed to be a party to this Agreement for the purpose of acknowledging that the Contractor in acting in accordance with the provisions of clause 4 shall not by doing so incur any liability to the Client.
- 4.8 If any Step In Notice given by the Beneficiary under this clause 4 requires the Contractor to accept the instructions of the Beneficiary's appointee, the Beneficiary shall, subject to the parties agreeing the terms for the novation agreement referred to in clause 4.4.2, be liable pursuant to any such agreement to the Contractor as guarantor for the payment of all sums from time to time due to the Contractor from the Beneficiary's appointee.

5. ASSIGNATION

- 5.1 This Agreement, the benefit hereof and/or the rights arising hereunder (whether or not accrued) may be assigned by the Beneficiary on two occasions without the Contractor's consent to any party to whom the Beneficiary is entitled to assign and nothing shall restrict the rights of the Scottish Ministers to affect a statutory transfer, without the consent of the Contractor or the Client being required.
- 5.2 The Contractor agrees that it shall not at any time assert that any permitted assignee in terms of the Agreement is precluded from recovering any loss resulting from any breach of this Agreement by reason that such assignee is not an original party to this Agreement or that no loss or a different loss has been suffered by such assignee.
- 5.3 The Contractor may not assign its rights or obligations under this Agreement and the Client may assign its rights or obligations under this Agreement only with the prior written consent of the Beneficiary.

6. EXCLUSION OF THIRD PARTY RIGHTS

The Contract (Third Party Rights) (Scotland) Act 2017 (the "Act") shall not apply to this Agreement and no person other than the parties to this Agreement (which term shall for the purposes of this clause include all permitted assignees or transferees or successors in title) shall have any rights under the Act, nor shall this Agreement be enforceable under the Act by any person other than the parties to it.

7. PROFESSIONAL INDEMNITY INSURANCE

The Contractor warrants that he has and shall maintain throughout the period that it retains liability and/or potential liability under, arising out of and/or in connection with this Agreement professional indemnity insurance to cover claims hereunder or in connection herewith in an amount of not less

than TEN MILLION POUNDS STERLING (£10,000,000) for any one claim and in the aggregate in any one year, subject to unlimited reinstatements (provided such insurance is available generally in the market to contractors at commercially reasonable rates). Any increased or additional premium required by reason of the Contractor's own claims record or other acts, omissions, matters or things particular to any sub-contractor shall be deemed to fall within commercially reasonable rates. Such insurance shall be with well-established United Kingdom insurance offices or underwriters of good repute. As and when it is reasonably required to do so by the Beneficiary, the Contractor shall produce for inspection documentary evidence to show that the insurance required is being maintained properly.

8. COLLATERAL WARRANTIES

The Contractor shall, within ten days of each request made from time to time by the Beneficiary, execute and deliver an agreement or agreements in the form of this Agreement (save for this clause 8) in favour of any one or more party entitled in terms of the Contract.

9. GOVERNING LAW AND JURISDICTION

This Agreement (and any dispute, controversy, proceedings or claim of whatever nature arising out of or in any way relating to this Agreement or its formation) shall be governed by and construed in accordance with Scots law and the parties hereby irrevocably submit to the exclusive jurisdiction of the Scottish courts.

10. LIABILITY AND DEFENCES

- 10.1 The Contractor shall have no greater duties and obligations to the Beneficiary under this Agreement than as it would have if the Beneficiary was named as joint "Client" with the Client under the Contract.
- 10.2 The Contractor shall be entitled in any action or proceedings by the Beneficiary to rely on any limitation in the Contract and to raise the equivalent rights in defence of liability as it would have under the Contract, declaring however that the Contractor (a) will not seek to rely on any defence in the event of a claim being made against it by Beneficiary pursuant to this Agreement that the Beneficiary was not an original party to the Contract and (b) shall not at any time assert that the Beneficiary is precluded from recovering any loss resulting from any breach of this Agreement by reason that the Beneficiary has suffered no loss or a different loss has been suffered by the Client and (c) the Contractor shall not be entitled to raise any retention, counterclaim or set-off under this Agreement in respect of any sums due under the Contract.
- 10.3 The Contractor shall be liable for any breach and/or default of any obligation of the Contractor arising under, out of or in connection with this Agreement provided that the Beneficiary shall have commenced an action and/or proceedings in respect thereof on or before the expiry of 12 years from the date of Completion (as defined in the Contract) of the whole of the Works. No action or proceedings arising under, out of or in connection with this Agreement shall be commenced against the Contractor after the expiry of 12 years from the date of Completion (as defined in the Contract) of the whole of the Works.

11. NOTICES

- 11.1 Any notice to be given hereunder shall be sufficiently served if in writing and delivered personally or sent by pre-paid first class recorded delivery post to the Beneficiary, the Client and the Contractor at their respective addresses specified in the preamble to this Agreement or such other address notified in writing by any party to all of the other parties.
- 11.2 In proving service it shall be sufficient to prove that the envelope containing the notice was properly addressed and either delivered personally or posted as a pre-paid first class recorded delivery letter.

12. COUNTERPART

This Agreement may be executed in any number of counterparts in accordance with the Legal Writings (Counterparts and Delivery) (Scotland) Act 2015 ("the 2015 Act"). No counterpart shall be effective until all counterparts have been executed and one part has been delivered to MacRoberts LLP from each of the Client, the Contractor, and the Beneficiary. The Client, the Contractor, and the Beneficiary agree MacRoberts LLP shall be the nominated person in terms of section 2(1) of the 2015 Act.

IN WITNESS WHEREOF these presents consisting of this and the preceding six pages are executed as follows

SUBSCRIBED for and on behalf of **LOTHIAN HEALTH BOARD**

by

..... Authorised Signatory
 Full Name

at

on

..... Authorised Signatory
 Full Name

at

on

SUBSCRIBED for and on behalf of **IMTECH ENGINEERING SERVICES CENTRAL LTD**

by

..... Director/Authorised Signatory
..... Full Name

at
on

..... Director/Company Secretary/Authorised Signatory
..... Full Name

at
on



SUBSCRIBED for and on behalf of **IHS LOTHIAN LIMITED**

by

..... Director
..... Full Name

at
on

..... Director/Company Secretary
..... Full Name

at
on

Schedule Part 5

Collateral Warranties

Part 2

Collateral Warranty forms from Project Manager and Supervisor in favour of the Board

In Pro

COLLATERAL WARRANTY**AMONG**

Faithful+Gould Limited (registered in England and Wales under company number 02236832) whose registered office is at Woodcote Grove, Ashley Road, Epsom, Surrey KT18 5BW (hereinafter referred to as "the **Consultant**")

And

Lothian Health Board, a health board constituted in Scotland under the National Health Service (Constitution of Health Boards) (Scotland) Order 1974 (S.I. 1974/267) as amended by the National Health Service (Constitution of Health Boards) (Scotland) Amendment Order 2003 (S.S.I. 2003/217) pursuant to Section 2 of the National Health Service (Scotland) Act 1990 and having its principal address at Waverley Gate, 2-4 Waterloo Place, Edinburgh, EH1 3EG (hereinafter together with its successors in title and assignees referred to as "the **Beneficiary**")

And

IHS LOTHIAN LIMITED, (company number SC493676) whose registered office is at 13 Queen's Road, Aberdeen, AB15 4YL (the "**Client**").

1 BACKGROUND AND RECITALS

- 1.1 The Beneficiary has an actual or prospective interest in the Project (afterdefined) and the Works (afterdefined) and has entered into a DBFM agreement with the Client for the Project and has or is about to enter into an agreement with the Client for the Works.
- 1.2 The Consultant is to be, or has been, appointed by the Client under the terms of the Appointment to provide the Services (afterdefined) and more particularly described in the Appointment.

1A DEFINITIONS

In this Agreement, except where expressly provided otherwise, the following capitalised terms have the following meanings:-

Appointment: means the appointment entered into or to be entered into between the Client and the Consultant on or around the date hereof.
--

Contract: means the contract between the Client and IMTECH ENGINEERING SERVICES CENTRAL LTD , (No 00443522) whose registered office is at G&H House, Hooton Street, Carlton Road, Nottingham NG3 5GL (the " Contractor ") for the Works;

Professional Indemnity Insurance: means £5,000,000 (five Million pounds Sterling).

Project: Royal Hospital for Children & Young People (RHCYP) & Department of Clinical Neurosciences (DCN), Edinburgh of which the Works form part;
--

Services: means the carrying out of the NEC4 Project Manager services and Health & Safety advice in relation to HVC 107 which services are more particularly described in the Appointment;

Works: means the Beneficiary's proposed project for the design, construction, testing, commissioning and completion of works and other ancillary works and services in relation to which the Consultant's Services are to be provided, comprising HVC107 at Royal Hospital for Children & Young People (RHCYP) & Department of Clinical Neurosciences (DCN), Edinburgh as more particularly described in the Contract;

2 AGREEMENT

- 2.1 This Agreement may be executed in any number of counterparts in accordance with the Legal Writings (Counterparts and Delivery) (Scotland) Act 2015 ("the 2015 Act"). No counterpart shall be effective until all counterparts have been executed and one part has been delivered to MacRoberts LLP from each of the Client, the Consultant, and the Beneficiary. The Client, the Consultant, and the Beneficiary agree MacRoberts LLP shall be the nominated person in terms of section 2(1) of the 2015 Act.
- 2.2 This Agreement incorporates the definitions and details stated in Clause 1A.

3 WARRANTY

- 3.1 The Consultant warrants and undertakes to the Beneficiary that it has complied and will continue to comply with all of the Consultant's obligations and duties under, arising out or in connection with the Appointment and shall provide the Services. The Consultant warrants that in relation to the Services, the Consultant has exercised and will continue to exercise the degree of skill, care and diligence reasonably to be expected from an experienced, appropriately qualified and competent professional person holding himself out as experienced and competent to perform those services in relation to works of a similar size, scope and nature as the Works when performing the Services in projects of a similar size, scope and nature as the Project.
- 3.2 The Consultant shall not amend the Scope (as such is defined in the Contract) without the consent of the Beneficiary.
- 3.3 The Consultant shall have no greater duties and obligations to the Beneficiary under this Agreement than it would have if the Beneficiary had been named as joint client under the Appointment. The Consultant shall be entitled in any action or proceedings by the Beneficiary to rely on any limitation in the Appointment and to raise the equivalent rights of defence of liability as it would have against the Client under the Appointment (other than to make any claim or defence of retention, counterclaim, set-off or to state a defence of no loss or that a difference loss has been suffered by the Client).

4 PROHIBITED MATERIALS

- 4.1 The Consultant warrants that the Consultant has exercised and will continue to exercise the standard of skill, care and diligence referred to in Clause 3.1 not to specify or approve for use in the Project any products or materials which at the time of use:-
- 4.1.1 do not conform with British and European Standards or Codes of Practice current at the date of use or which contravene the recommendations of the publication "Good Practice in the Selection of Construction Materials" (British Council for Offices, 2011);
- 4.1.2 are generally known within the Consultant's profession to be deleterious, in the particular circumstances in which they are specified for use, to health and safety and/or the durability of any building or structure; or

4.1.3 are not of new, sound and/or satisfactory quality.

5 INSURANCE

5.1 The Consultant undertakes and warrants :

5.1.1 to take out and maintain professional indemnity insurance with insurers of good repute carrying on insurance business in the United Kingdom in an amount of not less than that stated in clause 1A for each and every claim for a period of 12 years from the date of Completion (as defined in the Contract) of the Works or the date the Consultant last carried out services under the Appointment (whichever is the later) provided that such insurance is available in the market generally at commercially reasonable rates. Any increased or additional premium required by insurers by reason of the Consultant's own claims record or other acts or omissions particular to the Consultant shall be deemed to be within commercially reasonable rates;

5.1.2 to inform the Beneficiary or its assignees in writing as soon as reasonably possible if such professional indemnity insurance cover ceases to be available at commercially reasonable rates; and

5.1.3 when reasonably requested by the Beneficiary to produce for inspection within 14 days documentary evidence that its professional indemnity insurance cover is being maintained. Evidence of insurance will be provided in the form of a standard insurance broker's certificate.

5.2 The Consultant shall as soon as reasonably possible inform the Beneficiary if the professional indemnity insurance referred to in clause 5.1 ceases to be available at reasonably commercial rates in order that the Consultant and the Beneficiary can discuss means of best protecting their respective positions in the absence of such insurance.

6 COPYRIGHT

6.1 The copyright in all drawings, reports, models, specifications, bills of quantities, calculations and other documents and information prepared by or on behalf of the Consultant in connection with the Works ("the **Documents**") shall remain vested in the Consultant but the Beneficiary and its appointee shall have an irrevocable, non-exclusive, transferable and royalty-free licence, to copy and use the Documents and to reproduce the designs contained in them for any purpose relating to the Works and/or the Project including without limitation the construction, completion, alteration, maintenance, letting, promotion, advertisement, reinstatement, repair and extension of the Works and/or Project.

6.2 Such licence shall permit the use and reproduction of the Documents for the extension of the Works but shall not permit the reproduction of the designs contained in the Documents for any extension of the Works.

6.3 Such licence shall carry the right to grant sub-licences and shall subsist notwithstanding that the Appointment is terminated or the obligations and duties thereunder have been completed.

6.4 The Beneficiary shall be entitled to assign their rights in relation to the Documents to any third party without the consent of the Consultant.

6.5 The Consultant shall not be liable for any use by the Beneficiary or its assignees of any Documents for any purpose other than that for which the same was prepared and provided by the Consultant.

6.6 The Consultant shall on request provide proper copies of the Documents to the Beneficiary or its appointee and those authorised by the Beneficiary.

- 6.7 The Consultant warrants that the Documents (save to the extent that duly authorised sub-consultants have been used to prepare the same) are the Consultant's own original work and that in any event their use in connection with the Works and/or the Project will not infringe the rights of any third party. The Consultant further warrants that where duly authorised sub-consultants are used their work will be original and that the Consultant will obtain the necessary consents in relation to Clause 6.1.

7 NOT USED

8 ASSIGNATION

- 8.1 The benefit of this Agreement may be assigned or otherwise transferred, novated, in whole or in part by the Beneficiary on two occasions only without the consent of the Consultant (with further assignments subject to the Consultant's consent not to be unreasonably withheld or delayed) to any successor to the Beneficiary's interest in the Works and/or the Project or any substantial part thereof and nothing shall restrict the rights of the Scottish Ministers to affect a statutory transfer, without the consent of the Consultant or the Client being required provided that the Consultant shall be entitled to receive notice of such an assignment in writing within a reasonable period of the assignment taking place. No assignment of this Agreement by the Client or the Contractor shall be permitted.
- 8.2 The Consultant agrees that it shall not at any time assert that any permitted assignee in terms of this Agreement is precluded from recovering any loss resulting from any breach of this Agreement by reason that such assignee is not an original party to his Agreement or that no loss or a different loss has been suffered by such assignee.

9 OBLIGATIONS PRIOR TO TERMINATION OF THE APPOINTMENT BY THE CONSULTANT

- 9.1 Subject to the Consultant's right to suspect performance for non-payment under the Appointment pursuant to Section 112 of the Housing Grants, Construction and Regeneration Act 1996 as amended from time to time, the Consultant covenants with the Beneficiary that it will not exercise nor seek to exercise any right of termination of the Appointment or to discontinue the performance of any of its obligations thereunder (including by reason of any breach on the part of the Client) without giving not less than 21 days' written notice of its intention to do so to the Beneficiary and specifying the grounds for the proposed termination or discontinuance and identifying any material unperformed obligations and outstanding liabilities of the Client under the Appointment.
- 9.2 Any period stipulated in the Appointment for the exercise of a right of termination shall nevertheless be extended as may be necessary to take account of the period of notice required under Clause 9.1.
- 9.3 The Consultant shall be entitled to terminate the Appointment within the period of 21 days referred to in Clause 9.1 if the Beneficiary gives a written revocation to the Consultant of the notice referred to above and upon receipt of such revocation the rights and obligations of the parties to this Agreement shall be construed as if the relevant notice had not been given.

10 RIGHTS OF STEP-IN

- 10.1 The right of the Consultant to terminate the Appointment shall cease within the period of 21 days referred to in clause 9.1 if the Beneficiary shall give notice to the Consultant that the Beneficiary shall thenceforth be the "client" under the Appointment to the exclusion of the Client and thereupon, the Consultant will admit that the Beneficiary is the "client" and the Appointment will be and remain in full force and effect notwithstanding any of the grounds for proposed termination referred to in Clause 9.1. If, by the expiry of the said period of 21 days, the Beneficiary has not given notice to the Consultant as aforesaid, the Consultant shall be entitled to terminate the Appointment at any time thereafter.

- 10.2 If the Beneficiary has given such notice referred to as aforesaid or under Clause 10.5, the Beneficiary will as soon as practicable thereafter remedy any outstanding breach by the Client which has been included in the Consultant's notice pursuant to Clause 9.1 as a ground for termination and which is capable of remedy by the Beneficiary.
- 10.3 If the Beneficiary has given such notice as aforesaid, the Beneficiary will from the service of such notice become responsible for all sums properly payable to the Consultant under the Appointment accruing due whether before or after the service of such notice and the Beneficiary will have all the same rights as would have applied to the Client under the Appointment.
- 10.4 Notwithstanding anything contained in this Agreement and notwithstanding any payments which may be made by the Beneficiary to the Consultant, the Beneficiary will not be under any obligation to the Consultant nor will the Consultant have any claim or cause of action against the Beneficiary unless and until the Beneficiary has given written notice to the Consultant pursuant to Clause 10.1 or Clause 10.5 of this Agreement.
- 10.5 The Consultant further covenants with the Beneficiary that if the employment of the Client is terminated by the Beneficiary, the Consultant, if requested by the Beneficiary, by notice in writing within 21 days of such termination and, subject to Clause 10.2 and Clause 10.3, will accept the instructions of the Beneficiary to the exclusion of the Client in respect of its duties under the Appointment upon the terms and conditions of the Appointment and will if so requested enter into a novation agreement in a form to be agreed between the Beneficiary and the Consultant, such agreement not to be unreasonably withheld or delayed by either party, whereby the Beneficiary is substituted for the Client under the Appointment.
- 10.6 The Client acknowledges that the Consultant will be entitled to rely on a notice given to the Consultant by the Beneficiary under Clause 10.3 as conclusive evidence of termination.
- 10.7 The Beneficiary may by notice in writing to the Consultant appoint another person to exercise the Beneficiary's rights under this Clause 10 subject to the Beneficiary remaining liable to the Consultant as guarantor for its appointee in respect of its obligations under this Agreement.

11 NO WAIVER OR VARIATION

No failure, approval, act or forbearance on the part of the Beneficiary in respect of any right of the Beneficiary pursuant to this Agreement shall constitute any waiver of any right of the Beneficiary under or arising out of this Agreement nor relieve the Consultant of any of its duties or obligations under or arising out of this Agreement. The Consultant will not seek to modify or vary any part of the obligations for which it is responsible under the Appointment in any respect if that modification or variation will be detrimental to the Beneficiary or affects the Beneficiary's interest in the Works and/or the Project or the Construction Contract, the Appointment, or this Agreement or affects the Consultant's obligations under this Agreement.

12 NOTICES

- 12.1 Any notice given under or in connection with this Agreement (hereinafter called a "Notice") must be given in writing.
- 12.2 Any Notice must be served on a party by hand or by first class pre-paid post or recorded delivery to the following address and marked for the attention of the following person in the case of each party:

Party: The Beneficiary
 Address: Lothian Health Board, Waverley Gate 2-4 Waterloo Place Edinburgh EH1 3EG
 Person: The Chief Executive

Party: The Client

Address: IHS Lothian Limited, c/o Pinsent Masons LLP, 13 Queens Road, Aberdeen, AB15 4YL

Person: The Company Secretary

Party: The Consultant

Address: Faithful + Gould Limited, The Axis, 10 Holiday Street, Birmingham B1 1TF

Person: Robert Eastham

Any party may by Notice to the other party/parties change its address or the title of the person for whose attention Notices are to be given or made pursuant to this Clause. Any such Notice shall be deemed to have been received:

12.2.1 if delivered personally, at the time of delivery; and

12.2.2 in the case of pre-paid first class recorded delivery post, on the first Business Day after the date of posting.

12.3 If posted in Great Britain to an address in Great Britain by first class pre-paid post recorded delivery such Notice will be deemed to have been received at 10:00 am on the second Business Day after the next collection of letters to follow its posting unless there is a national or local disruption of postal services such that the notice cannot reasonably be expected to be collected and delivered within two Business Days

12.4 For the purposes of this Clause 12, "Business Day" means any day which is not a Saturday, a Sunday or a public holiday in Scotland. In proving service it shall be sufficient to prove that the envelope containing such Notice was properly addressed to the relevant party and either delivered personally to that address or delivered into the custody of the postal authorities as a pre-paid first class recorded delivery letter. For the avoidance of doubt, Notices shall not be validly served if sent by e-mail or fax.

13 SUCCESSORS

References to the Beneficiary shall include the person or persons from time to time entitled to the benefit of this Agreement.

14 APPLICABLE LAW

The laws of Scotland govern this Agreement and the parties will submit to the exclusive jurisdiction of the Scottish Courts.

15 LIMITATION PERIOD

No action or proceedings for any breach of this Agreement shall be commenced against the Consultant after the expiry of 12 years from the date of Completion (as defined in the Contract) of the Works or the date that the Consultant last carried out services under this Agreement (whichever is later).

16 THIRD PARTY RIGHTS

Save as provided in Clauses 8 or 10 above, nothing in this Agreement confers or purports to confer on any third party any benefit or any right to enforce any term of this Agreement.

IN WITNESS WHEREOF these presents consisting of this and the preceding 6 (six) pages are executed as follows

SUBSCRIBED for and on behalf of **LOTHIAN HEALTH BOARD**

by

..... Authorised Signatory

..... Full Name

at

on

In Pro

..... Authorised Signatory

..... Full Name

at

on

SUBSCRIBED for and on behalf of **FAITHFUL+GOULD LIMITED**

by

..... Director/ Authorised Signatory

..... Full Name

at

on

..... Director/Company Secretary/Authorised Signatory

..... Full Name

at

on

In Pro

SUBSCRIBED for and on behalf of **IHS LOTHIAN LIMITED**

by

..... Director

..... Full Name

at

on

..... Director/Company Secretary

..... Full Name

at

on

SUPERVISOR COLLATERAL WARRANTY

COLLATERAL WARRANTY

AMONG

WATERMAN BUILDING SERVICES LIMITED a company registered in England and Wales with number 02299033 and having its registered office at Pickfords Wharf, Clink Street, London SE1 9DG (hereinafter referred to as "the **Consultant**")

And

LOTHIAN HEALTH BOARD, a health board constituted in Scotland under the National Health Service (Constitution of Health Boards) (Scotland) Order 1974 (S.I. 1974/267) as amended by the National Health Service (Constitution of Health Boards) (Scotland) Amendment Order 2003 (S.S.I. 2003/217) pursuant to Section 2 of the National Health Service (Scotland) Act 1990 and having its principal address at Waverley Gate, 2-4 Waterloo Place, Edinburgh, EH1 3EG (hereinafter together with its successors in title and assignees referred to as "the **Beneficiary**")

And

IHS LOTHIAN LIMITED, (company number SC493676) whose registered office is at 13 Queen's Road, Aberdeen, AB15 4YL (the "**Client**").

1 BACKGROUND AND RECITALS

- 1.1 The Beneficiary has an actual or prospective interest in the Project (afterdefined) and the Works (afterdefined) and has entered into a DBFM agreement with the Client for the Project and has or is about to enter into an agreement with the Client for the Works.
- 1.2 The Consultant is to be, or has been, appointed by the Client under the terms of the Appointment to provide the Services (afterdefined) and more particularly described in the Appointment.

1A DEFINITIONS

In this Agreement, except where expressly provided otherwise, the following capitalised terms have the following meanings:-

<p>Appointment: means the appointment entered into or to be entered into between the Client and the Consultant on or around the date hereof.</p>

<p>Contract: means the contract between the Client and IMTECH ENGINEERING SERVICES CENTRAL LTD, (No 00443522) whose registered office is at G&H House, Hooton Street, Carlton Road, Nottingham NG3 5GL (the "Contractor") for the Works;</p>

<p>Professional Indemnity Insurance: means five million pounds (£5,000,000) for any one occurrence or series of occurrences arising out of any one event (save that pollution and contamination claims are on an annual aggregate basis and asbestos claims are subject to a separate annual aggregate limit of one million pounds (£1,000,000)).</p>
--

<p>Project: Royal Hospital for Children & Young People (RHCYP) & Department of Clinical Neurosciences (DCN), Edinburgh of which the Works form part;</p>
<p>Services: means the carrying out of the '<i>Supervisor</i>' service under the NEC Engineering and Construction Contract and advice in relation to HVC 107 which services are more particularly described in the Appointment;</p>
<p>Works: means the Beneficiary's proposed project for the design, construction, testing, commissioning and completion of works and other ancillary works and services in relation to which the Consultant's Services are to be provided, comprising HVC107 at Royal Hospital for Children & Young People (RHCYP) & Department of Clinical Neurosciences (DCN), Edinburgh as more particularly described in the Contract;</p>

2 AGREEMENT

- 2.1 This Agreement may be executed in any number of counterparts in accordance with the Legal Writings (Counterparts and Delivery) (Scotland) Act 2015 ("the 2015 Act"). No counterpart shall be effective until all counterparts have been executed and one part has been delivered to MacRoberts LLP from each of the Consultant, and the Beneficiary. The Client, the Consultant, and the Beneficiary agree MacRoberts LLP shall be the nominated person in terms of section 2(1) of the 2015 Act.
- 2.2 This Agreement incorporates the definitions and details stated in Clause 1A.

3 WARRANTY

- 3.1 The Consultant warrants and undertakes to the Beneficiary that it has complied and will continue to comply with all of the Consultant's obligations and duties under, arising out or in connection with the Appointment and shall provide the Services. The Consultant warrants that in relation to the Services, the Consultant has exercised and will continue to exercise the degree of skill, care and diligence reasonably to be expected from an experienced, appropriately qualified and competent professional person holding himself out as experienced and competent to perform those services in relation to works of a similar size, scope and nature as the Works when performing the Services in projects of a similar size, scope and nature as the Project.
- 3.2 The Consultant shall have no greater duties and obligations to the Beneficiary under this Agreement than it would have if the Beneficiary had been named as joint client under the Appointment. The Consultant shall be entitled in any action or proceedings by the Beneficiary to rely on any limitation in the Appointment and to raise the equivalent rights of defence of liability as it would have against the Client under the Appointment (other than to make any claim or defence of retention, counterclaim, set-off or to state a defence of no loss or that a difference loss has been suffered by the Client).

4 PROHIBITED MATERIALS

- 4.1 The Consultant warrants that, the Consultant has exercised and will continue to exercise the standard of skill, care and diligence referred to in Clause 3.1 not to specify or approve for use in the Project any products or materials which at the time of use:-
- 4.1.1 do not conform with British and European Standards or Codes of Practice current at the date of use or which contravene the recommendations of the publication

"Good Practice in the Selection of Construction Materials" (British Council for Offices, 2011);

- 4.1.2 are generally known within the Consultant's profession to be deleterious, in the particular circumstances in which they are specified for use, to health and safety and/or the durability of any building or structure; or
- 4.1.3 are not of new, sound and/or satisfactory quality.

5 INSURANCE

- 5.1 The Consultant undertakes and warrants:
 - 5.1.1 to take out and maintain professional indemnity insurance with insurers of good repute carrying on insurance business in the United Kingdom in an amount of not less than that stated in clause 1A for each and every claim for a period of 12 years from the date of Completion (as defined in the Contract) of the Works provided that such insurance is available in the market generally at commercially reasonable rates. Any increased or additional premium required by insurers by reason of the Consultant's own claims record or other acts or omissions particular to the Consultant shall be deemed to be within commercially reasonable rates;
 - 5.1.2 to inform the Beneficiary or its assignees in writing as soon as reasonably possible if such professional indemnity insurance cover ceases to be available at commercially reasonable rates; and
 - 5.1.3 when reasonably requested by the Beneficiary to produce for inspection documentary evidence that its professional indemnity insurance cover is being maintained. Evidence of insurance will be provided in the form of a standard insurance broker's certificate.
- 5.2 The Consultant shall as soon as reasonably possible inform the Beneficiary if the professional indemnity insurance referred to in clause 5.1 ceases to be available at reasonably commercial rates in order that the Consultant and the Beneficiary can discuss means of best protecting their respective positions in the absence of such insurance.

6 COPYRIGHT

- 6.1 The copyright in all drawings, reports, models, specifications, bills of quantities, calculations and other documents and information prepared by or on behalf of the Consultant in connection with the Works ("the **Documents**") shall remain vested in the Consultant but the Beneficiary and its assignees or appointee shall have an irrevocable, non-exclusive, transferable and royalty-free licence, to copy and use the Documents and to reproduce the designs contained in them for any purpose relating to the Works and/or the Project including without limitation the construction, completion, alteration, maintenance, letting, promotion, advertisement, reinstatement, repair and extension of the Works and/or Project.
- 6.2 Such licence shall permit the use and reproduction of the Documents for the extension of the Works but shall not permit the reproduction of the designs contained in the Documents for any extension of the Works.
- 6.3 Such licence shall carry the right to grant sub-licences and shall subsist notwithstanding that the Appointment is terminated or the obligations and duties thereunder have been completed.
- 6.4 The Beneficiary shall be entitled to assign their rights in relation to the Documents to any third party without the consent of the Consultant.

- 6.5 The Consultant shall not be liable for any use by the Beneficiary or its assignees of any Documents for any purpose other than that for which the same was prepared and provided by the Consultant.
- 6.6 The Consultant shall on request provide proper copies of the Documents to the Beneficiary or its appointee and those authorised by the Beneficiary.
- 6.7 The Consultant agrees to indemnify and keep indemnified the Beneficiary from and against all loss, damage, cost, expense, liability or claim in respect of breach of the copyright or other intellectual property rights of any third party caused by or arising out of the carrying out of the Appointment Services and/or the Works and/or the Project or the use of the licence.

7 SUB-PROVIDERS

Following a written request from the Beneficiary the Consultant will (unless it has already done so) and/or procure that its sub-consultants execute a collateral warranty in the relevant form specified in the Appointment in favour of any person in whose favour the Appointment obliges the Consultant to give or procure the giving of such a warranty.

8 ASSIGNATION

- 8.1 The benefit of this Agreement may be assigned or otherwise transferred, novated, in whole or in part by the Beneficiary to any successor to the Beneficiary's interest in the Works and/or the Project or any part thereof and nothing shall restrict the rights of the Scottish Ministers to affect a statutory transfer without the consent of the Consultant or the Client being required provided that the Consultant shall be entitled to receive notice of such an assignation in writing within a reasonable period of the assignation taking place. No assignation of this Agreement by the Client or the Contractor shall be permitted.
- 8.2 The Consultant agrees that it shall not at any time assert that any permitted assignee in terms of this Agreement is precluded from recovering any loss resulting from any breach of this Agreement by reason that such assignee is not an original party to his Agreement or that no loss or a different loss has been suffered by such assignee.

9 OBLIGATIONS PRIOR TO TERMINATION OF THE APPOINTMENT BY THE CONSULTANT

- 9.1 Subject to the Consultant's right to suspend performance for non-payment under the Appointment pursuant to Section 112 of the Housing Grants, Construction and Regeneration Act 1996 as amended from time to time, the Consultant covenants with the Beneficiary that it will not exercise nor seek to exercise any right of termination of the Appointment or to discontinue the performance of any of its obligations thereunder (including by reason of any breach on the part of the Client) without giving not less than 28 days' written notice of its intention to do so to the Beneficiary and specifying the grounds for the proposed termination or discontinuance and identifying any material unperformed obligations and outstanding liabilities of the Client under the Appointment.
- 9.2 Any period stipulated in the Appointment for the exercise of a right of termination shall nevertheless be extended as may be necessary to take account of the period of notice required under Clause 9.1.
- 9.3 The Consultant shall be entitled to terminate the Appointment within the period of 28 days referred to in Clause 9.1 if the Beneficiary gives a written revocation to the Consultant of the notice referred to above and upon receipt of such revocation the rights and obligations of the parties to this Agreement shall be construed as if the relevant notice had not been given.

10 RIGHTS OF STEP-IN

- 10.1 The right of the Consultant to terminate the Appointment shall cease within the period of 28 days referred to in clause 9.1 if the Beneficiary shall give notice to the Consultant that the

Beneficiary shall thenceforth be the "client" under the Appointment to the exclusion of the Client and thereupon, the Consultant will admit that the Beneficiary is the "client" and the Appointment will be and remain in full force and effect notwithstanding any of the grounds for proposed termination referred to in Clause 9.1. If, by the expiry of the said period of 28 days, the Beneficiary has not given notice to the Consultant as aforesaid, the Consultant shall be entitled to terminate the Appointment at any time thereafter.

- 10.2 If the Beneficiary has given such notice referred to as aforesaid or under Clause 10.5, the Beneficiary will as soon as practicable thereafter remedy any outstanding breach by the Client which has been included in the Consultant's notice pursuant to Clause 9.1 as a ground for termination and which is capable of remedy by the Beneficiary.
- 10.3 If the Beneficiary has given such notice as aforesaid, the Beneficiary will from the service of such notice become responsible for all sums properly payable to the Consultant under the Appointment accruing due whether before or after the service of such notice but the Beneficiary will in paying such sums be entitled to the same rights of set-off and deduction as would have applied to the Client under the Appointment.
- 10.4 Notwithstanding anything contained in this Agreement and notwithstanding any payments which may be made by the Beneficiary to the Consultant, the Beneficiary will not be under any obligation to the Consultant nor will the Consultant have any claim or cause of action against the Beneficiary unless and until the Beneficiary has given written notice to the Consultant pursuant to Clause 10.1 or Clause 10.5 of this Agreement.
- 10.5 The Consultant further covenants with the Beneficiary that if the employment of the Client is terminated by the Beneficiary, the Consultant, if requested by the Beneficiary, by notice in writing within 28 days of such termination and, subject to Clause 10.2 and Clause 10.3, will accept the instructions of the Beneficiary to the exclusion of the Client in respect of its duties under the Appointment upon the terms and conditions of the Appointment and will if so requested enter into a novation agreement whereby the Beneficiary is substituted for the Client under the Appointment.
- 10.6 The Client acknowledges that the Consultant will be entitled to rely on a notice given to the Consultant by the Beneficiary under Clause 10.3 as conclusive evidence of termination.
- 10.7 The Beneficiary may by notice in writing to the Consultant appoint another person to exercise the Beneficiary's rights under this Clause 10 subject to the Beneficiary remaining liable to the Consultant as guarantor for its appointee in respect of its obligations under this Agreement.

11 NO WAIVER OR VARIATION

No failure, approval, act or forbearance on the part of the Beneficiary in respect of any right of the Beneficiary pursuant to this Agreement shall constitute any waiver of any right of the Beneficiary under or arising out of this Agreement nor relieve the Consultant of any of its duties or obligations under or arising out of this Agreement. The Consultant will not seek to modify or vary any part of the obligations for which it is responsible under the Appointment in any respect if that modification or variation will be detrimental to the Beneficiary or affects the Beneficiary's interest in the Works and/or the Project or the Construction Contract, the Appointment, or this Agreement or affects the Consultant's obligations under this Agreement.

12 NOTICES

- 12.1 Any notice given under or in connection with this Agreement (hereinafter called a "Notice") must be given in writing.
- 12.2 Any Notice must be served on a party by hand or by first class pre-paid post or recorded delivery to the following address and marked for the attention of the following person in the case of each party:

Party: The Beneficiary

Address: Lothian Health Board, Waverley Gate 2-4 Waterloo Place Edinburgh EH1 3EG
 Person: The Chief Executive

Party: The Client
 Address: IHS Lothian Limited, c/o Pinsent Masons LLP, 13 Queens Road, Aberdeen, AB15
 4YL
 Person: The Company Secretary

Party: The Consultant
 Address: Waterman Building Services Limited, 2nd Floor, Victoria Wharf, 4 The
 Embankment, Sovereign Street, Leeds LS1 4BA
 Person: Steven Halmshaw

Any party may by Notice to the other party/parties change its address or the title of the person for whose attention Notices are to be given or made pursuant to this Clause. Any such Notice shall be deemed to have been received:

- 12.2.1 if delivered personally, at the time of delivery; and
- 12.2.2 in the case of pre-paid first class recorded delivery post, on the first Business Day after the date of posting.

- 12.3 If posted in Great Britain to an address in Great Britain by first class pre-paid post recorded delivery such Notice will be deemed to have been received at 10:00 am on the second Business Day after the next collection of letters to follow its posting unless there is a national or local disruption of postal services such that the notice cannot reasonably be expected to be collected and delivered within two Business Days.
- 12.4 For the purposes of this Clause 12, "Business Day" means any day which is not a Saturday, a Sunday or a public holiday in Scotland. In proving service it shall be sufficient to prove that the envelope containing such Notice was properly addressed to the relevant party and either delivered personally to that address or delivered into the custody of the postal authorities as a pre-paid first class recorded delivery letter. For the avoidance of doubt, Notices shall not be validly served if sent by e-mail or fax.

13 SUCCESSORS

References to the Beneficiary shall include the person or persons from time to time entitled to the benefit of this Agreement.

14 APPLICABLE LAW

The laws of Scotland govern this Agreement and the parties will submit to the exclusive jurisdiction of the Scottish Courts.

15 THIRD PARTY RIGHTS

Save as provided in Clauses 8 or 10 above, nothing in this Agreement confers or purports to confer on any third party any benefit or any right to enforce any term of this Agreement.

IN WITNESS WHEREOF these presents consisting of this and the preceding ■ pages are executed as follows

SUBSCRIBED for and on behalf of **LOTHIAN HEALTH BOARD**

by

..... Authorised Signatory

..... Full Name

at

on

In Pro

..... Authorised Signatory

..... Full Name

at

on

SUBSCRIBED for and on behalf of **WATERMAN BUILDING SERVICES LIMITED**

by

..... Director/ Authorised Signatory

..... Full Name

at

on

..... Director/Company Secretary/Authorised Signatory

..... Full Name

at

on



SUBSCRIBED for and on behalf of **IHS LOTHIAN LIMITED**

by

..... Director

..... Full Name

at

on

..... Director/Company Secretary

..... Full Name

at

on

Schedule Part 5

Collateral Warranties

Part 3

Ventilation Works Sub-Contractor Collateral Warranty

In Pro

CONSULTANT'S COLLATERAL WARRANTY

relating to a project at

ROYAL HOSPITAL FOR SICK CHILDREN & YOUNG

PEOPLE + DCN

between

In Process
HOARE LEA LLP

and

LOTHIAN HEALTH BOARD

THIS AGREEMENT is executed as a Deed and is dated

PARTIES

- (1) **HOARE LEA LLP** (registered number OC407254) of 155 Aztec West, Almondsbury, Bristol, England, BS32 4UB (**Consultant**).
- (2) **LOTHIAN HEALTH BOARD** a health board constituted in Scotland under the National Health Service (Constitution of Health Boards) (Scotland) Order 1974 (S.I. 1974/267) as amended by the National Health Service (Constitution of Health Boards) (Scotland) Amendment Order 2003 (S.S.I. 2003/217) pursuant to Section 2 of the National Health Service (Scotland) Act 1990 and having its principal address at Waverley Gate, 2-4 Waterloo Place, Edinburgh, EH1 3EG (**Beneficiary which term shall include its successors and assignees**).

BACKGROUND

- (A) The Client (who is described as the "Contractor" in the Professional Appointment) has engaged the Consultant to perform the Services in relation to the Project.
- (B) The Beneficiary has an interest in the Project.
- (C) The Consultant has agreed to enter into this collateral warranty in favour of the Beneficiary.
- (D) The Beneficiary has paid £1 to the Consultant as consideration under this agreement.

AGREED TERMS

1. INTERPRETATION

The following definitions and rules of interpretation apply in this agreement and the Background.

1.1 Definitions:

Business Day: a day other than a Saturday, Sunday or public holiday in Scotland when banks are open for business.

Professional Appointment: an agreement in writing dated 24th February 2020 between the Client and the Consultant.

Project: means the design construction, commissioning and completion of Ventilation Works associated with Board Change Notice HVC107.

Property: Royal Hospital for Children & Young People + DCN.

Services: the services defined in the Professional Appointment, performed by or on behalf of the Consultant for the Client pursuant to the Professional Appointment.

Client: **IMTECH ENGINEERING SERVICES CENTRAL LTD**, (No 00443522) whose registered office is at G&H House, Hooton Street, Carlton Road, Nottingham NG3 5GL.

- 1.2 A reference to **writing** or **written** includes fax but not e-mail.
- 1.3 A reference to a document is a reference to that document as varied or novated (in each case, other than in breach of this agreement) at any time.
- 1.4 References to clauses are to the clauses of this agreement.

- 1.5 Any reference to a English legal term for any action, remedy, method of judicial proceeding, legal document, legal status, court, official or any legal concept or thing shall, in respect of any jurisdiction other than England, be deemed to include a reference to that which most nearly approximates to the English legal term in that jurisdiction.
- 1.6 Any words following the terms **including, include, in particular, for example** or any similar expression shall be construed as illustrative and shall not limit the sense of the words, description, definition, phrase or term preceding those terms.

2. COMPLY WITH PROFESSIONAL APPOINTMENT

- 2.1 The Consultant warrants to the Beneficiary that it has complied with and shall continue to comply with its obligations under the Professional Appointment and shall provide the Services. The Consultant warrants that in relation to the Services, the Consultant has exercised and will continue to exercise the degree of skill, care and diligence of an experienced, appropriately qualified and competent professional person holding himself out as experienced and competent to perform those services in relation to projects of a similar size, scope and nature as the Project when performing the Services in Properties of a similar size, scope and nature as the Property.
- 2.2 Not Used.
- 2.3 In proceedings for breach of this clause 2, the Consultant may:
- (a) rely on any limitation of ability or other term of the Professional Appointment; and
 - (b) raise equivalent rights of defence as it would have had and have no greater liability than it would have had if the Beneficiary had been named as a joint client, with the Client, under the Professional Appointment,

provided that the Consultant (a) will not seek to rely on any defence in the event of a claim being made against it by Beneficiary pursuant to this agreement that the Beneficiary was not an original party to the Professional Appointment and (b) shall not at any time assert that the Beneficiary is precluded from recovering any loss resulting from any breach of this Agreement by reason that the Beneficiary has suffered no loss or a different loss has been suffered by the Client and (c) shall not be entitled to raise any retention, counterclaim or set-off under this agreement in respect of any sums due under the Professional Appointment

- 2.4 Notwithstanding the foregoing, the Consultant's liability shall be limited to the reasonable cost of repair, renewal and/or reinstatement of the Project, up to a maximum of £10,000,000 (Ten million pounds) in the aggregate to the extent that the Beneficiary incurs that cost, and the Consultant shall not be liable for the Beneficiary's other costs and losses.

2.5 PROHIBITED MATERIALS

- 2.5.1 The Consultant warrants that it has exercised and will continue to exercise the same degree of reasonable skill and care referred to in Clause 2.1 in:
- (a) the materials selected or specified by or on its behalf are in accordance with the guidance contained in the Good Practice Guidance and this Clause 2.5; and
 - (b) only materials and goods which are new and of sound and satisfactory quality shall be specified for use in connection with the Project; and
 - (c) there shall not be specified for use or permitted to be used in the Project any materials or substances which are expressly prohibited by the Professional Appointment or the Sub-Contract (as defined in the Professional Appointment) or which are generally known not to be in accordance with British Codes of Practice at the time of specification or use, or any materials or substances which are deleterious to health and safety or to the durability of buildings and/or other structures and/or finishes

and/or plant and machinery in the particular circumstances in which they are used, or any materials or substances identified as deleterious, unsatisfactory or unsuitable in the relevant circumstances in the Good Practice Guidance and, in addition to and separate from the foregoing, any substances or combination of substances publicised prior to the time of construction in any Building Research Establishment Limited ("BRE") publications issued as part of the BRE Professional development service which the BRE recommend are not used for building purposes or for the type of buildings comprised in the Project.

2.5.2 For the purposes of Clause 2.5.1, "Good Practice Guidance" means the edition of the publication entitled "Good practice in the selection of construction materials" (British Council for Offices (BCO): 2011) or any amended or updated version as at the date of the Professional Appointment; and

2.6 Notwithstanding the terms of the appointment, the Consultant shall maintain professional indemnity insurance of at least £10,000,000 (Ten million pounds) in the aggregate in respect of any liability that the Consultant may have to the Beneficiary pursuant to this agreement and for a period not less than 12 years from the date of the Professional Appointment. When reasonably requested by the Beneficiary to produce for inspection documentary evidence that its professional indemnity insurance cover is being maintained. Evidence of insurance will be provided in the form of a standard insurance broker's certificate.

2.7 COPYRIGHT

2.7.1 The copyright in drawings, report models, specification, bills of quantities calculations and other documents and information prepared by or on behalf of the Consultant in connection with the Project ("the Documents") shall remain vested in the Consultant but the Beneficiary and its assignees and successors shall have an irrevocable, non-exclusive, transferable and royalty-free licence, to copy and use the Documents and to reproduce the designs contained in them for any purpose relating to the Project and/or the Property including without limitation the construction, completion, alteration, maintenance, letting, promotion, advertisement, reinstatement, repair and extension of the Project and/or Property.

2.7.2 Such licence shall permit the use and reproduction of the Documents for the extension of the Project but shall not permit the reproduction of the designs contained in the Documents for any extension of the Project.

2.7.3 Such licence shall carry the right to grant sub-licences and shall subsist notwithstanding that the Professional Appointment is terminated or the obligations and duties thereunder have been completed.

2.7.4 The Beneficiary shall be entitled to assign their rights in relation to the Documents to any third party without the consent of the Consultant.

2.7.5 The Consultant shall not be liable for any use by the Beneficiary or its assignees of any Documents for any purpose other than that for which the same was prepared and provided by the Consultant.

2.7.6 The Consultant shall on request provide proper copies of the Documents to the Beneficiary or its assignees or successors, subject to our reasonable costs being met by the Beneficiary.

3. LIABILITY PERIOD

The Beneficiary may not commence any legal action against the Consultant under this agreement after the date which occurs after the expiry of 12 years from the date of the Professional Appointment.

4. ASSIGNMENT

The Beneficiary may assign the benefit of this agreement no more than twice, provided the Consultant is notified of each such assignment. Additional assignments shall be agreed with the Consultant in advance. The Consultant agrees that it shall not at any time assert that any permitted assignee in terms of this agreement is precluded from recovering any loss resulting from any breach of this agreement by reason that such assignee is not an original party to this agreement or that no loss or a different loss has been suffered by such assignee.

5. NOTICES

5.1 A notice given to a party under or in connection with this agreement:

- (a) shall be in writing in English;
- (b) shall be signed by or on behalf of the party giving it;
- (c) shall be sent to the party for the attention of the contact and at the address listed in clause 5.2;
- (d) shall be sent by a method listed in clause 5.4; and
- (e) unless proved otherwise is deemed received as set out in clause 5.4 if prepared and sent in accordance with this clause.

5.2 The parties' addresses and contacts are as set out in this table:

Party	Contact	Address
Consultant	Paul Winning Project Director Hoare Lea LLP	58 Waterloo Street Glasgow
Beneficiary	Lothian Health Board	Waverley Gate, 2-4 Waterloo Place, Edinburgh, EH1 3EG

5.3 A party may change its details given in the table in clause 5.2 by giving notice, the change taking effect for the party notified of the change at 9.00 am on the later of:

- (a) the date, if any, specified in the notice as the effective date for the change; or
- (b) the date five Business Days after deemed receipt of the notice.

5.4 This table sets out:

- (a) delivery methods for sending a notice to a party under this agreement; and
- (b) for each delivery method, the corresponding delivery date and time when delivery of the notice is deemed to have taken place provided that all other requirements in this clause have been satisfied:

Delivery method	Delivery date and time
Delivery by hand.	On signature of a delivery receipt or at the time the notice is left at the address on a Business Day and if left on a day which is not a Business Day then the first occurring Business Day after the notice is left
Pre-paid first class recorded delivery post or other next working day delivery service providing proof of delivery.	9.00 am on the second Business Day after posting or at the time recorded by the delivery service.

5.5 For the purpose of clause 5.4 and calculating deemed receipt all references to time are to local time in the place of deemed receipt.

5.6 A notice given under or in connection with this agreement is not valid if sent by e mail.

6. THIRD PARTY RIGHTS

A person who is not a party to this agreement shall not have any rights under the Contracts (Rights of Third Parties) Act 1999 to enforce any term of this agreement.

7. GOVERNING LAW

This agreement and any dispute or claim arising out of or in connection with it or its subject matter or formation (including non-contractual disputes or claims) shall be governed by and construed in accordance with the law of England and Wales.

8. JURISDICTION

Each party irrevocably agrees that the courts of England and Wales shall have non-exclusive jurisdiction to settle any dispute or claim arising out of or in connection with this agreement or its subject matter or formation (including non-contractual disputes or claims) provided that nothing shall prevent any action being taken in any court of competent jurisdiction.

9. COUNTERPARTS

This agreement may be executed in any number of counterparts and by each of the Parties on separate counterparts.

EXECUTED as a deed but with the intention that it only be delivered when dated.

EXECUTED (but not delivered)
until the date hereof)
AS A DEED by)
HOARE LEA LLP)
acting by:-)

Member

Name printed:

Member

Name printed:

EXECUTED (but not delivered)
until the date hereof)
AS A DEED by)
LOTHIAN HEALTH BOARD)
acting by:-)

In Process

Authorised Signatory.....

Name printed:

Authorised Signatory.....

Name printed:

Schedule Part 6**Independent Tester Varied Services Letter**

Dear Sirs

LOTHIAN HEALTH BOARD ("the **"Board"**);
IHS LOTHIAN LIMITED ("**Project Co**");
ARCADIS LLP (previously EC HARRIS LLP) (the "**Independent Tester**");

Royal Hospital for Sick Children, Child and Adolescent Mental Health Service and the Department of Clinical Neurosciences in a single building adjoining the Royal Infirmary of Edinburgh at Little France at the Site and Off-Site (the "Project")

The Board and Project Co entered into the Project Agreement, as amended, in respect of the Project.

The Board and Project Co have agreed to further amend and supplement the Project Agreement (the "**Supplemental Agreement No. 2** ") on or around the date of this letter, and as a result of Supplemental Agreement No.2 the Board and Project Co have agreed to vary the Services of the Independent Tester.

Terms used in this letter have the meaning given to them in Supplemental Agreement No.2. Any references to the Project Agreement shall be deemed to be references to the Project Agreement as amended and supplemented by Supplemental Agreement No. 2.

Pursuant to Clause 3 of the Independent Tester Contract amongst (amongst others) the Board, Project Co and the Independent Tester, we hereby instruct the Independent Tester to perform the following Varied Services:-

- issue the Certificate of Completion pursuant to Clause 35.5 of the Ventilation Works Contract for the Ventilation Works once The Independent Certifier has received the Project Manager's certificate certifying that the whole of the works (as defined in the Ventilation Works Contract) have achieved Completion (as defined in the Ventilation Works Contract) in accordance with the Ventilation Works Contract and is satisfied all of the Completion Criteria other relevant provisions of Supplemental Agreement No.2 have been complied with and
- familiarise himself with the Supplemental Agreement No. 2 and the Ventilation Works Contract in order to issue the Certificate of Completion.

The parties have enclosed a copy of Supplemental Agreement No. 2 (which includes a copy of the Ventilation Works Contract in Schedule Part 2)

By signature of this letter Project Co, the Board and the Independent Tester agree that the Services shall be varied as set out above.

This letter may be executed in any number of counterparts in accordance with the Legal Writings (Counterparts and Delivery) (Scotland) Act 2015 ("the 2015 Act"). No counterpart shall be effective until all counterparts have been executed and one part has been delivered to MacRoberts LLP from each of the Board, Project Co and the Independent Tester. The Board, Project Co and the Independent Tester agree MacRoberts LLP shall be the nominated person in terms of section 2(1) of the 2015 Act.

Signed for and on behalf of Project Co's Representative

Signed for and on behalf of the Board's Representative

Receipt of Independent Tester Varied Services Letter acknowledged for and on behalf of the Independent Tester

In Pro

Schedule Part 7**INSURANCES****Insurance****Section 1****Insurances**

1. Project Co will during the period from the Ventilation Works Commencement Date to the date 12 calendar months after the Ventilation Works Completion Date effect and maintain:
 - (a) the insurance described in Section 2, Part A of this Schedule Part 7; and
 - (b) such insurances as may be required by Law; and

Project Co shall use reasonable endeavours to secure that the Ventilation Works Contractor, the Project Manager, the Supervisor and Construction Sub-Contractor effect and maintain the insurances required in accordance with Section 2, Part B of this Schedule Part 7 (together the "**Ventilation Insurances**")
2. The Ventilation Insurances require to be effected by Project Co shall be placed and maintained on a direct basis with insurers that are appropriately regulated of good repute and financial standing
3. The Ventilation Insurances required to be effected by Project Co may include provision for deductibles no higher than those specified in Part A of Section 2 of this Schedule Part 7.
4. Project Co shall procure that no reduction in limits or coverage (including those resulting from extensions) or increases in exclusions or exceptions or other amendments to policy terms shall be made in relation to the Ventilation Insurances.
5. Project Co shall procure that the insurances provide for thirty (30) days prior written notice of their cancellation, non-renewal or amendment to their policy terms to be given to the Board.
6. Project Co shall (and shall use reasonable endeavours to secure that the Ventilation Works Contractor and its sub-contractors shall) procure that the policies of insurance taken out by Project Co, the Ventilation Works Contractor and any sub-contractor (as the case may be) shall contain waivers of subrogation against the other persons named in Part A of Section 2 of this Schedule Part 7.
7. Project Co shall comply (and shall use reasonable endeavours to secure that the Ventilation Works Contractor and its sub-contractors, the Project Manager, the Supervisor and any consultants engaged by Project Co and/or the Ventilation Works Contractor shall comply) with the terms and conditions of the Ventilation Insurances and shall not at any time do (or omit to do) or so far as they are respectively able permit or allow others to do (or omit to do) anything (including failure to disclose any fact) which:
 - (a) invalidates or may invalidate the Ventilation Insurances; or
 - (b) renders or may render void or voidable the whole or any part of the Ventilation Insurances; or
 - (c) brings any particular liability within the scope of an exclusion or exemption to the Ventilation Insurances; or
 - (d) renders or may render unavailable the whole or any part of the Ventilation Insurances; or

- (e) causes by any action not consistent with the proper performance of its obligations under this Agreement any increase in the costs of a Ventilation Insurance policy beyond that which would otherwise have arisen.
8. Project Co shall promptly pay (or procure that there are paid) any premiums due in respect of the Ventilation Insurances.
9. Project Co shall upon reasonable request provide promptly to the Board of the insurance policy together with any other information reasonably requested by the Board relating to such insurance policy) and the Board shall be entitled to inspect them during ordinary business hours and copies of documents and/or certificates evidencing the payment of premiums in respect of any Ventilation Insurance policy in effect at the relevant time.
10. If Project Co, fails to maintain any of the Ventilation Insurances, the Board will be entitled (but not bound) to pay the premiums due or to effect and maintain (or procure that there are effected and maintained) the Ventilation Insurances or otherwise remedy Project Co's failure in such manner as the Board considers appropriate, acting reasonably. The Board shall be entitled, to deduct any amount so paid from any sums thereafter payable by the Board to Project Co.
11. Project Co shall:
- (a) ensure the prompt notification of incidents to insurers and ensure the investigation of, and assist in the preparation of reports to the insurers and their loss adjusters on any incident likely to give rise to a claim under the Insurances respectively maintained;
- (b) ensure the prompt notification of all "material facts" known to it (as that term would be understood by an insurer of recognised standing) in relation to the Ventilation Insurances to the Board and to the insurers; and
- (c) ensure that any report (or any material results) or any survey conducted by any insurer of any relevant procedures in relation to the Ventilation Works are disclosed to the other party.
12. If any insurer disputes any claim made under any of the Ventilation Insurances effected or renewed under this Schedule Part 7, the parties, shall consult with each other and shall take such reasonable steps and render such assistance as is reasonable to preserve or pursue the claim.
13. Subject to appropriate confidentiality and to appropriate reasonable assistance from the other party as required, Project Co shall ensure that full disclosure of the following is made to those insurers providing the Ventilation Insurances:
- (a) all information which Project Co (acting in accordance with good insurance practice and in accordance with the advice of its insurance adviser and/or broker) believes that insurers shall require in their analysis of the risk;
- (b) all information which any of the insurers specifically request shall be disclosed;
- (c) to the extent relevant the Scope and all technical specifications being part of this Agreement or referred to within this Agreement, method of work statement and site safety procedures and any amendments to them;
- (d) all other information which Project Co acting in accordance with Good Industry Practice in good faith could reasonably consider to be material to the relevant insurance cover.
14. Project Co shall put in place appropriate internal reporting procedures to ensure that full disclosure to insurers as described above is made by its relevant personnel.

15. Project Co shall and shall use reasonable endeavours to secure that the Ventilation Works Contractor, its sub-contractors and any other contractors, the Project Manager, the Supervisor or consultants engaged by Project Co and/or the Ventilation Works Contractor in relation to any part of the Ventilation Works discloses to Project Co at the appropriate time all information material to the Ventilation Insurances until the expiry of the Ventilation Insurances and Project Co shall forward all information received from those persons relevant to any of the Insurances to the relevant insurers.
16. Neither failure to comply with or full compliance with the insurance provisions of this Agreement shall limit or relieve Project Co of its liabilities or obligations under this Agreement.
17. All insurance policies required to be effected or maintained under this Agreement will:
 - (a) contain a provision confirming that the relevant policy is primary without right of contribution and the liability of the insurers will not be affected by any other insurance of which the Board, Project Co or any relevant Funder may have the benefit so as to reduce the amount payable to any assured under such policy;
 - (b) provide that the Ventilation Insurances will continue unaltered for the benefit of the insured parties for at least 30 days after written notice by post mail or fax of any cancellation, change, modification or lapse thereof by reason of non-payment of premiums or instalment or otherwise has been given by insurers;
 - (c) provide that the parties insured are to be considered as separate and distinct entities and the word "the Insured" in the relevant Insurance Policy shall be considered as applying to each party in the same manner as if a separate policy had been issued to each provided always that the liability of the insurers shall not exceed the limit of indemnity under the relevant Ventilation Insurance policy;
 - (d) provide for non-vitiation protection;
 - (e) provide that the insurers waive all rights of subrogation howsoever arising which they may have or acquire against any Insured described in the appropriate Schedules arising out of an occurrence in respect of which any claim is admitted and is insured hereunder for the benefit of such Insured;
 - (f) contain a provision entitling any Insured to initiate a claim under the relevant policy in the event of the refusal or failure of the party effecting the Ventilation Insurances to do so;
 - (g) provide that neither the Agent, the Senior funders nor the Board shall be liable for the payment of any premium under the Ventilation Insurance policy although they may choose to pay the premium. This shall not relieve Project Co from its obligations to pay any premium under the Ventilation Insurance policy.
18. Neither failure to comply with or full compliance with the insurance provisions of this Agreement shall limit or relieve Project Co of its liabilities or obligations under this Agreement and in particular the obligation to hold the Board harmless in compliance with any indemnity provisions contained in this Agreement and/or the Project Agreement.
19. Without prejudice to the generality of the foregoing:
20. the Ventilation Insurances shall contain the endorsements referred to in Section 3 of this Schedule Part 7; and
21. Project Co shall be obliged to procure the execution by its brokers, and the delivery to the Board no later than two Business Days prior to the Ventilation Works Commencement Date, a broker's letter in the form of the draft letter referred to/included Section 4 of this Schedule Part 7.

Section 2

Part A

Project Co shall take out and maintain the following insurances from on or before the Ventilation Works Commencement Date until the date 12 calendar months after the Ventilation Works Completion Date

Common to each policy in Section 2 Part A (unless stated otherwise):

Insureds:

1. Board
2. Project Co
3. Ventilation Works Contractor
4. Service Provider
5. sub-contractors of any tier of 2, 3 and 4
6. Senior Funders
7. Subordinated Funders
8. Consultants (including the Independent Tester, Fire tester and Ventilation Tester) - for their site activities only

each for their respective rights and interests in the Project

1 CONTRACTORS' 'ALL RISKS' INSURANCE (CAR)

1.1 Insured Property

The permanent and temporary works, materials (including but not limited to equipment supplied by the Board, goods, Plant and Materials for incorporation in the works (other than constructional plant, tools, accommodation and equipment belonging to or the responsibility of the Ventilation Works Contractor or the construction sub-contractors) and all other property used or for use in connection with works associated with the Ventilation Works.

1.2 Coverage

"All risks" of physical loss or damage to the Insured Property unless otherwise excluded.

1.3 Sum Insured

At all times an amount not less than the full reinstatement or replacement value of the Insured Property, but not less than the value specified in the Ventilation Works Contract (or replacement contract where applicable) plus provision to include Cover Features & Extensions as appropriate.

1.4 Maximum Deductible

Not to exceed £150,000 each and every claim in respect of defective design, £25,000 in respect of water damage, 20% or £100,000 whichever is the greater in respect of additional costs of completion and £10,000 all other losses.

1.5 Territorial Limits

United Kingdom including offsite storage and during inland transit.

1.6 Period of Insurance

From the SA2 Effective Date until the date twelve months after the Ventilation Works Completion Date.

1.7 Cover Features & Extensions

1.7.1 Terrorism

1.7.2 Munitions of war clause

1.7.3 Additional costs of completion clause

1.7.4 Professional fees clause (including Board professional fees incurred during any period of reinstatement)

1.7.5 Debris removal clause

1.7.6 72 hour clause

1.7.7 European Union local authorities clause

1.7.8 Free issue materials clause

1.7.9 10% escalation clause

1.7.10 Automatic reinstatement of sum insured clause

1.7.11 Loss minimisation

1.7.12 Testing/commissioning period clause

1.7.13 Plans and documents clause

1.7.14 Expediting expenses

1.7.15 Temporary repairs

1.8 Principal Exclusions

1.8.1 War and related perils (UK market agreed wording)

1.8.2 Nuclear/radioactive risks (UK market agreed wording)

1.8.3 Pressure waves caused by aircraft and other aerial devices travelling at sonic or supersonic speeds

1.8.4 Wear, tear and gradual deterioration

1.8.5 Consequential financial losses

1.8.6 Cyber risks

1.8.7 Inventory losses

1.8.8 Fraud and employee dishonesty

1.8.9 Faulty design, workmanship and materials DE5 or LEG3 option extension

In Pro

Section 2

Part B

Project Co shall use reasonable endeavours to secure that there is taken out and maintained by the Ventilation Works Contractor, the Ventilation Works Sub-Contractor, the Project Manager and the Supervisor the following insurances from on or before the Ventilation Works Commencement Date until the date 12 years after the Ventilation Works Completion Date:-

Employers Liability - All parties as required by Law

Professional Indemnity Insurance – the required terms are detailed in the Ventilation Works Contract for the Ventilation Works Contractor, the Project Manager Appointment for the Project Manager, the Supervisor Appointment for the Supervisor and the Ventilation Works Sub-Contract for the Ventilation Works Sub-Contractor.

In Pro

Section 3

Endorsements

Unless the context otherwise requires defined terms set out in the following endorsements shall have the meaning set out in the Project Agreement.

Endorsement 1

Cancellation

- 1 This policy shall not be cancelled or terminated before the original expiry date is to take effect except in respect of non-payment of premium.
- 2 The insurer shall by written notice advise the Board:
 - 2.1 at least 30 days before any such cancellation or termination is to take effect;
 - 2.2 at least 30 days before any reduction in limits or coverage or any increase in deductibles is to take effect; and
 - 2.3 of any act or omission or any event of which the insurer has knowledge and which might invalidate or render unenforceable in whole or in part this policy.

Endorsement 2

Multiple Insured/Non-Vitiation Clause

1. Each of the parties comprising the insured shall for the purpose of this policy be considered a separate co-insured entity, insured on a composite basis, with the words "the insured" applying to each as if they were separately and individually insured provided that the total liability of the insurers under each section of this policy to the insured collectively shall not (unless the policy specifically permits otherwise) exceed the limit of indemnity or amount stated to be insured under that section or policy. Accordingly, the liability of the insurers under this policy to any one insured shall not be conditional upon the due observance and fulfilment by any other insured party of the terms and conditions of this policy or of any duties imposed upon that insured party relating thereto, and shall not be affected by any failure in such observance or fulfilment by any such other insured party.
- 2 It is understood and agreed that any payment or payments by insurers to any one or more of the insureds shall reduce, to the extent of that payment, insurers' liability to all such parties arising from any one event giving rise to a claim under this policy and (if applicable) in the aggregate.
- 3 Insurers shall be entitled to avoid liability to or (as may be appropriate) claim damages from any insured party in circumstances of fraud misrepresentation non-disclosure or material breach of warranty or condition of this policy (each referred to in this clause as a "**Vitiating Act**") committed by that insured party save where such misrepresentation non-disclosure or breach of warranty or condition was committed innocently and in good faith.
- 4 For the avoidance of doubt it is however agreed that a Vitiating Act committed by one insured party shall not prejudice the right to indemnity of any other insured who has an insurable interest and who has not committed the Vitiating Act.
- 5 Insurers hereby agree to waive all rights of subrogation and/or recourse which they may have or acquire against any insured party (together with their employees and agents) except where the rights of subrogation or recourse are acquired in consequence of a Vitiating Act in which circumstances insurers may enforce such rights against the insured responsible for the Vitiating Act notwithstanding the continuing or former status of the vitiating party as an insured.

- 6 Notwithstanding any other provision of this policy or any other document or any act and/or omission by any insured party insurers agree that:
- 6.1 no party other than the Board has any authority to make any warranty, disclosure or representation in connection with this policy on behalf of the Board;
- 6.2 where any warranty, disclosure or representation is required from the Board in connection with this policy insurers will contact the Board in writing (in accordance with Endorsement 3) and set out expressly the warranty, disclosure and/or representation required within a reasonable period of time from the Board (regarding itself); and
- 6.3 save as set out in a request from insurers to the Board in accordance with (2) above, the Board shall have no duty to disclose any fact or matter to insurers in connection with this policy save to the extent that for the Board not to disclose a fact or matter would constitute fraudulent misrepresentation and/or fraudulent non-disclosure.

Endorsement 3

Communications

1. All notices or other communications under or in connection with this policy shall be given to each insured (and the Board) in writing or by facsimile. Any such notice will be deemed to be given as follows
- 1.1 if in writing, when delivered;
- 1.2 if by facsimile, when transmitted but only if, immediately after transmission, the sender's facsimile machine records a successful transmission has occurred.
2. The address and facsimile number of the Board for all notices under or in connection with this policy are those notified from time to time by the Board for this purpose to Project Co at the relevant time. The initial address and facsimile number of the Board are as follows:
- The Board:
- Address: Lothian Health Board
Waverley Gate
2-4 Waterloo Place
Edinburgh
EH1 3EG
- Email: [REDACTED]
- Attention Contract Manager for RHSC & DCN Project
- Attention: The Chief Executive from time to time of the Board
3. It is further agreed that a notice of claim given by the Board or any other insured shall in the absence of any manifest error be accepted by the insurer as a valid notification of a claim on behalf of all insureds.

Endorsement 4

Loss Payee (applicable only to the Physical Damage Policies)

Subject to the provision of Clause 53.22.2 of the Project Agreement all proceeds of this policy shall be payable without deduction or set-off to the Insurance Proceeds Account.

Endorsement 5

Primary Insurance

It is expressly understood and agreed that this policy provides primary cover for the insured parties and that in the event of loss destruction damage or liability covered by this policy which is covered either in whole or in part under any other policy or policies of insurance effected by or on behalf of any of the insured parties the insurers will indemnify the insured parties as if such other policy or policies of insurance were not in force and the insurers waive their rights of recourse if any against the insurers of such other policy or policies of insurance.

Endorsement 6

Ringfencing

The level of any indemnity available to an insured party under this policy in relation to any claim(s) concerning the Project shall not be affected and/or reduced by any claim(s) unrelated to the Project.

In Pro

Section 4

Broker's letter of Undertaking

Date

To:

Dear Sirs

Project Agreement dated 12 and 13th February 2015 entered into between IHS Lothian Limited ("Project Co") Lothian Health Board (the "Board") (the "Agreement") as amended and supplemented by Supplemental Agreement No. 2 dated on or around the date hereof ("Supplemental Agreement No.2)

- 1 We refer to the Agreement and Supplemental Agreement No. 2. Unless the context otherwise requires, terms defined in the Agreement and Supplemental Agreement No. 2 shall have the same meaning in this letter.
- 2 We act as insurance broker to Project Co in respect of the Insurances and in that capacity we confirm that the Insurances which are required to be procured pursuant to clause 6.9 (*Insurance*) and Schedule Part 7 (*Insurance Requirements*) of the Supplemental Agreement No. 2:
 - 2.1 where appropriate name you and such other persons as are required to be named pursuant to Supplemental Agreement No. 2 and/or the Agreement for their respective interests;
 - 2.2 are, in our reasonable opinion as insurance brokers, as at today's date, in full force and effect;
 - 2.3 all premiums due to date in respect of the Insurances are paid and the Insurances are, to the best of our knowledge and belief, placed with insurers which, as at the time of placement, are reputable and financially sound. We do not, however, make any representations regarding such insurers' current or future solvency or ability to pay claims; and that
 - 2.4 the endorsements set out in Section 3 (*Endorsements*) to Schedule Part 7 (*Insurance Requirements*) of Supplemental Agreement No. 2 are as at today's date in full force and effect in respect of the Insurance in clause 6.9.3 and Schedule Part 7 and the endorsements set out in Section 3 (*Endorsements*) to Schedule Part 15 of the Agreement are as at today's date in full force and effect in respect of the Insurance in clauses 6.9.1 and 6.9.2 of Supplemental Agreement No. 2.
- 3 We further confirm that the attached cover notes confirm this position.
- 4 Pursuant to instructions received from Project Co and in consideration of your approving our appointment or continuing appointment as brokers in connection with the Insurances, we hereby undertake in respect of the interests of the Board in relation to the Insurances:
 - 4.1 **Notification Obligations**
 - 4.1.1 to notify you at least thirty (30) days prior to the expiry of any of the Insurances if we have not received instructions from Project Co to negotiate renewal and in the event of our receiving instructions to renew, to advise you promptly of the details thereof;
 - 4.1.2 to notify you at least thirty (30) days prior to ceasing to act as brokers to Project Co unless, due to circumstances beyond our control, we are unable to do so in which case we shall notify you as soon as practicable; and

4.1.3 to pay into the Insurance Proceeds Account without set off or deduction of any kind for any reason all payments in respect of claims received by us from insurers in relation to the Insurances specified in Clauses 30.1 to 30.3 (*Relief Events*) of the Agreement.

4.2 **Advisory Obligations**

4.2.1 to notify you as soon as practicable of any default in the payment of any premium for any of the Insurances;

4.2.2 to notify you if any insurer cancels or gives notification of cancellation of any of the Insurances, at least thirty (30) days before such cancellation is to take effect or as soon as reasonably practicable in the event that notification of cancellation takes place less than thirty (30) days before it is to take effect;

4.2.3 to notify you as soon as reasonably practicable of any act or omission, breach or default of Project Co or any other insured under the Insurances of which those of our employees directly involved with the placement or administration of the Insurances become aware and which acting reasonably they consider may invalidate any Insurance or render it void, avoidable or unenforceable in whole or in part or which may otherwise materially impact on the extent of cover provided under the Insurances; and

4.2.4 in accordance with our duty to Project Co to notify Project Co of its pre-contra tua duties of disclosure to insurers including the duty to disclose all information that would be considered material in the context of such duty.

4.3 **Disclosure Obligations**

4.3.1

(a) disclose to insurers all information and any fact, change of circumstance or occurrence made available to us by Project Co; or

(b) disclose, with the approval of Project Co (such approval not to be unreasonably withheld), all information and any fact, change of circumstance or occurrence made available to us by the Board,

which in our reasonable opinion is material to the risks insured against under the Insurances and which properly should be disclosed to insurers in accordance with the insurers' relevant policy terms and conditions as soon as reasonably practicable after we are in receipt from Project Co of such information or of the approval of Project Co in respect of such information and become aware of such information, fact, change of circumstance or occurrence whether prior to inception or renewal or otherwise; and

4.3.2 to treat as confidential all information so marked or otherwise stated to be confidential and supplied to us by or on behalf of Project Co or the Board and not to disclose such information, without the prior written consent of the supplier of the information, to any third party other than those persons who, in our reasonable opinion have a need to have access to such information from time to time, and for the purpose of disclosure to the insurers or their agents in respect of the Insurances in discharge of our obligation set out at clause 4.3.1 of this letter. Our obligations of confidentiality shall not conflict with our duties owed to Project Co and shall not apply to disclosure required by an order of a court of competent jurisdiction, or pursuant to any applicable law, governmental or regulatory authority having the force of law or to information which is in the public domain.

4.4 Administrative Obligations

- 4.4.1 to hold copies of all documents relating to or evidencing the Insurances, including but without prejudice to the generality of the foregoing, insurance slips, contracts, policies, endorsements and copies of all documents evidencing renewal of the Insurances, payment of premiums and presentation and receipt of claims;
- 4.4.2 to supply to the Board and/or its insurance advisers (or the Board's or its insurance advisers' authorised representatives) promptly on written request copies of the documents set out in clause 4.4.1 of this letter, and to the extent available, to make available to such persons promptly upon the Board's request the originals of such documents;
- 4.4.3 to administer the payment of premiums due pursuant to the Insurances such that, in so far as we hold appropriate funds, all such premiums shall be paid to insurers in accordance with the terms of the Insurances;
- 4.4.4 to administer the payment of claims from insurers in respect of the Insurances (the "**Insurance Claims**") including:
- (a) negotiating settlement of Insurance Claims presented in respect of the Insurances;
 - (b) collating and presenting all information required by insurers in relation to Insurance Claims presented in respect of the Insurances; and
 - (c) insofar as it is relevant and practicable, liaising with and reporting to the Board throughout the settlement, payment and administration of such Insurance Claims.
- 4.4.5 to advise the Board promptly upon receipt of notice of any material changes which we are instructed to make in the terms of the Insurances and which, if effected, in our opinion as Insurance Brokers would result in any material reduction in limits or coverage or in any increase in deductibles, exclusions or exceptions;
- 4.4.6 to advise the Board in advance of any lapse or non renewal of any policy maintained in respect of the Insurances;
- 4.4.7 to use our reasonable endeavours to have endorsed on each and every policy evidencing the Insurances (when the same is issued) endorsements substantially in the form set out in Section 3 (*Endorsements*) to Schedule Part 7 (*Insurance Requirements*) of Supplemental Agreement no. 2 in respect of the insurance under clause 6.9.3 of Supplemental Agreement no. 2 and Section 3 (*Endorsements*) to Schedule Part 15 (*Insurance Requirements*) of the Agreement in respect of the insurance under clauses 6.9.1 and 6.9.2 of Supplemental Agreement no. 2.

4.5 Insurance Cost Reporting Procedures

- 4.5.1 In our opinion, the premiums for the insurance in clause 6.9.3 and section 2 of Schedule Part 7 reflect prevailing premium rates in the UK insurance market.

5 Notification Details

- 5.1 Our obligations at clause 4 of this letter to notify or inform you shall be discharged by providing the requisite information in hard copy to:

5.1.1 **The Board:**

Address: Lothian Health Board
Waverley Gate
2-4 Waterloo Place
Edinburgh
EH1 3EG
Attention Contract Manager for RHSC & DCN Project

5.1.2 **Project Co**

Address: IHS Lothian Limited
c/o Pinsent Masons LLP
13 Queens Road
Aberdeen
AB15 4YL
Attention: The Company Secretary

6 **General**

- 6.1 For the avoidance of doubt, the undertakings and confirmations given in this letter relate solely to the Insurances. They do not apply to any other insurances and nothing in this letter should be taken as providing any undertakings or confirmations in relation to any insurance (other than the Insurances) that ought to have been placed or may at some future date be placed by ourselves or by other brokers.
- 6.2 Following termination of our appointment as broker to Project Co, on written notice to the Board we are released from all ongoing obligations set forth in this letter.
- 6.3 Nothing in this letter shall prejudice insurers' right to cancel the Insurances in accordance with their terms and the undertakings and confirmations set out in this letter are given subject to such right.
- 6.4 This letter is given by us on the instructions of Project Co and with Project Co's full knowledge and consent as to its terms as evidenced by Project Co's signature below. Accordingly, Project Co hereby waives any potential liability we might otherwise have had to it arising from actions taken by us to comply with the terms of this letter (including, without limitation, any particular liability relating to any conflict of interest).
- 6.5 This letter shall be governed by and construed in accordance with Scottish law.
- 6.6 This Letter may be executed in any number of counterparts in accordance with the Legal Writings (Counterparts and Delivery) (Scotland) Act 2015 ("the 2015 Act"). No counterpart shall be effective until all counterparts have been executed and one part has been delivered to MacRoberts LLP from each of the Consultant and the Beneficiary. The Consultant and the Beneficiary agree MacRoberts LLP shall be the nominated person in terms of section 2(1) of the 2015 Act.

Yours faithfully

For and on behalf of A J Gallagher

For and on behalf of Project Co

Schedule Part 8

Payments

“Initial Payment Information” means all applications for payment (including the related costing information and records of time spent as applicable), and any other supporting information relating to applications for payment under or in connection with the Ventilation Works Contract and the Appointments;

“Further Payment Information” assessments of payment including of amounts due, Payment Notices, certificates, and Pay Less Notices applicable under or in connection with the Ventilation Works Contract and the Appointments;

“Payment Information” means Initial Payment Information and Further Payment Information.

1. Project Co shall deliver all Payment Information it issues to and/or receives from the Ventilation Works Contractor, the Project Manager and the Supervisor to the Board for the Board's review and consideration. Project Co shall use reasonable endeavours to secure that the Ventilation Works Contractor, the Project Manager and the Supervisor issue all Payment Information they issue to Project Co, and further in the case of the Ventilation Works Contractor, issue to the Project Manager, and/or receive from Project Co and/or the Project Manager (as applicable) to the Board for the Board's review and consideration. Provided that Board is provided with all of the Payment Information at the applicable time then the provision of all Payment Information:-
 - (a) relating to the Ventilation Works Contract by Project Co or the Ventilation Works Contractor; or
 - (b) relating to the Project Manager Appointment by Project Co or the Project Manager; or
 - (c) relating to the Supervisor Appointment by Project Co or the Supervisor,shall discharge the obligation to provide all Payment Information and Payment Information need not be duplicated.
2. The Board acknowledges that, pursuant to the terms of clause 50.2 of the Ventilation Works Contract, the Ventilation Works Contractor is required to submit and Project Co shall use reasonable endeavours to secure that the Ventilation Works Contractor submits copies of the Ventilation Works Contractor's Initial Payment Information to the Board for review.
3. The Board acknowledges that:
 - (a) pursuant to the terms of paragraph B.1 of the Schedule Part 2 of the Appointments, the Project Manager and the Supervisor shall submit copies of their Initial Payment Information to the Board for review; and
 - (b) the Project Manager shall in addition submit each of its Further Payment Information, pursuant to core clause 5 and Y(UK)2 of the Ventilation Works Contract, to the Board for review.
4. Project Co shall submit Project Co's Further Payment Information that Project Co issues to the Project Manager and/or the Supervisor under the respective Appointments to the Board for review.
5. Where the Board or its advisers have any comments or representations in relation to the Payment Information received from the Project Manager and/or Project Co in respect of:
 - (a) the Ventilation Works Contract the Board shall be entitled to make any reasonable representations to the Project Manager and/or Project Co about the Initial Payment Information including whether any amounts are due and/or should be assessed and/or certified for payment. Project Co shall use reasonable endeavours to secure that the

Project Manager has due regard to any such representations, but such representations shall not be binding on the Project Manager or fetter its professional discretion in the proper performance of his role as Project Manager under the Ventilation Works Contract;

- (b) the Project Manager's Appointment and/or the Supervisor's Appointment, they shall be entitled to make any reasonable representations to Project Co about the Initial Payment Information including whether any amounts are due and/or should be assessed as due and/or paid; and
 - (c) the Board shall not be obliged to pay any costs which arise in respect of a compensation event where Project Co is not entitled to be reimbursed for such costs pursuant to clause 6.5.2(a).
6. The final date for the Board to make such representations to the Project Manager and/or Project Co (as the case may be) shall be 9 days following the receipt by the Board of the Initial Payment Information.
7. The Board will pay the Project Co amounts which Project Co is obliged to pay as properly assessed under deduction of the costs referred to in paragraph 5(c) in accordance with the terms of the Ventilation Works Contract, the Project Manager Appointment and the Supervisor's Appointment respectively but always excluding costs referred to in paragraph 5(c) above, at intervals of not less than one month, and the due date for payment in respect of amounts which the Board is due to pay shall be the earlier to occur of:
- (a) twenty four (24) days following the receipt by the Board of the Initial Payment Information; or
 - (b) ten (10) days following the receipt by the Board of the Further Payment Information
8. The final date for payment under this Agreement shall be the earlier to occur of:
- (a) thirty-one (31) days following receipt by the Board of the Initial Payment Information ; or
 - (b) seventeen (17) days following receipt by the Board of the Further Payment Information.
- Project Co shall provide evidence to the Board that such payments have been made to the Ventilation Works Contractor, Project Manager and/or Supervisor as applicable.
9. Subject to receiving payments from the Board in accordance with the process described in this Schedule Part 8, Project Co shall comply with its obligations to pay the Ventilation Works Contractor under the Ventilation Works Contract and to pay the Project Manager and the Supervisor under their respective Appointments.
10. If a payment due by the Board under this Schedule Part 7 is not paid by the applicable final date for payment , the Board acknowledges that:
- (a) the Ventilation Works Contractor is entitled to be paid interest pursuant to clause 51.2 of the Ventilation Works Contract at the rate stated in the Contract Data Part One of the Ventilation Works Contract; and
 - (b) the Project Manager and the Supervisor are entitled to be paid interest pursuant to paragraph B.6 of the Schedule Part Two of the Appointments at the rate four per cent (4%) over the Base Rate of the Bank of Scotland which is current at the relevant final date for payment

and, where such payment is late due to the acts, omissions or default of the Board, the Board shall pay the interest in addition to the payment to Project Co due by the Board from the applicable final date for payment until payment is made to the Ventilation Works Contractor.

11. Project Co shall be entitled, where it determines in good faith that the Board has not made a payment of an amount due in accordance with this Schedule Part 8, and pending final determination of the matter in accordance with Clause 8.4 (*Dispute Resolution*), to recover the same from the Board as a debt.
12. In the event that any amounts assessed under or in connection with the Ventilation Works Contract and/or any of the Appointments are subsequently assessed, agreed or determined such that they are adjusted downwards, reduced, sums are deducted from and/or found not to be due to the Ventilation Works Contractor, Project Manager and/or Supervisor (as applicable), and/or any amount is payable by any of them to Project Co, in accordance with the terms of the Ventilation Works Contract and/or any of the Appointments (as applicable) then such amounts shall be repaid to the Board by Project Co following receipt by Project Co of the relevant sums from the Ventilation Works Contractor, Project Manager and/or Supervisor (as appropriate); and less any costs reasonably and properly incurred by Project Co in relation to the recovery of such sums
13. There shall be no double counting of any amounts claimed from the Board by Project Co whether as between this Agreement and the Project Agreement and/or as between this Agreement and the Ventilation Works Contract and/or any of the Appointments respectively.

In Pro

Schedule Part 9

Board's Advisers' Design Assurance Statements

In Pro

Executive Office
 Gyle Square
 1 South Gyle Crescent
 EDINBURGH EH12 9EB

www.nhsns.org



FAO: Brian Currie
 NHS Lothian

Date 27th May 2020
 Your Ref
 Our Ref CS/GJ/MM

Sent via email to

Enquiries to Susan Ferguson
 Extension
 Direct Line
 Email

Dear Sir

Supplemental Agreement Number 2: Ventilation Works Design Observer Statement

Where words appear in capitalised terms in this letter, such words and expressions shall have the same meaning as defined in Supplemental Agreement No.2 ("SA2") between Lothian Health Board and IHS Lothian Limited.

We confirm in our capacity as Scottish Government Technical Observer that we have completed a review as far as reasonably practicable on the information provided of IHS Lothian Limited's design response to HVC 107 as detailed in the following documentation as it exists 2 business days prior to the SA2 Effective Date:

- Hoare Lea – MEP Engineering, Stage 4 Report: Revision 4 (13th May 2020)
- Air Handling Unit Technical Specifications
- Air Handling Unit Manufacturer's Drawings
- Requests for Information (RFI's) 01 – [015]

(together Part B of the Scope) and confirm to Lothian Health Board our opinion that the contents and design proposals therein should allow Project Co to meet the requirements of Part A of the Scope, assuming:

- Units are fully coordinated with the remainder of the works;
- All calculations are completed accurately;
- Those detailed elements of the design that are not yet complete do not contradict prior assumptions; and
- All efficiencies, including specific fan powers and components must comply with SHTMs.



Chair Keith Redpath
 Chief Executive Colin Sinclair

NHS National Services Scotland is the common name of the Common Services Agency for the Scottish Health Service.

This letter is not an acceptance on our part of any design liability.

Yours Faithfully



On behalf of NHS National Services Scotland

COLIN SINCLAIR
Chief Executive

In Pro



Lothian Health Board
Waverlygate
2-4 Waterloo Place
Edinburgh
EH1 3EG

Our Reference
Advisory Services
Statement

Mott MacDonald
Ground Floor West
19A Canning Street
Edinburgh EH3 8EG
United Kingdom

MML Advisory Services Statement

18 May 2020

Dear Sir / Madam

Advisory Services Statement

This Advisory Services Statement is issued subject to the terms and conditions of the Consultancy Agreement of October 2011 between the Lothian Health Board and Mott MacDonald Limited. To the extent achievable using reasonable skill and care, we hereby confirm as follows:

We confirm in our capacity as Lothian Health Board's Technical Advisor we have undertaken a review, commensurate with the time and information made available to us, of IHS Lothian Limited's design response to HVC 107 as detailed in the following documentation as it exists on 13th May, 2020:

- Hoare Lea – MEP Engineering, Stage 4 Report: Revision 4 (13th May 2020)

We further confirm we have previously commented upon the following:

- Air Handling Unit Technical Specifications
- Air Handling Unit Manufacturer's Drawings
- Requests for Information (RFI's) 01 – 015

In accordance with the findings of our Advisory Services Note dated 18th May 2020, and without prejudice to advice previously provided to the Lothian Health Board, we consider that good progress has continued to be made by Project Co (Imtech) and we have received assurances from Project Co on many issues. Whilst there are ongoing issues to be resolved with the design (including but not limited to the matters raised in our Advisory Services Note), on the basis of those assurances we have not identified significant 'red flags' at this stage which in our opinion would prevent Project Co ultimately meeting the requirements of Part A of the Scope, subject to Project Co;

- Continuing to develop and finalise their design and provide assurance against the comments, advice, and queries raised,
- Completing any necessary quality assurance and in particular correcting inconsistencies in their design (we continue to spot errors that need to be corrected by Project Co),
- Achieving necessary approvals.

Mott MacDonald Limited. Registered
in England and Wales no. 1243967
Registered office: Mott MacDonald
House, 8-10 Sydenham Road,
Croydon CR0 2EE, United Kingdom



In making the above statements, we highlight;

- There is not an acceptance on our part of any design liability,
- Project Co remains solely liable and responsible for their design and construction meeting the requirements of Part A of the Scope. We are not in a position to provide any design assurance as we cannot be Designer and client Advisor at the same time,
- Consistent with our Advisory Services remit, we are unable to validate, check, endorse, sign off or approve the design or construction and are unable to undertake shadow design, calculations / modelling, or checking any detailed calculations / modelling provided by Project Co.
- Our role is to assist the Board in providing Advisory Services. Specifically related to HVC 107, we have assisted the Board in defining the Part A works scope, and have subsequently commented upon, advised, and queried Project Co's Part B design, all as per the remit outlined in G Greer e-mail to B Currie on 18 Feb 20.
- Our Advisory Services are provided for the exclusive benefit of the Board and, accordingly, this Advisory Services Statement cannot be relied upon by IHS Lothian Ltd (or any other third party) or otherwise be inserted in any agreement to which we are not a party.

It is important to highlight that at this stage the design is not completed and Project Co will need to continue to develop the design, not just in terms of the base mechanical and electrical engineering services, but also in relation to all other associated matters such as equipment, architectural, structural, acoustic, fire, etc.

Design and construction co-ordination is a matter beyond our remit to advise upon, however, successful co-ordination of the installations in the existing building will be crucial to the success of Project Co's design and construction. Whilst preparatory investigations have already been undertaken by them, this is a particular ongoing risk for Project Co to manage which may involve further changes to the current design. We understand that detailed coordination of Project Co's design is ongoing by Project Co and recommend the Board receives assurance from Project Co relative to this matter.

We believe that our work in relation to HVC 107, provided in a collaborative manner with the design team, has assisted Project Co to progress their design proposals. We have to date and continue to fulfil our remit to provide comments, advice, and queries, and as a result are positively influencing Project Co's emerging design.

We continue to be absolutely committed to supporting the Board and Project Co achieving a satisfactory outcome from this process.

Yours faithfully

Graeme Greer

Graeme Greer
Associate





Turner Property Services Limited
 t/a Turner Professional Engineering Services (TPES)
 65 Craigton Road, Glasgow, G51 3EQ, United Kingdom

NHS Lothian Health Board
 Waverley Gate
 2-4 Waterloo Place
 Edinburgh
 EH1 3EG

17 May 2020

Dear Sirs,

Supplemental Agreement Number 2: Ventilation Works

Design Assurance Statement

Where words appear in capitalised terms in this letter, such words and expressions shall have the same meaning as defined in Supplemental Agreement No.2 ("SA2") between Lothian Health Board and IHS Lothian Limited.

I confirm in my capacity as Lothian Health Board's Authorising Engineer (Ventilation) that I have completed a review of IHS Lothian Limited's design response to HVC 107 as detailed in the following documentation as it exists on 13 May 2020:

- Hoare Lea – MEP Engineering, Stage 4 Report: Revision 4 (13th May 2020)
- Air Handling Unit Technical Specifications
- Air Handling Unit Manufacturer's Drawings
- Requests for Information (RFIs) 01 – 015

(together Part B of the Scope) and confirm to the NHS Lothian Health Board my opinion that the contents and design proposals therein should allow Project Co to meet the requirements of Part A of the Scope.

This letter is a confirmation that it should be possible for the design included in Part B of the Scope to meet the requirements of Part A of the Scope; and is not an acceptance on my part of any design liability.

Yours Faithfully

Eur Ing John M Rayner, BSc (Eng), CEng, FIHEEM, FCMI, MIMechE, MIET,
 MSVHSoc, TechIOSH

A member of the Turner Group of Companies.
 Registered Office: 65 Craigton Road, Glasgow G51 3EQ. Reg. No. 267753 Scotland

In Pro



Certificate Of Completion

Envelope ID: 3C2B05B37E3645C18D91A3086C80DEBC	Status: De vered
Subject: Please DocuSign: RHSC Supplemental Agreement No. 2 - Addtional Vent at on Works.DOCX	
Source Envelope:	
Document Pages: 233	Signatures: 4
Certificate Pages: 2	Intas: 0
AutoNav: Enabled	Envelope Originator:
Envelope Stamp ng: Enabled	V kash Va tha
Time Zone: (UTC) Dub n, Ed nburgh, L sbon, London	C typon t
	London, LONDON EC2Y 9AH
	[Redacted]
	IP Address: 193.240.181.194

Record Tracking

Status: Or gna	Ho der: V kash Va tha	Locat on: DocuS gn
8/5/2020 9:39:37 AM	[Redacted]	

Signer Events

Ca um Campbe
 [Redacted]
 Secur ty Leve : Ema Account Authent cat on (None)
 [Redacted]
 Signature Adopt on: Pre-se ec ed Sty e
 Us ng IP Address: 62.255.1 0.218

Timestamp

Sent: 8/5/2020 9:48:23 AM
 V ewed: 8/5/2020 12:05:11 PM
 S gned: 8/5/2020 12:06:30 PM

Electronic Record and Signature Disclosure:
Not Offered v a DocuS gn

Matthew Temp eton
 [Redacted]
 Secur ty Leve : Ema Account Authent cat on (None)
 [Redacted]
 Signature Adopt on: Pre-se ected Sty e
 Us ng IP Address: 94.13.184.114

Sent: 8/5/2020 9:48:24 AM
 V ewed: 8/5/2020 10:41:59 AM
 S gned: 8/5/2020 10:42:44 AM

Electronic Record and Signature Disclosure:
Not Offered v a DocuS gn

Susan Go dsm th
 [Redacted]
 Secur ty Leve : Ema Account Authent cat on (None)
 [Redacted]
 Signature Adopt on: Pre-se ected Sty e
 Us ng IP Address: 62.255.130.218

Sent: 8/5/2020 9:48:23 AM
 V ewed: 8/5/2020 12:22:31 PM
 S gned: 8/5/2020 12:24:21 PM

Electronic Record and Signature Disclosure:
Not Offered v a DocuS gn

V v Cockburn
 [Redacted]
 Secur ty Leve : Ema Account Authent cat on (None)
 [Redacted]
 Signature Adopt on: Pre-se ected Sty e
 Us ng IP Address: 185.240.200.178

Sent: 8/5/2020 9:48:25 AM
 Resent: 8/5/2020 12:34:44 PM
 V ewed: 8/5/2020 4:52:27 PM
 S gned: 8/5/2020 4:54:11 PM

Electronic Record and Signature Disclosure:
Not Offered v a DocuS gn

Signer Events	Signature	Timestamp
Phoebe H rst [REDACTED] Security Level: Ema , Account Authentication (None) Electronic Record and Signature Disclosure: Not Offered via DocuSign		Sent: 8/5/2020 4:54:31 PM Viewed: 8/5/2020 4:55:39 PM
In Person Signer Events	Signature	Timestamp
Editor Delivery Events	Status	Timestamp
Agent Delivery Events	Status	Timestamp
Intermediary Delivery Events	Status	Timestamp
Certified Delivery Events	Status	Timestamp
Carbon Copy Events	Status	Timestamp
Ian Graham [REDACTED] Security Level: Ema , Account Authentication (None) Electronic Record and Signature Disclosure: Not Offered via DocuSign	COPIED	Sent: 8/5/2020 9:48:23 AM Viewed: 8/5/2020 11:08:46 AM
Jennifer McKay [REDACTED] Security Level: Ema , Account Authentication (None) Electronic Record and Signature Disclosure: Not Offered via DocuSign	COPIED	Sent: 8/5/2020 9:48:24 AM Viewed: 8/5/2020 10:50:29 AM
Margaret K nnes [REDACTED] Security Level: Ema , Account Authentication (None) Electronic Record and Signature Disclosure: Not Offered via DocuSign	COPIED	Sent: 8/5/2020 9:48:24 AM Viewed: 8/5/2020 10:48:17 AM
Phoebe H rst [REDACTED] Security Level: Ema , Account Authentication (None) Electronic Record and Signature Disclosure: Not Offered via DocuSign	COPIED	Sent: 8/5/2020 9:48:25 AM Viewed: 8/5/2020 9:51:00 AM
Witness Events	Signature	Timestamp
Notary Events	Signature	Timestamp
Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	8/5/2020 4:54:31 PM
Certified Delivered	Security Checked	8/5/2020 4:55:40 PM
Payment Events	Status	Timestamps

In Process

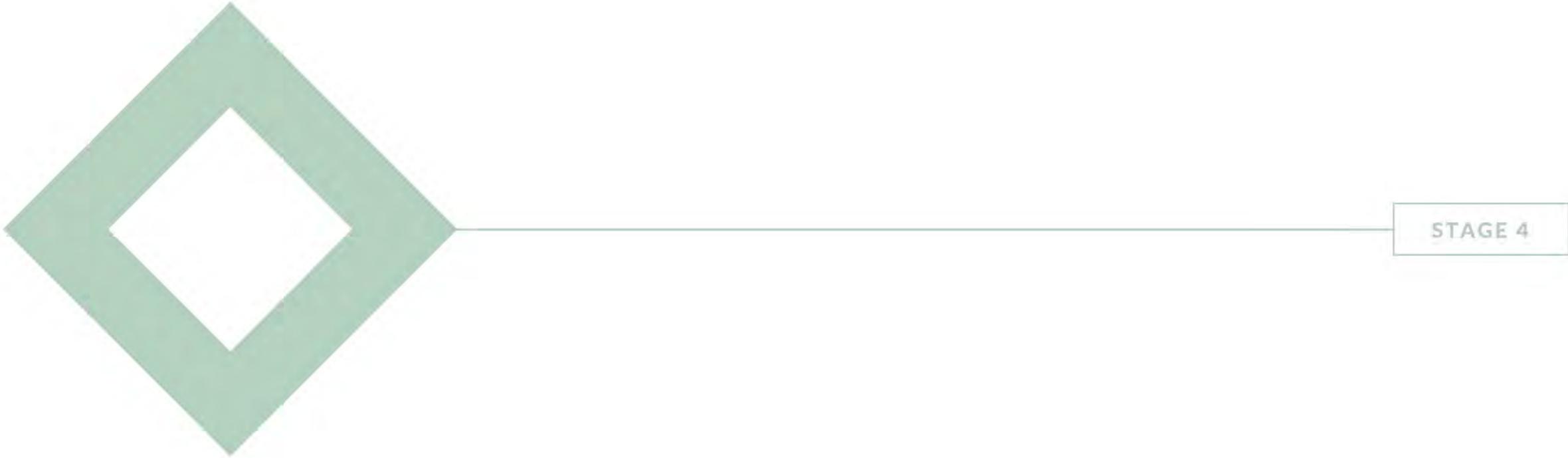


Royal Hospital for Children and Young People + DCN. Edinburgh.

IHS Lothian.

MEP ENGINEERING
STAGE 4 REPORT

REVISION 07 – 21 DECEMBER 2020



Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
01	16/03/2020	Initial Issue	SV	PW	SC
02	17/03/2020	IHSL Comments incorporated	SV	PW	SC
03	30/03/2020	NHS Lothian comments incorporated	SV	PW	SC
04	12/05/2020	Comments incorporated	SV	PW	SC
05	02/06/2020	IHSL Comments incorporated	SV	PW	SC
06	27/07/2020	NHS & Internal QA Comments Incorporated	ES	PW	SC
07	21/12/2020	Final Report	SV/ES	PW	SC

This document has been prepared for IHS Lothian only and solely for the purposes expressly defined herein. We owe no duty of care to any third parties in respect of its content. Therefore, unless expressly agreed by us in signed writing, we hereby exclude all liability to third parties, including liability for negligence, save only for liabilities that cannot be so excluded by operation of applicable law. The consequences of climate change and the effects of future changes in climatic conditions cannot be accurately predicted. This report has been based solely on the specific design assumptions and criteria stated herein.

Project number: 27/27164

Document reference: REP-2727164-08-SV-20200313-Stage 4 Report-Rev07

Contents.

Audit sheet.	2	5.1 Mechanical	15
Executive summary	5	5.2 Electrical	19
1. General.	5	6. Level 04 Works	21
1.1 General description of project	5	6.1 Mechanical	21
1.2 The project team	5	6.2 Electrical	21
1.3 Hoare Lea's role and responsibilities	5	7. Air Handling Units	22
1.4 Planning	6	7.1 Plantroom 3	22
1.5 Interfaces with other systems	6	7.2 Isolation Rooms & Enclosure's	22
1.6 Building Standards – Building Warrant Requirements	6	7.3 Fans	22
1.7 Handover	6	7.4 Dampers	22
1.8 Energy strategy	6	7.5 Water Coils	23
1.9 Air leakage	6	7.6 Filters	23
1.10 Acoustics	6	7.7 Works Testing	23
1.11 Plant replacement and maintenance strategy	6	7.8 Psychometric Chart (Summer)	23
1.12 Surveys	6	7.9 Ductwork Sizing	24
1.13 CDM	7	7.10 Margins	24
1.14 BIM	7	8. Vibration Assessment	25
1.15 Builder's work provision	7	9. Fire and Smoke Control Measures	27
1.16 Off-site manufacture	7	10. High-level Metering Strategy	27
1.17 Programme	7	11. Plant Replacement Strategy	28
1.18 Environmental Matrix	7	11.1 Level 04 Plant room	28
1.19 Project risks	7	11.2 Level 02 Flat roof	28
1.20 Prohibited Materials	7	11.3 Level 01 Energy Centre	28
1.21 Equipment	7	11.4 Heater Batteries	28
1.22 Working with others	7	12. Energy Study	29
2. HVC107 Change Request	8	12.1 Energy Calculations	32
3. Level 01 Works	9	13. HVC107 Cost Breakdown	35
3.1 Mechanical	9	Appendix 1 - Drawings	36
3.2 Electrical	12	Appendix 2 – Programme	37
3.3 Negative/Negative Isolation Room.	13	Appendix 3 – Environmental Matrix	38
4. Equipment Layout	13	Appendix 4 – BSRIA BG 6/2018 A Design Framework for Building Services 5th edition	39
5. Level 03 Works	15		

Appendix 5 – Specifications	40
Appendix 6 – Equipment Schedules	41
Appendix 7 – Technical Workshop Presentations	42
Appendix 8 – Technical Workshop Minutes	43
Appendix 9 – HAI SCRIBE (issued on 2nd March)	44
Appendix 10 – Proposed Site Set-up	45
Appendix 11 – CDM & Project Risk	46
Appendix 12 – C&S Information	47
Appendix 13 – Architectural Information	48
Appendix 14 – Acoustic Report	49
Appendix 15 – Airflow & Pressure Cascade	50
Appendix 16 – Electrical Calculations Report	51
Appendix 17 – Fire Strategy	52
Appendix 18 – Overheating Temperature Study	53
Appendix 19 – Project Derogation List	54

Executive summary

This report has been produced in conjunction with IMTECH as the principal contractor for the project.

The contents of the report describe the Stage 4 design proposals for HVC107, which have been described and presented at the following technical workshops:

- Workshop 1 2020-01-14
- Workshop 2 2020-01-21
- Workshop 3 2020-01-28
- Workshop 4 2020-02-04
- Workshop 5 2020-02-11
- Meeting 2020-02-18
- Workshop 6 2020-02-25
- Meeting 2020-03-03
- Workshop 7 2020-03-10
- Workshop 8 2020-03-17
- Meeting 2020-03-31
- Meeting 2020-04-07
- AHU Workshop (9) 2020-04-09
- Workshop 10 2020-04-14
- Meeting 2020-04-16
- Workshop 11 2020-04-21
- Meeting 2020-04-23
- Meeting 2020-04-28
- Meeting 2020-05-05
- Meeting 2020-05-12
- Meeting 2020-05-19
- Meeting 2020-05-26
- Meeting 2020-06-02
- Meeting 2020-06-16
- Meeting 2020-06-25
- Meeting 2020-06-30
- Meeting 2020-07-28
- Meeting 2020-08-11
- Meeting 2020-09-08
- Meeting 2020-10-06
- Meeting 2020-11-03
- Meeting 2020-11-10
- Meeting 2020-11-17

The presentations and minutes are contained in appendix 7 & appendix 8.

The contents of the presentations have generally been accepted and this has formed the basis of the design proposals contained in this report.

1. General.

1.1 General description of project

This report has been prepared to record the strategic design proposals for the mechanical, electrical and public health (MEP) engineering requirements for HVC107.

The purpose of the report is to confirm to the Client and the design team of the proposed engineering systems.

The aim of HVC107 is to enhance the ventilation requirements for the single bed and multibed rooms as listed in Section 2 to provide an Air Change Rate of 10 at +10Pa. In addition, the ventilation redundancy to the isolation rooms will be enhanced by removing the rooms from the general ventilation system.

1.2 The project team

The project team is as follows: -

- Client	IHS Lothian
- Architect	Imtech (Sub-consultant)
- Project Manager	Faithful & Gould
- Cost Consultant	Faithful & Gould
- Contractor	Imtech
- MEP Engineer	Hoare Lea
- Structural Engineer	Imtech (Sub-consultant)
- Building Control	Edinburgh City Council
- Fire Engineer	Hoare Lea
- Acoustic Consultant	Hoare Lea
- NEC Supervisor	Watermans

1.3 Hoare Lea's role and responsibilities

IHS Lothian has appointed Hoare Lea via Imtech to undertake mechanical, electrical and public health design (MEP) duties to BSRIA Stage 4 for the duties required within HVC107. The MEP design items include:

- Heating and cooling to the new Air Handling Units + any local heater batteries.
- Ventilation - To enhance the ventilation in line with HVC107
- Condensate drainage associated with the new air handling units
- Building management system (BMS) controls associated with any additional plant
- Power distribution associated with the new plant
- Lighting (if required)
- Data
- Fire alarm

Certain systems falling within the above categories will require additional specialist design input in order to provide a complete design. In those instances, Hoare Lea will provide a performance design for the systems and cooperate with the specialist to ensure their requirements can be incorporated. Following agreement on the required systems, additional specialists have been identified and appointed to undertake additional design duties for the following systems:

- BMS

1.4 Planning

A 'Non Material Variation' planning submission was registered with Edinburgh City Council for the works, covering the external works associated with the level 1 and level 3 ventilation. It was anticipated that the following conditions would be raised:

- Visual impact of external plant and distribution systems.
- The additional external plant will not increase the local background noise level. In addition, the internal noise condition must be in line with SHTM guidelines.

On the 23RD of July, Edinburgh City Council confirmed acceptance of the proposed changes as a 'Non Material Variation' as per Application No: 11/O2454/VARY

1.5 Interfaces with other systems

The following schedule identifies the interfaces that are required to the existing hospital systems:

Electricity	Level 1 – Energy Centre Level 3 – Level 2 plantroom Level 4 (plantrooms) -Existing
LTHW	Level 1 – Energy Centre Level 3 – Level 2 plantroom Level 4 (plantroom) -Existing
CHW	Level 1 – New Chillers Level 3 – New Chillers Level 4 (plantroom) -Existing
BMS	Level 1 – Energy Centre Level 3 – Level 2 plantroom Level 4 (plantroom) -Existing
Fire Alarm	Level 1 – Energy Centre Level 3 – Level 2 plantroom Level 4 (plantroom) -Existing

1.6 Building Standards – Building Warrant Requirements

1.6.1 Fire Alarm

Each of the AHU enclosures will be provided with a fire detection and alarm installation which is designed in accordance with BS5839-1: 2017. The installation will be an extension of the existing fire alarm system that is provided throughout the hospital campus.

1.6.2 Emergency Lighting

An emergency lighting system which has been designed in accordance with BS5266-1: 2016 will be provided within each of the AHU enclosures. The installation will utilise self-contained emergency lighting fittings complete with inverter and 3-hour battery back-up.

1.6.3 Ventilation

The Air Handling Units will comply with the Specific Fan Power levels (SFP) in line with current Building Standards and the guidance on the efficiency of mechanical ventilation and air conditioning systems given in the Non-domestic Building Services Compliance Guide for Scotland <http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards/techbooks/techhandbooks/ndbscg>.

- Isolation Rooms: 2.4W/l/s (1.4+1.0)
- AHU04-06: 2.6W/l/s (2.2+0.1+0.3)
- AHU04-07: 3.6 W/l/s (2.2+0.1+0.3+1.0)

1.6.4 Drainage

The additional drainage for the Air Handling Unit condensate will be submitted to Building Control in line with the requirements of Section 3 of the current Building Standards.

1.7 Handover

A separate completion criteria and handover document has been prepared and agreed between NHS Lothian and IHSL.

1.8 Energy strategy

As part of the detail design works, we intend to update the project Energy Strategy as this forms part of the contractual requirements for the project. At this stage a separate Energy Study has been carried out, identifying the additional energy for the proposed Isolation Room Air Handling Units and in the increased energy associated with the enhanced central Air Handling Units (AHU04-06 & AHU04-07). The energy study is contained in section 11 of this report.

1.9 Air leakage

The rooms that have a specific pressure criterion (i.e. Isolation Rooms and the single bed/multibed rooms) will require a room air pressure test to be carried out on them to ensure that there are no significant leaks. The data from this air pressure test will be used to justify the room leakage rates used within the calculations and ventilation design.

1.10 Acoustics

Section 14 contains an acoustic assessment of the existing single bed and multibed rooms.

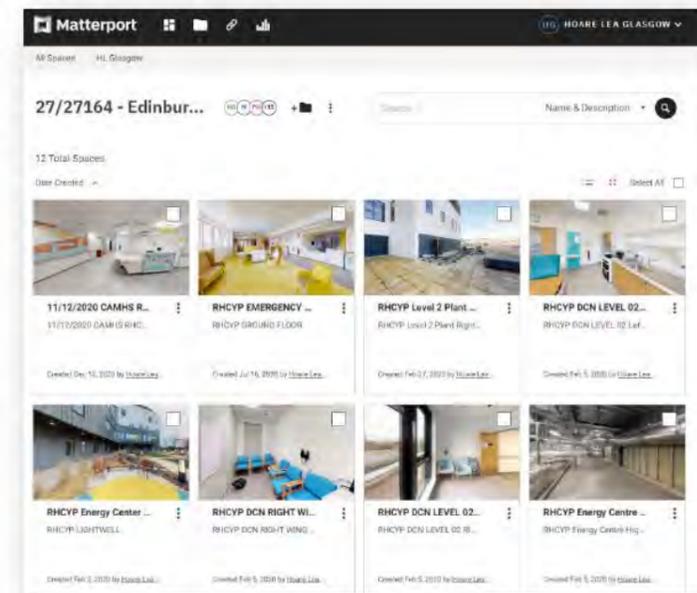
1.11 Plant replacement and maintenance strategy

The plant replacement and maintenance strategy is described in section 10 of this report

1.12 Surveys

Hoare Lea has undertaken a Matterport survey of the areas affected by HVC107. The findings from the survey are saved on a secure platform that can be accessed on request.

[Redacted text]



1.13 CDM

Health and safety has been considered in the design to date and all possible steps taken to ensure that no residual risk remains. The formal CDM risk register is contained in Appendix 11. The plant replacement and maintenance strategy within section 11 outlines the steps required to ensure that the additional plant can be maintained in a safe manner.

1.14 BIM

The design of this Hospital has utilised BIM (Building Information Modelling). All future design changes will be carried out amending the existing BIM model using Autodesk Revit software. Undertaking the alterations in BIM has allowed an increased level of coordination, however, the final design output from the model is not the equivalent of construction drawings.

1.15 Builder's work provision

Utilising the proposed BIM model, we can identify the positions of each builder's work hole, which will allow the structural engineer and contractor to fully assess the complexity for installation and cost. Any additional builders work holes will follow the criteria within the building fire strategy.

1.16 Off-site manufacture

The AHU modules will be constructed off-site, which will have benefits to the construction programme (included within the latest programme). These modules will be provided fully constructed and partially commissioned, just requiring connection the power supplies and piped services when they are installed. This has benefits for ensuring the highest quality and saves time on site.

1.17 Programme

The current proposed programme is contained in Appendix 2. The proposed completion date is currently 25/01/2021.

1.18 Environmental Matrix

The existing 'As Designed' Environmental Matrix has been amended by Hoare Lea to show the enhancements required to achieve HVC107. There are other amendments to rooms out with the scope of HVC107 that have been made. These have been made as a result of utilising the additional fresh air to supply, via air transfer, to non-clinical areas. A copy of the proposed Environmental Matrix is contained in Appendix 3.

1.19 Project risks

A formal risk workshop took place on 17/03/2020 and a project risk register has been produced, which has been included within Appendix 11.

1.20 Prohibited Materials

Project Co confirm that there has not been specified and there shall not be specified for use nor has there been used nor shall there be used in the works, any materials, substances, building practices, products or techniques which at the time of use:-

1. do not conform with British and European Standards, Codes of Practice and/or which contravene the recommendations of the publication "Good Practice in the Selection of Construction Materials" (British Council for Offices, 2011) as such are amended and updated from time to time and as are current at the date of use;
2. are generally known, or ought to be known, to the Contractor and his subcontractors or within the Contractor's profession in the United Kingdom to be deleterious or hazardous to health and safety and/or to the durability of any building or structure; and
3. are not of new, sound and of satisfactory quality.

1.21 Equipment

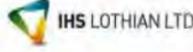
Project Co confirms that we are supplying all our own equipment and materials to do the works.

1.22 Working with others

A list of proposed meetings will be prepared with a descriptor for the process of working collaboratively. This will include an overview of the current working agreement for open book accounting between the Board and Project Co.

2. HVC107 Change Request

The HVC107 notice is shown below:

High Value Change Notice

Project: RHCYP + DCN – Little France Edinburgh

1 – Issue of Change Notice to Project Co

Title: Paediatric Critical Care and Haematology / Oncology Ventilation
Reference No: 0107 **Date:** 5th December, 2019

Target Cost Capital: £4.6m **Target Cost Revenue:** TBA

High Value Change Requirements (Schedule Part 16, Section 4, Clause 2.1.3)

Single bedrooms and Multi-bedrooms in Paediatric Critical Care

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems which will deliver **10 air changes/hour at +10pa** as per SHTM 03-01, Appendix 1, Table A1 to the following rooms at the Facilities:

Room Number	Room Type
1-B1-065	Neo Natal 3 cot area including 1-B1-022 – Corridor, 1-B1-069 – Staff Base, 1-B1-068 – Clean Utility and 1-B1-071 – Rinsus Bay which are all open to 1-B1-065. This area does not contain an en-suite.
1-B1-075	Single cot cubicle neo natal including 1-B1-074 en-suite
1-B1-063	Open plan bay 4 bed This area does not contain an en-suite.
1-B1-037	Single bed cubicle This area does not contain an en-suite.
1-B1-031	Open plan bay 4 bed This area does not contain an en-suite.
1-B1-021	Single bed cubicle This area does not contain an en-suite.
1-B1-020	Single bed cubicle This area does not contain an en-suite.
1-B1-019	Single bed cubicle This area does not contain an en-suite.
1-B1-006	Open plan bay 4 bed This area does not contain an en-suite.

Isolation Rooms in Paediatric Critical Care

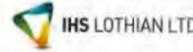
In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems for a positive pressure ventilated lobby PPVL Single Bedroom Isolation Suite with a lobby air supply terminal with a HEPA filter, as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1, to the following rooms at the Facilities.

Project Co may utilise the supply and extract ventilation system description in SHPN 04-01, Supplement 1, Clause 4.5 for a dedicated ventilation system per Suite or SHPN 04-01, Supplement 1, Clause 4.8 for a common ventilation system to multiple Suites as the basis of their design. If Clause 4.8 is selected as the basis of design, a duplicate air handling / supply unit is considered necessary. A combination of both methods may be used provided Project Co, as far as is reasonably practical, reuse the existing ventilation installations. Regardless of option chosen, all aspects of the design and installation must be technically compliant with all relevant guidance.

NHSL require to remove or significantly reduce the risk of losing all isolations rooms due to a single point of failure. Ideally each isolation room would benefit from its own supply and extract, however, NHSL appreciate this may not be possible or practical due to other constraints e.g. space. Therefore, Project Co are requested to provide their best practical solution to reduce the risk as low as possible but maintaining guidance criteria as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1.

Room Number	Room Type
1-B1-016	Isolation Bedroom This area does not contain an en-suite.
1-B1-017	Isolation Bedroom This area does not contain an en-suite.

HVCN 0107

1-B1-026	Isolation Bedroom This area does not contain an en-suite.
1-B1-036	Isolation Bedroom This area does not contain an en-suite.

Single bedrooms and Multi-bedrooms in Haematology and Oncology

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems which will deliver **10 air changes/hour at +10pa** as per SHTM 03-01, Appendix 1, Table A1 and fit Hepa filters (H12 grade) to the air inlets to the following rooms at the Facilities:

Room Number	Room Type
3-C1.4-059	Single Bedroom including 3-C1.4-060 en-suite
3-C1.4-057	Single Bedroom including 3-C1.4-058 en-suite
3-C1.4-055	Single Bedroom including 3-C1.4-056 en-suite
3-C1.4-046	Single Bedroom including 3-C1.4-047 en-suite
3-C1.4-032	Single Bedroom including 3-C1.4-033 en-suite
3-C1.4-018	Single Bedroom including 3-C1.4-019 en-suite
3-C1.4-016	Single Bedroom including 3-C1.4-017 en-suite
3-C1.4-013	Single Bedroom including 3-C1.4-014 en-suite
3-C1.4-010	Single Bedroom including 3-C1.4-009 en-suite
3-C1.4-074	Single Bedroom including 3-C1.4-075 en-suite
3-C1.4-076	Single Bedroom including 3-C1.4-077 en-suite
3-C1.4-078	Single Bedroom including 3-C1.4-079 en-suite
3-C1.4-084	Multi-Bed (3) Day Care including 3-C1.4-085 en-suite
3-C1.4-061	Multi-Bed (6) Day Care including 3-C1.4-062 en-suite

Isolation Rooms in Haematology and Oncology

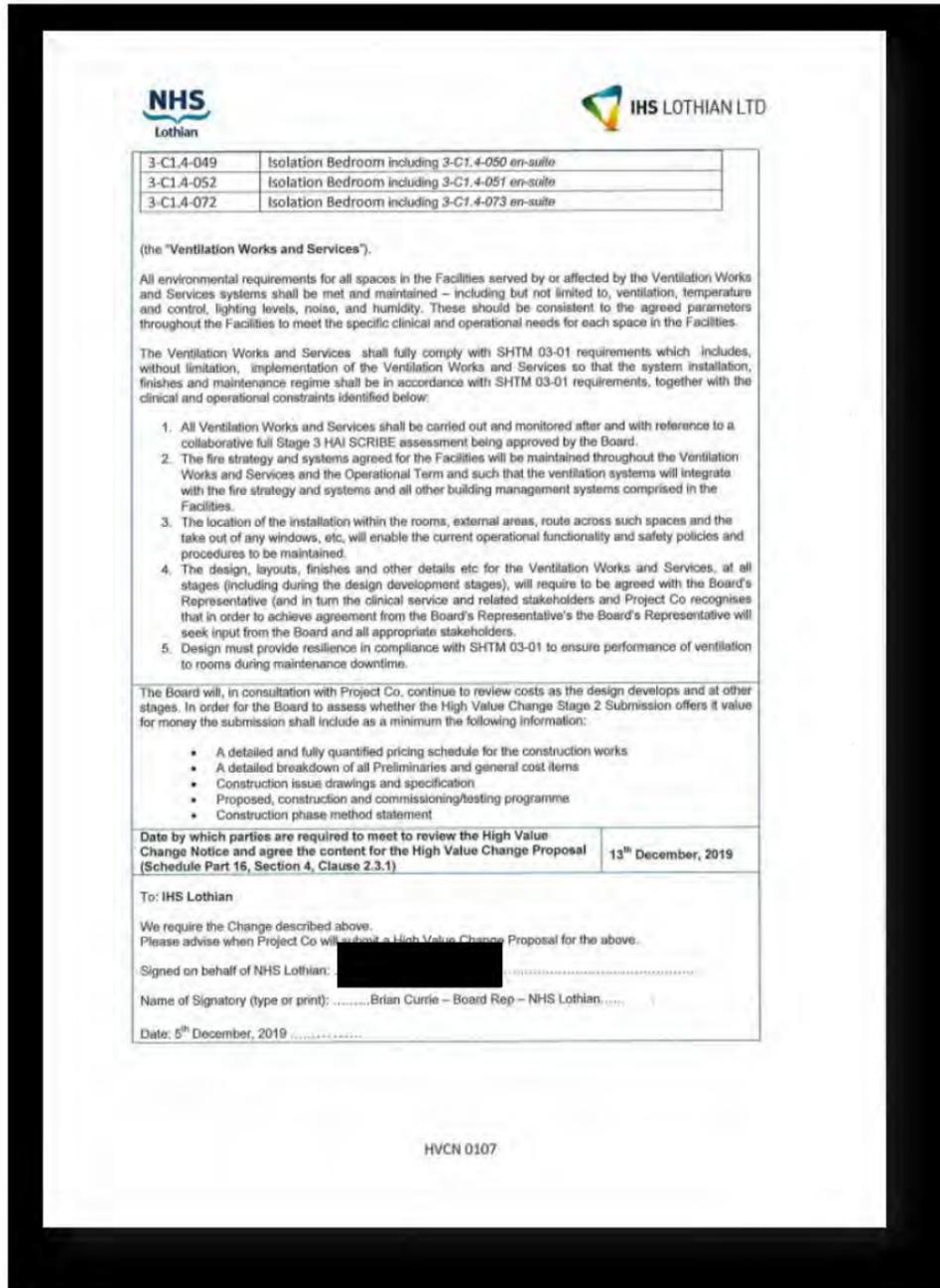
In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems for a positive pressure ventilated lobby PPVL Single Bedroom Isolation Suite with a lobby air supply terminal with a HEPA filter, as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1, to the following rooms at the Facilities.

Project Co may utilise the supply and extract ventilation system description in SHPN 04-01, Supplement 1, Clause 4.5 for a dedicated ventilation system per Suite or SHPN 04-01, Supplement 1, Clause 4.8 for a common ventilation system to multiple Suites as the basis of their design. If Clause 4.8 is selected as the basis of design, a duplicate air handling / supply unit is considered necessary. A combination of both methods may be used provided Project Co, as far as is reasonably practical, reuse the existing ventilation installations. Regardless of option chosen, all aspects of the design and installation must be technically compliant with all relevant guidance.

NHSL require to remove or significantly reduce the risk of losing all isolations rooms due to a single point of failure. Ideally each isolation room would benefit from its own supply and extract, however, NHSL appreciate this may not be possible or practical due to other constraints e.g. space. Therefore, Project Co are requested to provide their best practical solution to reduce the risk as low as possible but maintaining guidance criteria as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1.

Room Number	Room Type
3-C1.4-040	Isolation Bedroom including 3-C1.4-041 en-suite
3-C1.4-043	Isolation Bedroom including 3-C1.4-042 en-suite

HVCN 0107



3. Level 01 Works

3.1 Mechanical

3.1.1 Ventilation Strategy

3.1.1.1 Isolation Room AHUs

There are 4 Isolation rooms associated with the Level 1 Paediatric Critical Care.

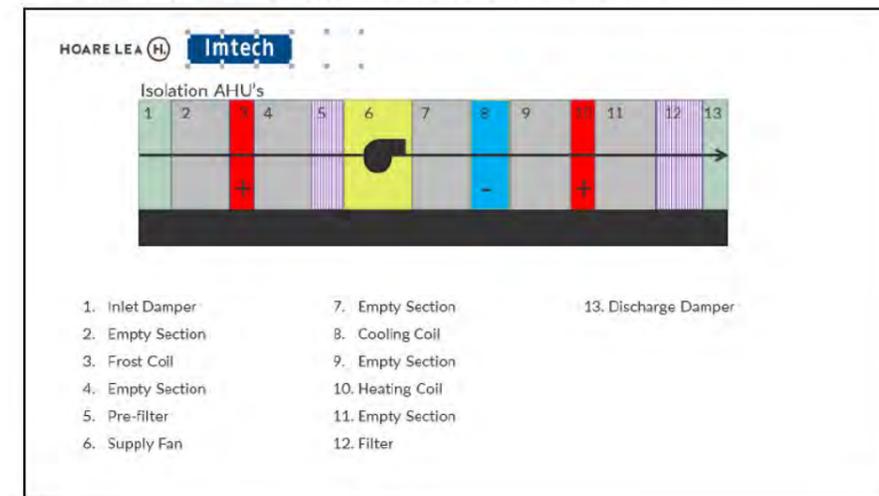
During the first technical workshop 2 options were presented to achieve compliance with HVC107:

- Individual Air Handling Units per Isolation Room
- Run & Standby AHU's serving the 4 Isolation Rooms.

It was agreed that for temperature control purposes that individual Air Handling Units were the correct solution. The advantages and disadvantages of this option are shown below:

Advantages	Disadvantages
Simpler control as each supply AHU would serve each Isolation room.	Although the AHU's would be smaller, a slightly larger plant area would be required.
Commissioning and balancing would be easier to achieve and maintain (+pressure).	Although smaller, there would be 4 x 315mm diameter duct as opposed to 1 x 700x400 duct. (coordination issue)
Individual temperature control in each room as each AHU would be able to supply at different temperatures.	There would be more builderswork holes through the façade.
This option fits within the plant area available.	
This option achieved complete fire and smoke separation from all other areas.	

The 'supply only' Air Handling Units will be configured as follows:



A letter will be issued to the successful Air Handling Manufacturer confirming that Heat recovery is not required as per the requirements of the ErP regulations.

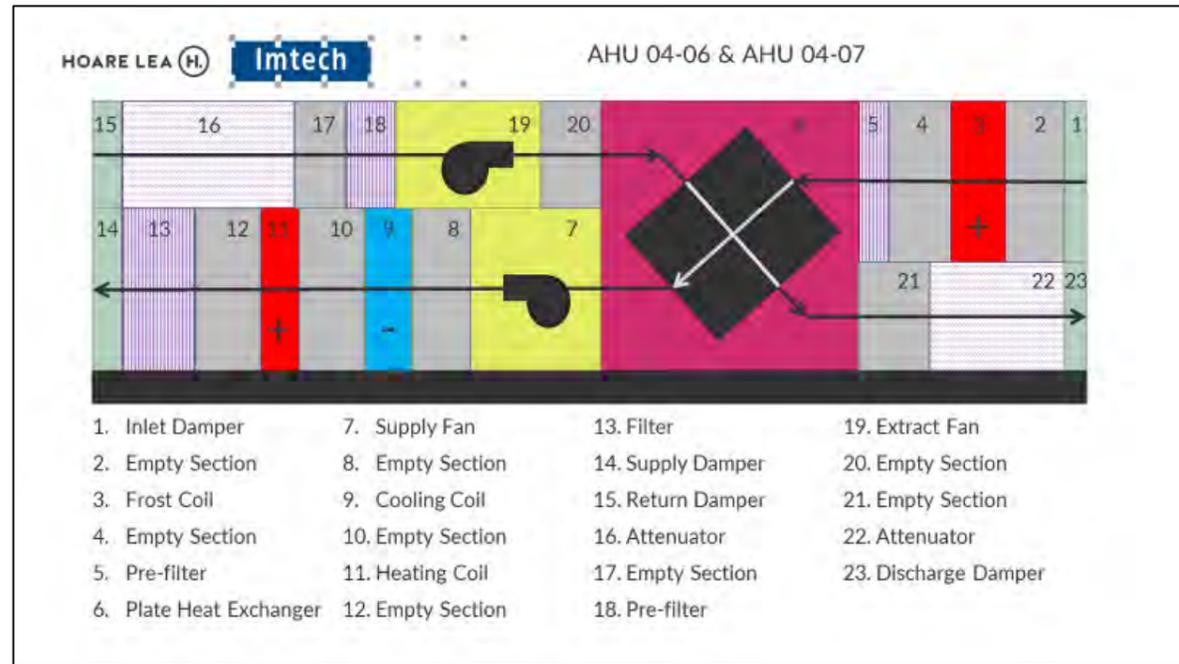
The isolation room air handling units will be located on the external grass area adjacent to the energy centre mezzanine level. The area around the new enclosure (and the air intakes) will have a slabbed area and a cage to prevent vegetation entering the air stream in accordance with clause 3.65 of SHTM03-01.

3.1.1.2 General Supply and Extract AHU

The existing supply and extract air handling unit serving the level 1 Paediatric Critical Care will be replaced with a new unit that is capable of delivering the enhanced air volume and pressure to achieve the requirements of HVC107.

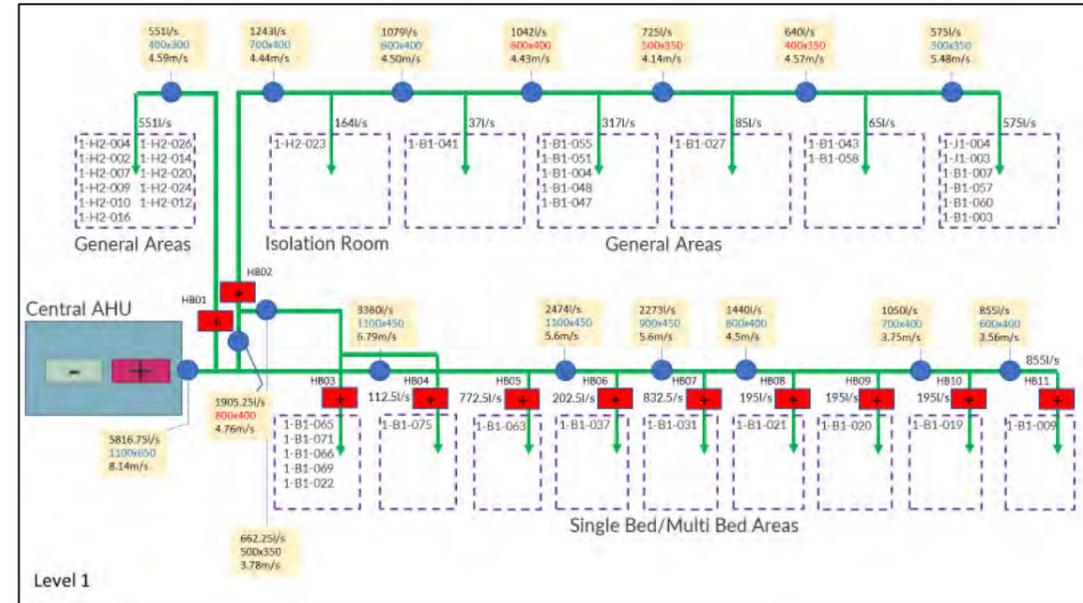
A site measured survey has been carried out and a new flat packed unit can be installed in the area of the existing unit (AHU04-06).

As agreed during Technical Workshop 3 a plate heat exchanger will be utilised for heat recovery purposes.



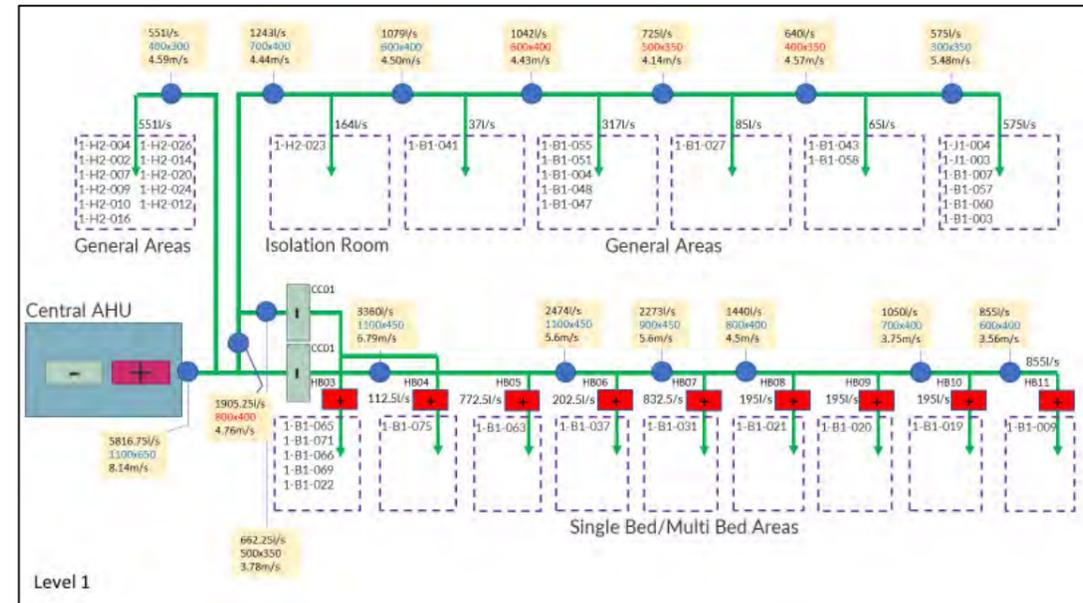
3.1.1.3 General Supply and Extract AHU Schematic (Option1)

Option 1 is the selected solution as this removes the inherent risk of duct mounted cooling coils (i.e. legionella). All cooling is delivered within the central air handling unit (supply temp of 15 deg C) with duct mounted re-heater coils providing terminal re-heat.



3.1.1.4 General Supply and Extract AHU Schematic (Option2)

Option 2 actually uses slightly more energy as the central AHU has the heat all the air to 18 deg C to then be cooled to 15 deg C (for one room) then re-heated for the individual room conditions (please refer to section 11 of this report). However, the legionella risk of installing duct mounted cooling coils and the added maintenance, would be too big a risk so has therefore been discounted.



3.1.1.5 Changes to Existing Ductwork

Based on the ductwork sizing in section 3.1.1.3/3.1.1.4, most of the ductwork does not require to be changed (ductwork sizing identified in blue). There are a few elements of the existing ductwork system that must be modified, specifically the ductwork serving room 1-B1-065, 075, 071 & 066.

Refer to the Stage 4 down takings and proposed drawings for final details.

3.1.2 Heating Strategy

A new LTHW pump (run and standby) will be installed within the energy centre that will deliver the required flowrate to the new Isolation room air handling units. The pipework will be routed through the energy centre mezzanine level to the new air handling units.

As the radiant panel circuit is being significantly modified due to the majority of radiant panels being removed, this will be utilised to serve the new proposed heater batteries in addition to the remaining radiant panels. The new pipework will be installed in stainless steel. A replacement pump will be installed to deliver the enhanced flowrate. This pump will remain as a constant temperature circuit as per the previous design.

3.1.3 Cooling Strategy

A stand-a-lone Chilled Water Air Cooled Chiller (run and standby configuration) will be installed adjacent to the new AHU plantroom enclosure on the grass area adjacent to the energy centre mezzanine level. The Chiller will deliver Chilled Water to the 4 No. Isolation room Air Handling Unit cooling coils. 30% Glycol will be added to the CHW circuit in addition to trace heating to ensure there are no issues in winter periods.

3.1.4 AHU Enclosure Services (Mechanical)

The new Isolation room AHU enclosures will come as a packaged plantroom, complete with all internal pipework, valves and control devices.

As the enclosure is constructed from Steel this will not impact the Fire Strategy.

3.1.5 Enclosure Location

The level 1 Isolation room Air Handling units will be located adjacent to the existing energy centre with the landscape around the AHUs compliant with clause 3.65 of SHTM 03-01 Part A.

An assessment was carried out on the routing on the external ductwork. The original solution was to route the ductwork round the parapet wall above the Paru garden, but the ductwork configuration required to route into the ground floor overhang meant that this would significantly impact the natural daylight into the ground floor bedrooms. An alternative has been proposed and accepted that would result in the ductwork crossing the Paru garden but there are ways of minimising the visual impact of this by incorporating it within the garden landscape design. Refer to appendix 13 for details of all the architectural drawings.

3.2 Electrical

3.2.1 LV Distribution & Containment Strategy

The electrical supplies will be derived from outgoing ways on the mezzanine level Section Boards EC/1 & EC/2 within the Energy Centre. The supplies to each of these Section Boards are derived from separate Substations (EC/1 from Substation 2, EC/2 from Substation 1) which provides inherent resilience in the electrical supply. The new supplies will be arranged in a *'segregated duplicated essential service'* arrangement, where fully rated primary and secondary supplies are provided, complete with automatic transfer switches (ATSs), and cable segregation of minimum 2 metres internally and 5 metres externally to avoid the risk of one single action, e.g. digger cutting through a cable, jeopardising both supplies. The circuits will be protected by suitably rated TPN MCCB/MCB protective devices, with the manufacturer (Schneider) and range (Compact NSX/Acti9) of the protective devices the same as that installed within the existing section boards/distribution board. An electrical LV grading study of the LV distribution has been undertaken to ensure there are no issues with discrimination/selectivity of the protective devices.

The protective devices will be connected to 5-core XLPE/SWA/LSZH cables which will be suitably terminated, earthed, connected, identified and shrouded at either end. The cables will rise from the top of Section Boards EC/1 and EC/2 and be routed from the Mezzanine level within the Energy Centre to the position of the new AHU enclosure at the rear of the existing Energy Centre Building (on grass area at upper level) on segregated cable tray runs (minimum 2 metres internally and 5 metres externally). The cables will then penetrate the existing building and enter the new AHU enclosure and onto segregated cable tray runs (1no. tray for each power supply - 2no. total + 1no. duct for IT/BMS Cabling). The cables will be routed into 2no. suitably sized and rated wall mounted TPN Distribution Boards (1no. primary supply, 1no. secondary supply) which will each be located at a suitable location within the AHU enclosure (refer to enclosure layouts for final configuration and position). The TPN Distribution Boards specified are of the same manufacturer as that installed elsewhere on site (Schneider), and be complete with incoming switch disconnect, outgoing MCBs/RCBOs, blanked ways and metering. The metering/monitoring strategy will follow that which is installed elsewhere on site. All MCCBs supplying the new Distribution Boards shall have the functionality to be connected to the site wide energy metering/monitoring system. The works to connect the MCCBs to the metering/monitoring system shall be included in the scope of this project.

The supplies for the AHUs will be derived from spare ways on the TPN Distribution Boards and will be protected via suitably rated MCBs/RCBOs. Each AHU will have a dedicated duplicated essential supply from the TPN Distribution Boards, which will be wired in 5-core XLPE/SWA/LSZH cable (1no. primary supply and 1no. secondary supply per AHU). The supply cables will be terminated, earthed, connected, identified and shrouded at either end.

New electrical supplies for the Pump Control Panel shall be derived from spare ways on Section Boards EC/1 and EC/2 (Primary and Secondary supplies). The cables shall be protected by suitably rated MCCBs, which will have the functionality to be connected to the site wide energy metering/monitoring system. The works to connect the MCCBs to the metering/monitoring system shall be included in the scope of this project. The protective devices will be connected to 5-core XLPE/SWA/LSZH cables which will be suitably terminated, earthed, connected, identified and shrouded at either end. The cables will rise from the top of Section Boards EC/1 and EC/2 and be routed from the Section Board positions to the position of the new Pump Control Panels, utilising existing containment where possible, otherwise, on new perforated cable tray, segregated by minimum 2 metres.

The cable containment within the enclosures shall comprise segregated perforated metallic cable tray routes for primary and secondary supplies to AHUs, as well as metallic trunking/conduit final circuit routes for lighting and small power. Each AHU will have a means of local isolation, which will be via suitably rated rotary isolator installed adjacent to the relevant item of plant. A dedicated run of perforated ELV tray shall be provided for fire and data cabling. All containment suspensions shall be via screwed rod with appropriate fixings, brackets, etc.

Each of the cables from the Section Boards (EC/1 & EC/2) to the Pump Control Panel and from the TPN DBs to the AHU and chillers will be terminated into a changeover panel - 1no. ATS for the Pump Control Panel and 1no.

ATS for each of the AHUs and chillers (7no. total). The make and model of the ATSs selected are detailed on the data sheets provided. ATSs need to be connected to the BMS, with reporting of:

- The way/board that is being supplied
- Fault conditions

For all power-system cables (including for small power), installed within buildings, only cables with a Euroclass of D_{ca} , s1b, d2, a2 or better will be installed.

Where installed outside of buildings, only cables with a Euroclass of E_{ca} or better will be installed.

3.2.2 Data Strategy

IT structured cabling for connection to the site wide BMS system will be derived from the node data cabinet that is located within the Energy Centre, on the basis that the distance between the node cabinet and the new AHUs on this level do not exceed 90m. The cable will be rated for installation in external/subterranean areas and be suitably segregated from LV power cabling for the new AHUs via dedicated segregated cable containment. This will include separate/divided containment and separate ducting (where installed below ground) – existing data cable containment will be utilised where possible. A dedicated run of perforated ELV tray shall be provided for fire and data cabling. 1no. twin RJ45 data outlet will be installed for each of the AHUs, which will be mounted adjacent to the items of plant/equipment.

For all telecoms-system cables within the scope of BS 6701 and installed within buildings, only cables with a Euroclass of C_{ca} , s1b, d2, a2 or better will be installed.

Where installed outside of buildings, only cables with a Euroclass of E_{ca} or better will be installed.

3.2.3 Fire Alarm Strategy

The AHUs will be interfaced to the fire alarm panel to ensure communication between the fire alarm system and the ventilation system in the Isolation Rooms. The cause and effect strategy for the shutdown, or continual running, of the ventilation plant within the Isolation Rooms will be developed in conjunction with the NHSL Fire Officer, taking cognisance of the patient group that are likely to occupy the Isolation Rooms. The fire alarm interfaces will be fully compatible with the existing Gent 'Vigilant' fire alarm system. Fire Alarm cabling will be connected to the nearest fire alarm loop, subject to loop load characteristics being checked by the fire alarm specialist. Where there is insufficient loop current capacity, the interfaces will be connected to the nearest loop that does have spare loop current capacity to power the interfaces. All interface units will be loop powered rather than mains powered.

All cabling for the fire alarm interface units will be wired in enhanced grade soft-skinned fire-resistant cable with red outer sheath and utilise existing cable containment within the building where possible. It is anticipated that the cabling will be connected to the fire alarm loop wiring within the Energy Centre building, however, this requires further investigation and confirmation of spare loop capacity available on the relevant loops, as previously stated. Cables will be routed in dedicated segregated containment from an EMC perspective (fire alarm cabling to be segregated from LV cabling).

All cables used for fire resistance will have received certification of their compliance via the LPCB.

3.2.4 AHU Enclosure Services (Electrical)

The new AHU enclosure will be provided with general and emergency lighting provisions in accordance with CIBSE/SLL guidance and BS5266-1 respectively. The general lighting fittings shall comprise linear sealed IP65 LED luminaires, IP65 rated light switches and associated cabling and containment. The emergency light fittings shall comprise non-maintained emergency twin-spot luminaires and illuminated signage.

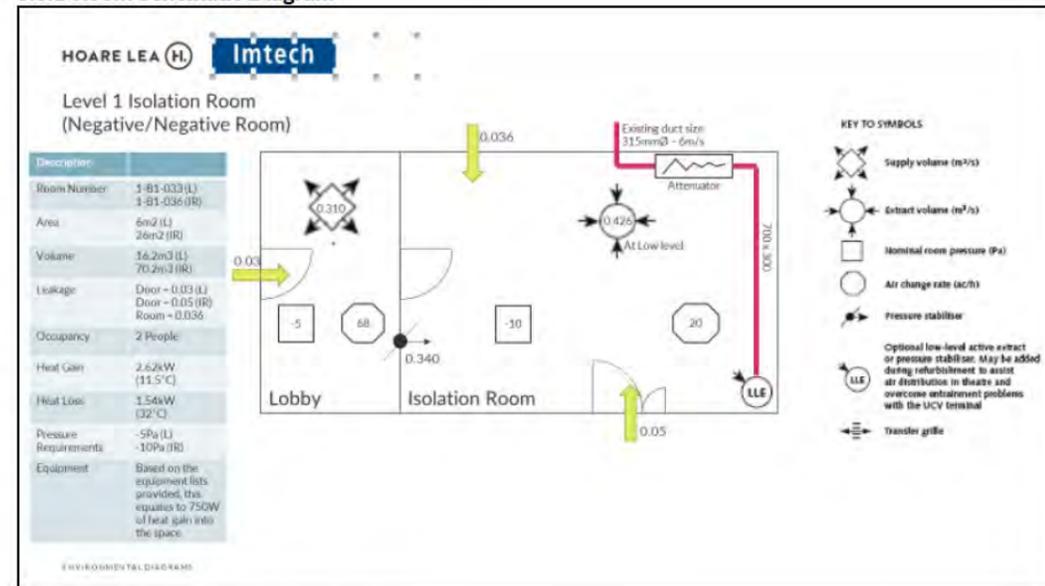
Fire detection and alarm equipment shall be provided within the enclosure in accordance with BS5839-1. This shall comprise fire detectors, break-glass call points, sounders and visual alarm devices (VADs). The devices within the enclosure shall be connected to the existing fire alarm system by extending the nearest loop within the energy centre building. The Fire Alarm Contractor shall carry out calculations to confirm there are no issues

spare loop capacity available on the relevant loop. Battery capacity/duration calculations shall also be undertaken, where appropriate.

Lightning protection and transient voltage surge suppression shall be provided to the enclosure in accordance with a Class I system to BS EN 62305 standards. The Lightning Protection Specialist Contractor shall be responsible for designing an appropriate system, including tying into any existing systems, where required.

3.3 Negative/Negative Isolation Room.

3.3.1 Room Schematic Diagram

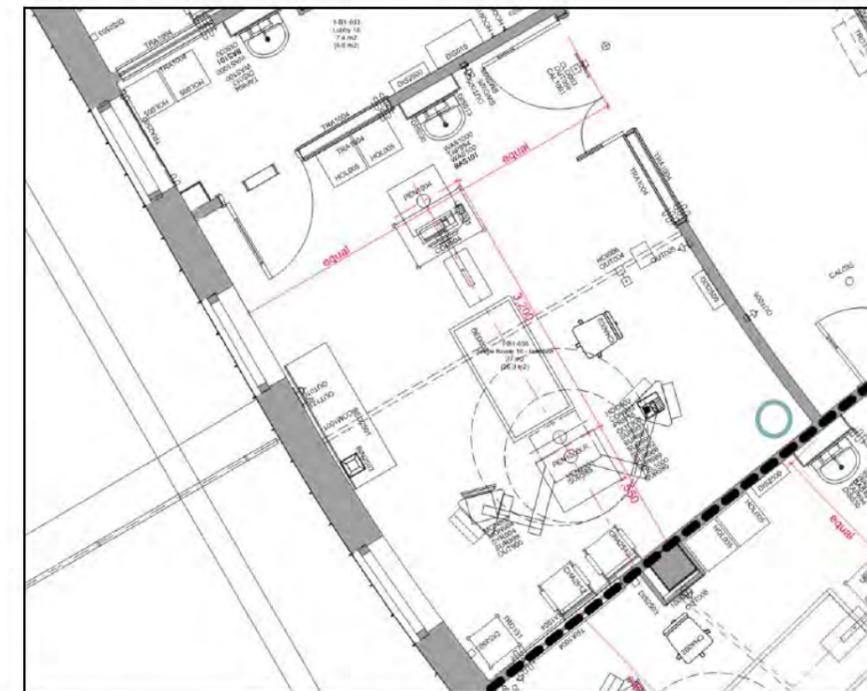


Excerpt from Hoare Lea Environmental Diagrams

The requirement for the Negative/Negative Isolation room is to convert room 1-B1-036 into a negative pressure isolation room with cascades of -5Pa corridor to lobby and -10Pa lobby to room all at 10 Ac/h in accordance with HBN 04-01 Supp 1.

The proposed strategy would be to supply conditioned air from the new Isolation AHU's (located next to the energy centre) into the Lobby at high level. Air would then be drawn into the Isolation room via an enhanced extract system (through a bigger pressure stabiliser) utilising the existing 315mmØ fire rated ductwork system. The ventilation system will be extended to low level to provide a better distribution of air within the room.

4. Equipment Layout



Excerpt from Drawing HLM-Z4-01-PL-400-418 Rev I

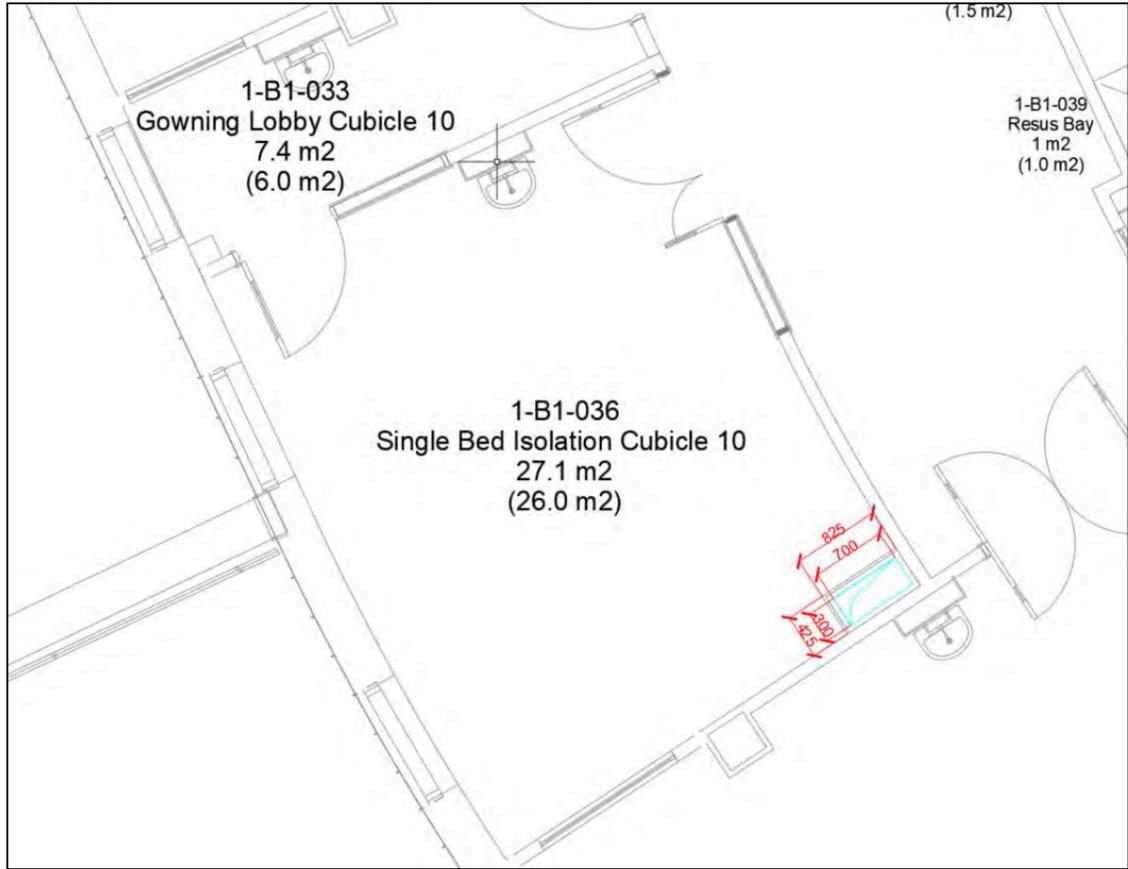
As discussed in technical workshop of 30/06/20, to ensure good air movement through the room, the existing extract will be extended to just above low level in the back corner of the room. The most appropriate location is the back corner

We have assessed the equipment layout for the room and NHSL have suggested that there would be no change in layout associated with the change to the ventilation strategy or future proofing required. The room equipment layout and survey photos do not show any equipment or furniture in this corner that would prevent extending the duct to low level in this location.



Images from Matterport Survey

4.1.1 Proposed duct to low level



Proposed low level duct location

The proposed extract duct would be extended to low level in a boxed detail with an angled grille set at 80°. The duct/boxing would stop short of the floor to allow cleaning below.

The grille would be a pull off type face for ease of cleaning as shown in Figure 5 below.



Figure 5 - Low level extract detail.

5. Level 03 Works

5.1 Mechanical

5.1.1 Ventilation Strategy

5.1.1.1 Isolation Room AHUs

There are 5 Isolation rooms associated with the Level 3 Haematology and Oncology.

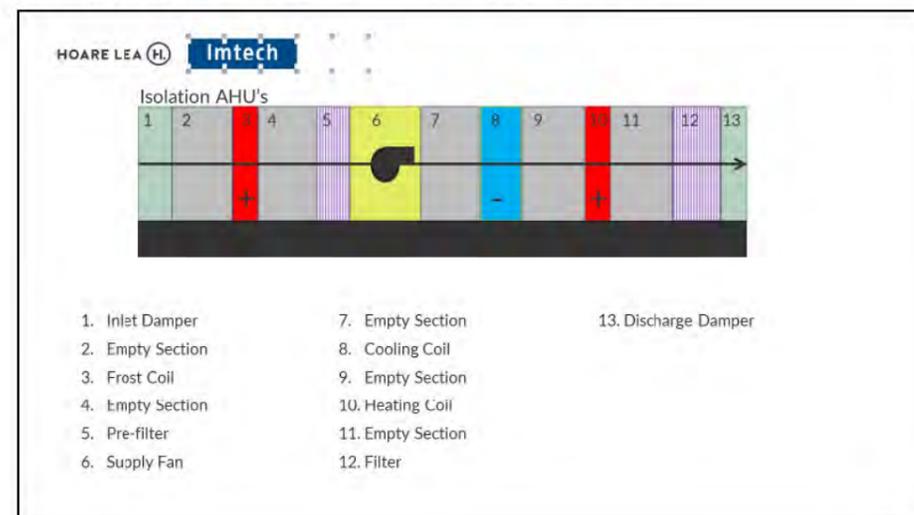
During the first technical workshop 2 options were presented to achieve compliance with HVC107:

- Individual Air Handling Units per Isolation Room
- Run & Standby AHU's serving the 4 Isolation Rooms.

It was agreed that for temperature control purposes that individual Air Handling Units were the correct solution. The advantages and disadvantages of this option are shown below:

Advantages	Disadvantages
Simpler control as each supply AHU would serve each Isolation room.	Although the AHU's would be smaller, a slightly larger plant area would be required.
Commissioning and balancing would be easier to achieve and maintain (+pressure).	Although smaller, there would be 5 x 315mm diameter duct as opposed to 1 x 700x400 duct. (coordination issue)
Individual temperature control in each room as each AHU would be able to supply at different temperatures.	There would be more builderswork holes through the façade.
This option fits within the plant area available.	
This option achieved complete fire and smoke separation from all other areas.	

The 'supply only' Air Handling Units will be configured as follows:



A letter will be issued to the successful Air Handling Manufacturer confirming that Heat recovery is not required as per the requirements of the ErP regulations.

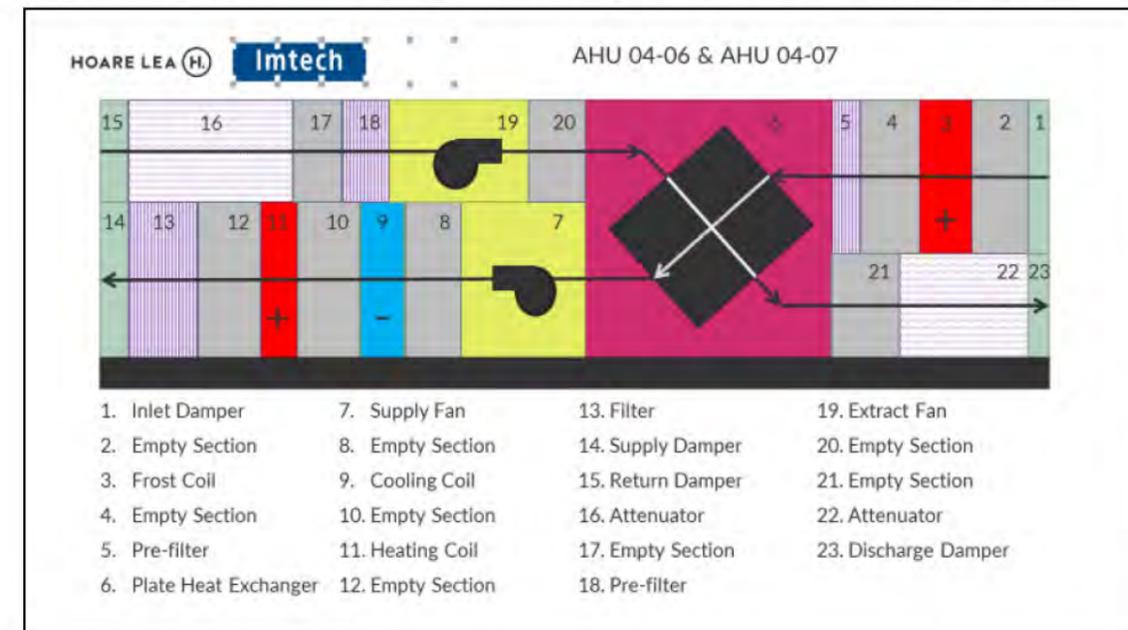
The isolation room air handling units will be located on the grass areas adjacent to the energy centre mezzanine level.

5.1.1.2 General Supply and Extract AHU

The existing supply and extract air handling unit serving the Level 3 Haematology and Oncology will be replaced with a new unit that can deliver the enhanced air volume and pressure to achieve the requirements of HVC107.

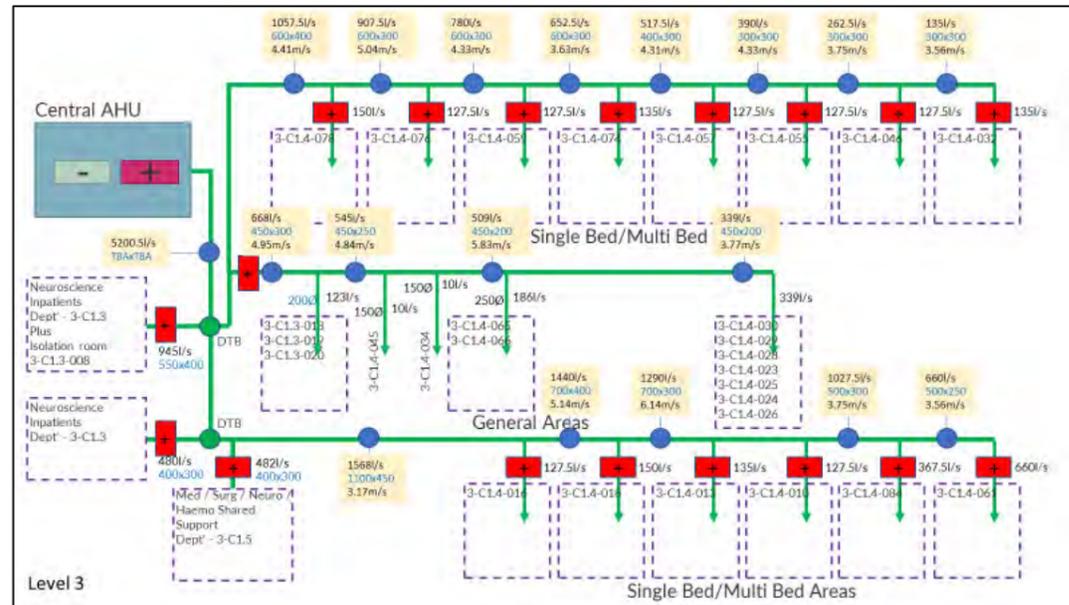
A site measured survey has been carried out and a new flat packed unit can be installed in the area of the existing unit (AHU04-07).

As agreed during Technical Workshop 3 a plate heat exchanger will be utilised for heat recovery purposes.



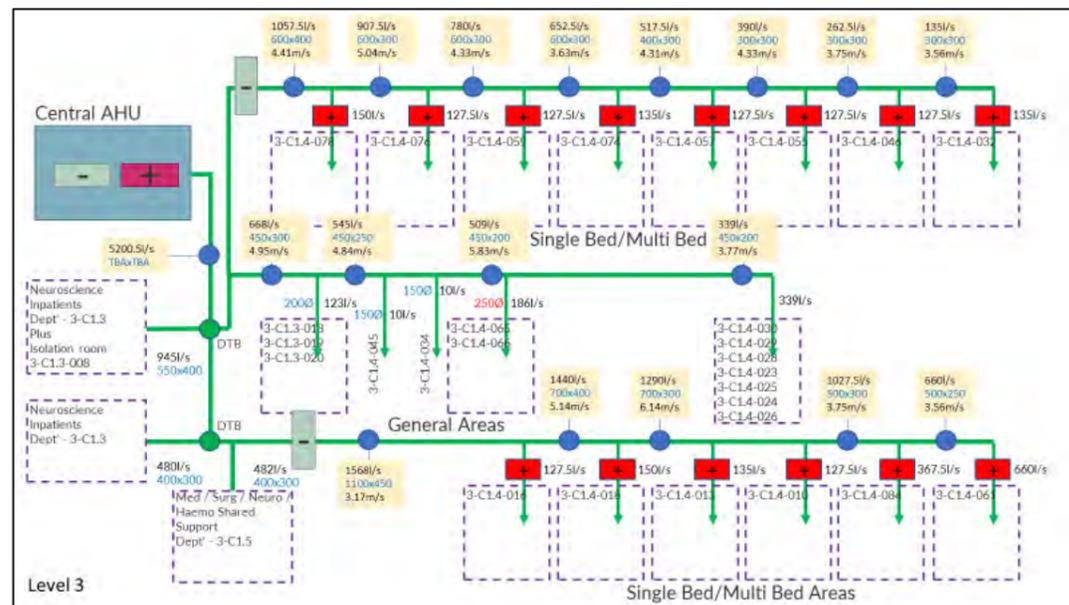
5.1.1.3 General Supply and Extract AHU Schematic (Option1)

Option 1 is our favoured solution as this removed the inherent risk of duct mounted cooling coils. All cooling is delivered within the central air handling unit (supply temp of 15 deg C) with duct mounted re-heater coils providing terminal re-heat.



5.1.1.4 General Supply and Extract AHU Schematic (Option2)

Option 2 provides a slight energy reduction (please refer to section 11 of this report, however as stated in section 4.1.1.3 the legionella risk of installing duct mounted cooling coils and the added maintenance, would be too great and would outweigh the slight increase in energy.



5.1.1.5 Changes to Existing Ductwork

Based on the ductwork sizing in section 4.1.1.3/4.1.1.4, most of the ductwork does not require to be changed (ductwork sizing identified in blue).

5.1.2 Heating Strategy

The new proposed Isolation room AHU's will be served from the existing LTHW connection serving the level 2 Theatre Air Handling plantroom. The pipework will be extended externally to serve the 5 No. new supply only units.

As the radiant panel circuit is being significantly modified due to the majority of radiant panels being removed, this will be utilised to serve the new proposed heater batteries in addition to the remaining radiant panels. The new pipework will be installed in stainless steel. A replacement pump will be installed to deliver the enhanced flowrate. This pump will remain as a constant temperature circuit as per the previous design.

5.1.3 Cooling Strategy

A stand-a-lone Chilled Water Air Cooled Chiller (run and standby configuration) will be installed adjacent to the new AHU plantroom enclosure on the grass area adjacent to the energy centre mezzanine level. The Chiller will deliver Chilled Water to the 5 No. Isolation room Air Handling Unit cooling coils.

30% Glycol will be added to the CHW circuit in addition to trace heating to ensure there are no issues in winter periods.

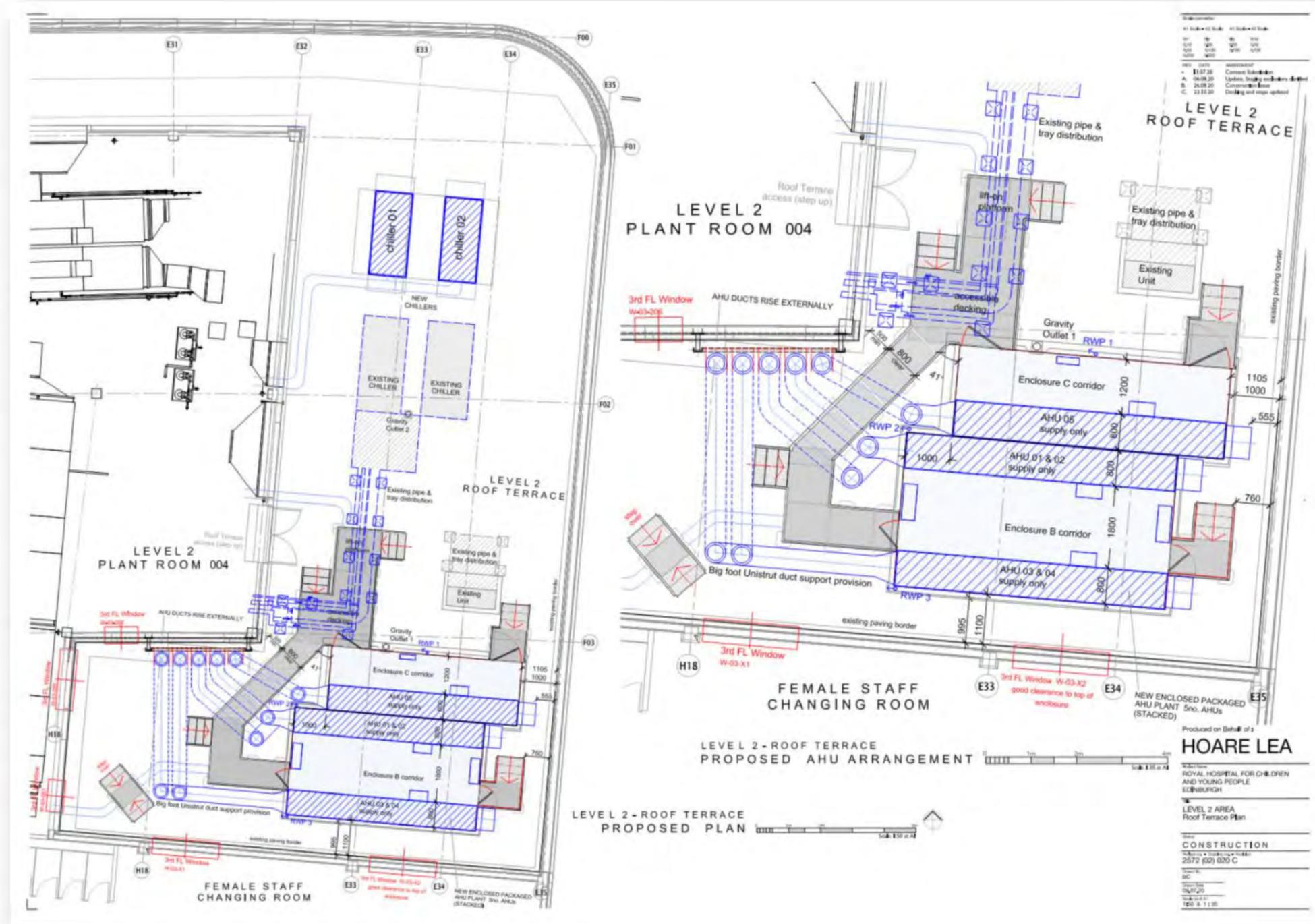
5.1.4 AHU Enclosure Services (Mechanical)

The new Isolation room AHU enclosures will come as a packaged plantroom, complete with all internal pipework, valves and control devices.

As the enclosure is constructed from Steel this will not impact the Fire Strategy.

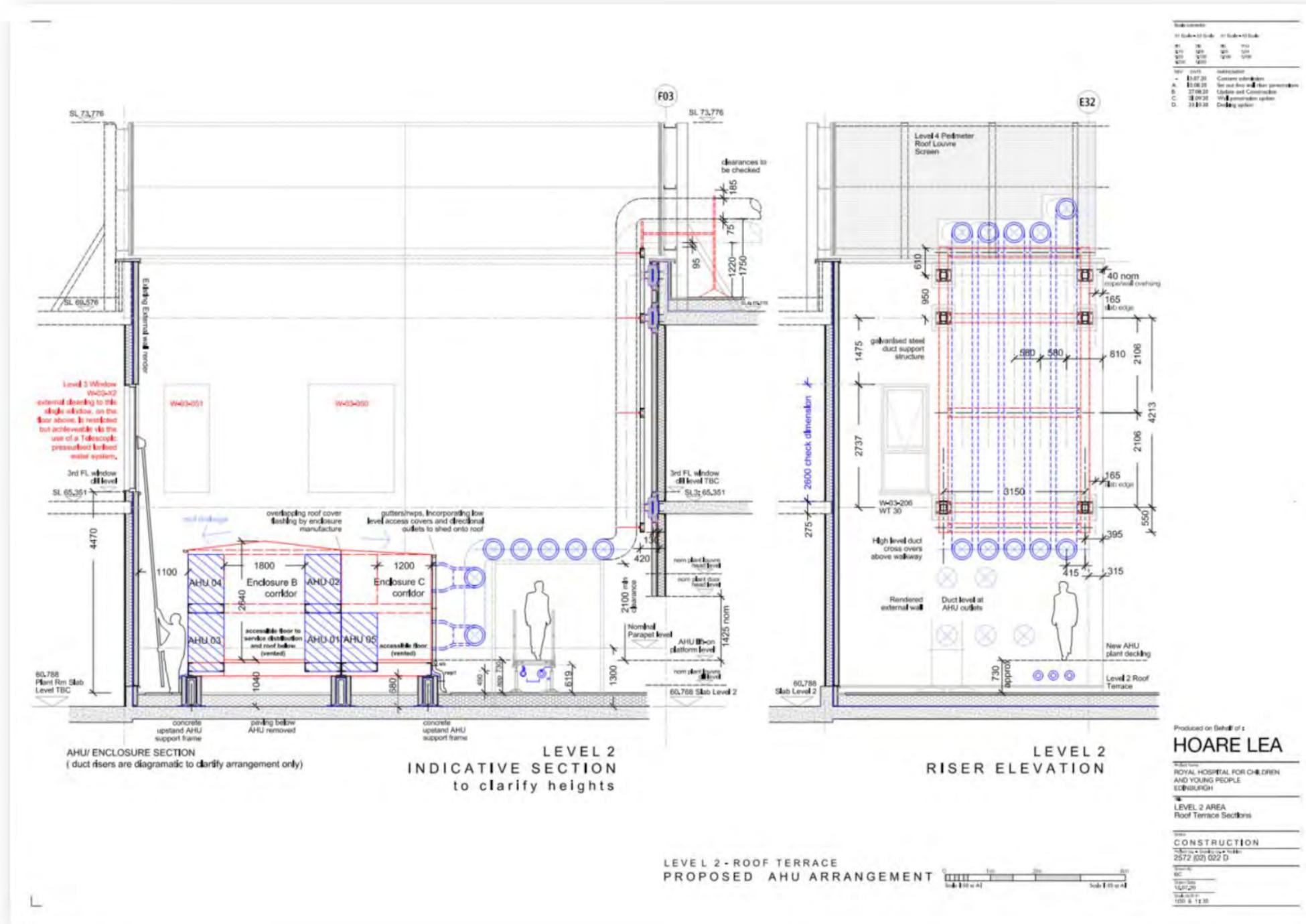
5.1.5 Enclosure Location

The level 3 Isolation room Air Handling units will be located on the level 2 flat roof adjacent to the Theatre AHU plantroom. Refer to Oberlanders drawings 2572 (02)020C Level 2 Roof Plan & 2572 (02)022D Level 2 Sections.



Level 2 - Plan





Level 2 - Section



5.2 Electrical

5.2.1 LV Distribution & Containment Strategy

The electrical supplies will be derived from outgoing ways on the Level 2 Plant Room Section Boards PE3/2 & PE4/2. The supplies to each of these Section Boards are derived from separate Substations (PE3/2 from Substation 2, PE4/2 from Substation 1) which provides inherent resilience in the electrical supply. The new supplies will be arranged in a *'segregated duplicated essential service'* arrangement, where fully rated primary and secondary supplies are provided, complete with automatic transfer switches (ATSs), and cable segregation of minimum 2 metres internally and 5 metres externally, to avoid the risk of one single action, e.g. digger cutting through a cable, jeopardising both supplies. The circuits will be protected by suitably rated TPN MCCBs/MCB protective devices, with the manufacturer (Schneider) and range (Compact NSX/Acti9) of the protective devices the same as that installed within the existing section board/distribution board. An electrical LV grading study of the LV distribution has been undertaken to ensure there are no issues with discrimination/selectivity of the protective devices.

The protective devices will be connected to 5-core XLPE/SWA/LSZH cables which will be suitably terminated, earthed, connected, identified and shrouded at either end. The cables will rise from the top of Section Boards PE3/2 and PE4/2 and be routed from the section board position up onto the existing main cable tray run within the Plant Room. The cables will then transit onto a new sections of cable tray, which will be suspended at high level using supports and screwed rod/suspension wire. The power cables will be segregated by a minimum of 2 metres internally on diverse cable containment systems. The cables will then exit the plant room at high level, drop to ground level, and run at low level on separate segregated containment systems to the location of the AHU enclosure. The power cables will be segregated by a minimum of 5 metres externally, routed on either side of the flat roof area. The containment system will be elevated from the ground using a Big Foot System. The cables will then be terminated into 2no. suitably sized and rated wall-mounted TPN Distribution Boards (1no. primary supply, 1no. secondary supply), which will be located at a suitable location within the AHU enclosure (refer to enclosure layouts for final configuration and position). The TPN Distribution Boards will be of the same manufacturer as that installed elsewhere on site (Schneider), and be complete with incoming switch disconnecter, outgoing MCBs/RCBOs, blanked ways and metering. The metering/monitoring strategy will follow that which is installed elsewhere on site. All MCCBs supplying the new Distribution Boards shall have the functionality to be connected to the site wide energy metering/monitoring system. The works to connect the MCCBs to the metering/monitoring system shall be included in the scope of this project.

The supplies for the AHUs will be derived from spare ways on the TPN Distribution Boards and will be protected via suitably rated MCBs/RCBOs. Each AHU will have a dedicated duplicated essential supply from the TPN Distribution Boards, which will be wired in 5-core XLPE/SWA/LSZH cable (1no. primary supply and 1no. secondary supply per AHU). The supply cables will be terminated, earthed, connected, identified and shrouded at either end.

New electrical supplies for the Pump Control Panel shall be derived from spare ways on Section Boards PE3/2 and PE4/2 (Primary and Secondary supplies). The cables shall be protected by suitably rated MCCBs, which will have the functionality to be connected to the site wide energy metering/monitoring system. The works to connect the MCCBs to the metering/monitoring system shall be included in the scope of this project. The protective devices will be connected to 5-core XLPE/SWA/LSZH cables which will be suitably terminated, earthed, connected, identified and shrouded at either end. The cables will rise from the top of Section Boards PE3/2 and PE4/2 and be routed from the Section Board positions to the position of the new Pump Control Panel, utilising existing containment where possible, otherwise, on new perforated cable tray, segregated by minimum 2 metres.

The cable containment within the enclosures shall comprise segregated perforated metallic cable tray routes for primary and secondary supplies to AHUs, as well as metallic trunking/conduit final circuit routes for lighting and small power. Each AHU will have a means of local isolation, which will be via suitably rated rotary isolator installed adjacent to the relevant item of plant. A dedicated run of perforated ELV tray shall be provided for fire and data cabling. All containment suspensions shall be via screwed rod with appropriate fixings, brackets, etc.

Each of the cables from the Section Boards (PE3/2 & PE4/2) to the Pump Control Panel and from the TPN DBs to the AHU and chillers will be terminated into a changeover panel - 1no. ATS for the Pump Control Panel and 1no. ATS for each of the AHUs and chillers (8no. total). The make and model of the ATSs selected are detailed on the data sheets provided. ATSs shall be connected to the BMS, with reporting of:

- The way/board that is being supplied
- Fault conditions

For all power-system cables (including for small power), installed within buildings, only cables with a Euroclass of D_{ca}, s1b, d2, a2 or better will be installed.

Where installed outside of buildings, only cables with a Euroclass of E_{ca} or better will be installed.

5.2.2 Data Strategy

IT structured cabling for connection to the site wide BMS system will be derived from the nearest node data cabinet, on the basis that the distance between the node cabinet and the new AHUs on this level do not exceed 90m. The cable will be rated for installation in external/subterranean areas and be suitably segregated from LV power cabling for the new AHUs via dedicated segregated cable containment. This will include separate/divided containment and separate ducting (where installed below ground) – existing data cable containment will be utilised where possible. A dedicated run of perforated ELV tray shall be provided for fire and data cabling. 1no. twin RJ45 data outlet will be installed for each of the AHUs, which will be mounted adjacent to the items of plant/equipment.

For all telecoms-system cables within the scope of BS 6701 and installed within buildings, only cables with a Euroclass of C_{ca}, s1b, d2, a2 or better will be installed.

Where installed outside of buildings, only cables with a Euroclass of E_{ca} or better will be installed.

5.2.3 Fire Alarm Strategy

The AHUs will be interfaced to the fire alarm panel to ensure communication between the fire alarm system and the ventilation system in the Isolation Rooms. The cause and effect strategy for the shutdown, or continual running, of the ventilation plant within the Isolation Rooms will be developed in conjunction with the NHS Fire Officer, taking cognisance of the patient group that are likely to occupy the Isolation Rooms. The fire alarm interfaces will be fully compatible with the existing Gent 'Vigilon' fire alarm system. Fire Alarm cabling will be connected to the nearest fire alarm loop, subject to loop load characteristics being checked by the fire alarm specialist. Where there is insufficient loop current capacity, the interfaces will be connected to the nearest loop that does have spare loop current capacity to power the interfaces. All interface units will be loop powered rather than mains powered.

All cabling for the fire alarm interface units will be wired in enhanced grade soft-skinned fire-resistant cable with red outer sheath and utilise existing cable containment within the building where possible. It is anticipated that the cabling will be connected to the fire alarm loop wiring within the Level 2 Plant Room, however, this requires further investigation and confirmation of spare loop capacity available on the relevant loops, as previously stated. Cables will be routed in dedicated segregated containment from an EMC perspective (fire alarm cabling to be segregated from LV cabling).

All cables used for fire resistance will have received certification of their compliance via the LPCB.

5.2.4 AHU Enclosure Services (Electrical)

The new AHU enclosure will be provided with general and emergency lighting provisions in accordance with CIBSE/SLL guidance and BS5266-1 respectively. The general lighting fittings shall comprise linear sealed IP65 LED luminaires, IP65 rated light switches and associated cabling and containment. The emergency light fittings shall comprise non-maintained emergency twin-spot luminaires and illuminated signage.

Fire detection and alarm equipment shall be provided within the enclosure in accordance with BS5839-1. This shall comprise fire detectors, break-glass call points, sounders and visual alarm devices (VADs). The devices within the enclosure shall be connected to the existing fire alarm system by extending the nearest loop within

the main hospital building. The Fire Alarm Contractor shall carry out calculations to confirm there are no issues with spare loop capacity available on the relevant loop. Battery capacity/duration calculations shall also be undertaken, where appropriate.

Lightning protection and transient voltage surge suppression shall be provided to the enclosure in accordance with a Class I system to BS EN 62305 standards. The Lightning Protection Specialist Contractor shall be responsible for designing an appropriate system, including tying into any existing systems, where required.

6. Level 04 Works

6.1 Mechanical

The two existing air handling units serving Level 1 Paediatric Critical Care and Level 3 Haematology and Oncology (AHU04-06 & AHU04-07) will be replaced with new air handling units designed to deliver the correct air volumes to achieve the SHTM requirements within HVC107.

Due to the configuration of the new air handling units, the intake and discharge ductwork will be re-configured to connect to the existing louvres and supply and extract ductwork.

LTHW and CHW connections will be reconfigured to provide the required flowrates to achieve the heating and cooling duties.

The CHW pump will be replaced to allow the enhanced flowrate to be achieved.

6.2 Electrical

6.2.1 AHU 04:06 & 04:07 Electrical Supplies

The existing electrical supply cabling and protective devices from Section Boards PE2/4 and PE3/4 on Level 4 to the existing Automatic Transfer Switches (ATSs) within the Level 4 Air Handling Unit Plant Room for AHU 04:06 and 04:07 have been assessed for current carrying capacity and circuit protection and are considered suitable for re-use. It is proposed that the existing MCCBs within Section Boards PE2/4 and PE3/4 are retained, the existing circuit cabling from Section Boards PE2/4 and PE3/4 to the existing ATSs are retained, and the existing ATSs units for AHU04:06 and AHU04:07 are also retained. Each of these items will be inspected and tested prior to final installation to confirm their suitability for re-use, however, given the age and condition of the building it is not anticipated that there will be any issues with condition or integrity.

It is proposed that the existing switched supply cabling from each of the ATSs to the existing AHUs shall be stripped out and replaced with new switched supply cabling and containment (where required) of suitable size/rating. The existing means of local isolation shall be assessed for re-use and replaced with new suitably rated 4 pole isolators where required (1no. for each new AHU).

7. Air Handling Units

All air handling units will be ERP2018 compliant.

The Fans and motors are sized for dirty (mean) filter allowance.

All units will be SHTM03-01 complaint and will have clear identification as to the area served.

Project split into two different elements: -

1. Plantroom 3 – Central AHU's (04-06 & 04-07)
2. Isolation Room AHU's + Enclosures

7.1 Plantroom 3

The 2 new, internally located, units (AHU 04-06 & 07) will be supplied in factory assembled sectional cabinets, sized to go through the Plantroom 3 double doors, with an opening size of 2100 high x 1800 wide x max length of 3500mm.

The units will have Anodised aluminium extrusion framework.

The units will have Foam infill panels 50mm thick CFC free.

The AHU leakage standard on all air handling units to be L1.

The outer and inner panels will be pre coated steel RAL9002 Grey/White (1.0mm/1.0mm panel skins for the 2 Internally located AHU's)

All bases are sized sufficient for trapping and allowing for 1:20 external sloping drain pans-250mm high formed channel.

The only section that needs to be supplied to site in 'kit form' and built up on site is the plate heat exchanger section.

Broken down the 'cube' has dimensions of: -

- AHU 04/06 cube size is.1610 x 1735 x 3400mm
- AHU 04/07 cube size is.1410 X 1535 x 3010mm

These units to be built up on site and will have a full pressure test carried out to prove compliance.

7.2 Isolation Rooms & Enclosure's

The nine externally located air handling units (AHU/03-ISO-01 to 05 & AHU/ISO-01 to 04) will be double or single stacked, then shipped to site in largest sections as possible and where applicable certified lifting lugs will be fitted.

The units will have Anodised aluminium extrusion framework.

The units will have Foam infill panels 50mm thick CFC free.

The AHU leakage standard on all air handling units to be L1.

The outer Panel RAL 7016 Anthracite and inner panels pre coated steel RAL9002 Light Grey/White (1.5mm/1.5mm panel skins for the 9 Externally located AHU's, this to minimise noise breakout).

All bases are sized sufficient for trapping and allowing for 1:20 sloping external drain pans-300mm high pfc as shown above.

Outdoor unit bases will be fully painted-weatherproof, finish same as unit panels RAL 7016 Anthracite.

The Entire enclosure (central corridor and AHU's) will be fully weatherproof, with intake weather louvre on fresh air inlet and arranged with centralized corridor (2000mm Enclosure A, 1800mm Enclosure B & 1200mm Enclosure C), complete with single or double sloping roof, gutters and down pipes. Entire enclosure, sloping roof and gutters and down pipes to be finished in White/light Grey pre coated steel.

Enclosure corridor will have internal lights, access doors at each end of the enclosure, note pipework for all water coils to be at low level via the 200mm (x 75mm) pfc high base frame.

Internal sectional sizes for pipework/cladding will be 2 x slot sizes of 180mm high x 200mm wide located at each size of the corridor frame work, each slot to serve the 6 x water coils (12 x flow and return water pipes) Current pipe sizes are:- Frost & Cooling coil 20mm dia and Re Heating coil 15mm dia.

The corridor flooring will be constructed with GRP grating suitable with removable panels, these panels to measure approx. 2000mm wide x 1000mm long (so 6 x GRP panels in total). Base frame foundation detail will be shown on the 'provisional' general arrangement drawing.

7.3 Fans

EC Plug speed controllers, details of each as follows: -

Direct Driven EC Fan's (all-Supply & Extract)

All fans sized on dirty (mean) filter condition.

For the 9 off units serving the Isolation Rooms, the Supply EC Fans they are to be also sized at +10% supply airflow rate capability margin. This is in addition to the 6% duct leakage allowance.

Where specified EC Fan Array arrangement will be selected such that if one fan fails the other remaining fans can ramp up to achieve 100% design duty. Backdraught dampers fitted where applicable.

We have allowed for 2, 3 or 4 Fan Array (refer to schedules) to meet duties and allowed for best possible efficiencies,

EC Type plug fans are complete with IE4 rated motor (IE5 motors out soon) and integral speed controller, thus negating the need for a separate frequency drive inverter. Speed is controlled via 0/10v signal from either BMS or electronic pressure transducer. EC Fans will be run via control panel signal.

The EC motors have thermal overload protection built into the motor electronics, rather than external thermistors or TOP wiring terminals. You can also read the electronics temperature from the fans Modbus connection.

Viewing port (200mm) will be included for each fan and general access section.

Factory fitted motor isolators will be fitted externally on all fan sections, each isolator, complete with auxiliary contracts.

All Fan/motor includes Plug & Socket-Supplied and wired.

Drive screens will be fitted on all fan access doors.

7.4 Dampers

All dampers will be suitable for motorisation by the control's specialist.

Damper actuators will be supplied and fitted by the control's specialist.

As standard all dampers to be opposed blade operation and constructed from aluminium, with edge and side seals.

Hand quadrants will be allowed on all room side dampers.

7.5 Water Coils

Air/Water design conditions for AHU 04-06 & 07, as follows: -

- Frost coil Air On/Off -10/5°C, Water On/Off 80/60°C, max water PD 10kPa
- Chilled Water Coil Air On 28/22°C (db/wb) Air Off 11.3/11.3°C (db/wb), max water PD 40Kpa
- Re Heating coil Air On/Off 10/18°C, Water On/Off 80/60°C, max water PD 10kPa

Air/Water design conditions for the Isolation Room AHU's, as follows: -

- Frost coil Air On/Off -10/5°C, Water On/Off 80/60°C, max water PD 10kPa
- Chilled Water Coil Air On 28/22°C (db/wb) Air Off 11.3/11.3°C (db/wb), max water PD 40Kpa
- Re Heating coil Air On/Off 5/32°C, Water On/Off 80/60°C, max water PD 10kPa

Coil construction for all water coils, copper tubes, headers and fins (excluding frost coil which will be bare tube to comply with SHTM) stainless steel casings.

Cooling coil and PHE drain pans to be stainless steel and with a 1:20 slope. Moisture eliminator fitted to cooling coil which is to be removable as per SHTM 03/01

In line with the requirements of SHTM 03/01 we have allowed for the two large indoor units (AHU 04-06 & 07), water coils to be split and staggered in direction of airflow (arranged 1 high x 2 wide) when single coil exceeds 1000mm in width. The smaller 9 off outdoor AHU's would be single coil arrangement.

7.6 Filters

M5 Epm10 55% pre filters will be installed at supply inlet, each with front withdrawal frames for the 9 off external AHU's (AHU/03-ISO-01 to 05 & AHU/ISO-01 to 04)

F9 Epm1 90% Bag filters will be installed at supply discharge, each with front withdrawal frames for the 9 off external AHU's (AHU/03-ISO-01 to 05 & AHU/ISO-01 to 04)

M5 Epm10 55% pre filters will be installed at supply & extract inlet, with front withdrawal frames for the 2 off internal AHU's (AHU 04-06 & 07)

F9 Epm1 90% Bag filters will be installed at supply discharge, each with front withdrawal frames for the 2 off internal AHU's (AHU 04-06 & 07)

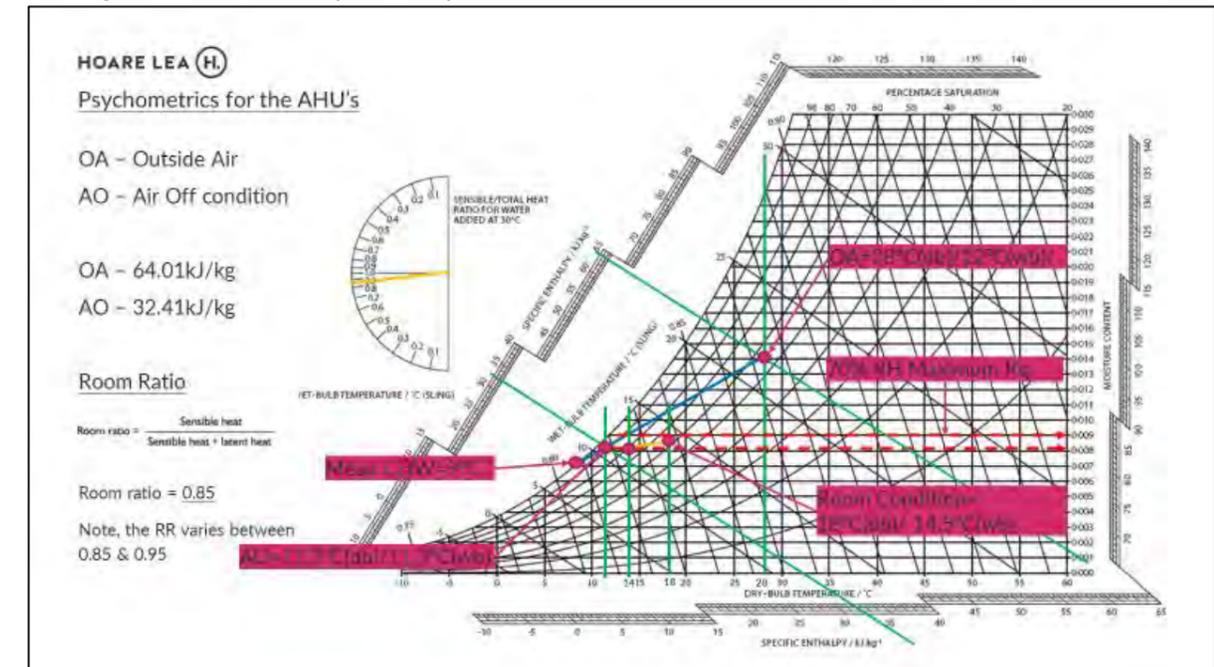
Initial fill and one spare set of all filters allowed.

Magnahelic filter gauge will be fitted to each filter bank.

7.7 Works Testing

One small and one large AHU was performance tested at Cramlington for Volumetric & leakage performance. All units will have a performance test carried out on site.

7.8 Psychrometric Chart (Summer)



It was agreed during Technical Workshop 5 that the external design condition will be based on 28°C(wb)/22°C(db). This offers a level of future proofing for the new air handling units against rising external temperatures, but we would highlight that all other air handling units on site are sized at 26°C(wb)/20°C(db).

In accordance with SHTM03-01 the maximum humidity level within the room should be no more than 70% (i.e. a moisture content of no more than 0.009 kg/kg at 18 °C).

The cooling coil has been sized for an enthalpy difference of (64.01-32.41) 31.6kJ/kg.

In winter (external temperature up to 11.3°C(wb)/11.3°C(db) and a moisture content of not more than 0.0081kg/kg is compliant without the need for de-humidification via the cooling coil.

The sensible and latent cooling has been calculated for each single bed room, multi bed room and each isolation room. The Room ratio varied between 0.85 and 0.95. for calculation purposes 0.85 has been used to prove that in summer conditions 70% is not exceeded.

7.9 Ductwork Sizing

All existing ductwork and new ductwork will be assessed using the duct sizing graph below. The aim is to utilise as much of the existing ductwork and routing as possible as other services have been installed below most of the prefabricated pipework modules.

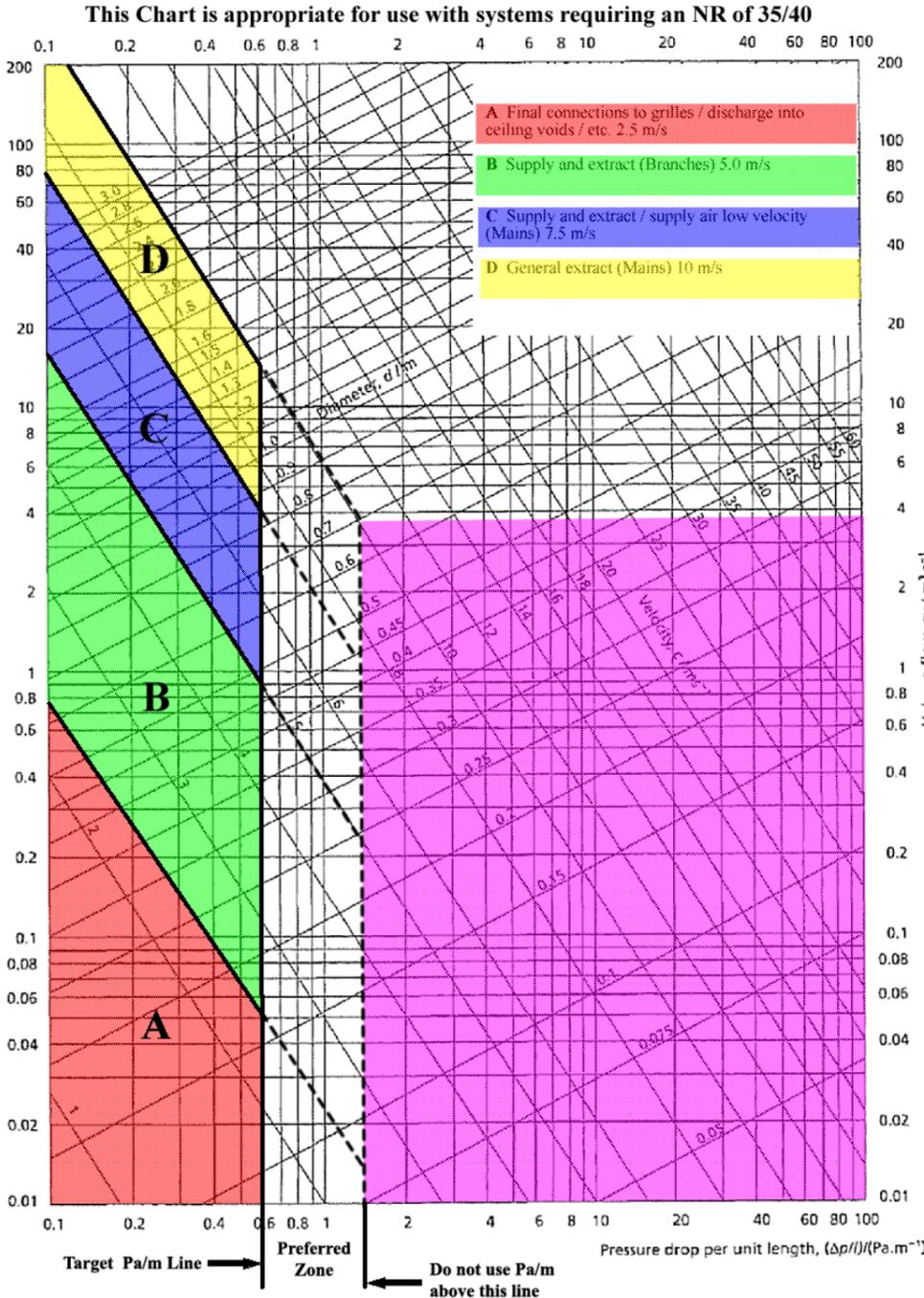
7.10 Margins

The following margins have been allowed within the AHU selections:

- Air Volume:**
 Isolation Room Air Handling Units - 10%
 AHU 04-06 - 18%
 AHU 04-07 - 19%

- Pressure**
 Isolation Room Air Handling Units - 10%
 AHU 04-06 - 10%
 AHU 04-07 - 10%

- Ductwork Leakage**
 Isolation Room Air Handling Units - 6%
 AHU 04-06 - 6%
 AHU 04-07 - 6%



8. Vibration Assessment



VIBRATION
VIBRATION CONSIDERATIONS

1

Edinburgh Royal Hospital for Children and Young People Vibration Considerations.

1. Introduction

This document sets out some high-level commentary on the perceived risks associated with MEP installations and the potential for adverse vibration effects, particularly within operating theatres.

2. Applicable Criteria.

The Department of Health guidance document HTM08:01 guidance document is the current acoustic design standard for healthcare facilities. With regards to vibration, any which is caused by plant, medical equipment or other internal activities should not affect the use of the building. In certain situations, special consideration may be required in ultra-sensitive areas, where vibration-sensitive medical equipment such as MRIs or microscopy units are located. In such instances, the suppliers of the equipment will prescribe limits for floor vibration prior to installation.

In addition to the above, there are also elements of design which are likely to be the responsibility of the structural engineer and includes floor response due to footfall and potentially the transmission of footfall or other activity-driven vibration to other areas. The HTM provides guidance on the level of vibration checks which should be undertaken as a minimum.

Structural vibration	Check
The structure has been designed to meet the required vibration levels from footfalls and other vibration sources	
Vibration in a non-sensitive space (for example corridors) does not cause excessive vibration in a nearby sensitive area	
Equipment is properly isolated from the structure	
Laboratory furniture has been assessed for vibration amplification	
Provisions have been made for very sensitive medical equipment	

2.1 Vibration

Vibration can be interpreted in a number of ways. The HTM sets out limits for Continuous and Intermittent vibration sources however for operating theatres the guidance states that intermittent vibration shall be minimised such that is no greater than limits imposed for continuous vibration.

Continuous vibration is assessed as the root mean square (RMS) value (averaged over one second) of the frequency weighted acceleration on the floors of occupied areas. Multiplying factors are applied to the baseline 0.005ms^{-2} limit of perception in the vertical orientation (perpendicular to the floor) and applied to areas categorised by their sensitivity. For operating theatres, the limit is defined by a multiplying factor of 1, meaning the limit of vibration is 0.005ms^{-2} for continuous or intermittent sources.

2.2 Noise

Structure-borne noise from mechanical plant vibration should meet the same overall MEP noise target for the room considered and is cumulative with any in-room component generated by plant or services. Within operating theatres, the MEP design criterion of NR40 should therefore be considered to comprise both in-room and structure-borne components. A well designed system will minimise the structural component such that the in-room contribution is dominant.

DOC-10-11954-05-MM-20200327-Vibration Considerations-0.docx.docx



VIBRATION
VIBRATION CONSIDERATIONS

2

3. Plant spaces considered.

The focus of this document is the AHU deck within Zone 3. The area contains a significant number of items and there is concern that vibration caused by the plant items may adversely affect the operating theatre areas below at Level 01.



Figure 1: Level 2 (Zone 3) AHU deck.

4. Good practise.

4.1 Generic advice

It is good practise to ensure that following:

- That all plant items are sufficiently isolated. In this situation, a minimum Vibration Isolation Efficiency (VE) of no less than 98% is advised.
- Connected pipe and or ductwork shall also be isolated. The initial recommendation is that this be implemented throughout the entire plant space and along any routes that service the operating theatres or risers that are common to them.
- Flexible connectors between pipes/ducts and machinery are to be used in all cases.
- Any pumps be installed upon a correctly designed inertia base.

The project requirement for 98% isolation efficiency will require detailed consideration for air handling units, where isolation is often provided within the unit build-up. In such cases, the supplier shall make provision for sufficiently rigid rails or inertia bases such that the project requirements can be met. Additional allowances shall be made for increased space around the fans to permit free movement without lateral or torsional or rocking modes of vibration resulting in contact to the casing or other part of the unit build-up, which may short-circuit the design.

Given the above, the proposal for vibration isolation within the unit shall be made available to Hoare Lea for review and comment.

HOARE LEA (H) VIBRATION VIBRATION CONSIDERATIONS 3

4.2 Isolator limitations (deflection of the plant deck slab)

The performance of a vibration isolator is typically expressed on the assumption that the base (plant room floor) is rigid. Any variation from this condition will limit the performance of the isolator, such that their spring-rate will have to increase to act as an effective absorber.

To account for this, a rule-of thumb guide to selection can be adopted on the basis that the deflection of the isolator under the static load of the supported MEP equipment is at least 10 times the deflection of the slab at the point of contact.

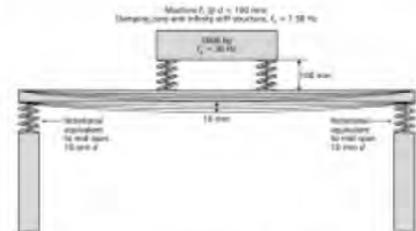


Figure 2. Consideration of non-rigid support conditions

5. Detailed considerations.

The advice provided in the above section is usually sufficient to design-out vibration issues in the majority of circumstances. However, given the sensitivity of the scheme, being aware of design assumptions assumed by isolator or AHU suppliers is of great importance. The following sets out aspects which are advised to be investigated in further detail.

5.1 Source properties of the AHU

Even in the event that isolator conditions can be met (i.e. accounting for non-rigid slabs), this method does not specifically quantify the resultant vibration-level associated with particularly active pieces of plant. This makes assessment against the target vibration value difficult to achieve as a desktop exercise.

Conventionally, isolation strategies are derived on the basis of the machine weight and the operating speed in terms of RPM. This method overlooks the complex range of vibration frequencies (spectral) that are produced in situ due to panel resonances and the structural forms of the AHU. Measurements of the proposed units, either factory or site-based would help inform the design. Varying levels of precision can be applied to ascertain input values from engineering-estimates (quick methods) to fully-quantified source characterisation (detailed time-intensive experimental methods).

5.2 Transmission profile of the structure

As with the previous section, even accounting for a non-rigid base does not ensure that the whole transmission paths between source (plant room) and receiver (operating theatres) are accounted for. The most efficient method of characterising this path, given the structure is complete, would be to undertake vibration transmission measurements between plants and sensitive areas.

The results of this test may be sufficient to derive plant-limits of vibration which the supplier could be responsible for at a point above any isolation measures put in place.

HOARE LEA (H) VIBRATION VIBRATION CONSIDERATIONS 4

6. Next steps.

We would advise the following steps as a course of action:

- 1) Undertake simplified isolator specification calculations (as per Section 4.1).
- 2) Review in line with structural deflections (as per Section 4.2).
- 3) Provide these to a specialist supplier to comment on the range of deflection required. If the deflections are too high then alternative strategies may be necessary.
- 4) Undertake testing of similar AHUs.
- 5) Review AHU levels against predicted losses from isolation system proposed. If the system appears acceptable, no further action to be taken. If the selection looks borderline or non-compliant, suggest field-testing of plant-room to operating theatre transmission paths.

9. Fire and Smoke Control Measures

The fire and smoke control measures will be installed in line with the Hoare Lea Fire Strategy document. Additional dampers will also be installed in line with the MVC Fire Enhancement works.

Please refer to Appendix 17.

10. High-level Metering Strategy

It is proposed to connect each of the MCCBs supplying the new AHU Distribution Boards to the existing site metering/monitoring system in order to monitor and record information on current, voltage and power, etc. This follows the same method that is currently being employed on site, as no physical meters are installed at any of the existing section boards.

The metering information will communicate on the same protocol that is currently used on site, and will be fully compatible with, and connected to, the site-wide metering/monitoring system.

All required cabling, connections and commissioning works shall be included in the scope of this project.

11. Plant Replacement Strategy

11.1 Level 04 Plant room

Existing AHU 04-06 and 04-07 will be disassembled within the plantroom and removed in sections through the double doors leading to the external roof where they will be craned down and removed from site.

The new AHU 04-06 and 04-07 will be factory tested and delivered to site 'flat packed' for assembly. Each section will be craned up to the roof and into the plantroom through the double doors. The units will be assembled within the plant room and a leakage test performed again.

After first install, any consumables (e.g. filters) will be replaced easily from within the plant room double doors.

The AHUs incorporate an array of EC Plug fans that are easily removed and installed from within the plant room without any craneage requirements.

Access sections and viewing ports have been allowed for all major AHU components.

A spare fan for each AHU and spare filters will be located within the plant area to ensure maintenance is not affected by any potential leads in delivery times.

The new external Twin Extract fan is easily accessible from the level 4 roof. Any future replacement can be carried out in line with the existing Plant Maintenance Strategy for all items of plant on the 4th floor roof.

11.2 Level 02 Flat roof

The new isolation room AHUs will be complete with an enclosed maintenance corridor accessible either end and fitted with lighting and small power for day to day maintenance. The AHUs and enclosure will be delivered in sections to site and craned onto the flat roof where they will be assembled and tested.

After first install all the AHU component will be easily replaced from within the enclosure. Spare consumables and fans will be stored within the level 2 plant area that has direct double door access to the flat roof.

The control panel for the AHUs will be located within the enclosure corridor

The LTHW and CHW pipework will run under the accessible GRP flooring of the enclosure and rise to the AHUs with all valves readily accessible from within the enclosure.

The new chillers that will serve the AHUs will also be craned onto the flat roof as a complete package. General maintenance and spare parts can be accessed through the level 2 plant area. The new pumps for the chilled water circuit will be installed within the level 2 plant area.

11.3 Level 01 Energy Centre

The new isolation room AHUs will be complete with an enclosed maintenance corridor accessible either end and fitted with lighting and small power for day to day maintenance. The AHUs and enclosure will be delivered in sections on site and craned onto the grass area next to the energy centre where they will be assembled and tested.

After first install, all the AHU component will be easily replaced from within the enclosure. Spare consumables and fans will be stored within the energy centre and delivered to the AHUs when required via the footpath going around the hospital.

The control panel for the AHUs will be located within the enclosure corridor

The LTHW and CHW pipework will run under the accessible GRP flooring of the enclosure and rise to the AHUs with all valves readily accessible from within the enclosure.

The new chillers that will serve the AHUs will also be craned onto the grass area as complete package. General maintenance and spare parts can also be through the footpath around the hospital. The new pumps for the chilled water and LTHW circuits will be installed within the Energy centre mezzanine level.

The existing lifting beam within the energy centre will be used to lift any pumps to the mezzanine level.

We are investigating the possibility of installing a new access door from the energy centre mezzanine level directly to the grass area where the chillers and AHU will be located.

11.4 Heater Batteries

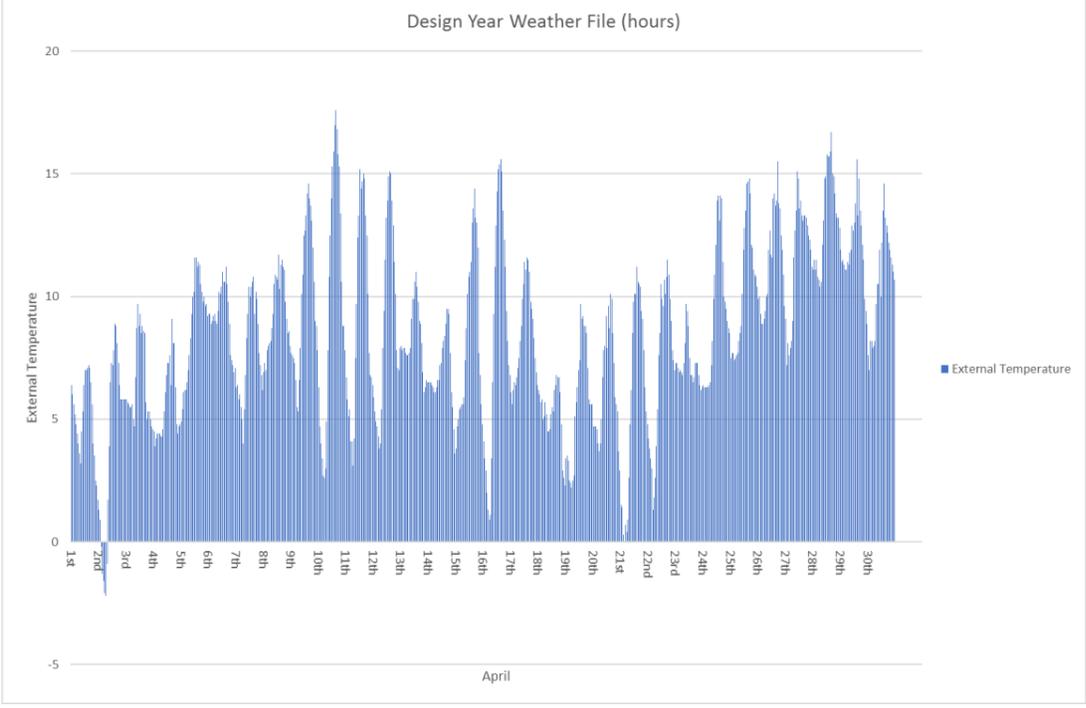
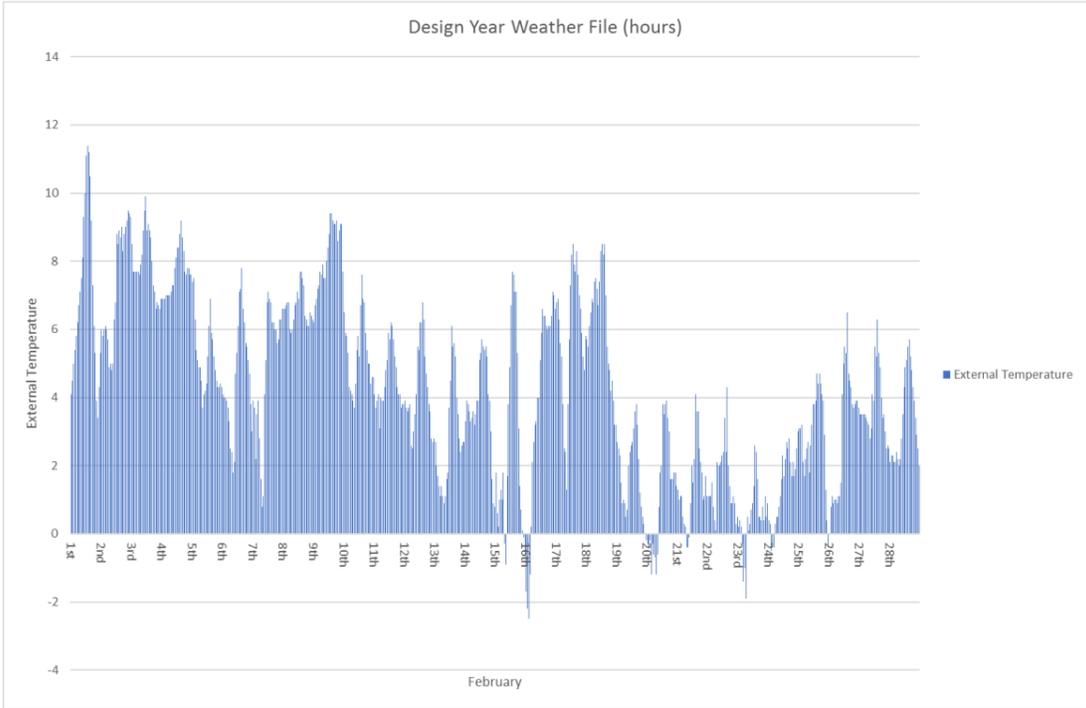
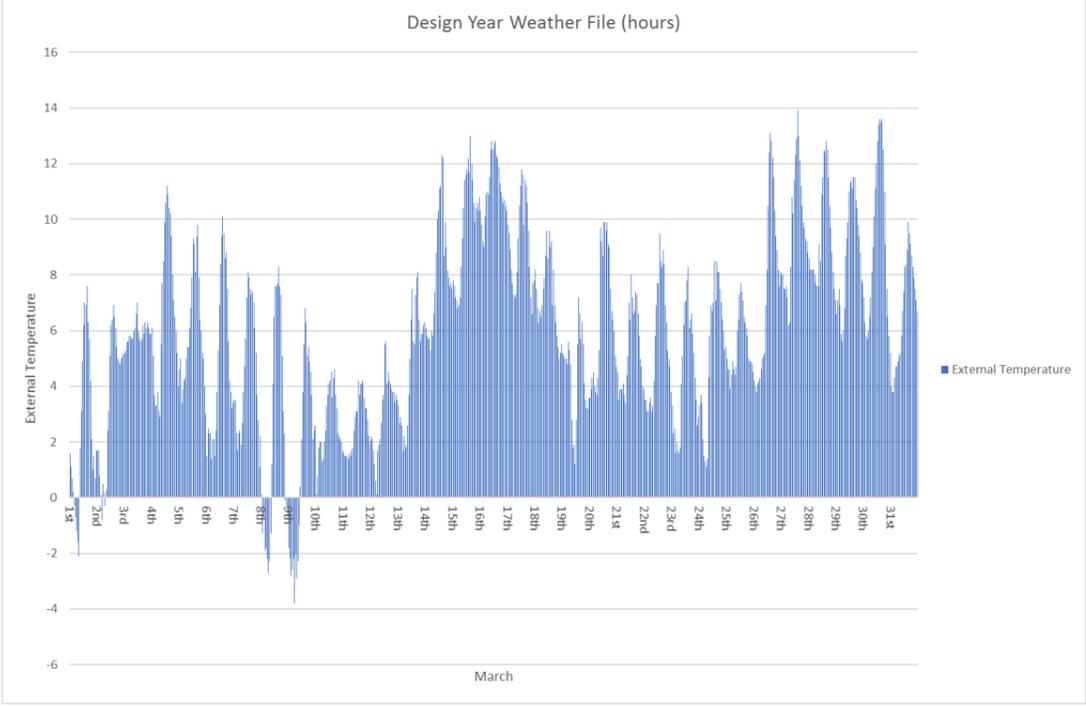
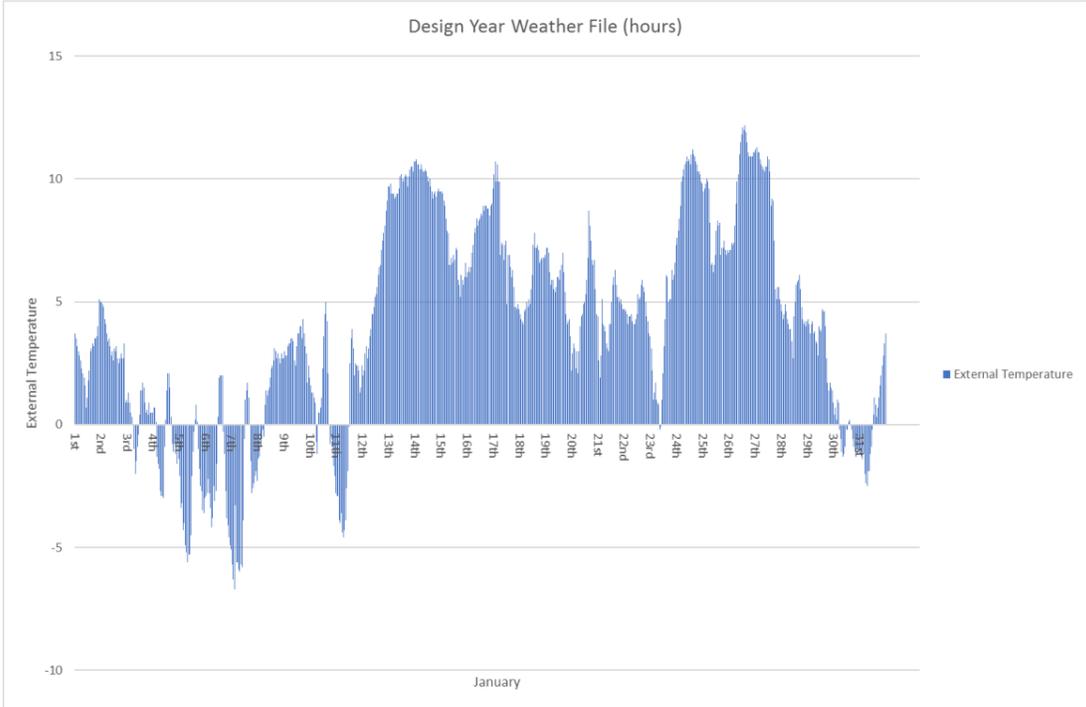
All new LTHW ducted heater batteries serving level 01 and level 03 areas will be installed out with the clinical rooms that they are serving and typically located in corridors or adjacent ancillary rooms.

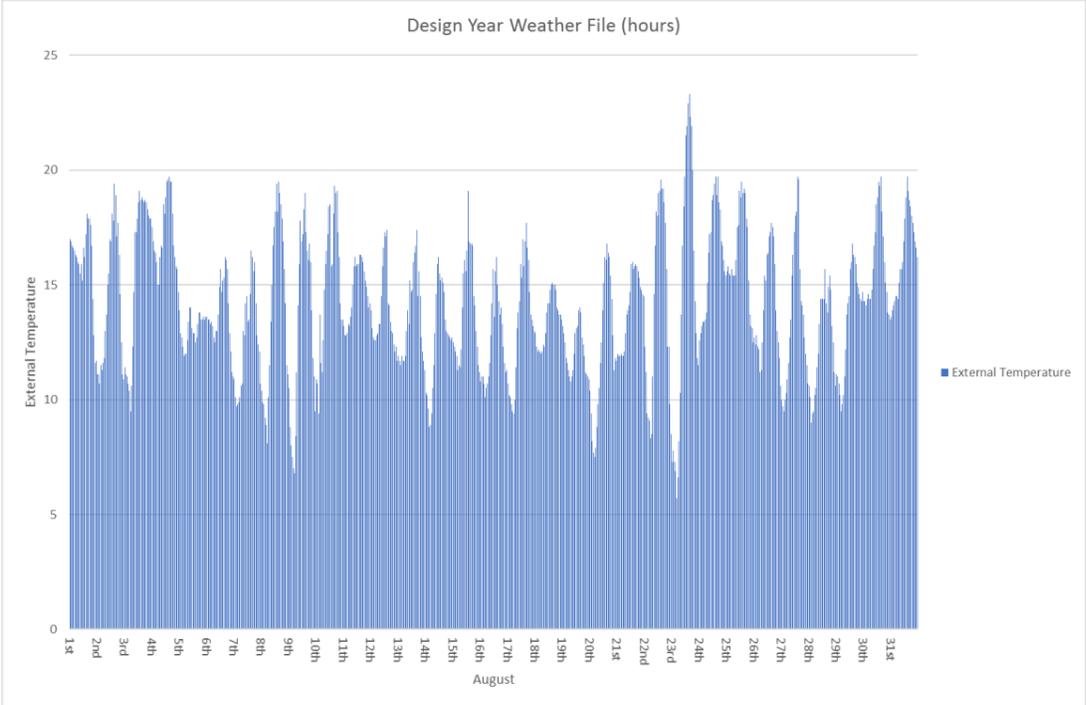
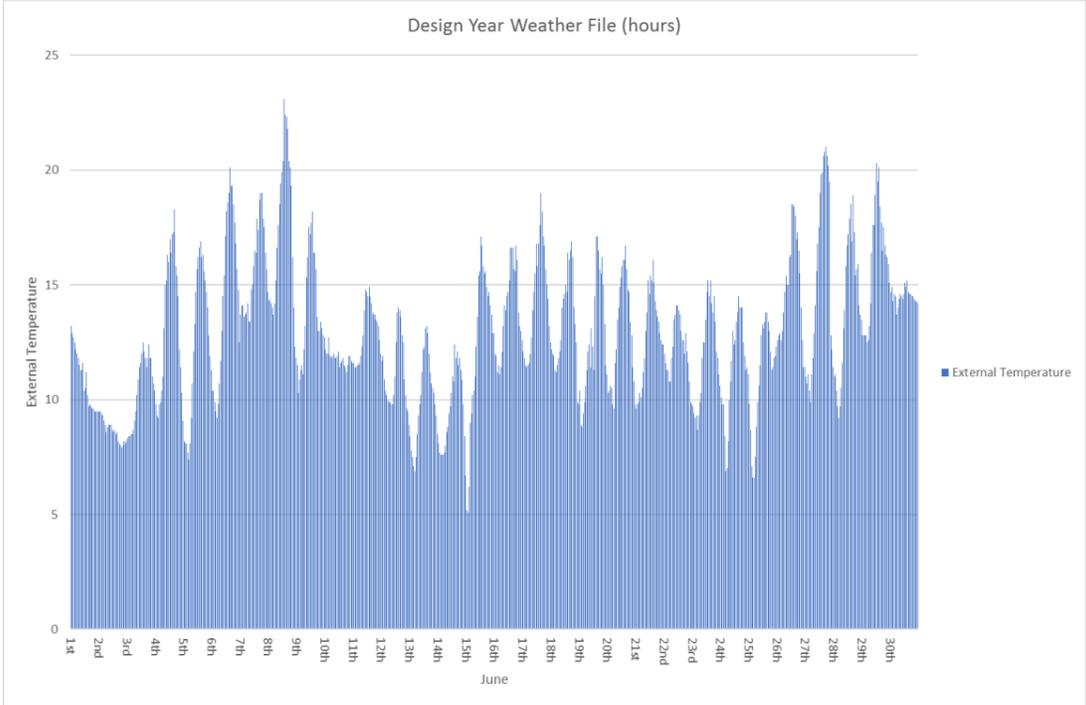
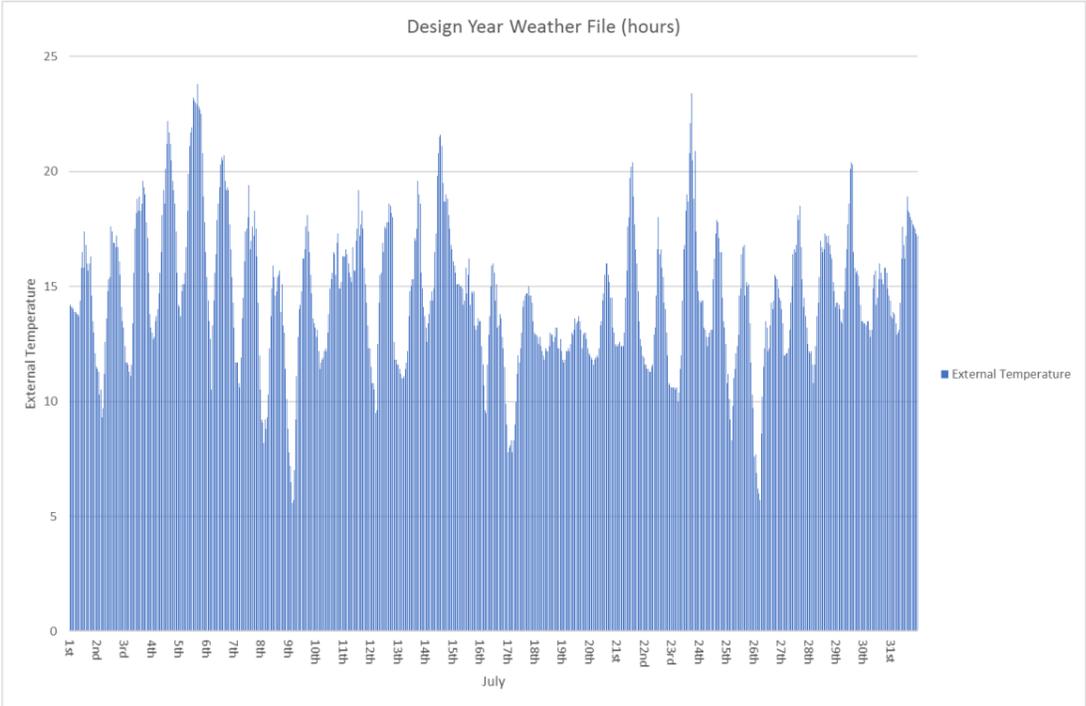
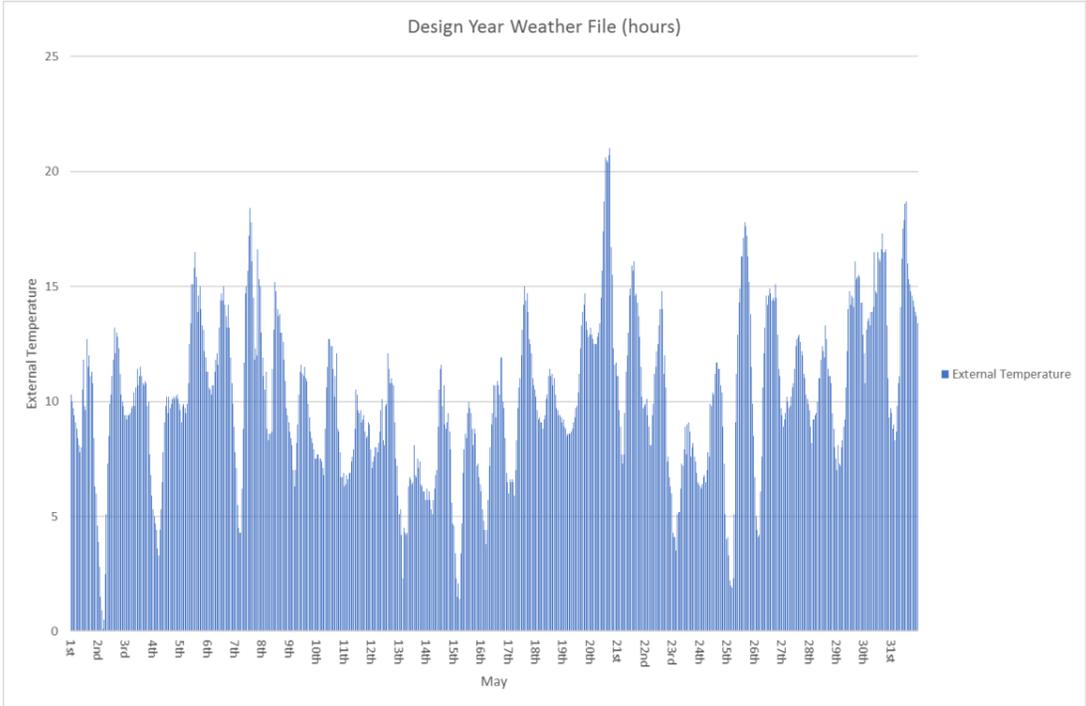
Due to the physical size of the heater batteries and their enclosures every effort will be made to install them with minimum impact to already installed services. This will not be achievable everywhere but any control valve serving those heater batteries will be installed in an easily accessible location.

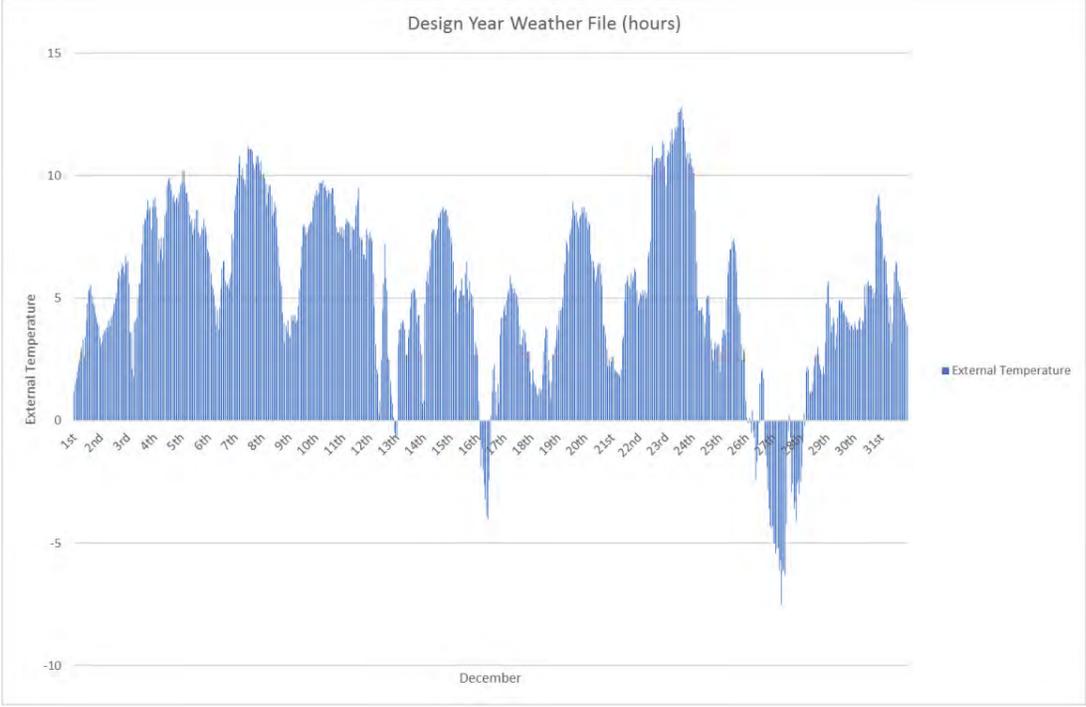
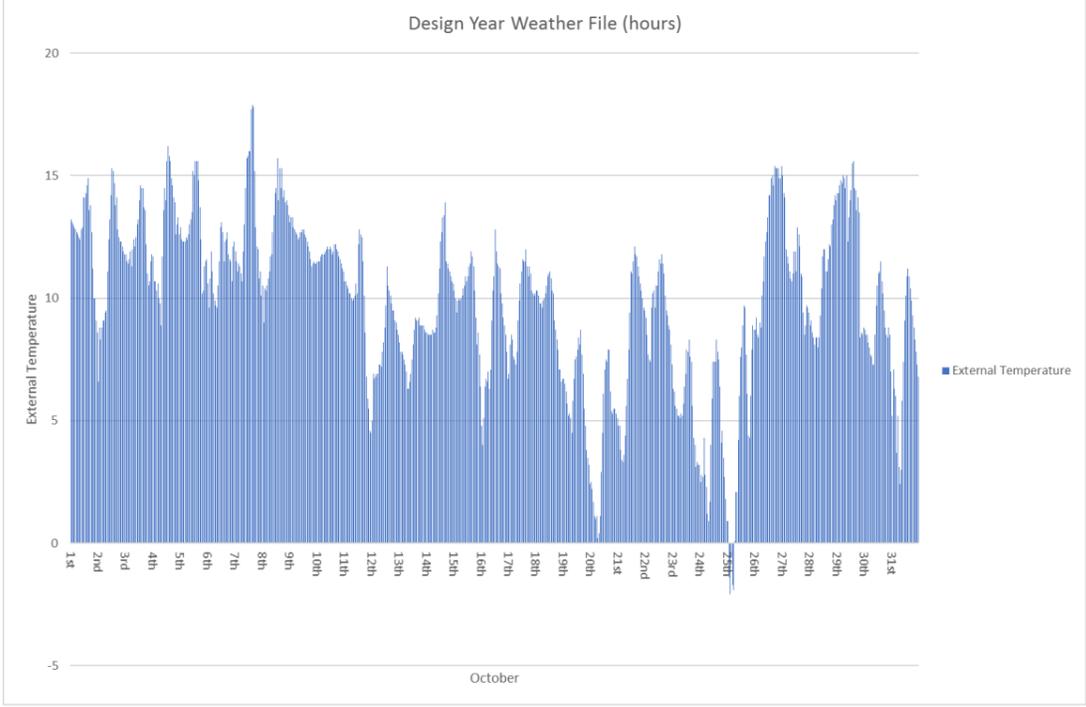
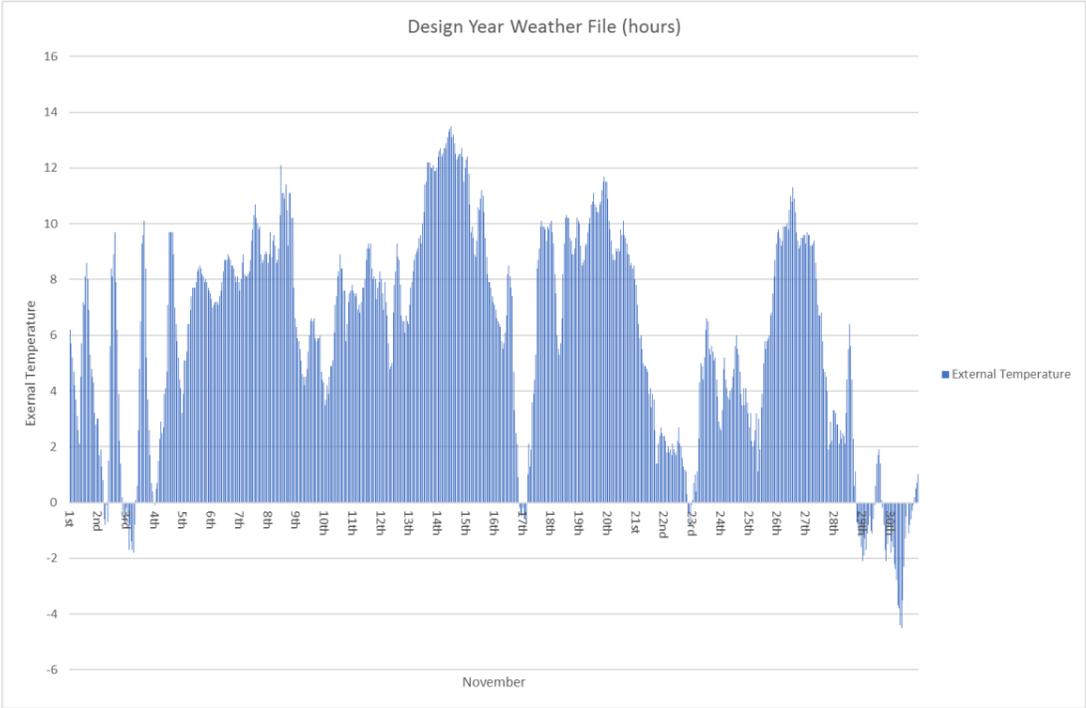
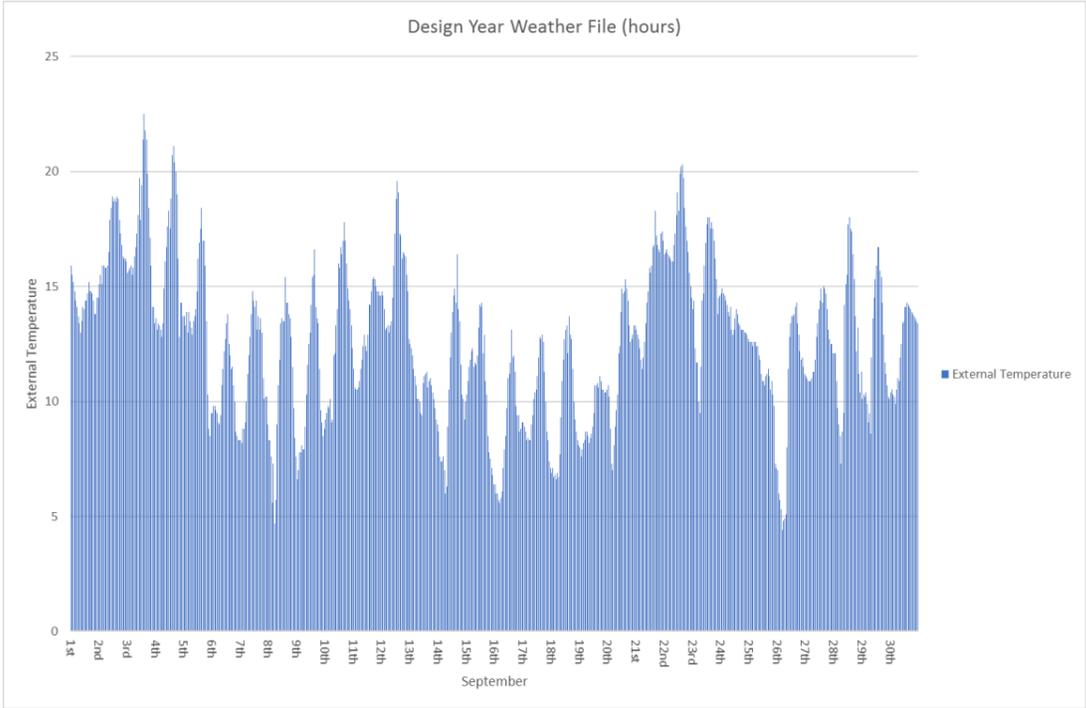
More information on this item will be provided at the next stage and once all investigative works have been complete.

12. Energy Study

The CIBSE design weather file (TRY for Edinburgh) has been utilised for the purposes of the energy calculations. The design weather conditions are shown in the following graphs:







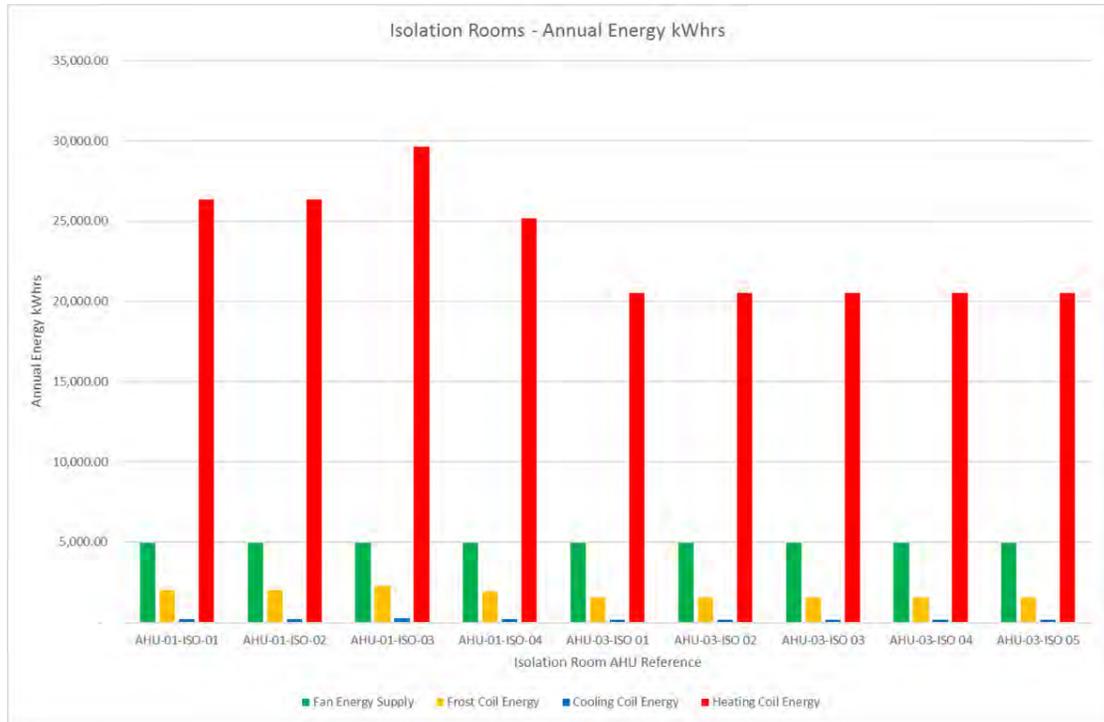
12.1 Energy Calculations

The energy calculations cover the additional electricity and gas energy associated with the additional isolation room AHU's and the option study associated with the central cooling versus the duct mounted cooling coil.

12.1.1 Isolation Room Energy Calculation

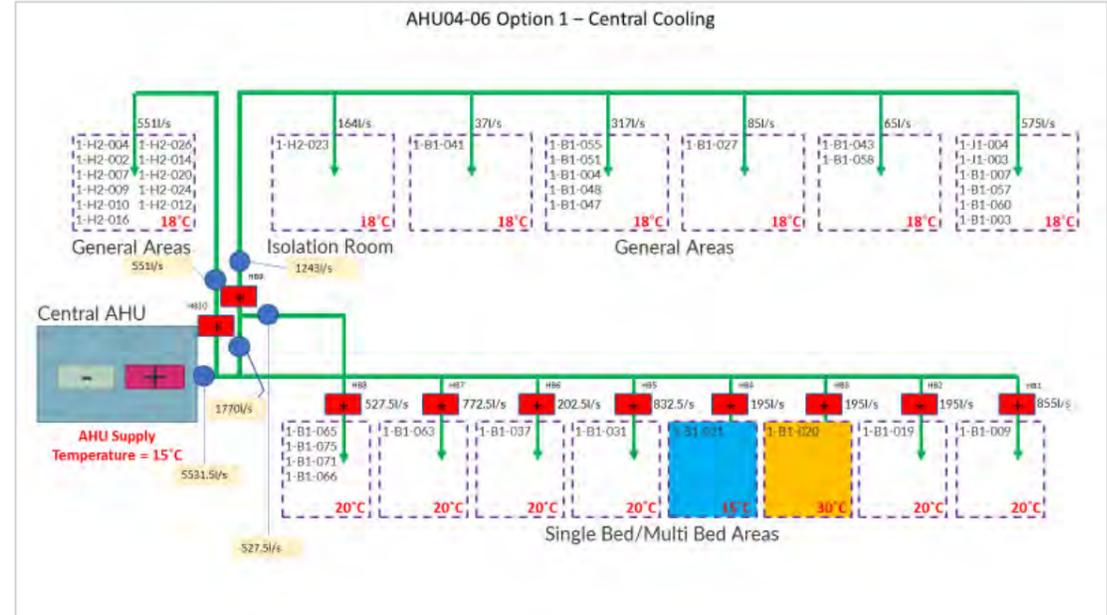
It is proposed to install an additional 9No. Isolation room Air Handling Units. The units are supply air only and do not have any heat recovery. The units are all relatively small in comparison to the central Air Handling Units located within the main plantrooms. They operate 24 hours per day and will use additional energy that was not accounted for in previous energy calculations.

All 9 Air handling units are roughly the same size (duty) except for AHU ISO3, which is slightly larger

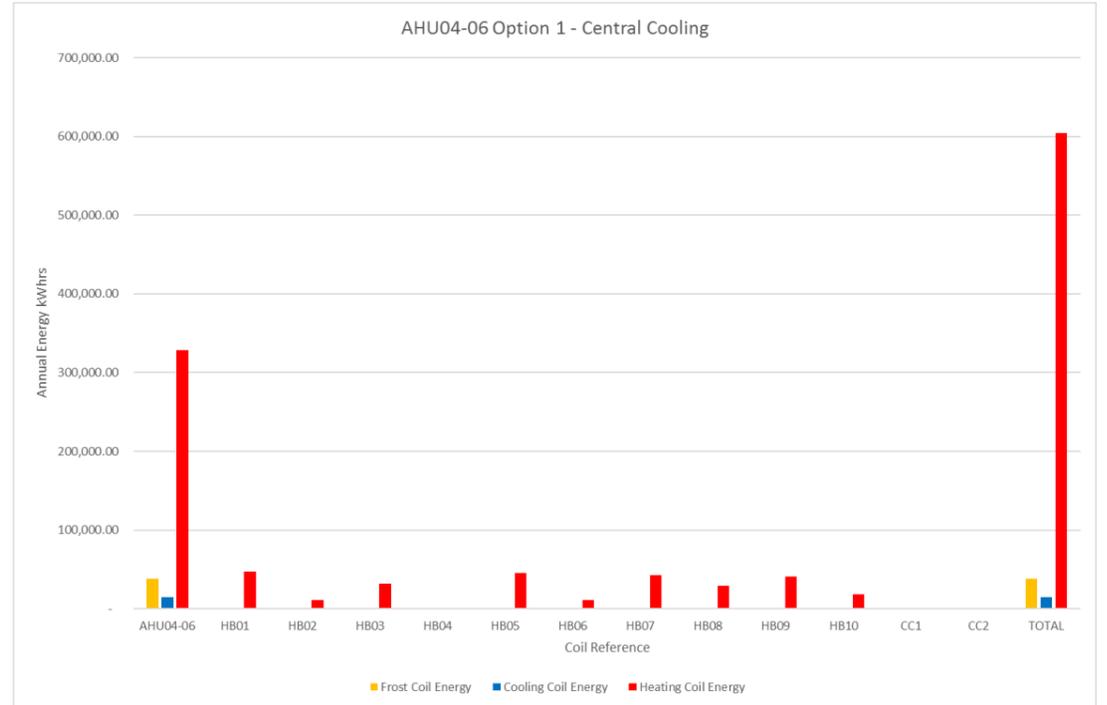


12.1.2 AHU04-06 Option 1 (Central Cooling) Energy Calculation

For Option 1 the central AHU will heat the air to 15deg C. This allows any single bed or multi bed room to be controlled to 18 deg C. The remaining rooms are then heated to either 18 deg C (general areas with radiant panels) or 20deg C (without radiant panels). Note that all duct mounted coils (for the single bed or multi bed rooms) can raise the temperature from 15deg C to 30deg C.

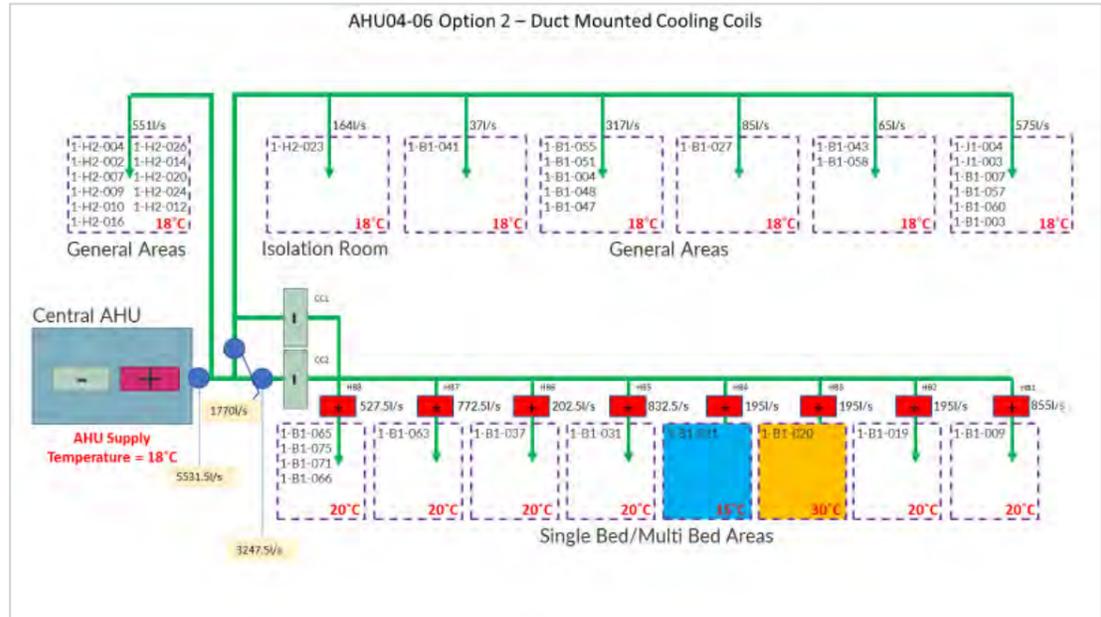


The graph below shows the annual energy that this option uses. A comparison between Option 1 & 2 is contained in section 10.1.6.

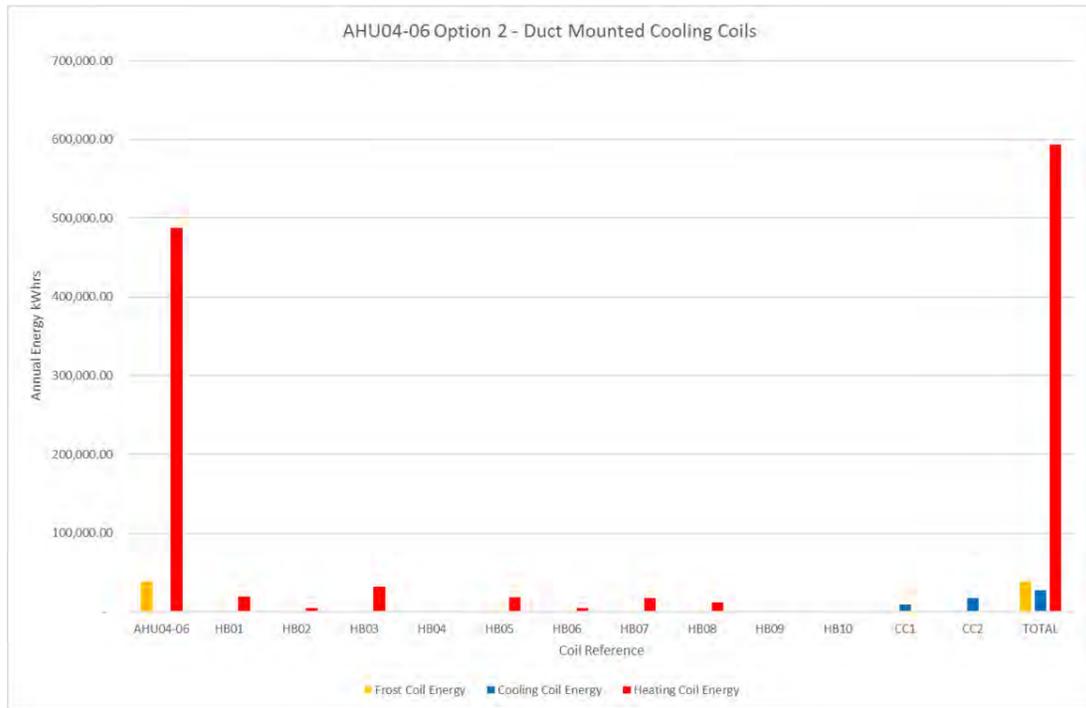


12.1.3 AHU04-06 Option 2 (Duct Mounted Cooling Coils) Energy Calculation

For Option 2 the central AHU will heat the air to 18deg C. This then requires 2No duct mounted cooling coils to be installed to lower the supply temperature to 15deg C to allow any single bed or multi bed room to be controlled to 18 deg C. The single bed and multi bed rooms not requiring the low supply temperature are then heated to 20 deg C. Note that all duct mounted coils can raise the temperature from 15deg C to 30deg C.

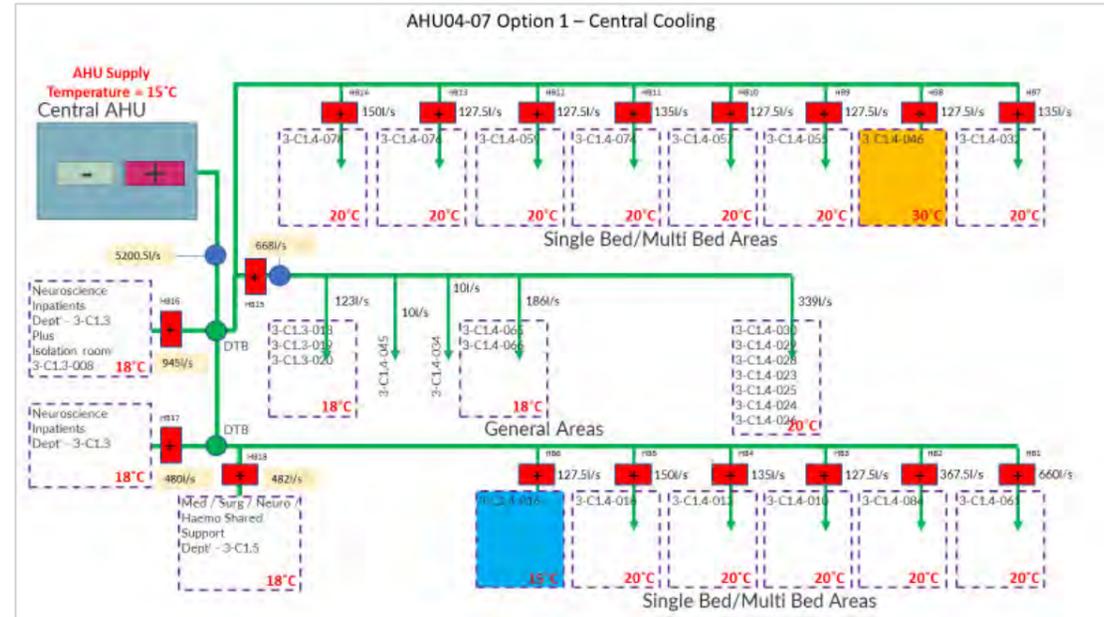


The graph below shows the annual energy that this option uses. A comparison between Option 1 & 2 is contained in section 10.1.6.

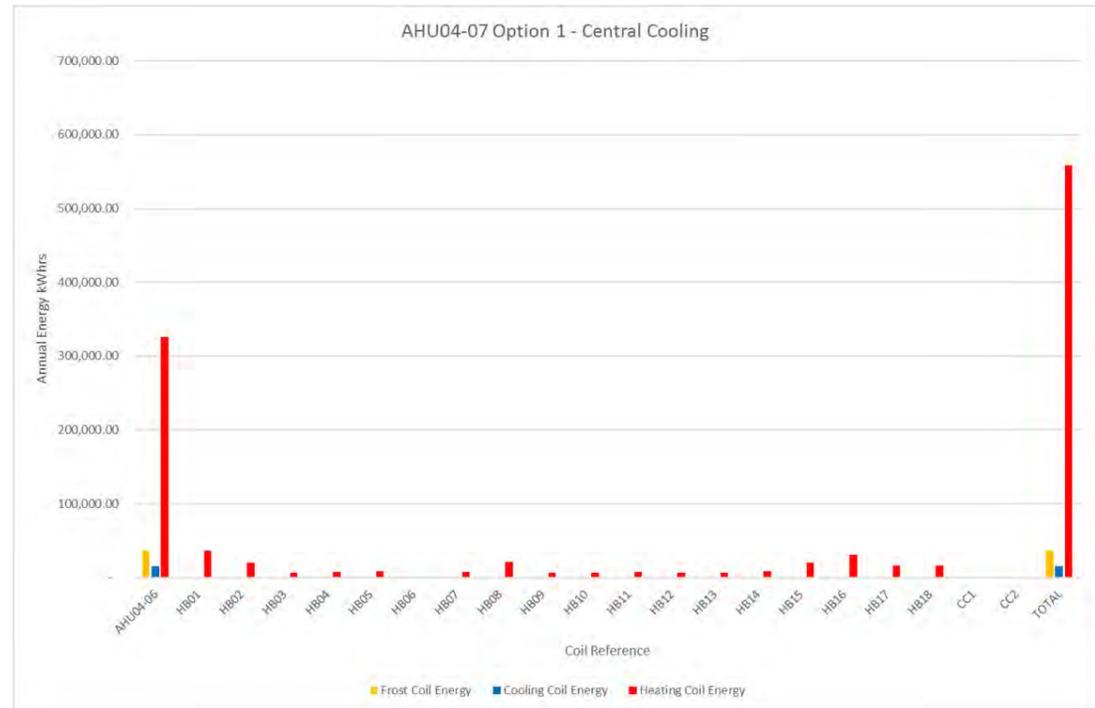


12.1.4 AHU04-07 Option 1 (Central Cooling) Energy Calculation

For Option 1 the central AHU will heat the air to 15deg C. This allows any single bed or multi bed room to be controlled to 18 deg C. The remaining rooms are then heated to either 18 deg C (general areas with radiant panels) or 20deg C (without radiant panels). Note that all duct mounted coils (for the single bed or multi bed rooms) can raise the temperature from 15deg C to 30deg C.

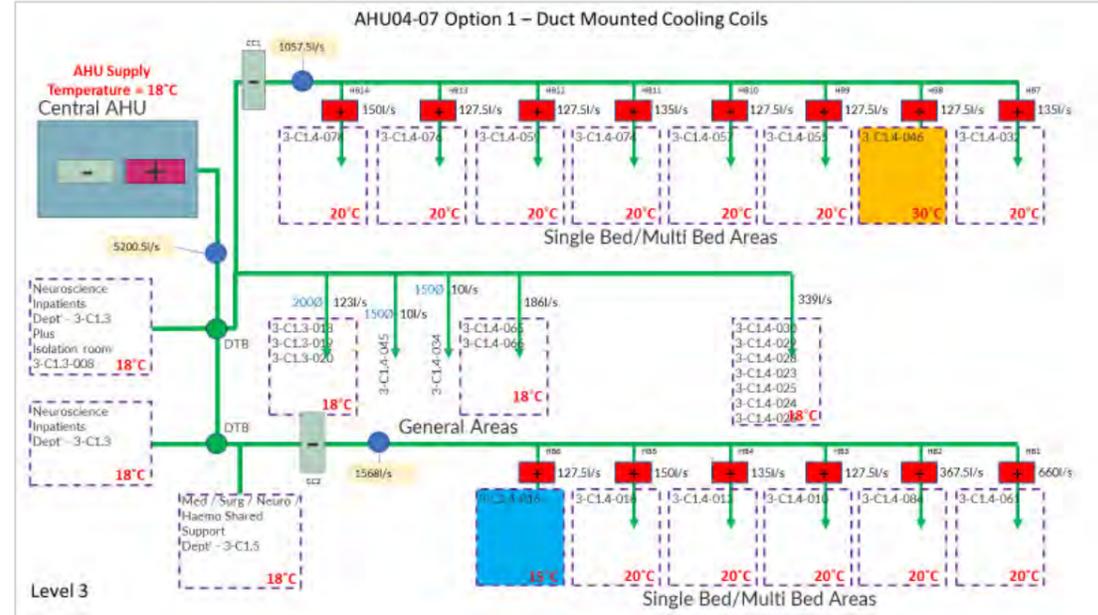


The graph below shows the annual energy that this option uses. A comparison between Option 1 & 2 is contained in section 10.1.7.

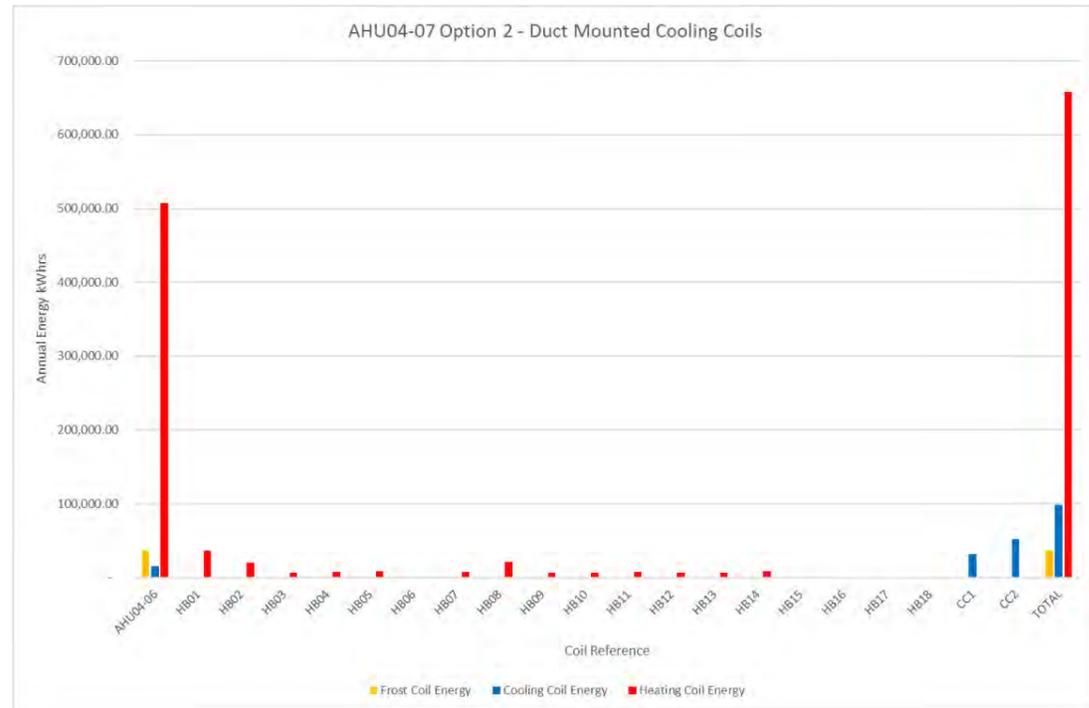


12.1.5 AHU04-07 Option 2 (Duct Mounted Cooling Coils) Energy Calculation

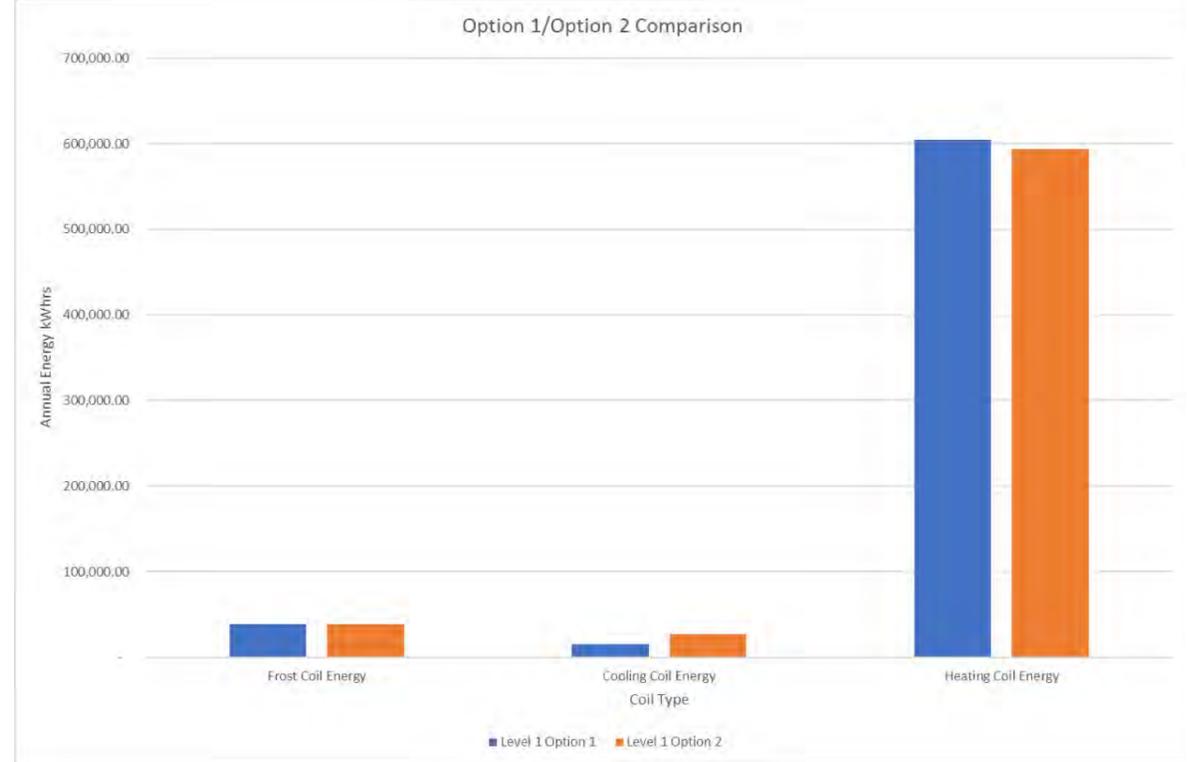
For Option 2 the central AHU will heat the air to 18deg C. This then requires 2No duct mounted cooling coils to be installed to lower the supply temperature to 15deg C to allow any single bed or multi bed room to be controlled to 18 deg C. The single bed and multi bed rooms not requiring the low supply temperature are then heated to 20 deg C. Note that all duct mounted coils can raise the temperature from 15deg C to 30deg C.



The graph below shows the annual energy that this option uses. A comparison between Option 1 & 2 is contained in section 10.1.7.



12.1.6 Level 1 Option 1 & 2 Energy Comparison



Option 1 – Central Cooling

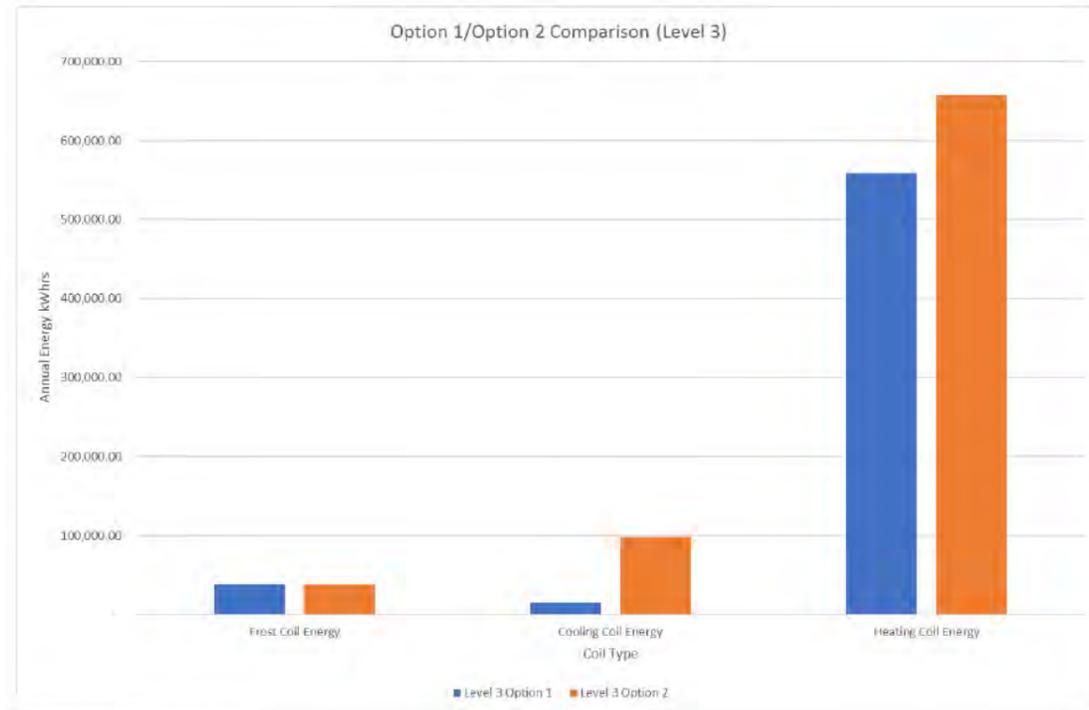
Option 2 – Duct Mounted Cooling

Option 1 uses slightly more heat energy as the duct mounted heater batteries have to raise the supply air up from 15deg C to 20deg C. Level 1 has larger rooms (multi bed rooms) therefore this is why the overall heating energy is higher as the duct mounted heater batteries have a larger capacity.

The cooling energy is slightly higher for option 2 as the central AHU is cooling all the air to 15deg C but based on the weather file used this is a marginal increase.

Overall, based on the risk and the minimal increase in energy Option 1 has been selected.

12.1.7 AHU 04-07 Energy Comparison



Option 1 – Central Cooling

Option 2 – Duct Mounted Cooling

Option 2 uses more heat energy as the duct mounted heater batteries have to raise the supply air up from 15deg C to 20deg C. Level 3 has more of the single bed room therefore this is why the overall heating energy is higher.

The cooling energy is slightly higher for option 2 as the central AHU is cooling all the air to 15deg C.

Overall, based on the risk and the increase in energy for Option 2, Option 1 has been selected.

13. HVC107 Cost Breakdown

The following costs have been produced by Imtech as a high-level order of costs and it should be noted that costs may change as the design and proposals are developed. These high-level costs will be continually updated throughout the duration of the design process, procurement period and commissioning. The below costs exclude, IHS L costs. Legal fees, funders costs, OPEX. Lifecycle and VAT.

Imtech Engineering Services Limited



HVC 107 Cost Breakdown ex VAT

Contract:	Royal Hospital Children & Young People & DCN		
Client:	IHS L		
FAO:	Gordon Morrison/Rob Eastham		
Your Ref:			
Our Ref:	P1600009		
Date:	22/12/2020		
HVC 107 Ventilation			
Prelim / Site set Up	£1,696,773		
Electrical Works	£70,952		
Mechanical Works	£512,126		
Ventilation Works	£797,316		
Thermal Insulation	£288,232		
Automatic Controls	£416,752		
Design Team	£734,606		
Professional Fees (CDM fees)	£12,450		
Builders work, access, and firestopping	£1,733,255		
Test & commissioning	£116,936		
AHU (+VAV, Attenuators, Grilles, Dampers)	£579,941		
Chillers	£84,492		
Press Units (+Vessel, Separator)	£13,313		
Pumps (+Heater batteries)	£45,543		
Draeger / HPI / Static / Boston's	£288,709		
Walkways (access platforms)	£56,172		
Lighting to Paru Gardens	£23,912		
Negative negative - Extract Fan	£3,942		
Contingency	£100,000		
Fee %	£1,345,576		
Total	£8,920,998		

Appendix 1 - Drawings

Appendix 2 – Programme

Appendix 3 – Environmental Matrix

Appendix 4 – BSRIA BG 6/2018 A Design Framework for Building Services 5th edition

Appendix 5 – Specifications

Appendix 6 – Equipment Schedules

Appendix 7 – Technical Workshop Presentations

Appendix 8 – Technical Workshop Minutes

Appendix 9 – HAI SCRIBE (issued on 2nd March)

Appendix 10 – Proposed Site Set-up

Appendix 11 – CDM & Project Risk

Appendix 12 – C&S Information

Appendix 13 – Architectural Information

Appendix 14 – Acoustic Report

Appendix 15 – Airflow & Pressure Cascade

Appendix 16 – Electrical Calculations Report

Appendix 17 – Fire Strategy

Appendix 18 – Overheating Temperature Study

Appendix 19 – Project Derogation List

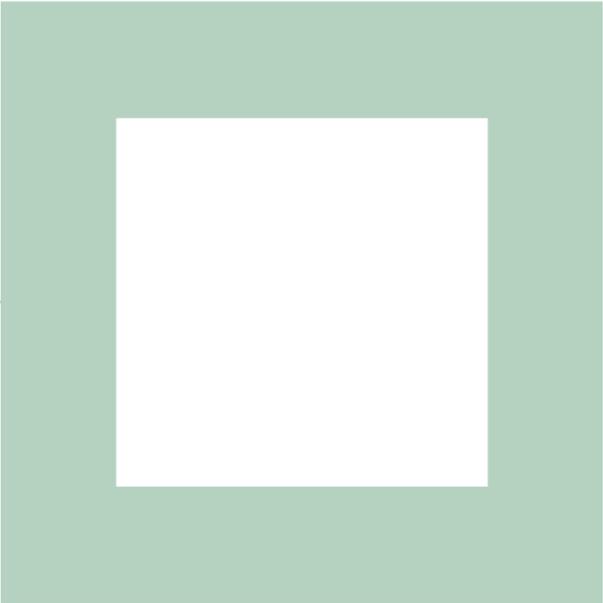


STRATIS VATIS
PRINCIPAL ENGINEER



HOARELEA.COM

4th Floor
58 Waterloo Street
Glasgow
G2 7DA
Scotland



From: McCallum R (Richard)
Sent: 12 April 2021 08:51
To: Graham, Chris; Morrison A (Alan); Chief Executive
Cc: Henderson C (Calum); Watters, Elaine
Subject: RE: Final RHCYP/DCN Oversight Board Draft Minute - 08 April 2021
Attachments: RHCYP OB 08-04-21 Minutes - Draft AM.doc

Categories: For Action

Chris,
A couple of minor changes from me. I'm otherwise content – thank you.
Richard

From: Graham, Chris [REDACTED]
Sent: 12 April 2021 07:25
To: Morrison A (Alan) [REDACTED]; McCallum R (Richard) [REDACTED] Chief Executive [REDACTED]
Cc: Henderson C (Calum) [REDACTED]; Watters, Elaine [REDACTED]
Subject: Final RHCYP/DCN Oversight Board Draft Minute - 08 April 2021
Importance: High

Please find attached the draft minute of the final RHCYP/DCN Oversight Board for review.

Please let me have any amendments, additions.

Kind regards
Chris

Chris Graham
Secretariat Manager – Corporate Governance Team
NHS Lothian

MS TEAMS – [REDACTED]
[REDACTED]

OVERSIGHT BOARD**NHS Lothian Royal Hospital for Children and Young People, Department of Clinical Neurosciences and Child and Adolescent Mental Health Services**

Minutes of the Final Oversight Board meeting held at 4:30pm on Thursday 08 April 2021 held via MS Teams.

Present by Teams: Mr A. Morrison, Capital Accounting and Policy Manager, Scottish Government (in the Chair); Miss T. Gillies, Medical Director, NHS Lothian; Professor A. McMahon, Nurse Director NHS Lothian; Mr C. Henderson, Scottish Government; Mr P. Reekie, Chief Executive, Scottish Futures Trust and Mr G. Archibald, NHS Lothian Joint Staff Side representative

In Attendance by Teams: Mr R. McCallum, Interim Director of Health Finance and Governance, Scottish Government; Mr C. Campbell, Chief Executive, NHS Lothian; Ms M. Morgan, Senior Programme Director; Mr I. Graham, Director of Capital Planning and Projects, NHS Lothian; Mr G. James, Health Facilities Scotland, NHS National Services Scotland; Prof Jacqui Reilly, HAI Executive lead for NSS and SRO for centre of excellence work; Ms J. Mackay, NHS Lothian Director of Communications and Mr C. Graham, Corporate Governance Team (minutes).

Apologies: Mrs S. Goldsmith, Director of Finance, NHS Lothian; Mr B. Currie, Project Director, NHS Lothian; Mr C. Sinclair, Chief Executive, NHS National Services Scotland and Mr J. Miller, Director of Procurement, Commissioning and Facilities, NSS.

1. Minutes of previous meeting – 25 February 2021

1.1 The minutes of the meeting held on 25 February 2021 were accepted.

2. NSS Action Log Close Out

2.1 The circulated action log spreadsheet from Ronnie Henderson, Commissioning Manager – Hard FM, NHS Lothian, showing all actions now closed following discussions and correspondence with Ian Storrar was accepted.

3. Closing of Oversight Board

3.1 The Oversight Board referred to the originally agreed Terms of Reference for the group and accepted that it was now clear that the point of completion had been reached a couple of weeks ago with the migration of final services into the new hospital. The completed Terms of Reference were noted as:

The Oversight Board will provide advice in relation to:

- Advice on phased occupation;
- Advice on the proposed solution for ventilation in critical care areas and on any other areas that require rectification works;
- Advice on facility and operational readiness to migrate;
- Gain information and give advice to NHS Lothian about commercial arrangements with IHSL for completion of works;
- The approach to NPD contract management

- Identification of areas that could be done differently in future

3.2 It was agreed that this was now the appropriate time to formally draw the Oversight Board to a close and disband. This would be the final meeting of the group.

3.3 The Oversight Board noted that feedback received from staff, patients and visitors following the final migration of services had all been very positive. NHSL were delighted that the hospital was now fully open and operational and the feedback from staff within neurology, neurosurgery, CAMHS and children's inpatients had also been good. This feedback from staff was also consistent with the partnership feedback of staff loving their new working environment.

4. Final Comments

4.1 It was recognised that this had been a journey since the summer of 2019. The Chair expressed appreciation to NHSL and NSS colleagues for all their hard work and contributions to get to this point. It was noted that the blueprint followed in this process would help to inform capital plans and other projects nationally moving forward.

Deleted: The Chair also encouraged members to visit the new hospital when current Covid restrictions allow.¶

4.2 The Oversight Board would now be officially closed down and the minute would be circulated for agreement electronically to confirm this position. Thanks were also passed to Ms Morgan for all her contribution as Senior Programme Director and it was recognised that this role had also now formally come to an end, correspondence to confirm this would come from the Scottish Government as it had been the Scottish Government who had asked Ms Morgan to come into post.

Deleted: to close the loop

4.3 One final piece of formality was to consider the NHSL escalation to level 4. Mr Campbell stated that feedback received on the NHSL remobilisation plan referring to escalation indicated that NHSL would come off escalation for the RHCYP/DCN provided the Oversight Board was concluded and the de-escalation accepted within the minute. This position was accepted and Mr McCallum would confirm this with John Connaghan at the Scottish Government.

4.4 The Oversight Board also discussed long term lessons learned and it was agreed that this work would be taken forward through NHS Assure, there was nothing further specifically for NHSL colleagues in relation to this.

4.5 Based on the above discussion, final confirmation to stand the Oversight Board down was agreed.

Royal Hospital for Sick Children and Department for Clinical Neurosciences - Edinburgh

RHSC / DCN RDS Environmental Matrix

Please note that all revisions prior to 11 were during the original construction phase.

Rev	Description	Prepared by	Checked by	Authorised by	Date
11	20171025 Environmental Matrix (Rev 11) Issued to Imtech for developing for HVC107	MPEX	MPEX	MPEX	25/10/2017
12	Consolodated Environmental Matrix following the completion of MVC157 & HVC107.	Stratis Vatis	Paul Winning	Paul Winning	22/04/2021

RHSC / DCN Environmental Matrix

Dept Code	Index
A1 - A4	Front Door - A&E / Assessment Ward
B1	Critical Care / HDU / Neonatal Surgery
C1- C5	RHSC In Patient Pathway / Ward Care
D1 - D10	RHSC Ambulatory Care
E1	Pod
F1	Child and Adolescent Mental Health
G2 - G3	Clinical Support
H1 - H3	Academic
I1 - I2	Facilities / Infrastructure Support Services
J1 - J2	Patient / Family Support
K1 - K2	Family Facilities
L1 - L2	DCN In Patient Pathway / Ward Care
M1- M4	DCN Support Space
N1	DCN Out Patient Departments
P1	Combined Theatres
Q1	Combined Radiology
R1 - R2	Office / Admin Support Services
S1 - S7	Combined Facilities / Infrastructure Support Services
T1	Plant
U1	Shelled Space

Notes

1. Comfort Cooled Fresh Air means cooling via the central Air Handling Unit and not openable windows or room cooling.
2. Non HVC107 rooms are not affected by the works and therefore there are no changes to the requirements.
3. 18°C-22°C indicates the range over which the temperature may float
18°C-22°C indicates the range over which the temperature should be capable of being controlled.
4. Rooms with no supply air identified achieve fresh air make-up via corridor (excess supply air from other spaces).

* All Open to 1-B1-065

** Windows will be locked shut

5. **Red** text identifies a change

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
G-A1-002	A1 Emergency Department	Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-003		Store - Medical Gas Cylinders	1	Storage Area Med Gas	28	16	Adjacent Space Transfer	None	No	None	Central General Extract	0	7	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-004		Processing Room	1	Diagnostic room	25	18	Radiant Panels	Remote Adjustable Sensor	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3 people at 10 l/s per person (4ach)	3 people at 10 l/s per person (4ach)	Balanced	F7	43	n/a	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-A1-005		Changing Cubicles	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	0	4	Negative	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-006		General X-Ray Room	1	Diagnostic room	25	18	Warm Air - Reheat Battery	BMS Adjustable Sensor	Yes	By Specialist	Central Supply and Extract	8	8	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-A1-007		Dirty Utility	1	Dirty utility	28	18	Radiant Panels	Adjustable Sensor	No	None	Isolation Bedroom	0	6	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-008		Washdown Room	1	Dirty utility	28	18	Radiant Panels	Remote Adjustable Sensor	No	None	Zonal Dirty Extract (EF-01-02)	0	10	Negative	H14	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-009		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-010		ED Laboratory	1	Laboratory	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	6	Balanced	F7	43	60	500	n/a	None	A	80	Switch	General working plane 1m
G-A1-011		Linen Bay (1 Trolley)	1	Linen Bay	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-012		Bay 5	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply Air, Zonal Dirty Extract (EF-01-02)	10	10	Balanced	F7, H14 Extract	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
G-A1-013		Bay 14	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply Air, Zonal Dirty Extract (EF-01-01)	10	10	Balanced	F7, H14 Extract	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
G-A1-014		Bay 6	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply Air, Zonal Dirty Extract (EF-01-02)	10	10	Balanced	F7, H14 Extract	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
G-A1-015		Bay 13	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply Air, Zonal Dirty Extract (EF-01-01)	10	10	Balanced	F7, H14 Extract	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
G-A1-016		Staff Base	1	Reception	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Supply	10	0	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-A1-017		Clean Utility	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central Supply	6	0	Positive	F7	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-018		Bay 7	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply Air, Zonal Dirty Extract (EF-01-01)	10	10	Balanced	F7, H14 Extract	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
G-A1-019		Bay 12	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply Air, Zonal Dirty Extract (EF-01-01)	10	10	Balanced	F7, H14 Extract	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
G-A1-020		Bay 8	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply Air, Zonal Dirty Extract (EF-01-01)	10	10	Balanced	F7, H14 Extract	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
G-A1-021		Bay 11	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply Air, Zonal Dirty Extract (EF-01-01)	10	10	Balanced	F7, H14 Extract	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
G-A1-022		Bay 9	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply Air, Zonal Dirty Extract (EF-01-01)	10	10	Balanced	F7, H14 Extract	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
G-A1-023		Store Room	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Zonal Dirty Extract (EF-01-01)	0	3	Negative	H14 Extract	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-025		Bay 10	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply Air, Zonal Dirty Extract (EF-01-01)	10	10	Balanced	F7, H14 Extract	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
G-A1-026		Emergency / Ambulance Entrance	1	Circulation Areas - Entrance Lobby	28	Not Controlled	Warm Air Door Curtain	BMS Adjustable Sensor	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-028		Resus 1	1	Resuscitation Bay	25	21	Radiant Panels	Adjustable Sensor	Yes	Wall Mounted Unit	Central Supply and Extract	15	11	Positive	F7	43	41	500	n/a	None	A	80	Switch	Bed / Trolley 1.45m
G-A1-029		Resus 2	1	Resuscitation Bay	25	21	Radiant Panels	Remote Adjustable Sensor	Yes	Wall Mounted Unit	Central Supply and Extract	15	11	Positive	F7	43	41	500	n/a	None	A	80	Switch	Bed / Trolley 1.45m
G-A1-030		IPS Room	1	IPS Room	30	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-031		Viewing Room	1	Body View	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	4	Negative	F7	43	41	100 (KNX)	n/a	None	A	80	Switch / Dimmer	Floor 0m
G-A1-032		Relatives Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
G-A1-033		WC - Wheelchair accessible	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-034		Store - Major Incident / Ambulance Equipment	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-035		Triage Room	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	10	10	Balanced	F7	43	41	300	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
G-A1-036		Reception: 2 staff	1	Reception	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	2 people at 10 l/s per person (2ach)	2 people at 10 l/s per person (1ach)	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-A1-037		Parking Bay: 6 wheelchairs	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	0	Balanced	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-038		Main Entrance Draught Lobby	1	Circulation Areas - Entrance Lobby	28	Not Controlled	Warm Air Door Curtain	BMS Adjustable Sensor	No	None	Central General Extract	0	2	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-039		Parking Bay: 3 accident trolleys & 3 wheelchairs	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	2	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-040		Store - Equipment & Supplies	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-041		WC - Wheelchair accessible	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-042		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-043		Female Staff Changing and Lockers: 30 places	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-044		Staff Shower: ambulant	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A1-045		Waiting Area inc Play Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	36 people at 10 l/s per person (8ach)	6	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
G-A1-046		Baby Infant / Feeding Room	1	baby Feeding	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	100	n/a	None	A	80	Switch	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
G-A1-047		Nappy Change	1	Nappy Change	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A1-048		Male Staff Changing Room and Lockers: 20 places	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A1-049		Staff Shower: ambulant	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A1-050		Consultant Office (6 person)	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Concealed Cassette Unit	Central Supply and Extract	4	2.7	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
G-A1-052		Senior Charge Nurse Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Concealed Cassette Unit	Central Supply and Extract	4	2.5	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
G-A1-053		Interview/Meeting Room: 6 persons	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6 people at 10 l/s per person (9ach)	6 people at 10 l/s per person (9ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
G-A1-054		Beverage Bay	1	Tea Making	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	41	100 (KNX)	n/a	None	A	80	switch	Floor 0m	
G-A1-055		WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A1-056		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A1-057		Medical Staff / Audit / Secy Office (3 Person)	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	2.5	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
G-A1-058		WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A1-059		Store - Stock & Sterile Supplies	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	2.5	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A1-060		Bay 2	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10	10	Balanced	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m	
G-A1-061		Bay 1	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10	10	Balanced	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m	
G-A1-062		Bay 4	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10	10	Balanced	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m	
G-A1-063		Pantry - Staff / Patient	1	Pantry	28	18	Adjacent Space Transfer Air	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	n/a	41	300	n/a	None	A	80	Switch	Floor 0m	
G-A1-064		Bay 3	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10	10	Balanced	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m	
G-A1-065		Store - Plaster	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A1-066		Plaster Suite (2 bays)	1	Plaster Suite (2 bays)	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	7	6	Positive	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m	
G-A1-067		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A1-072		Mobile X-Ray Bay	1	Mobile X Ray Bay	28	18	Adjacent Space Transfer	None	No	None	None	0	4	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A1-001A		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A1-001B		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A1-024		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	2	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A1-027		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	2.5	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A1-051		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A1-068		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A1-069		Draught Lobby	1	Draught Lobby	28	Not Controlled	Warm Air Door Curtain	BMS Adjustable Sensor	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A1-070		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A1-071		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-002		A2 Paediatric Acute Receiving Unit - 34 Beds	Single Room 27	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
G-A2-003			Room 27 - Ensuite	14	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-004			Single Room 28	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
G-A2-005			Room 28 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-006	Single Room 26		1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
G-A2-007	Room 26 - Ensuite		1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-008	Reception		1	Reception	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract Air	2 people at 10l/s/per person (5ach)	2 people at 10l/s/per person (5ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
G-A2-009	Single Room 29		1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
G-A2-010	Room 29 - Ensuite		1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-011	Touchdown Base 2		4	staff base	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	n/a	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	
G-A2-012	Single Room 31		1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
G-A2-013	Room 31 - Ensuite		1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-014	Single Room 30		1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
G-A2-015	Room 30 - Ensuite		1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10 minimum	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
G-A2-016		Resus Bay	1	Resus Trolley bay	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-017		Single Room 6	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
G-A2-018		Room 6 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-019		Single Room 5	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
G-A2-020		Room 5 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-021		Clean Utility	1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	41	150	n/a	None	A	80	Automatic Controls	General working plane 1m
G-A2-022		Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-023		WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-024		WC - Visitors	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-025		Linen Bay (1 Trolley)	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-026		Touchdown Base 1	1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	None	0	0	n/a	n/a	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-A2-027		Hoist Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-028		Observation Bay	1	Multi-bed Wards	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural and Central Supply Air	4	via ensuite	positive to ensuite	F7	43	41	100	5	300	A	80	switch / dimmer	Bed / Trolley 1.45m
G-A2-029		Observation Bay - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-030		Observation Bay - Toilet	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-031		Single Room 1	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
G-A2-032		Room 1 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-033		Single Room 2	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
G-A2-034		Room 2 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-035		Single Room 3	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
G-A2-036		Room 3 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-037		Single Room 4	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
G-A2-038		Room 4 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-039		Treatment Room	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
G-A2-040		Dining / Play Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	7	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
G-A2-041		Ward Kitchen	1	Ward Kitchen	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	6	Negative	None	43	60	500	n/a	None	A	80	Switch	General working plane 1m
G-A2-042		Single Room 7	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
G-A2-043		Room 7 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-044		Single Room 8	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract Air	6	6 via bedroom & ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
G-A2-045		Room 8 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-046		Bay 2	1	Multi-bed Wards	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural and Central Supply Air	4	via ensuite	positive to ensuite	F7	43	41	100	5	300	A	80	switch / dimmer	Bed / Trolley 1.45m
G-A2-047		Bay 2 - Toilet	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-048		Bay 2 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-049		Touchdown Base 3	1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-A2-050		Single Room 9	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
G-A2-051		Room 9 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-052		Single Room 10	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
G-A2-053		Room 10 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-054		Bay 1	1	Multi-bed Wards	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural and Central Supply Air	4	via ensuite	positive to ensuite	F7	43	41	100	5	300	A	80	switch / dimmer	Bed / Trolley 1.45m
G-A2-055		Bay 1 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-056		Bay 1 - Toilet	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-058		Single Room 11	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
G-A2-059		Room 11 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-060		Single Room 12	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
G-A2-061		Room 12 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-A2-062		WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
G-A2-063		Linen Bay (1 Trolley)	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-064		Store - Equipment	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-065		Single Room 16	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
G-A2-066		Room 16 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-067		Single Room 14	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
G-A2-068		Room 14 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-069		Touchdown Base 4	1	Staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	2 people at 10 l/s per person (8ach)	0	Positive	F7	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	
G-A2-070		Single Room 15	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
G-A2-071		Room 15 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-072		Single Room 17	1	Isolation Bedroom	28	21	Adjacent Space Transfer Air	Local / BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Supply Via Lobby	10	10 via the ensuite	Balanced	H14	n/a	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
G-A2-073		Room 17 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	43	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-074		Room 17 - Lobby	1	Isolation Lobby	28	21	Warm Air - Reheat Battery	Local / BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply	46	0	Positive	H14	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-075 A&B		Store - General	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-076		Patients' Assisted Bathroom	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Switch	Floor 0m	
G-A2-077		Multi-Disciplinary Office	1	Multi Disciplinary Work Areas	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
G-A2-078		Senior Charge Nurse Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
G-A2-079		On-Call Consultant Office (2 Person)	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
G-A2-080		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-081		Clinical Coordination Office (2 Person)	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
G-A2-082		Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-083		Patient Interview Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6 people at 10 l/s per person (9ach)	6 people at 10 l/s per person (9ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
G-A2-084		Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-001		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-057		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-085		Corridor	1	Corridor	28	18	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-086		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-088		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A2-089		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-A3-001		A3 PARU / Emergency / Radiology Shared Support	Staff Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
G-A3-002		Seminar & Training Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	22 people at 10 l/s per person (9ach)	22 people at 10 l/s per person (9ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
G-A3-003	Meeting / Case Conference Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	25 people at 10 l/s per person (11ach)	25 people at 10 l/s per person (11ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m		
G-A3-004	Lobby	1	Lobby	18	28	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
G-A3-005	Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m		
1-B1-002	B1 PICU and HDU's - 24 Beds	Retrieval Equipment Store	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	2.5	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
1-B1-003	Staff Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F9 ePM1 90%	300	n/a	None	A	80	Switch	Floor 0m	Switch	Floor 0m		
1-B1-004	Senior Charge Nurse Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m		
1-B1-005	WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m		
1-B1-006	WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m		
1-B1-007	Equipment Service Room	1	Small Workshop	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	6	Negative	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m		
1-B1-008	IPS Room	1	IPS Room	30	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	4	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m		
1-B1-009	Bay 1	1	Multi-bed Wards	28	18	Duct Mounted Heater Batteries	Local / BMS adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air **	10	6	+10Pa	F9 ePM1 90%	100	5	300	A	80	switch / dimmer	Bed / Trolley	switch / dimmer	Bed / Trolley 1.45m		
1-B1-010	Gas Cylinder Store	1	Storage Area Med Gas	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	7	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m		

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
1-B1-011		Multidisciplinary Work Area PICU	1	Multi Disciplinary Work Areas	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	0	4	Negative	F9 ePM1 90%	400	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m
1-B1-012		Staff Base 1	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Extract	0	Part of Corridor	n/a	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m
1-B1-014		Resuscitation Trolley Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	Part of Corridor	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-015		Lobby 5	1	Isolation Lobby	32	11.5	Heated via Bedroom Supply Air System	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Isolation Room Supply System	50	0	+10Pa to corridor	H14	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-016		Single Room 5 Isolation	1	Isolation Bedroom	28	18	Lobby Transfer Air	Adjustable	Yes	Lobby Transfer Air	Supply via lobby + Dirty Extract	10	10	Balanced	H14	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m
1-B1-017		Single Room 6 Isolation	1	Isolation Bedroom	28	18	Lobby Transfer Air	Adjustable	Yes	Lobby Transfer Air	Supply via lobby + Dirty Extract	10	10	Balanced	H14	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m
1-B1-018		Lobby 6	1	Isolation Lobby	32	11.5	Heated via Supply Air System	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Isolation Room Supply System	55	0	+10Pa to corridor	H14	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-019		Single Room 8	1	Bedroom	28	18	Duct Mounted Heater Batteries	adjustable	Yes	Comfort Cooled Fresh Air	Central Supply & Extract **	10	4	+10Pa	F9 ePM1 90%	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m
1-B1-020		Single Room 7	1	Bedroom	28	18	Duct Mounted Heater Batteries	adjustable	Yes	Comfort Cooled Fresh Air	Central Supply & Extract **	10	2.3	+10Pa	F9 ePM1 90%	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m
1-B1-021		Single Room 9	1	Bedroom	28	18	Duct Mounted Heater Batteries	adjustable	Yes	Comfort Cooled Fresh Air	Central Supply & Extract **	10	3	+10Pa	F9 ePM1 90%	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m
1-B1-023		Staff Base 2	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	0	Part of Corridor	n/a	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m
1-B1-024		Resuscitation Trolley Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	None	0	Part of Corridor	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-025		Lobby 10	1	Isolation Lobby	32	11.5	Heated via Supply Air System	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Isolation Room Supply System	62	0	+10Pa to corridor	H14	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-026		Single Room 10 - Isolation	1	Isolation Bedroom	28	18	Lobby Transfer Air	Adjustable	Yes	Lobby Transfer Air	Supply via lobby + Dirty Extract	10	10	Balance	H14	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m
1-B1-027		Clean Utility	1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F9 ePM1 90%	150	n/a	None	A	80	Automatic Controls	General working plane 1m	Automatic Controls	General working plane 1m
1-B1-028		Bed/Patient Chair / Buggy Storage	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-029		Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-030		Linen Bay (1 Trolley)	1	Linen Bay	28	16	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-031		Bay 2	1	Multi-bed Wards	28	18	Duct Mounted Heater Batteries	adjustable	Yes	Comfort Cooled Fresh Air	Central Supply & Extract **	10	4	+10Pa	F9 ePM1 90%	100	5	300	A	80	switch / dimmer	Bed / Trolley 1.45m	switch / dimmer	Bed / Trolley 1.45m
1-B1-032		Patients' Assisted Bathroom	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Switch	Floor 0m	Switch	Floor 0m
1-B1-033		Lobby 16	1	Isolation Lobby	32	11.5	Heated via Supply Air System	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Isolation Room Supply System	45	0	-5Pa to corridor	H14	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-034		Linen Bay (1 Trolley)	1	Linen Bay	28	16	Adjacent Space Transfer Air	None	No	None	None	0	Part of Corridor	n/a	None	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-035		Hoist Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	Part of Corridor	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-036		Single Room 16 Isolation	1	Isolation Bedroom	28	18	Lobby Transfer Air	Adjustable	Yes	Lobby Transfer Air	Supply via lobby + Dirty Extract	10	15	-10Pa to Lobby	H14	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m
1-B1-037		Single Room 17	1	Bedroom	28	18	Duct Mounted Heater Batteries	adjustable	Yes	Comfort Cooled Fresh Air	Central Supply & Extract **	10	4	+10Pa	F9 ePM1 90%	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m
1-B1-038		Staff Base 3	1	Staff Base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	Part of Corridor	n/a	F9 ePM1 90%	200/300	n/a	None	A	80	Switch / Dimmer	General working plane 1m	Switch / Dimmer	General working plane 1m
1-B1-039		Resuscitation Trolley Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	Part of Corridor	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-041		Clean Utility	1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F9 ePM1 90%	150	n/a	None	A	80	Automatic Controls	General working plane 1m	Automatic Controls	General working plane 1m
1-B1-042		Multidisciplinary Work Area HDU	1	Multi Disciplinary Work Areas	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	0	4	Negative	F9 ePM1 90%	400	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m
1-B1-043		Laboratory	1	Laboratory	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	6	Balance	F9 ePM1 90%	500	n/a	None	A	80	Switch	General working plane 1m	Switch	General working plane 1m
1-B1-044		IPS Room	1	IPS Room	30	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-045		Quiet / Interview Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	0	6	Negative	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m
1-B1-046		Store - Equipment	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	2	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-047		Family Interview Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	5	Balance	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m
1-B1-048		On call consultant	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	2.5	Positive	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m
1-B1-049		Retrieval Team	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	0	4	Negative	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m
1-B1-050		Bulk Supplies Store	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-051		Data Manager & Secretarial Office (3 person)	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	3	Positive	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m
1-B1-055		Waiting Area (Visitors)	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Balance	F9 ePM1 90%	300	n/a	None	A	80	Switch	Floor 0m	Switch	Floor 0m
1-B1-056		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-057		X-Ray Processing	1	Diagnostic room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	8	8	Balance	F9 ePM1 90%	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	Switch / Dimmer	General working plane 1m
1-B1-058		Mobile X-Ray / Ultrasound Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	Yes	Comfort Cooled Fresh Air	Central Supply & Extract	8	8	Balance	F9 ePM1 90%	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-059		Cardiac Echo/ECG Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	7	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-060		Seminar Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	7	7	Balance	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
1-B1-061		Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-062		WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-063		Bay 3	1	Multi-bed Wards	28	18	Duct Mounted Heater Batteries	local BMS adjustable	Yes	Comfort Cooled Fresh Air	Central Supply & Extract **	10	4.5	+10Pa	F9 ePM1 90%	100	5	300	A	80	switch / dimmer	Trolley 1.45m	switch / dimmer	Bed / Trolley 1.45m
1-B1-064		Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-065		Neonatal Bay 4 *	1	Multi-bed Wards	28	18	Duct Mounted Heater Batteries	local BMS adjustable	Yes	Comfort Cooled Fresh Air	Central Supply and Extract**	10	5	+10Pa	F9 ePM1 90%	100	5	300	A	80	switch / dimmer	Trolley 1.45m	switch / dimmer	Bed / Trolley 1.45m
1-B1-066		Clean Utility (Neo-Natal) *	1	Clean Utility	28	18	Duct Mounted Heater Batteries	local BMS adjustable	Yes	Comfort Cooled Fresh Air	Central Supply and Extract**	10	5	+10Pa	F9 ePM1 90%	150	n/a	None	A	80	Automatic Controls	General working plane	Automatic Controls	General working plane 1m
1-B1-067		Medical Gas Store	1	Storage Area Med Gas	28	16	Adjacent Space Transfer Air	None	No	None	General Central Extract	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-068		Baby Infant / Feeding Room	1	Baby Feeding	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Dirty Extract	0	10	Negative	None	100	n/a	None	A	80	Switch	Floor 0m	Switch	Floor 0m
1-B1-069		Staff Base 4 *	1	Cellular / Ward Offices	28	18	Duct Mounted Heater Batteries	local BMS adjustable	Yes	Comfort Cooled Fresh Air	Central Supply and Extract**	10	5	+10Pa	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m
1-B1-071		Resuscitation Trolley Bay *	1	Circulation Equipment Storage Bays	28	18	Duct Mounted Heater Batteries	local BMS adjustable	No	None	Central Supply and Extract**	10	5	+10Pa	F9 ePM1 90%	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-072		Play Specialist Base & Store	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	0	4	Negative	F9 ePM1 90%	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-073		Pantry / Milk Store	1	Pantry	28	18	Adjacent Space Transfer Air	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	0	7	Negative	F9 ePM1 90%	300	n/a	None	A	80	Switch	Floor 0m	Switch	Floor 0m
1-B1-074		Neonatal Cot 22 - Ensuite	1	Bathroom	28	18	Warm air via bedroom	Floating temp	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-075		Neonatal Cot 22	1	Bedroom	28	18	Duct Mounted Heater Batteries	local BMS adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air **	10	via ensuite	+10Pa	F9 ePM1 90%	100	5	300	A	80	Switch / Dimmer	Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m
1-B1-077		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	100	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-078		Relative Overnight Stay Room 1	1	Relatives Overnight Stay	28	20	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	4	0	Positive	F9 ePM1 90%	100	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Bed / Trolley 1.45m
1-B1-079		Relative Overnight Room 1 Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-080		WC - Relatives	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-082		Relative Overnight Stay Room 2	1	Relatives Overnight Stay	28	20	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	4	0	Positive	F9 ePM1 90%	100	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Bed / Trolley 1.45m
1-B1-083		Relative Overnight Room 2 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-084		Relatives' Sitting Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	0	Positive	F9 ePM1 90%	300	n/a	None	A	80	Switch	Floor 0m	Switch	Floor 0m
1-B1-090		Equipment Cleaning	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	100	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-001		Corridor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-013		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-013A		Corridor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-013B		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-013C		Corridor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-022		Corridor *	1	Corridor	28	18	Duct Mounted Heater Batteries	local BMS adjustable	No	None	Central Supply and Extract**	10	5	+10Pa	F9 ePM1 90%	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-040		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Extract	0	7	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-052		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Extract	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-070		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Extract	0	31	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-076		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-086		Corridor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-087		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-088		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-B1-089		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	100	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.1-002	C1	Medical Inpatients - 23 Beds	1	IPS Room	30	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-003		Senior Charge Nurse Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
3-C1.1-004		Single Room 4 (Transitional Care Bed)	1	Isolation Bedroom	28	21	Adjacent Space Transfer Air	BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Supply via lobby	10	10 via the ensuite	Balanced	H14	n/a	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.1-005		Room 4 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	25	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-006		Room 4 - Lobby	1	Isolation Lobby	28	21	Warm Air - Reheat Battery	Local BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply	48	0	Positive	H14	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-007		Hoist Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-008		Sitting Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
3-C1.1-009		Single Room 6 (Transitional Care Bed)	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.1-010		Room 6 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
3-C1.1-011		Touchdown Base 2	1	Staff Base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	1 person at 10l/s/per person (8ach)	0	Positive	F7	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
3-C1.1-012		Resus Bay	1	Resus Trolley bay	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-013		Single Room 5 (Transitional Care Bed)	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.1-014		Room 5 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-015		Single Room 7 (Transitional Care Bed)	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.1-016		Room 7 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-017		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-018		Bay 2 (beds 15-18)	1	Multi-bed Wards	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural and Central Supply Air	4	via ensuite	positive to ensuite	F7	43	41	100	5	300	A	80	switch / dimmer	Bed / Trolley 1.45m
3-C1.1-019		Bay 2 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-020		Bay 2 - Toilet	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-021		Dining / Play Room	1	Eating/Drinking	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	8 people at 10 l/s per person (4ach)	8 people at 10 l/s per person (4ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
3-C1.1-022		Store - Equipment	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-023		Ward kitchen	1	Ward Kitchen	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central General Extract	0	6	Negative	None	43	60	500	n/a	None	A	80	Switch	General working plane 1m
3-C1.1-024		Linen Bay (1 Trolley)	1	Linen Bay	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.1-025		Store - General	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-026		WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-027		WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-028		Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-029		Mobile X-Ray/Ultrasound Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-030		Multi-disciplinary Office	1	Multi Disciplinary Work Areas	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
3-C1.1-031		Reception / Staff Base	1	Reception	28	18	Radiant Panels	Remote Sensor Adj.	Yes	wall Mounted Unit	Central Supply Air	1 person at 10 l/s per person (3ach)	0	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
3-C1.1-032		Room 21 - Lobby	1	Isolation Lobby	28	21	Warm Air - Reheat Battery	Local BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply	48	0	Positive	H14	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-033		Single Room 21	1	Isolation Bedroom	28	21	Adjacent Space Transfer Air	BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Supply via lobby	10	10 via the ensuite	Balanced	H14	n/a	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.1-034		Room 21 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	42	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-035		Room 20 - Lobby	1	Isolation Lobby	28	21	Warm Air - Reheat Battery	Local BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply	38	0	Positive	H14	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-036		Single Room 20	1	Isolation Bedroom	28	21	Adjacent Space Transfer Air	BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Supply via lobby	10	10 via the ensuite	Balanced	H14	n/a	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.1-037		Room 20 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	42	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-038		Touchdown Base 1	1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Supply and Extract	1 person at 10l/s/per person (8ach)	1 person at 10l/s/per person (8ach)	Balanced	F7	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
3-C1.1-039		Room 19 - Lobby	1	Isolation Lobby	28	21	Warm Air - Reheat Battery	Local BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply	50	0	Positive	H14	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-040		Single Room 19	1	Isolation Bedroom	28	21	Adjacent Space Transfer Air	BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Supply via lobby	10	10 via the ensuite	Balanced	H14	n/a	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.1-041		Room 19 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	42	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-042		Clean Utility	1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	41	150	n/a	None	A	80	Automatic Controls	General working plane 1m
3-C1.1-043		Treatment Room	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
3-C1.1-044		Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-045		Touchdown Base 3	1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	1 person at 10l/s/per person (8ach)	0	Positive	F7	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
3-C1.1-046		Bay 1 (beds 10-14 excl 13)	1	Multi-bed Wards	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural and Central Supply Air	4	via ensuite	positive to ensuite	F7	43	41	100	5	300	A	80	switch / dimmer	Bed / Trolley 1.45m
3-C1.1-047		Bay 1 - Toilet	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-048		Bay 1 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.1-049		Patients' Assisted Bathroom	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Switch	Floor 0m
3-C1.1-050		Patient Interview Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4 people at 10 l/s per person (7ach)	4 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
3-C1.1-051		Touchdown Base 4	1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	0	0	n/a	n/a	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
3-C1.1-052		Single Room 9	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
3-C1.1-053		Room 9 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.1-054		Single Room 8	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.1-055		Room 8 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.1-056		Single Room 3	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.1-057		Room 3 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.1-058		Single Room 1	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	6 via bedroom & ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.1-059		Room 1 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.1-060		Single Room 2	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.1-061		Room 2 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.1-062		Touchdown Base 5	1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	None	0	0	n/a	n/a	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	
3-C1.1-063		Single Room 24	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.1-064		Room 24 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.1-065		Single Room 23	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.1-066		Room 23 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.1-067		Single Room 22	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.1-068		Room 22 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.1-070		WC - Visitors	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.1-001		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.1-071		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.1-073		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.1-072		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-002		C1.2 Surgical Long Stay Inpatients -15 Beds	Single Room 9	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.2-003			Room 10 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.2-004			Linen Bay	1	Linen Bay	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.2-005			Single Room 11	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.2-006	Room 11 - Ensuite		1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-007	Single Room 12		1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.2-008	Room 12 - Ensuite		1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-009	Touchdown Base 1		1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	0	0	n/a	n/a	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	
3-C1.2-010	Single Room 10		1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.2-011	Room 9 - Ensuite		1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-012	Dirty Utility		1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-013	DSR		1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-014	Single Room 14		1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.2-015	Room 14 - Ensuite		1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-016	Hoist Bay		1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-017	Patients' Assisted Bathroom		1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Switch	Floor 0m	
3-C1.2-018	Single Room 15		1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.2-019	Room 16 - Ensuite		1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-020	Single Room 16		1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.2-021	Room 15 - Ensuite		1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-022	Touchdown Base		1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	None	0	0	n/a	n/a	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	
3-C1.2-023	Bay 2 (beds 5-8)		1	Multi-bed Wards	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural and Central Supply Air	4	via ensuite	positive to ensuite	F7	43	41	100	5	300	A	80	switch / dimmer	Bed / Trolley 1.45m	
3-C1.2-024	Bay 2 - Toilet		1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-025	Bay 1 - Ensuite		1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
3-C1.2-026		Bay 1 (beds 1-4)	1	Multi-bed Wards	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural and Central Supply Air	4	via ensuite	positive to ensuite	F7	43	41	100	5	300	A	80	switch / dimmer	Bed / Trolley 1.45m	
3-C1.2-027		Bay 1 - Toilet	2	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-028		Senior Charge Nurse Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
3-C1.2-029		Resuscitation Trolley Bay	1	Resus Trolley bay	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-030		Store - Equipment	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-031		Clean Utility	1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	41	150	n/a	None	A	80	Automatic Controls	General working plane 1m	
3-C1.2-032		Treatment Room	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m	
3-C1.2-033		Dining / Play Room	1	Eating/Drinking	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5 people at 10 l/s per person (5ach)	5 people at 10 l/s per person (5ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m	
3-C1.2-034		Ward kitchen	1	Ward Kitchen	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central General Extract	0	6	Negative	None	43	60	500	n/a	None	A	80	Switch	General working plane 1m	
3-C1.2-035		Patient Interview Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	5 people at 10 l/s per person (8ach)	5 people at 10 l/s per person (8ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
3-C1.2-036		Reception / Staff Base	1	Reception	28	18	Adjacent Space Transfer Air	None	Yes	Comfort Cooled Fresh Air	Central Supply Air	3	0	Positive	F7	n/a	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
3-C1.2-037		Discharge Lounge	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m	
3-C1.2-038		Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-039		Store - General	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-040		WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-041		WC - Visitors	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-042		Touchdown Base 3	1	Staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	None	0	0	n/a	n/a	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	
3-C1.2-043		Multi-Disciplinary Office	1	Multi Disciplinary Work Areas	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
3-C1.2-044		WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-001		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-045		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.2-046		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.3-002		C1.3 Neuroscience Inpatients - 12 Beds	Waiting Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	5	5	Balanced	F9 ePM1 90%	300	n/a	None	A	80	Switch	Floor 0m	Switch	Floor 0m
3-C1.3-003			Reception / Staff Base	1	Reception	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply Air	3	0	Positive	F9 ePM1 90%	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	Automatic Controls	Desk 0.75 to 0.85m
3-C1.3-004	WC Accessible		1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-005	Store - Equipment		1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-006	Touchdown Base		1	Staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	7	0	Positive	F9 ePM1 90%	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	Switch / Dimmer	General working plane 1m	
3-C1.3-007	Room 1 - Lobby		1	Isolation Lobby	28	21	Warm Air - Reheat Battery	Local EMS Adjustable	Yes	Comfort Cooled Fresh Air	Central Supply	64	0	Positive	H14	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-008	Single Room 1		1	Isolation Bedroom	28	21	Adjacent Space Transfer Air	BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Supply via lobby	10	10 via the ensuite	Balanced	H14	100	5	300	A	80	Switch / Dimmer	Trolley	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.3-009	Room 1 - Ensuite		1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	43	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-010	Bay 1 - Toilet		1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-011	Bay 1 (Bed 2-5)		1	Multi-bed Wards	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural and Central Supply Air	4	via ensuite	positive to ensuite	F9 ePM1 90%	100	5	300	A	80	switch / dimmer	Trolley	switch / dimmer	Bed / Trolley 1.45m	
3-C1.3-012	Bay 1 - Ensuite		1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-013	Bay 2 (beds 6-9)		1	Multi-bed Wards	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural and Central Supply Air	4	via ensuite	positive to ensuite	F9 ePM1 90%	100	5	300	A	80	switch / dimmer	Trolley	switch / dimmer	Bed / Trolley 1.45m	
3-C1.3-014	Bay 2 - Toilet		1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-015	Resuscitation Trolley Bay		1	Resus Trolley bay	28	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	Part of Corridor	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-016	Linen Bay		1	Linen Bay	28	16	Adjacent Space Transfer Air	None	No	None	None	0	Part of Corridor	n/a	None	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-017	Store - General		1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-018	Multi-Disciplinary Office		1	Multi Disciplinary Work Areas	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m	
3-C1.3-019	Patient Interview Room		1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	6	Balanced	F9 ePM1 90%	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	Automatic Controls	Desk 0.75 to 0.85m	
3-C1.3-020	Senior Charge Nurse Office		1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m	
3-C1.3-021	WC - Staff		1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-022	WC - Staff		1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
3-C1.3-023		WC - Visitors	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-024		Snoezelen Room	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	3	3	Balanced	F9 ePM1 90%	300	n/a	1000	A	80	Switch	Trolley 1.45m	Switch	Bed / Trolley 1.45m	
3-C1.3-025		Rehabilitation Room	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	3	3	Balanced	F9 ePM1 90%	300	n/a	1000	A	80	Switch	Trolley 1.45m	Switch	Bed / Trolley 1.45m	
3-C1.3-026		Hoist Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-027		Touchdown Base	1	Staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	1 person at 10L/s/per person (7ach)	0	0	Positive	F9 ePM1 90%	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	Switch / Dimmer	General working plane 1m
3-C1.3-028		Single Room 10 (VT)	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F9 ePM1 90%	100	5	300	A	80	Switch / Dimmer	Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.3-029		Room 10 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-030		Single Room 11 (VT)	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F9 ePM1 90%	100	5	300	A	80	Switch / Dimmer	Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.3-031		Room 11 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-032		Single Room 12	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F9 ePM1 90%	100	5	300	A	80	Switch / Dimmer	Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.3-033		Room 12 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-034		Ward Kitchen	1	Ward Kitchen	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	6	Negative	None	500	n/a	None	A	80	Switch	General working plane 1m	Switch	General working plane 1m	
3-C1.3-035		Patients' Assisted Bathroom	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Switch	Floor 0m	Switch	Floor 0m	
3-C1.3-036		Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-037		Treatment Room	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F9 ePM1 90%	500	n/a	1000	A	90	Switch	Trolley 1.45m	Switch	Bed / Trolley 1.45m	
3-C1.3-038		Clean Utility	1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F9 ePM1 90%	150	n/a	None	A	80	Automatic Controls	General working plane 1m	Automatic Controls	General working plane 1m	
3-C1.3-039		Dining / Play Room	1	Eating/Drinking	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	5	Balanced	F9 ePM1 90%	300	n/a	None	A	80	Switch	Floor 0m	Switch	Floor 0m	
3-C1.3-040		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	100	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-041		Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.3-001		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	None	0	0	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-002		C1.4 Haematology / Oncology Inpatients & Daycases - 17 Beds & 2 Chairs	Quiet Study Room	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	0	3	Negative	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m
3-C1.4-004	Disposal Hold		1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-005	DSR		1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	100	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-006	Store - General		1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-007	Patient Interview Room		1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	0	6	Negative	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m	
3-C1.4-008	Complementary Therapy Room		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	0	3	Negative	F9 ePM1 90%	300	n/a	1000	A	80	Switch	Trolley 1.45m	Switch	Bed / Trolley 1.45m	
3-C1.4-009	Room 11 - Ensuite		1	Bathroom	28	18	Warm air via bedroom	Floating temp	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-010	Single Room 11		1	Bedroom	28	18	Duct Mounted Heater Batteries	local/bms adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air **	10	0	+10Pa	H14	100	5	300	A	80	Switch / Dimmer	Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.4-011	Assisted Bathroom		1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Switch	Floor 0m	Switch	Floor 0m	
3-C1.4-012	Touchdown Base 4		1	Staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	Part of Corridor	Part of Corridor	n/a	F9 ePM1 90%	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	Switch / Dimmer	General working plane 1m	
3-C1.4-013	Single Room 12		1	Bedroom	28	18	Duct Mounted Heater Batteries	local/bms adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air **	10	0	+10Pa	H14	100	5	300	A	80	Switch / Dimmer	Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.4-014	Room 12 - Ensuite		1	Bathroom	28	18	Warm air via bedroom	Floating temp	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-015	Social Space		1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	0	8	Negative	F9 ePM1 90%	300	n/a	None	A	80	Switch	Floor 0m	Switch	Floor 0m	
3-C1.4-016	Single Room 14		1	Bedroom	28	18	Duct Mounted Heater Batteries	local/bms adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air **	10	0	+10Pa	H14	100	5	300	A	80	Switch / Dimmer	Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.4-017	Room 14 - Ensuite		1	Bathroom	28	18	Warm air via bedroom	Floating temp	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-018	Single Room 10		1	Bedroom	28	18	Duct Mounted Heater Batteries	local/bms adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air **	10	0	+10Pa	H14	100	5	300	A	80	Switch / Dimmer	Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.4-019	Room 10 - Ensuite		1.0	Bathroom	28	18	Warm air via bedroom	Floating temp	No	None	Central Dirty Extract	0	10	Negative	None	200.0	n/a	None	A	80.0	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-021	Hoist Bay		1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer	None	No	None	None	0	0	Balanced	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-022	Dirty Utility		1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-023	Nursing Staff Office		1	Pharmacy Base	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	3	3	Balanced	F9 ePM1 90%	300	n/a	1000	A	80	Switch	Trolley 1.45m	Switch	Bed / Trolley 1.45m	
3-C1.4-024	Multi-Disciplinary Office		1	Multi Disciplinary Work Areas	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m	
3-C1.4-025	Medical Staff Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m		
3-C1.4-026	Consultant Office (5 person)	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m		

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
3-C1.4-027		Store - Equipment	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-028		Research Staff Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m
3-C1.4-029		Pharmacy Base	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m
3-C1.4-030		Senior Charge Nurse Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m
3-C1.4-032		Single Room 9	1	Bedroom	28	18	Duct Mounted Heater Batteries	Local 7.0m/s adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air **	10	0	+10Pa	H14	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.4-033		Room 9 - Ensuite	1.0	Bathroom	28	18	Warm air via bedroom	Floating temp	No	None	Central Dirty Extract	0	10	Negative	None	200.0	n/a	None	A	80.0	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-034		Touchdown Base 3	1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	Part of Corridor	Part of Corridor	n/a	F9 ePM1 90%	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	Switch / Dimmer	General working plane 1m
3-C1.4-035		Linen Bay (1 Trolley)	1	Linen Bay	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-036		WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-037		WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-038		Clean Utility	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F9 ePM1 90%	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m	Switch	Bed / Trolley 1.45m
3-C1.4-039		Room 8 Lobby	1	Isolation Lobby	32	11.5	Heated via Supply Air System	Remote Sensor Adj. adjustable	Yes	Comfort Cooled Fresh Air	Isolation Room Supply System	64	0	+10Pa to corridor	H14	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-040		Single Room 8 (Isolation)	1	Isolation Bedroom	28	18	Lobby Transfer Air	Local 7.0m/s adjustable	Yes	Comfort Cooled Fresh Air	Supply via lobby	10	0	Balanced	H14	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.4-041		Room 8 - Ensuite	1	Bathroom	28	18	Room Transfer Air	Floating temp	No	None	Dirty Extract	0	40	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-042		Room 7 - Ensuite	1	Bathroom	28	18	Room Transfer Air	Floating temp	No	None	Dirty Extract	0	40	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-043		Single Room 7 (Isolation)	1	Isolation Bedroom	28	18	Lobby Transfer Air	Local 7.0m/s adjustable	Yes	Comfort Cooled Fresh Air	Supply via lobby	10	0	Balanced	H14	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.4-044		Room 7 Lobby	1	Isolation Lobby	32	11.5	Heated via Supply Air System	Remote Sensor Adj. adjustable	Yes	Comfort Cooled Fresh Air	Isolation Room Supply System	64	0	+10Pa to corridor	H14	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-045		Touchdown Base 2	1	Staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	Part of Corridor	Part of Corridor	n/a	F9 ePM1 90%	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	Switch / Dimmer	General working plane 1m
3-C1.4-046		Single Room 15	1	Bedroom	28	18	Duct Mounted Heater Batteries	Local 7.0m/s adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air **	10	0	+10Pa	H14	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.4-047		Room 15 - Ensuite	1	Bathroom	28	18	Warm air via bedroom	Floating temp	No	None	Central Dirty Extract	0	11	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-048		Room 6 - Lobby	1	Isolation Lobby	32	11.5	Heated via Supply Air System	Remote Sensor Adj. adjustable	Yes	Comfort Cooled Fresh Air	Isolation Room Supply System	64	0	+10Pa to corridor	H14	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-049		Single Room 6 (Isolation)	1	Isolation Bedroom	28	18	Lobby Transfer Air	Local 7.0m/s adjustable	Yes	Comfort Cooled Fresh Air	Supply via lobby	10	0	Balanced	H14	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.4-050		Room 6 - Ensuite	1	Bathroom	28	18	Room Transfer Air	Floating temp	No	None	Dirty Extract	0	40	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-051		Room 5 - Ensuite	1	Bathroom	28	18	Room Transfer Air	Floating temp	No	None	Dirty Extract	0	40	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-052		Single Room 5 (Isolation)	1	Isolation Bedroom	28	18	Lobby Transfer Air	Local 7.0m/s adjustable	Yes	Comfort Cooled Fresh Air	Supply via lobby	10	0	Balanced	H14	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.4-053		Room 5 - Lobby	1	Isolation Lobby	32	11.5	Heated via Supply Air System	Remote Sensor Adj. adjustable	Yes	Comfort Cooled Fresh Air	Isolation Room Supply System	64	0	+10Pa to corridor	H14	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-054		Resuscitation Trolley Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer	None	No	None	None	0	0	Balanced	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-055		Single Room 16	1	Bedroom	28	18	Duct Mounted Heater Batteries	Local 7.0m/s adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air **	10	0	+10Pa	H14	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.4-056		Room 16 - Ensuite	1	Bathroom	28	18	Warm air via bedroom	Floating temp	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-057		Single Room 17	1	Bedroom	28	18	Duct Mounted Heater Batteries	Local 7.0m/s adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air **	10	0	+10Pa	H14	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.4-058		Room 17 - Ensuite	1	Bathroom	28	18	Warm air via bedroom	Floating temp	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-059		Single Room 18	1	Bedroom	28	18	Duct Mounted Heater Batteries	Local 7.0m/s adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air **	10	0	+10Pa	H14	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.4-060		Room 18 - Ensuite	1	Bathroom	28	18	Warm air via bedroom	Floating temp	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-061		Bay 1 (Beds 1-6)	1	Multi-bed Wards	28	18	Duct Mounted Heater Batteries	Local 7.0m/s adjustable	Yes	Ceiling Cassette - Chilled Water	Central Supply Air **	10	5	+10Pa	H14	100	5	300	A	80	switch / dimmer	Bed / Trolley 1.45m	switch / dimmer	Bed / Trolley 1.45m
3-C1.4-062		Bay 1 - Ensuite	1	Bathroom	28	18	Warm air via bedroom	Floating temp	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-063		Play Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	0	8	Negative	F9 ePM1 90%	300	n/a	None	A	80	Switch	Floor 0m	Switch	Floor 0m
3-C1.4-064		Ward Kitchen	1	Ward Kitchen	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	6	Negative	None	500	n/a	None	A	80	Switch	General working plane 1m	Switch	General working plane 1m
3-C1.4-065		Treatment Room	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F9 ePM1 90%	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m	Switch	Bed / Trolley 1.45m
3-C1.4-066		Clean Utility	1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F9 ePM1 90%	150	n/a	None	A	80	Automatic Controls	General working plane 1m	Automatic Controls	General working plane 1m
3-C1.4-067		WC - Visitors	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	11	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-068		Waiting Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	0	6	Negative	F9 ePM1 90%	300	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-069		Reception / Staff Base	1	Reception	28	18	Adjacent Space Transfer Air	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	Part of Corridor	Part of Corridor	Balanced	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m
3-C1.4-071		Room 4 - Lobby	1	Isolation Lobby	32	11.5	Heated via Supply Air System	Remote Sensor Adj. adjustable	Yes	Comfort Cooled Fresh Air	Isolation Room Supply System	64	0	+10Pa to corridor	H14	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.4-072		Single Room 4 (Isolation)	1	Isolation Bedroom	28	18	Lobby Transfer Air	Local 7.0m/s adjustable	Yes	Comfort Cooled Fresh Air	Supply via lobby	10	0	Balanced	H14	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
3-C1.4-073		Room 4 - Ensuite	1	Bathroom	28	18	Room Transfer Air	Floating temp	No	None	Dirty Extract	0	40	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-074		Single Room 3	1	Bedroom	28	18	Duct Mounted Heater Batteries	local/bms adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air **	10	0	+10Pa	H14	100	5	300	A	80	Switch / Dimmer	Desk / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.4-075		Room 3 - Ensuite	1	Bathroom	28	18	Warm air via bedroom	Floating temp	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-076		Single Room 2	1	Bedroom	28	18	Duct Mounted Heater Batteries	local/bms adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air **	10	0	+10Pa	H14	100	5	300	A	80	Switch / Dimmer	Desk / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.4-077		Room 2 - Ensuite	1	Bathroom	28	18	Warm air via bedroom	Floating temp	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-078		Single Room 1	1	Bedroom	28	18	Duct Mounted Heater Batteries	local/bms adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air **	10	0	+10Pa	H14	100	5	300	A	80	Switch / Dimmer	Desk / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.4-079		Room 1 - Ensuite	1	Bathroom	28	18	Warm air via bedroom	Floating temp	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-080		Reception	1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	None	0	0	n/a	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	Switch / Dimmer	General working plane 1m	
3-C1.4-081		Touchdown Base 1	1	Reception	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	Part of Corridor	Part of Corridor	n/a	F9 ePM1 90%	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	Automatic Controls	Desk 0.75 to 0.85m	
3-C1.4-083		Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	9	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-084		Bay 2 (Beds 7-9)	1	Multi-bed Wards	28	18	Duct Mounted Heater Batteries	local/bms adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air **	10	0	+10Pa	H14	100	5	300	A	80	switch / dimmer	Desk / Trolley 1.45m	switch / dimmer	Bed / Trolley 1.45m	
3-C1.4-085		Bay 2 - Ensuite	1	Bathroom	28	18	Warm air via bedroom	Floating temp	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-086		Equipment Bay	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	Part of Corridor	Part of Corridor	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-087		Consult Room	1	Consulting Room (Now treatment room)	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10	6	Positive	F9 ePM1 90%	300	n/a	1000	A	80	Switch	Desk / Trolley 1.45m	Switch	Bed / Trolley 1.45m	
3-C1.4-088		Beverage Bay	1	Tea Making	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	100 KNX	n/a	None	A	80	switch	Floor 0m	switch	Floor 0m	
3-C1.4-001		Corridor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-003		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	Balanced	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-020-2		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-031		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-082		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.4-070		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	100	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.5-002		C1.5 Med / Surg / Neuro / Haemo Shared Support	Store - back up clothing	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.5-003			Family Sitting Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F9 ePM1 90%	300	n/a	None	A	80	Switch	Floor 0m	Switch	Floor 0m
3-C1.5-004			Baby Infant / Feeding Room	1	Baby Feeding	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	100	n/a	None	A	80	Switch	Floor 0m	Switch	Floor 0m
3-C1.5-005			Nappy Change	1	Nappy Change	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	100	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.5-006			Breast Pump Room	1	Baby Feeding	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	100	n/a	None	A	80	Switch	Floor 0m	Switch	Floor 0m
3-C1.5-007			WC-Wheelchair Accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C1.5-008	WC-Wheelchair Accessible		1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.5-001	Corridor		1	Corridor	28	18	None	None	No	None	Central Supply Air	20	0	Negative	F9 ePM1 90%	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.6-001	C1.6 Adolescent Shared Accommodation	Dining / Recreation Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m	
3-C1.6-002		Quiet Room / Study	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
3-C1.7-002	C1.7 Paediatric Neurophysiology	EEG Review Room	1	Cellular / Ward Offices	28	18	Radiant Panels		Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m	
3-C1.7-003		EEG Recording Room 2	1	Diagnostic room	25	18	Warm Air - Reheat Battery		Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	8	8	Balanced	F9 ePM1 90%	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	Switch / Dimmer	General working plane 1m	
3-C1.7-004		EEG Recording Room 1	1	Diagnostic room	25	18	Warm Air - Reheat Battery		Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	8	8	Balanced	F9 ePM1 90%	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	Switch / Dimmer	General working plane 1m	
3-C1.7-005		Evoked Potential Recording Room	1	Diagnostic room	25	18	Warm Air - Reheat Battery		Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	8	8	Balanced	F9 ePM1 90%	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	Switch / Dimmer	General working plane 1m	
3-C1.7-001		Corridor	1	Corridor	28	18	Radiant Panels		No	None	None	0	0	Balanced	none	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-C1.8-002	C1.8 Surgical Short Stay Inpatients - 14 Beds	Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.8-003		Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.8-005		Single Room 9	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
3-C1.8-006		Room 9 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.8-007		Staff WC	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.8-008		WC - Visitors	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-C1.8-009		Dining / Play Room	1	Eating/Drinking	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5 people at 10 l/s per person (4ach)	5 people at 10 l/s per person (4ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m	
3-C1.8-010		Ward Kitchen	1	Ward Kitchen	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	6	Negative	None	43	60	500	n/a	None	A	80	Switch	General working plane 1m	
3-C1.8-011		Reception Desk/Staff Base	1	Reception	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply Air	3	0	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
3-C1.8-012		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.8-013		Store - General	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.8-014		Clean Utility	1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	41	150	n/a	None	A	80	Automatic Controls	General working plane 1m
3-C1.8-015		Treatment Room	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
3-C1.8-016		Bay 1 (beds 1-4)	1	Multi-bed Wards	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural and Central Supply Air	4	via ensuite	positive to ensuite	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.8-017		Bay 1 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.8-018		Bay 1 - Toilet	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.8-019		Touchdown Base 1	1	Staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	None	0	0	n/a	n/a	n/a	43	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
3-C1.8-020		Resuscitation Trolley Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.8-021		Single Room 10	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.8-022		Room 11 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.8-023		Single Room 15	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.8-024		Room 15 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.8-025		Single Room 14	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.8-026		Room 14 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.8-027		Bay 2 (beds5-8)	1	Multi-bed Wards	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural and Central Supply Air	4	via ensuite	positive to ensuite	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.8-028		Bay 2 - Toilet	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.8-029		Bay 2 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.8-030		Single Room 12	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.8-031		Room 12 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.8-032		Single Room 11	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-C1.8-033		Room 10 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.8-034		Linen Bay (1 Trolley)	1	Linen Bay	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.8-035		Patient's Assisted Bathroom	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Switch	Floor 0m
3-C1.8-036		Store - Equipment	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.8-037		Senior Charge Nurse Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
3-C1.8-040		Touchdown Base 2	1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	n/a	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
3-C1.8-001		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.8-004		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C1.8-038		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
3-C2-003		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
3-C2-004		Seminar Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	18 people at 10 l/s per person (9ach)	18 people at 10 l/s per person (9ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
3-C2-005		Staff Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
3-C2-006		Parent Shower Room	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C2-001		Corridor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C3-002	C3	Special Feeds Unit	Food Prep Area	1	Ward Kitchen	28	18	Radiant Panels		No	None	0	6	Negative	None	500	n/a	None	A	80	Switch	General working	Switch	General working plane 1m
3-C3-003		Wash Room	1	Bathroom	28	20	Adjacent Space Transfer Air		No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C3-004		Office Ante Room	1	Cellular / Ward Offices	28	18	Radiant Panels		Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	4	Balanced	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m
3-C3-005		Store - Feeds	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air		No	None	Central General Extract	0	3	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C3-001		Corridor	1	Corridor	28	18	None		No	None	None	0	0	Balanced	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
3-C4-002		Store	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C4-003		Room 1 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C4-005		Sleep Room 1	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-C4-006		Parents Room	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	None	positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Floor 0m
3-C4-007		Control Room	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	2	Negative	None	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
3-C4-008	C4	Sleep Lab	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-C4-009			1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	4	None	positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Floor 0m
3-C4-010			1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C4-001			1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C4-001A			1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-C4-001B			1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-C5-002	C5	Classrooms	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-C5-003			1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-C5-004			1	Classroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	7 people at 10 l/s per person (5ach)	7 people at 10 l/s per person (5ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
4-C5-005			1	Classroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	7 people at 10 l/s per person (5ach)	7 people at 10 l/s per person (5ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
4-C5-006			1	Classroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	11 people at 10 l/s per person (8ach)	11 people at 10 l/s per person (8ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
4-C5-007			1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
4-C5-008			1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-C5-009			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-C5-001			1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D1-001			D1	D1	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80
1-D1-002	1	Consulting Room			25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D1-003	1	Treatment Room			25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
1-D1-004	1	Linen Bay			28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m
1-D1-005	1	Consulting Room			25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D1-008	1	Treatment Room			25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
1-D1-009	1	Resus Trolley bay			28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Bed / Trolley 1.45m
1-D1-010	1	Dirty utility			28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D1-011	1	Toilet			28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D1-012	1	Bathroom			28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D1-013	1	Clean Utility			28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	41	150	n/a	None	A	80	Automatic Controls	General working plane 1m
1-D1-014	1	Consulting Room			25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D1-015	1	Common room/staff room/lounge			28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
1-D1-016	1	Consulting Room			25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D1-017	1	Consulting Room			25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D1-018	1	Consulting Room			25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D1-019	1	Consulting Room			25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D1-020	1	Consulting Room			25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D1-021	1	Consulting Room			25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D1-022	1	Consulting Room			25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D1-023	1	Consulting Room			25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D1-025	1	Consulting Room			25	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	41	300	n/a	1000	A	80	Switch	General working plane 1m
1-D1-026	1	Consulting Room			25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	2 people at 10 l/s per person (4ach)	2 people at 10 l/s per person (4ach)	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	General working plane 1m
1-D1-027	1	Waiting Room			28	18	Underfloor Heating	BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	5	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
1-D1-029	1	Baby Feeding			28	18	Radiant Panels	Remote Sensor Adj.	No	None	Dirty Extract	0	10	Negative	None	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-D1-030	1	Nappy Change			28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-D1-031	1	Storage Area Equipment			28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
1-D1-032	D1	RHSC Main Outpatients Department	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D1-033			1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	2 people at 10 l/s per person (4ach)	2 people at 10 l/s per person (4ach)	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D1-034			1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D1-035			1	Disposal Hold	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	6	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D1-036			1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	41	300	n/a	1000	A	80	Switch	General working plane 1m
1-D1-037			1	Reception	28	18	Underfloor Heating	BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (4ach)	2 people at 10 l/s per person (4ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
1-D1-038			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D1-040			1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
1-D1-041			1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D1-042			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D1-043			1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-D1-044			1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	41	300	n/a	1000	A	80	Switch	Desk 0.75 to 0.85m
1-D1-045			1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D1-046			1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D1-047			1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D1-048			1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-D1-001			1	Nappy Change	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-D1-002			1	Baby Feeding	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-D1-003			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-D1-004			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-D1-005			1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-D1-006			1	Disposal Hold	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	6	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-D1-007			1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-D1-008			1	Plaster Suite (3 bays)	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	7	7	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-D1-009			1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-D1-010			1	Small Workshop	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	6	Negative	F7	43	41	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-D1-011			1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-D1-012			1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-D1-013			1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-D1-014			1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-D1-015	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	41	300	n/a	1000	A	80	Switch	General working plane 1m		
G-D1-016	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m		
G-D1-019	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
G-D1-020	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (3ach)	2 people at 10 l/s per person (3ach)	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m		
G-D1-021	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m		
G-D1-022	1	Circulation Equipment Storage Bays	28	16	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
G-D1-023	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m		
G-D1-024	1	Tea Making	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	41	100 (KNX)	n/a	None	A	80	switch	Floor 0m		
G-D1-025	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	General working plane 1m		
G-D1-026	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m		
G-D1-027	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
G-D1-028	1	Infant Measuring Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	General working plane 1m		
G-D1-029	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m		
G-D1-030	1	Linen Bay	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m		

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
G-D1-031		Clean Utility	1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	41	150	n/a	None	A	80	Automatic Controls	General working plane 1m	
G-D1-032		Consulting Room 1	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m	
G-D1-033		Treatment Room 8	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m	
G-D1-034		Consulting Room 2	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m	
G-D1-035		Consulting Room 3	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m	
G-D1-036		Consulting Room 4	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m	
G-D1-037		Meeting Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10 people at 10 l/s per person (9ach)	10 people at 10 l/s per person (9ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
G-D1-038		Consulting Room 5	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m	
G-D1-039		Consulting Room 6	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m	
G-D1-040		Consulting Room 7	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	8 people at 10 l/s per person (4ach)	8 people at 10 l/s per person (4ach)	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m	
G-D1-041		Senior Charge Nurse Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	3 people at 10 l/s per person (4ach)	3 people at 10 l/s per person (4ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
G-D1-042		Acorn Room 2 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-D1-017		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-D1-017A		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-D1-017B		Corridor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-D1-043		Corridor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
1-D1-007		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-D1-044		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
1-D1-039		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
1-D1-049		Manifold	1	Manifold	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-D2-001	D2	Cardiology & Respiratory	Waiting Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6 people @ 10 l/s per person (9ach)	6 people @ 10 l/s per person (9ach)	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
G-D2-003			Admin Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-D2-004			WC Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-D2-005			CardioPulmonary Exercise Lab	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	6	Balanced	F7	43	41	500	n/a	None	A	90	Switch	Bed / Trolley 1.45m
G-D2-006			Echocardiograph Lab	1	Diagnostic room	25	18	Warm Air - Reheat Battery	BMS Adjustable Sensor	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	8	8	Balanced	F7	43	41	300	n/a	None	A	80	Switch / Dimmer	General working plane 1m
G-D2-007			DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-D2-008			Store/ Equipment	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-D2-009			ECG Procedure Room	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	6	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Bed / Trolley 1.45m
G-D2-010			Admin Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
G-D2-012			pH/Impedance Lab	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	6	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Bed / Trolley 1.45m
G-D2-013			Pulmonary Function Laboratory	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	6	Balanced	F7	43	41	500	n/a	None	A	90	Switch	Bed / Trolley 1.45m
G-D2-014			Cardiac Stress Lab	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	6	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Bed / Trolley 1.45m
G-D2-015			Physical Measurement	1	Consulting Room	25	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	300	n/a	1000	A	80	Switch	General working plane 1m
G-D2-002			Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-D2-002A			Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-D2-002B			Corridor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D4-001			Waiting Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	7 people @ 10 l/s per person (7ach)	7 people @ 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
1-D4-002			ABR Room	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	6	Negative	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
1-D4-003			Test Room	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	6	Negative	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
1-D4-004			Shared Staff Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-D4-005			Consulting Room 2	1	Consulting Room	25	18	Warm Air - Reheat Battery	BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	3	3	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-D4-006			Control Room 1	1	Diagnostic room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	8	8	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
1-D4-007	D4	Audiology	1	Consulting Room	25	18	Warm Air - Reheat Battery	BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	3	3	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
1-D4-008			1	Control Room 2	Diagnostic room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	8	8	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
1-D4-009			1	Waiting Area	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people @ 10 l/s per person (6ach)	2 people @ 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
1-D4-010			1	Work Room	Small Workshop	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	6	Negative	F7	43	41	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-D4-012			1	Store	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D4-013			1	Mould Room	Small Workshop	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	6	Negative	F7	43	41	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-D4-011			1	Corridor	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D4-011A			1	Corridor	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D4-011B			1	Corridor	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-D5-002	D5	Paediatric Dentistry	1	Dental Lab	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	6	6	Balanced	F7	43	60	500	n/a	None	A	80	Switch	General working plane 1m	
G-D5-003			1	Clean Utility / Dental Store	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	41	150	n/a	None	A	80	Automatic Controls	General working plane 1m
G-D5-004			1	Surgery 1	Dental Surgery	25	18	warm air via AHU Battery	Local 7 fans Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	10	10	Balanced	F7	43	41	500	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
G-D5-005			1	Dirty Utility	Dirty utility	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-D5-006			1	Mobile Inter-oral Storage	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-D5-007			1	Recovery	Recovery Bay / Recovery Room	25	20	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	None	A	90	Switch / Dimmer	Bed / Trolley 1.45m
G-D5-008			1	Surgery 4	Dental Surgery	25	18	warm air via AHU Battery	Local 7 fans Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	10	10	Balanced	F7	43	41	500	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
G-D5-009			1	Surgery 3	Dental Surgery	25	18	warm air via AHU Battery	Local 7 fans Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	10	10	Balanced	F7	43	41	500	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
G-D5-010			1	Surgery 2	Dental Surgery	25	18	warm air via AHU Battery	Local 7 fans Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	10	10	Balanced	F7	43	41	500	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
G-D5-001			1	Corridor	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-D5-011			1	Corridor	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-001	D6	Dentistry	1	Dictation/ 1:1/Phone Booth	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	4	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
1-D6-002			1	Staff Office - All specialties (39 person)	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-D6-003			1	Meeting Room - 6 person	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	6 people at 10 l/s per person (9ach)	6 people at 10 l/s per person (9ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-D6-004			1	Dictation/ 1:1/Phone Booth	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	4	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-D6-005			1	Meeting Room - 4 person	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4 people at 10 l/s per person (10ach)	4 people at 10 l/s per person (10ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-D6-006			1	WC - Staff	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-007			1	WC - Staff	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-009			1	Dictation/ 1:1/Phone Booth	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	4	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
1-D6-010			1	Dictation/ 1:1/Phone Booth	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	4	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
1-D6-014			1	Store - Physio	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-016			1	Management Office	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-D6-017			1	A&C Staff Office/Appliance Officer	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-D6-018			1	DSR	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-019			1	Equipment Decontamination	Equipment Decontamination	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	41	200	n/a	None	A	80	Automatic Controls	General working plane 1m
1-D6-020			1	Clinic Room 1	Diagnostic room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	8	8	Balanced	F7	43	41	300	n/a	None	A	80	Switch / Dimmer	General working plane 1m
1-D6-021			1	Clinic Room 2	Diagnostic room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	8	8	Balanced	F7	43	41	300	n/a	None	A	80	Switch / Dimmer	General working plane 1m
1-D6-022			1	Waiting Play Area	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	16 people at 10 l/s per person (6ach)	16 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
1-D6-023			1	Reception	Reception	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (5ach)	2 people at 10 l/s per person (5ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
1-D6-024			1	WC - Wheelchair accessible	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-025			1	Infant Measuring Room	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	2 people at 10 l/s per person (5ach)	2 people at 10 l/s per person (5ach)	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	General working plane 1m
1-D6-026			1	Linen Bay	Linen Bay	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
1-D6-027	D6	RHSC Therapies	Treatment Room 3	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
1-D6-028			Treatment Room 4	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
1-D6-029			Treatment Room 5	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
1-D6-030			Treatment Room 6	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply	10	0	Positive	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D6-031			Store - Dietetic	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-032			Treatment Room 16	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply	10	0	Positive	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D6-035			Treatment Room 7	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply	10	0	Positive	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D6-036			Treatment Room 15	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
1-D6-037			Store - Physio	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-038			Store - OT	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-039			Rehabilitation Room 9	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	6	Negative	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
1-D6-040			Splinting / Casting Room 14	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D6-041			Store - OT	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-042			Pantry	1	Pantry	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
1-D6-043			Store - Physio	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-044			WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-045			Store - SALT	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-046			Rehabilitation Room 10	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	6	Negative	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
1-D6-047			Store - OT	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-048			Rehabilitation Room 8	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	6	Negative	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
1-D6-049			Changing Cubicles	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-050			Store - Physio	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-052			Store - Physio	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-053			Rehabilitation Room 12	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	5	6	Negative	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
1-D6-054			Rehabilitation Room 11	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	5	6	Negative	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
1-D6-057			WC - assisted (large+changing)	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-060			Resus Bay	1	Resuscitation Bay	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-061			Hoist Bay	1	Circulation Equipment Storage Bays	28	16	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-034			Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	5	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-055			Corridor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-056			Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	4	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-062			Corridor	1	Corridor	28	18	None	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D6-058	Riser/Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m		
1-D6-059	Riser/Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m		
1-D7-001	D7	Plastics Dressings Clinic	Assisted Bathroom	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Switch	Floor 0m
1-D7-002			Dressings / Doppler Store	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D7-003			Clinic Room 1	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply	10	0	Positive	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D7-004			Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D7-005			01.01	1	Circulation Areas	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	4	Balanced	F7	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D7-006			Clinic Room 2	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-D7-007			Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-D7-008			Corridor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-D8-001	D8	Social Work	Social Work Office	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
G-D8-002			Interview Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	4	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
G-D8-003			Corridor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-D8-005			Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
3-D9-002	D9	Medical Day Care Unit - 5 Beds	Waiting Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	5	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
3-D9-003			Reception: 1 staff	1	Reception	28	18	Adjacent Space Transfer Air	None	Yes	Wall Mounted Unit	Central Supply and Extract	3	3	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
3-D9-004			WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-D9-005			Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-D9-006			Interview, Counselling & Quiet Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
3-D9-007			Office and Storage 2 staff	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
3-D9-008			Resuscitation Trolley Bay	1	Resus Trolley bay	28	16	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-D9-009			Physical Measurement	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
3-D9-010			Waiting Play Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	5	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
3-D9-011			Consulting Room	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
3-D9-012			Clean Utility	1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	41	150	n/a	None	A	80	Automatic Controls	General working plane 1m
3-D9-013			Treatment Room	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
3-D9-014			Pantry	1	Pantry	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
3-D9-015			Senior Charge Nurse Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
3-D9-016			Bay 2	1	Patient Treatment Lounge	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
3-D9-017			Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-D9-018			Touchdown Base 1	1	Staff base	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
3-D9-019			Single Room 1	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-D9-020			Room 1 - Ensuite	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-D9-021			Parking Bay: 1 patient trolley/which	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-D9-022			Bay 1 (beds 3-5)	1	Multi-bed Wards	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural and Central Supply Air	4	via ensuite	positive to ensuite	F7	43	41	100	5	300	A	80	switch / dimmer	Bed / Trolley 1.45m
3-D9-023			Bay 1 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-D9-024			Single Room 2	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-D9-025			Room 2 - Ensuite	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-D9-026	Linen Bay	1	Linen Bay	28	16	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m		
3-D9-027	Store - General	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
3-D9-028	WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m		
3-D9-030	DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	100	n/a	None	A	80	Automatic Controls	Floor 0m		
3-D9-001	Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
3-D9-029	Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m		
Switch Cupboard	Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m		
G-D10-001	D10	Ambulatory Care Shared Support	Staff Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
G-E1-001	E1	Pod	Multi-Functional Activity Zone	1	Patient Accommodation Day	25	18	Underfloor Heating	BMS Adjustable Sensor	No	None	None	0	0	n/a	None	43	41	100	n/a	None	A	80	Switch	Floor 0m
G-E1-002			RHSC OPD Reception	1	Reception	28	18	Underfloor Heating	BMS Adjustable Sensor	No	None	None	0	0	n/a	None	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
G-E1-003			RHSC OPD Suite A Sub Waiting	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people @ 10l/s per person	2 people @ 10l/s per person	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-E1-004			Wheelchair Access ble	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-E1-005			Wheelchair Access ble	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-E1-006			WC Fully Accessible changing room	4	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-E1-007			Wheelchair Access ble	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-E1-008			DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-E1-009			WC - Ambulant	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-E1-010			Wheelchair Access ble	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
G-E1-011		RHSC OPD Main Waiting	1	Waiting Room	28	18	Underfloor Heating	BMS Adjustable Sensor	No	None	None	0	0	n/a	None	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
G-E1-012		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-E1-012A		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-E1-012B		Manifold	1	Manifold	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-T2-013		Manifold	1	Manifold	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-002		Consultant Psychiatrist / Psychologist Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-003		Storage (testing)	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-004		Senior Charge Nurse Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-005		Meeting Room 3	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4 people at 10 l/s per person (6ach)	4 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-006		Reception	1	Reception	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply Air	2 people at 10 l/s per person (6ach)	0	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-007		Meeting Room 4	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4 people at 10 l/s per person (6ach)	4 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-008		Meeting Room 1	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4 people at 10 l/s per person (6ach)	4 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-009		Meeting Room 2	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4 people at 10 l/s per person (6ach)	4 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-010		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
G-F1-011		Waiting Area 2	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-013		Storage / Photocopy	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-014		Secretary/Filing Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-016		Multi-Disciplinary Office	1	Multi Disciplinary Work Areas	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-017		Shower / WC / WHB assisted	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Switch	Floor 0m
G-F1-018		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-019		Play Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	12 people at 10 l/s per person (8ach)	12 people at 10 l/s per person (8ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
G-F1-020		Group Room 4	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	13 people at 10 l/s per person (8ach)	13 people at 10 l/s per person (8ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-021		Screening Room	1	Diagnostic room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	5 people at 10 l/s per person (7ach)	5 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-F1-022		Calm Down Zone	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	4	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
G-F1-023		Meeting Room 5	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	8 people at 10 l/s per person (10ach)	8 people at 10 l/s per person (10ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-024		Group Room 3	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	13 people at 10 l/s per person (6ach)	13 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-026		Meeting Room 6	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	8 people at 10 l/s per person (6ach)	8 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-027		Sitting Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
G-F1-028		Multi-Disciplinary Office	1	Multi Disciplinary Work Areas	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-030		Multi-Disciplinary Office	1	Multi Disciplinary Work Areas	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-031		Sitting Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	8 people at 10 l/s per person (10ach)	8 people at 10 l/s per person (10ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
G-F1-032		Group Room 2	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10 people at 10 l/s per person (10ach)	10 people at 10 l/s per person (10ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
G-F1-033		Art Room	1	Classroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15 people at 10 l/s per person (9ach)	15 people at 10 l/s per person (9ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-034		Therapy / Play Therapy Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
G-F1-036	F1 CAMHS - 12 Beds	Dining Room (Inpatients & Day Prog)	1	Eating/Drinking	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	4	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
G-F1-037		Therapy Kitchen	1	Ward Kitchen	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central General Extract	0	6	Negative	None	43	41	500	n/a	None	A	80	Switch	General working plane 1m
G-F1-038		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-039		Ward kitchen	1	Ward Kitchen	28	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	6	Negative	None	n/a	60	500	n/a	None	A	80	Switch	General working plane 1m
G-F1-040		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-041		Waiting Area 1	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10 people at 10 l/s per person (10ach)	10 people at 10 l/s per person (10ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-042		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-043		WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-044		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	2 people at 10 l/s per person (10ach)	2 people at 10 l/s per person (10ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
G-F1-045		Multidisciplinary Office - ITS	1	Multi Disciplinary Work Areas	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-047		Recreation Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	6	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
G-F1-048		Group Room 1	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-049		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	2 people at 10 l/s per person (10ach)	2 people at 10 l/s per person (10ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
G-F1-050		Small Treatment Room	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	3	Positive	F7	43	41	300	n/a	1000	A	80	Switch	General working plane 1m
G-F1-051		Treatment Room	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
G-F1-052		Treatment Room Store	1	Drug Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	41	150	n/a	None	A	80	Automatic Controls	General working plane 1m
G-F1-053		Multi-Disciplinary Office	1	Multi Disciplinary Work Areas	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-054		Laundry Room	1	Laundry	28	18	Adjacent Space Transfer Air	None	Yes	Wall Mounted Unit	Central Supply and Extract	6	10	Negative	F7	n/a	60	300	n/a	None	A	80	Switch	Floor 0m
G-F1-056		Open Space	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	5	5	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
G-F1-057		Pantry	1	Pantry	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
G-F1-058		WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-059		Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-061		Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-062		Staff Base	1	Reception	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-F1-065		Quiet Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
G-F1-067		Bedroom 1	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	6 via bedroom & ensuite	Balanced	F7	43	n/a	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
G-F1-068		Room 1 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-069		Bedroom 8	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	6 via bedroom & ensuite	Balanced	F7	43	n/a	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
G-F1-070		Room 8 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-071		Bedroom 11	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	6 via bedroom & ensuite	Balanced	F7	43	n/a	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
G-F1-072		Room 11 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-073		Bedroom 10	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	6 via bedroom & ensuite	Balanced	F7	43	n/a	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
G-F1-074	Room 10 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-F1-075	Bedroom 9	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	6 via bedroom & ensuite	Balanced	F7	43	n/a	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
G-F1-076	Room 9 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-F1-077	Bedroom 2	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	6 via bedroom & ensuite	Balanced	F7	43	n/a	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
G-F1-078	Room 2 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-F1-079	Bedroom 3	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	6 via bedroom & ensuite	Balanced	F7	43	n/a	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
G-F1-080	Room 3 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
G-F1-081		Bedroom 4	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	6 via bedroom & ensuite	Balanced	F7	43	n/a	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
G-F1-082		Room 4 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-F1-083		Bedroom 5	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	6 via bedroom & ensuite	Balanced	F7	43	n/a	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
G-F1-084		Room 5 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-F1-085		Bedroom 12	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	6 via bedroom & ensuite	Balanced	F7	43	n/a	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
G-F1-086		Room 12 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-F1-087		Bedroom 6	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	6 via bedroom & ensuite	Balanced	F7	43	n/a	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
G-F1-088		Room 6 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-F1-089		Linen Bay	1	Linen Bay	28	16	Adjacent Space Transfer Air	None	No	None	None	None	0	0	n/a	None	n/a	n/a	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-090		Bedroom 7	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	6 via bedroom & ensuite	Balanced	F7	43	n/a	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
G-F1-091		Room 7 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-F1-092		Quiet Room	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4 people at 10 l/s per person (4ach)	4 people at 10 l/s per person (4ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
G-F1-096		Store	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-F1-101		Intensive Nursing Room	1	Seclusion Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	3	0	Positive	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
G-F1-001		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-015		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-025		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-029		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-035		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-046		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-055		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-060		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-066		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-093		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-097		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-098		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-100		Lobby	1	Lobby	28	18	Adjacent Space Transfer	None	No	None	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-094		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-095		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-F1-102	E-S Duct 1	1	E-S Duct 1	Not Controlled	Not Controlled	None	None	No	None	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-F1-103	E-S Duct 2	1	E-S Duct 2	Not Controlled	Not Controlled	None	None	No	None	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-F1-104	E-S Duct 3	1	E-S Duct 3	Not Controlled	Not Controlled	None	None	No	None	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-F1-105	E-S Duct 4	1	E-S Duct 4	Not Controlled	Not Controlled	None	None	No	None	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-F1-106	E-S Duct 5	1	E-S Duct 5	Not Controlled	Not Controlled	None	None	No	None	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-F1-107	E-S Duct 6	1	E-S Duct 6	Not Controlled	Not Controlled	None	None	No	None	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-F1-108	E-S Duct 7	1	E-S Duct 7	Not Controlled	Not Controlled	None	None	No	None	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-F1-109	E-S Duct 8	1	E-S Duct 8	Not Controlled	Not Controlled	None	None	No	None	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
2-G2-002	G2 Equipment Library	DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m	
2-G2-003		Clean Equipment	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-G2-004		Dirty Equipment	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	60	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-G2-005		Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-G2-001		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
1-G3-002	G3	On-Call Suite	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-G3-003			1	Bathroom	28	18	Radiant Panels	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-G3-004			1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-G3-005			1	Bathroom	28	18	Radiant Panels	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-G3-006			1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-G3-007			1	Bathroom	28	18	Radiant Panels	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-G3-008			1	Mini Kitchen	28	18	Adjacent Space Transfer Air	None	Yes	Comfort Cooled Fresh Air	Central General Extract	0	5	Negative	None	n/a	41	300	n/a	None	A	80	Switch	Floor 0m
1-G3-009			1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-G3-001			1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-H1-002			H1	Child Life & Health	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	15 people at 10 l/s per person (8ach)	15 people at 10 l/s per person (8ach)	Balanced	F7	43	n/a	300	n/a	None	A	80
4-H1-003	1	Classroom			28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	36 people at 10 l/s per person (12ach)	36 people at 10 l/s per person (12ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
4-H1-004	1	Classroom			28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	32 people at 10 l/s per person (10ach)	32 people at 10 l/s per person (10ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
4-H1-005	1	Toilet			28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-H1-006	1	Disposal Hold			28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-H1-007	1	Waiting Room			28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	5	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
4-H1-008	1	Changing Facilities			28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	positive to wc	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
4-H1-009	1	Toilet			28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-H1-010	1	Toilet			28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-H1-011	1	DSR			28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
4-H1-012	1	Open Plan Office			28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
4-H1-013	1	Cellular / Ward Offices			28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
4-H1-014	1	Tea Making			28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	41	100 (KNX)	n/a	None	A	80	switch	Floor 0m
4-H1-015	1	Cellular / Ward Offices			28	18	Adjacent Space Transfer Air	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
4-H1-016	1	Laboratory			25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	6	Balanced	F7	43	60	500	n/a	None	A	80	Switch	General working plane 1m
4-H1-017	1	Meeting Room - 4 person			25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4 people at 10 l/s per person (8ach)	4 people at 10 l/s per person (8ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
4-H1-018	1	Laboratory			25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	6	Balanced	F7	43	60	500	n/a	None	A	80	Switch	General working plane 1m
4-H1-019	1	Toilet			28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-H1-020	1	Toilet			28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-H1-021	1	Storage Area Equipment			28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central Supply and Extract	4	3	Positive	F7	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-H1-022	1	Cellular / Ward Offices			28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
4-H1-024	1	Cellular / Ward Offices			28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
4-H1-025	1	Cellular / Ward Offices			28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
4-H1-026	1	Storage Area Equipment			28	16	Adjacent Space Transfer Air	None	Yes	Wall Mounted Cassette	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-H1-027	1	Laboratory			25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	6	Balanced	F7	43	60	500	n/a	None	A	80	Switch	General working plane 1m
4-H1-028	1	Cellular / Ward Offices			28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
4-H1-029	1	Cellular / Ward Offices			28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
4-H1-030	1	Cellular / Ward Offices			28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
4-H1-031	1	Cellular / Ward Offices			28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
4-H1-032	1	Cellular / Ward Offices			28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
4-H1-033	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m		
4-H1-035	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer Air	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m		
4-H1-036	1	Storage Area Med Gas	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
4-H1-001		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-H1-023		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-H1-034		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
1-H2-001	H2 Clinical Research Facility	Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air		No	None	Central Dirty Extract	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
1-H2-002		Waiting Play Area	1	Waiting Room	28	18	Radiant Panels		Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	5	Balanced	F9 ePM1 90%	300	n/a	None	A	80	Switch	Floor 0m	Switch	Floor 0m	
1-H2-004		Reception	1	Reception	28	18	Radiant Panels		Yes	Comfort Cooled Fresh Air	Central Supply Air	3	0	Positive	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m	
1-H2-005		WC Accessible Patients	1	Toilet	28	18	Adjacent Space Transfer Air		No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
1-H2-006		DSR	1	DSR	28	18	Adjacent Space Transfer Air		No	None	Central Dirty Extract	0	6	Negative	None	100	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
1-H2-007		Office - 4 person	1	Cellular / Ward Offices	28	18	Radiant Panels		Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	2.5	Positive	F9 ePM1 90%	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	Switch	Desk 0.75 to 0.85m	
1-H2-008		Linen Bay	1	Linen Bay	28	16	Adjacent Space Transfer Air		No	None	None	None	0	0	n/a	None	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-H2-009		Consulting Room 2	1	Consulting Room	25	18	Radiant Panels		Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	2.5	Balanced	F9 ePM1 90%	300	n/a	1000	A	80	Switch	Desk / Trolley 1.45m	Switch	Bed / Trolley 1.45m	
1-H2-010		Consulting Room 1	1	Consulting Room	25	18	Radiant Panels		Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F9 ePM1 90%	300	n/a	1000	A	80	Switch	Desk / Trolley 1.45m	Switch	Bed / Trolley 1.45m	
1-H2-011		WC Staff	1	Toilet	28	18	Adjacent Space Transfer Air		No	None	Central Dirty Extract	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
1-H2-012		Pantry	1	Pantry	28	18	Radiant Panels		Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	7	Negative	F9 ePM1 90%	300	n/a	None	A	80	Switch	Floor 0m	Switch	Floor 0m	
1-H2-013		Store - Equipment	1	Storage Area Equipment	25	16	Radiant Panels		Yes	Ceiling Cassette - Chilled Water	Central General Extract	0	2.5	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
1-H2-014		Bay 1	1	Consulting Room	25	18	Radiant Panels		Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F9 ePM1 90%	300	n/a	1000	A	80	Switch	Desk / Trolley 1.45m	Switch	Bed / Trolley 1.45m	
1-H2-015		Bay 1 - Ensuite	1	Bathroom	28	20	Radiant Panels		No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
1-H2-016		Sample Processing	1	Diagnostic room	25	18	Radiant Panels		Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	8	6	Balanced	F9 ePM1 90%	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	Switch / Dimmer	General working plane 1m	
1-H2-017		Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air		No	None	Central Dirty Extract	0	6	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
1-H2-018		Room 1 - Ensuite	1	Bathroom	28	18	Warm air via bedroom	Floating temp	No	None	Dirty Extract	0	16	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
1-H2-020		Clean Utility	1	Clean Utility	25	18	Radiant Panels		Yes	Ceiling Cassette - Chilled Water	Central Supply Air	6	0	Positive	F9 ePM1 90%	150	n/a	None	A	80	Automatic Controls	General working plane 1m	Automatic Controls	General working plane 1m	
1-H2-021		Single Room 1	1	Isolation Bedroom (not isolation)	28	18	Duct Mounted Heater Batteries	Local / BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Supply via lobby	10	via the ensuite	Balanced	H14	100	5	300	A	80	Switch / Dimmer	Desk / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m	
1-H2-022		Room 5 - Ensuite	1	Bathroom	28	20	Radiant Panels		No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
1-H2-023		Room 1 - Lobby	1	Isolation Lobby	32	11.5	Heated via Supply Air System	AHO on control satisfy bedroom	Yes	Comfort Cooled Fresh Air	Isolation Room Supply System	31	0	+10Pa to corridor	H14	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
1-H2-024		Single Room 5	1	Bedroom	28	18	Radiant Panels		Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	H14	100	5	300	A	80	Switch / Dimmer	Desk / Trolley 1.45m	Switch / Dimmer	Bed / Trolley 1.45m	
1-H2-028		Touch Down Base	1	staff base	28	18	Radiant Panels		Yes	Comfort Cooled Fresh Air	Central Supply Air	Part of Corridor	Part of Corridor	Positive	F9 ePM1 90%	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	Switch / Dimmer	General working plane 1m	
1-H2-019		Corridor	1	Corridor	28	18	Radiant Panels		No	None	None	None	0	0	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-H2-026		Corridor	1	Corridor	28	18	Radiant Panels		No	None	None	None	0	0	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-H2-029		Corridor	1	Corridor	28	18	Adjacent Space Transfer Air		No	None	None	None	0	0	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m
1-H2-027		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None		No	None	Central General Extract	0	3	Negative	None	100	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
3-H3-001	H3 Clinical Education Suite	Scenario Room 1	1	Classroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10 people at 10 l/s per person (7ach)	10 people at 10 l/s per person (7ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
3-H3-002		Control Room	1	Control Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled	Central Supply and Extract	3 people at 10 l/s per person (5ach)	3 people at 10 l/s per person (5ach)	Balanced	F7	43	n/a	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m	
3-H3-003		Storage	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-H3-004		Teaching Room 1	1	Classroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10 people at 10 l/s per person (7ach)	10 people at 10 l/s per person (7ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
3-H3-005		Scenario Room 2	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10 people at 10 l/s per person (7ach)	10 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
3-H3-006		WC / WHB disabled	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-H3-007		WC Ambulant	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-H3-008		WC Ambulant	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-H3-010		Teaching Room 2	1	Classroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10 people at 10 l/s per person (7ach)	10 people at 10 l/s per person (7ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
3-H3-011		Beverage Bay	1	Tea Making	28	18	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	41	100 (KNX)	n/a	None	A	80	switch	Floor 0m	
3-H3-012		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m	

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
3-H3-013		Manual Handling, Health & Safety	1	Classroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
3-H3-014		Practice Based Educators Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
3-H3-015		Meeting Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	14 people at 10 l/s per person (7ach)	14 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
3-H3-016		Seminar Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	23 people at 10 l/s per person (8ach)	23 people at 10 l/s per person (8ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
3-H3-018		Management/ Admin Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
3-H3-019		Computer Carrels	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6 people at 10 l/s per person (7ach)	6 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
3-H3-020		Lockers	1	Circulation Equipment Storage Bays	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central Supply and Extract	5	4	Positive	F7	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-H3-009		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-H3-021		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-11-001		H1	Draught Lobby	1	Circulation Areas - Entrance Lobby	28	Not Controlled	Warm Air Door Curtain	BMS Adjustable Sensor	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-11-002	Wheelchair Bay		1	Circulation Areas	28	16	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-11-003	Security Office		1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
G-11-004	Vending Machine		1	Vending Machine	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	n/a	n/a	None	n/a	n/a	n/a	n/a	Floor 0m
G-11-005	Reception / Information Desk		1	Reception	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	3	2	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
G-11-006	Retail Shop		1	Retail Shop	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	3	3	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m	
G-11-007	Catering Shop		1	Catering Shop	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	3	3	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m	
G-11-008	Waiting Area		1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	9 people at 10 l/s per person (7ach)	9 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m	
G-11-009	Public Telephone Booth		1	Circulation Phone Booth	28	18	Adjacent Space Transfer Air	None	No	None	n/a	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-11-010	WC - Visitors		1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-11-011	WC - Wheelchair accessible		1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-11-012	Assisted Change/Nappy Change		1	Nappy Change	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-11-013	DSR		1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-11-014	Fire Control room		1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
B-12-002	I2	DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m	
B-12-004		Store - Beds	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-12-005		Store - Toys	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-12-006		Vending & Café Store	1	Storage Area	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	2	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-12-007		Store	1	Storage Area	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	2	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-12-008		Store	1	Storage Area	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	2	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
1-J1-001	J1	Lobby	1	Circulation Areas - Entrance Lobby	28	18	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
1-J1-002		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	200	n/a	None	A	80	Automatic Controls	Floor 0m	Automatic Controls	Floor 0m	
1-J1-003		Viewing Room	1	Body View	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	6	Negative	F9 ePM1 90%	100 (KNX)	n/a	None	A	80	Switch / Dimmer	Floor 0m	Switch / Dimmer	Floor 0m	
1-J1-004		Sitting Room with Beverage Bay	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4 (existing)	5	Negative	F9 ePM1 90%	300	n/a	None	A	80	Switch	Floor 0m	Switch	Floor 0m	
G-J2-002	J2	Interview Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6 people at 10 l/s per person (10ach)	6 people at 10 l/s per person (10ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
G-J2-003		Sanctuary	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	8	Negative	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m	
G-J2-004		WC wheelchair accessible / Ritual Washing Area	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-J2-005		Store	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-J2-006		Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
G-J2-001		Corridor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-J2-007		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-K1-001		Meeting Rooms (family size)	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10 people at 10 l/s per person (9ach)	10 people at 10 l/s per person (9ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
G-K1-002	K1 Family Support	Meeting Rooms (family size)	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10 people at 10 l/s per person (9ach)	10 people at 10 l/s per person (9ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-K1-003		Office 1	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-K1-004		Office 2	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-K1-005		Office 3	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-K1-006		Waiting	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5 people at 10 l/s per person (8ach)	5 people at 10 l/s per person (8ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
G-K1-007		Nappy Changing Room	1	Nappy Change	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-K1-008		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-K1-010		Interview Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4 people at 10 l/s per person (6ach)	4 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
G-K1-011		Office 4	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-K1-012		Office 5	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-K1-013		Store	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-K1-015		Interview Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4 people at 10 l/s per person (6ach)	4 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
G-K1-016		Drop-In Lounge / Beverage Bay	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
G-K1-017		Drop-In Multi-Purpose Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
G-K1-018		WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-K1-019		Beverage Bay	1	Tea Making	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	5	Negative	None	43	41	100 (KNX)	n/a	None	A	80	switch	Floor 0m
G-K1-021		Complementary Therapy Room	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-K1-022		Radio Lollipop Broadcasting Studio, Lobby	1	Circulation Areas	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	5	5	Balanced	F7	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-K1-023		Wheelchair Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-K1-024		Office 6	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
G-K1-025		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-K1-026		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-K1-029		Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-K1-009		Comidor	1	Comidor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-K1-030		Comidor	1	Comidor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-K1-027		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-002			Reception/Waiting	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	3	3	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch
3-K2-004		WC - Female	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-005		WC - Male	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-006		Lounge - non residents	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	25 people at 10 l/s per person (8ach)	25 people at 10 l/s per person (8ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
3-K2-007		WC - Wheelchair accessible	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-008		Family Room for 4 persons inc en-suite	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-009		En-suite Shower / WC / WHB	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-010		Family Room for 4 persons inc en-suite	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-011		En-suite Shower / WC / WHB	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-012		Family Room for 4 persons inc en-suite	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-013		En-suite Shower / WC / WHB	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-014		Family Room for 4 persons inc en-suite	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-015		En-suite Shower / WC / WHB	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-016		Family Room for 4 persons inc en-suite	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-017		En-suite Shower / WC / WHB	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-019		Family Room accessible for 4 persons inc en-suite	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-020		En-suite Shower / WC / WHB	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
3-K2-021	K2	Family Hotel	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-022			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-023			1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-024			1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-025			1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-026			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-027			1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-028			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-029			1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-030			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-032			1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-033			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-035			1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-036			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-037			1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-038			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-039			1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-040			1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-041			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-042			1	Laundry	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	6	10	Negative	F7	43	60	300	n/a	None	A	80	Switch	Floor 0m
3-K2-043			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-044			1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-045			1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-046			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-047			1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-048			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-050			1	Pantry	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	48 people at 10 l/s per person (6ach)	48 people at 10 l/s per person (6ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
3-K2-051			1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	15 people at 10 l/s per person (6ach)	15 people at 10 l/s per person (11ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
3-K2-053			1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	13 people at 10 l/s per person (10ach)	13 people at 10 l/s per person (10ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
3-K2-054			1	Switch/Meter Cupboard	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-057			1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-058			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-059			1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-060			1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-061			1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-062			1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-063			1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-064			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-065			1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-066			1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-067			1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-068	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m		
3-K2-069	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m		
3-K2-071	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m		

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
3-K2-072		Family Room for 4 persons inc ensuite	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-073		Family Room for 4 persons inc ensuite	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-074		En-suite Shower / WC / WHB	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-075		Family Room for 4 persons inc ensuite	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Positive	F7	43	n/a	100	n/a	None	A	80	Switch / Dimmer	Bed / Trolley 1.45m
3-K2-076		En-suite Shower / WC / WHB	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-078		Laundry	1	Laundry	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	6	10	Negative	F7	43	60	300	n/a	None	A	80	Switch	Floor 0m
3-K2-080		Storage - refuse	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-086		Office - 4 person	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
3-K2-001		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-018		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-049		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-052		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-056		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-054		Switch/Meter Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-081		Switch Cup	1	Switch Cup	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-082		Switch Cup	1	Switch Cup	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-083		Switch Cup	1	Switch Cup	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
3-K2-084		Switch Cup	1	Switch Cup	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-002		Single Room 1	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-L1-003		Room 1 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-004		Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-005		Intensive Treatment Room	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
1-L1-006		Single Room 2	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-L1-007		Room 2 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-008		Touchdown Base 1	1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10l/s/per person (13ach)	2 people at 10l/s/per person (13ach)	Balanced	F7	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
1-L1-009		Resuscitation Trolley Bay	1	Resus Trolley bay	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-010		Single Room 3	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-L1-011		Room 3 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-012		Waiting Area, relatives	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	5	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
1-L1-013		Refreshment: Vending Machine	1	Refreshment: Vending Machine	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m
1-L1-014		WC - Wheelchair accessible (Visitors)	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-015		Single Room 4	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	6	6 via bedroom and ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-L1-016		Room 4 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-017		Single Room 5	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-L1-018		Room 5 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-019		Linen Bay	1	Linen Bay	28	16	Adjacent Space Transfer	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-020		Hoist Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-021		Single Room 6	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-L1-022		Room 6 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-023		Staff Base 1	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10l/s/per person (5ach)	2 people at 10l/s/per person (5ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-L1-024		Single Room 22	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-L1-025		Room 2 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-026		WC - Wheelchair accessible (Visitors)	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-027		Patient Waiting	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	11 people at 10l/s/per person (7ach)	11 people at 10l/s/per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
1-L1-028	L1 DCN Acute Care - 24 Beds	Multi-Disciplinary Office / Reception	1	Multi Disciplinary Work Areas	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-L1-029		Consulting Room 1	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-L1-030		Consulting Room 2	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-L1-031		Consulting Room 3	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-L1-032		Consulting Room 4	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-L1-033		Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-034		Single Room 23	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-L1-035		Room 23 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-036		Touchdown Base 2	1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air & Extract	2 people at 10l/s/per person (14ach)	2 people at 10l/s/per person (14ach)	Balanced	F7	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
1-L1-037		Interview/Relatives Quiet Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4 people at 10 l/s per person (6ach)	4 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
1-L1-038		Single Room 24	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-L1-039		Room 24 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-040		Room 25 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-044		Single Room 25	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-L1-046		Senior Charge Nurse Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-L1-047		Clean Utility	1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	41	150	n/a	None	A	80	Automatic Controls	General working plane 1m
1-L1-052		Staff Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5 people at 10l/s/per person (7ach)	5 people at 10l/s/per person (7ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
1-L1-053		Multi-disciplinary Office	1	Multi Disciplinary Work Areas	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	400	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-L1-054		Ward Kitchen	1	Ward Kitchen	28	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	6	Negative	None	n/a	60	500	n/a	None	A	80	Switch	General working plane 1m
1-L1-055		Touchdown Base 3	1	staff base	28	18	Adjacent Space Transfer Air	None	Yes	Comfort Cooled Fresh Air	Central General Extract	0	2 people at 10l/s/per person (6ach)	Negative	n/a	n/a	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
1-L1-060		Teaching Room	1	Classroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10 people at 10 l/s per person (6ach)	10 people at 10 l/s per person (6ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-L1-061		Dirty Utility	1	Dirty utility	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	6	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-066		Single Room 7	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-L1-067		Room 7 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-068		Single Room 8	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	10 via the ensuite	Positive	H14	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-L1-069		Room 8 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	45	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-070		Interview/Relatives Quiet Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4 people at 10 l/s per person (6ach)	4 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
1-L1-071		Linen Bay	1	Linen Bay	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-072		WC Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-073		WC Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-074		Resuscitation Trolley Bay	1	Resus Trolley bay	28	16	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-075		Staff Base 2	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
1-L1-076		Storage Consumables	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-077		Relatives Room - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-078		Hoist Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-079	WC Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
1-L1-080	WC: Independent Wheelchair	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
1-L1-082	Relatives Overnight Stay Room	1	Relatives Overnight Stay	28	20	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	4	0	Positive	F7	43	n/a	100	n/a	None	A	80	Switch	Bed / Trolley 1.45m	
1-L1-083	Single Room 21	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m	
1-L1-084	Room 21 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
1-L1-085	Mobile X-Ray Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
1-L1-086A		Storage Equipment	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-086B		Storage Equipment	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-087		Room 20 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-088		Single Room 20	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-L1-089		Touchdown Base 5	1	Staff base	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Supply and Extract	2 people at 10l/s/per person (7ach)	2 people at 10l/s/per person (7ach)	Balanced	F7	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
1-L1-090		Storage Stationery	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-091		Single Room 19	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-L1-092		Room 19 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-093		Single Room 18	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-L1-094		Room 18 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-095		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-096		Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-097		Bay 1	1	Multi-bed Wards	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural and Central Supply Air	4	via ensuite	positive to ensuite	F7	43	41	100	5	300	A	80	switch / dimmer	Bed / Trolley 1.45m
1-L1-099		Bay 1 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-100		Bay 2	1	Multi-bed Wards	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural and Central Supply Air	4	via ensuite	positive to ensuite	F7	43	41	100	5	300	A	80	switch / dimmer	Bed / Trolley 1.45m
1-L1-101		Bay 2 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-103		Treatment Room	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
1-L1-104		Room 8 - Lobby	1	Isolation Lobby	28	21	Warm Air - Reheat Battery	Local Fans Adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air	56	0	Positive	H14	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-108		Physical Measure	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	n/a	n/a	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-L1-109		Touchdown Base 4	1	Staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central General Extract	0	2 people at 10l/s/per person (14ach)	Negative	n/a	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
1-L1-001		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-105		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-106		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-L1-107		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-002		Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-003		Linen Bay	1	Linen Bay	28	16	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-004		Single Room 7	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-005		Room 7 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-006		Single Room 8	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-007		Room 8 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-008		Hoist Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-009		Touchdown Base 4	1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	2 people at 10l/s/per person (13ach)	0	Positive	F7	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
2-L2-010		Single Room 9	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	6	6 via bedroom ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-011		Room 9 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-012		Store	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-013		Single Room 10	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-014		Room 10 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-015		Single Room 11	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-016		Room 11 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-017		Touchdown Base 3	1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	2 people at 10l/s/per person (13ach)	0	Positive	F7	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
2-L2-018		Single Room 6	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
2-L2-019		Room 6 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-020		Resuscitation Trolley Bay	1	Resus Trolley bay	28	16	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-021		Single Room 12	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-022		Room 12 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-023		Single Room 5	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-024		Room 5 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-025		Touchdown Base 2	1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	2 people at 10l/s/per person (13ach)	0	Positive	F7	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
2-L2-026		Single Room 14	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-027		Room 14 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-028		Single Room 4	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-029		Room 4 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-030		Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-031		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-032		Single Room 15	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-033		Room 15 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-034		Single Room 16	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-035		Room 16 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-036		Single Room 17	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-037		Room 17 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-038		Room 20 - Lobby	1	Isolation Lobby	28	21	Warm Air - Reheat Battery	Local BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply	49	0	Positive	H14	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-039		Single Room 20	1	Isolation Bedroom	28	21	Adjacent Space Transfer Air	BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Supply via lobby	10	10 via the ensuite	Balanced	H14	n/a	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-040		Room 20 - Ensuite	1	Isolation Shower Room Ensuite	28	20	Adjacent Space Transfer Air	None	No	None	Dirty Extract	0	49	Negative	None	n/a	41	150 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-041		Single Room 2	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-042		Room 2 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-043		Single Room 1	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-044		Room 1 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-045		Touchdown Base 1	8	staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	2 people at 10l/s/per person (13ach)	0	Positive	F7	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
2-L2-046		Single Room 18	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-047		Room 18 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-048		Single Room 19	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-049		Room 19 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-050		Single Room 3	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-051		Room 3 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-052		Clean Utility	1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	41	150	n/a	None	A	80	Automatic Controls	General working plane 1m
2-L2-053		Interview Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4 people at 10 l/s per person (6ach)	4 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-L2-054		Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-055		Sitting Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
2-L2-056		Senior Charge Nurse Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	3 people at 10 l/s per person (4ach)	3 people at 10 l/s per person (4ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-L2-057		Multi-disciplinary Office	1	Multi Disciplinary Work Areas	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-L2-058		Store	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-059		Hoist Bay	3	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	8	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-060		WC: Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-061		WC: Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
2-L2-062	L2 DCN Inpatients - 43 Beds	Ward Kitchen	1	Ward Kitchen	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central General Extract	0	6	Negative	None	43	60	500	n/a	None	A	80	Switch	General working plane 1m
2-L2-063		Touchdown Base 6	7	staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	2 people at 10l/s/per person (13ach)	0	Positive	F7	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
2-L2-064		Mobile X-Ray Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-065		WC: Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-066		WC: Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-067		Clinical Supplies Store	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-068		WC: Independent Wheelchair	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-069		Teaching Room	1	Classroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	9 people at 10 l/s per person (6ach)	9 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-L2-070		Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-071		WC: Ambulant	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-072		WC: Ambulant	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-073		Reception	1	Reception	28	18	Adjacent Space Transfer Air	None	Yes	Wall Mounted Unit	Central Supply and Extract	1 people at 10l/s/per person (4ach)	1 people at 10l/s/per person (4ach)	Balanced	F7	n/a	n/a	300	n/a	None	A	80	None	Desk 0.75 to 0.85m
2-L2-074		Waiting Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	9 people at 10l/s/per person (7ach)	9 people at 10l/s/per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
2-L2-075		Multi-disciplinary Office	1	Multi Disciplinary Work Areas	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-L2-076		Senior Charge Nurse Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3 people at 10l/s/per person (4ach)	3 people at 10l/s/per person (4ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-L2-077		Interview Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4 people at 10 l/s per person (6ach)	4 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-L2-078		Ward Kitchen	1	Ward Kitchen	28	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	6	Negative	None	n/a	60	500	n/a	None	A	80	Switch	General working plane 1m
2-L2-079		Clean Utility	1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	41	150	n/a	None	A	80	Automatic Controls	General working plane 1m
2-L2-080		Assisted Bathroom	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Switch	Floor 0m
2-L2-081		Sitting Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
2-L2-082		Single Room 14	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-083		Room 14 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-084		Single Room 12	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-085		Room 12 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-086		Touchdown Base 7	1	Staff base	28	18	Adjacent Space Transfer Air	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10l/s/per person (13ach)	2 people at 10l/s/per person (13ach)	Balanced	F7	n/a	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
2-L2-087		Single Room 25	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-088		Room 25 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-089		Hoist Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-090		Single Room 24	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-091		Room 24 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-092		Single Room 11	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-093		Room 11 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-094		Single Room 10	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-095		Room 10 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-096		Room 23 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-097		Single Room 23	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-098		Hoist Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-099		Resuscitation Trolley Bay	1	Resus Trolley bay	28	16	Adjacent Space Transfer	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-100		Touchdown Base 5	1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air & Extract	2 people at 10l/s/per person (13ach)	2 people at 10l/s/per person (13ach)	Balanced	F7	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
2-L2-101		Touchdown Base 4	1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply & Extract	2 people at 10l/s/per person (13ach)	2 people at 10l/s/per person (13ach)	Balanced	F7	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
2-L2-102		Single Room 22	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-103		Room 22 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-104		Single Room 21	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-105		Room 21 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-106		Single Room 9	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-107		Room 9 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-108		Single Room 8	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-109		Room 8 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-110		Room 20 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-111		Single Room 20	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-112		Hoist Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-113		Single Room 19	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-114		Room 19 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-115		Touchdown Base 3	1	staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	2 people at 10l/s/per person (13ach)	0	Positive	F7	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
2-L2-117		Single Room 7	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-118		Room 7 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-119		Single Room 6	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-120		Room 6 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-121		Single Room 18	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-122		Room 18 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-123		Single Room 5	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-124		Room 5 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-125		Single Room 4	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-126		Room 4 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-127		Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-128		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-129		Touchdown Base 2	1	Staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	2 people at 10l/s/per person (13ach)	0	Positive	F7	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
2-L2-130		Single Room 3	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-131		Room 3 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-132		Single Room 2	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-133		Room 2 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-134		Room 1 Lobby	1	Isolation Lobby	28	21	Warm Air - Reheat Battery	Local BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply	47	0	Positive	H14	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-135		Single Room 1	1	Isolation Bedroom	28	21	Adjacent Space Transfer Air	BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Supply via lobby	10	10 via the ensuite	Balanced	H14	n/a	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-136		Room 1 - Ensuite	1	Isolation Shower Room Ensuite	28	20	Adjacent Space Transfer Air	None	No	None	Dirty Extract	0	47	Negative	None	n/a	41	150 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-137		Touchdown Base 1	1	Staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	2 people at 10l/s/per person (13ach)	0	Positive	F7	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
2-L2-138		Room 16 - Ensuite	1	Bathroom	28	20	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-139		Single Room 16	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-140		Single Room 15	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Natural & Central Supply Air	4	via ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-141		Room 15 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	Minimum 10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
2-L2-142		Single Room 17	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	6 via bedroom & ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
2-L2-143		Room 17 - Ensuite	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-144		Linen Bay	1	Linen Bay	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-152		Physical Measure	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	3	3	Balanced	F7	43	n/a	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
2-L2-153		Store	1	Store	28	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200/300	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-001		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-145		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-146		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-147		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-148		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-151		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-149		Switch Cup	1	Switch Cup	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-150		Switch Cup	1	Switch Cup	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
2-L2-154		Switch Cup	1	Switch Cup	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-M1-002		M1 DCN Outpatients	Consulting Room 1 (PreAssessment)	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch
G-M1-003	Consulting Room 2 (PreAssessment)		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-M1-004	Staff Base		1	Staff base	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Supply and Extract	1 person at 10l/s/per person (7ach)	1 person at 10l/s/per person (7ach)	Balanced	F7	43	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	Desk 0.75 to 0.85m
G-M1-005	WC - Wheelchair accessible		1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-M1-006	Linen Bay		1	Linen Bay	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-M1-007	Consulting Room 3 (PreAssessment)		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-M1-008	Physical Measurement		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	3	3	Balanced	F7	43	n/a	300	n/a	1000	A	80	Switch	General working plane 1m
G-M1-009	Consulting Room 4 (PreAssessment)		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-M1-010	Pre Op Clinic Team Office (3 person)		1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-M1-011	Consulting Room 1		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-M1-012	Consulting Room 16		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-M1-013	Consulting Room 2		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-M1-014	Consulting Room 15		1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
G-M1-015	Consulting Room 3		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-M1-016	Clean Utility		1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	41	150	n/a	None	A	80	Automatic Controls	General working plane 1m
G-M1-017	Consulting Room 4		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-M1-018	Consulting Room 5		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-M1-019	Consulting Room 6		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-M1-020	Consulting Room 7		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-M1-021	Consulting Room 8		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-M1-022	Consulting Room 9		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-M1-023	Consulting Room 10		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-M1-024	Consulting Room 11		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-M1-025	Consulting Room 12		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-M1-027	Consulting Room 14		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-M1-028	Senior Charge Nurse Office		1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-M1-029	Outpatients Management Office		1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-M1-031	Staff Base		1	Staff base	28	18	Adjacent Space Transfer Air	None	Yes	Comfort Cooled Fresh Air	Central Supply Air	1 person at 10l/s/per person (8ach)	0	Positive	F7	n/a	n/a	200/300	n/a	1000	A	80	Switch / Dimmer	Desk 0.75 to 0.85m
G-M1-032	Main Waiting		1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	35 person at 10l/s/per person (8ach)	35 person at 10l/s/per person (8ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
G-M1-034		WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-M1-035		WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-M1-036		Staff Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m	
G-M1-037		Store: Clinical Supplies, Equipment & Stationery	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-M1-038		Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-M1-039		WC Fully Accessible Changing Room	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	10	Negative to corridor	None	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-M1-040		Physical Measurement	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	No	None	None	None	0	0	n/a	None	43	n/a	300	n/a	1000	A	80	Switch	General working plane 1m
G-M1-041		Store - Equipment / General	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-M1-042		Phlebotomy Room	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	2 people at 10 l/s per person (4ach)	2 people at 10 l/s per person (4ach)	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m	
G-M1-043		Public Telephone Booth	1	Circulation Phone Booth	28	18	Adjacent Space Transfer	None	No	None	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-M1-045		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-M1-046		Medical Records Store	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
G-M1-047		Enquiry / Information Desk: 2 staff	1	Reception	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	2 people at 10 l/s per person (2ach)	2 people at 10 l/s per person (2ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
G-M1-049		Patient Interview Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4 people at 10 l/s per person (7ach)	4 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
G-M1-050		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-M1-051		Sub Waiting Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	9 people at 10 l/s per person (7ach)	9 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m	
G-M1-001		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-M1-026		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-M1-030		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-M1-048		Corridor	1	Corridor	28	18	None	None	No	None	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-M1-052		Switch Cup	1	Switch Cup	Not Controlled	Not Controlled	None	None	No	None	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
2-M2-002		M2 DCN Therapies	Staff Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-M2-003			Reception	1	Reception	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply Air	3	0	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-M2-004			Interview Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4 people at 10 l/s per person (6ach)	4 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-M2-005			Interview Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4 people at 10 l/s per person (6ach)	4 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-M2-006	Waiting		1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	9 people at 10 l/s per person (7ach)	9 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m	
2-M2-007	ADL Bathroom, Shower, WC with hoists		1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-M2-008	Treatment Room 1		1	Physiotherapy Studio	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10	0	Positive	F7	43	41	300	n/a	None	A	80	Switch / Dimmer	Floor 0m	
2-M2-009	ADL Kitchen		1	Pantry	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central General Extract	0	6	Negative	None	43	41	300	n/a	None	A	80	Switch	Floor 0m	
2-M2-010	Consulting Room 2		1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m	
2-M2-011	Treatment Room 3		1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m	
2-M2-012	Treatment Room 4		1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m	
2-M2-013	Staff Lockers		1	Changing Facilities	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
2-M2-014	WC Access ble		1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-M2-015	Staff Toilet		1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-M2-016	Staff Toilet		1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-M2-017	Changing Cubicle 1		1	Changing Facilities	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
2-M2-018	Changing Cubicle 2		1	Changing Facilities	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
2-M2-019	Changing Cubicle 3		1	Changing Facilities	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
2-M2-020	Changing Cubicle 4		1	Changing Facilities	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
2-M2-021	Store: General/Equipment		1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane			
2-M2-022		Patient Toilet	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	0	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m			
2-M2-023		Rehabilitation Room 5	1	Physiotherapy Studio	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	5	6	Negative	F7	43	41	300	n/a	None	A	80	Switch / Dimmer	Floor 0m			
2-M2-024		Store: General/Equipment	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m			
2-M2-025		Store: General/Equipment	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m			
2-M2-001		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
2-M2-026		Switch Cupboard	1	Switch Cup	Not Controlled	Not Controlled	None	None	No	None	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m		
2-M3-002	M3	Programmed Investigations Unit	Treatment Room	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m		
2-M3-003			Treatment Bays 1-4	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m		
2-M3-004			Waiting area; 4 & 2 wheelchairs	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	5	5	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m		
2-M3-001			Corridor	1	Corridor	28	18	None	None	No	None	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-M4-002	M4	DCN Neurophysiology	Waiting Area (DCN)	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	5	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m		
2-M4-003			Secretarial Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m		
2-M4-004			Reporting Room	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m		
2-M4-005			Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m		
2-M4-006			WC - wheelchair accessible (DCN)	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m		
2-M4-007			Quiet Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m		
2-M4-008			EMG/Nerve Conduction Room 3	1	Diagnostic room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	8	8	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m		
2-M4-009			EMG/Nerve Conduction Room 1	1	Diagnostic room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	8	8	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m		
2-M4-011			EMG/Nerve Conduction Room 2	1	Diagnostic room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	8	8	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m		
2-M4-012			VTEM/Ambulatory Review Room	1	Diagnostic room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	8	8	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m		
2-M4-013			Clinical Physiologist Room	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m		
2-M4-014			WC - Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m		
2-M4-016			Store / Records	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
2-M4-017			EEG Recording Room 5	1	Diagnostic room	25	18	Warm Air - Reheat Battery	BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	8	8	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m		
2-M4-018			EEG Recording Room 4	1	Diagnostic room	25	18	Warm Air - Reheat Battery	BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	8	8	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m		
2-M4-019			EEG Recording Room 6	1	Diagnostic room	25	18	Warm Air - Reheat Battery	BMS Adjustable Sensor	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	8	8	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m		
2-M4-001			Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-M4-020			Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Supply	None	1	0	Positive	F7	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-M4-021			Switch Cupboard	1	Switch Cup	Not Controlled	Not Controlled	None	None	No	None	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
2-M4-022			Switch Cupboard	1	Switch Cup	Not Controlled	Not Controlled	None	None	No	None	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-N1-001			N1	DCN Entrance	Reception / Information Desk	1	Reception	28	18	underfloor heating	BMS Adjustable Sensors.	Yes	Ceiling Cassette - Chilled Water	Central Supply Air	4	4	Balanced	F7	43	n/a	300	n/a	None	A	80	None	Desk 0.75 to 0.85m
G-N1-002					Draught Lobby	1	Circulation Areas - Entrance Lobby	28	Not Controlled	Warm Air Door Curtain	BMS Adjustable Sensor	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-N1-003	WC - Wheelchair accessible	1			Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m		
G-N1-004	WC - Visitors	1			Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m		
G-N1-005	Wheelchair Bay	1			Circulation Equipment Storage Bays	28	16	underfloor heating	BMS Adjustable Sensors.	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
G-N1-006	Vending Machine	1			Vending Machine	28	16	underfloor heating	BMS Adjustable Sensors.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
G-N1-007	Waiting Area	1			Waiting Room	28	18	underfloor heating	BMS Adjustable Sensors.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	5	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m		
G-N1-008	Manifold	1			Manifold	Not Controlled	Not Controlled	None	None	No	None	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
2-N2-002	N2	DCN Wards / Health Records Support - (N2)	Staff Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	18 people at 10 l/s per person (7ach)	18 people at 10 l/s per person (7ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m		
2-N2-003			Coffee Bar	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central Supply and Extract	6	8	Negative	F7	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m		
2-N2-004			Disposal Hold (small)	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
2-N2-005			DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m		

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
2-N2-001		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-002		Physical Measurement Bay	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	General working plane 1m
1-P1-003		Single Room 1	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	6 via bedroom and ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-P1-004		Room 1 - Ensuite	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-005		Single Room 2	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	6 via bedroom and ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-P1-006		Room 2 - Ensuite	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-007		Consulting Room 5	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
1-P1-008		Consulting Room 4	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
1-P1-009		Interview Room - DCU	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4 people at 10 l/s per person (7ach)	4 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-P1-010		Single Room 3 - Ensuite	1	Bedroom	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	6 via bedroom and ensuite	Balanced	F7	43	41	100	5	300	A	80	Switch / Dimmer	Bed / Trolley 1.45m
1-P1-011		Room 3 - Ensuite	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-012		Discharge Lounge	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
1-P1-013		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-014		Interview Room - DCU	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4 people at 10 l/s per person (7ach)	4 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-P1-015		Clean Utility (Dispensary)	1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	41	150	n/a	None	A	80	Automatic Controls	General working plane 1m
1-P1-016		Pantry (DCU)	1	Pantry	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
1-P1-017		Wheelchair Parking Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer	None	No	None	Central Supply Air	37	0	Positive	F7	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-018		Linen Bay	1	Linen Bay	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-020		WC - Patients	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-021		Staff Base - Recovery	1	Staff base	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	200/300	n/a	None	A	80	Switch / Dimmer	Desk 0.75 to 0.85m
1-P1-022		Recovery Clean Utility	1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	41	150	n/a	None	A	80	Automatic Controls	General working plane 1m
1-P1-023		Recovery Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-024		Recovery	1	Recovery Bay / Recovery Room	25	20	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	None	A	90	Switch / Dimmer	Bed / Trolley 1.45m
1-P1-025		Recovery Bay 6	1	Recovery Bay / Recovery Room	25	20	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	None	A	90	Switch / Dimmer	Bed / Trolley 1.45m
1-P1-026		Recovery Bay 10	1	Recovery Bay / Recovery Room	25	20	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	None	A	90	Switch / Dimmer	Bed / Trolley 1.45m
1-P1-027		Linen Bay	1	Linen Bay	28	16	Adjacent Space Transfer	None	No	None	Central Supply Air	37	0	Positive	F7	n/a	n/a	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-028		Recovery Staff Base	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	41	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-P1-029		Post Op Recovery	1	Recovery Bay / Recovery Room	25	20	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	None	A	90	Switch / Dimmer	Bed / Trolley 1.45m
1-P1-030		Bay 5	1	Recovery Bay / Recovery Room	25	20	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	None	A	90	Switch / Dimmer	Bed / Trolley 1.45m
1-P1-031		Bay 6	1	Recovery Bay / Recovery Room	25	20	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	None	A	90	Switch / Dimmer	Bed / Trolley 1.45m
1-P1-032		Theatre 30	1	Operating Theatre Suite	31	18	warm air via AHU Battery	Local 7 DWS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	25	7	Positive	F7	43	41	1000	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-033		Anaesthetic Room 30	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 DWS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-034		Scrub Room 30	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 DWS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central General Extract	0	12	Negative	None	n/a	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-035		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (7ach)	2 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
1-P1-036		Image Intensifier Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-038		Satellite Pharmacy Store	1	Clean Utility	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	n/a	n/a	150	n/a	None	A	80	Automatic Controls	General working plane 1m
1-P1-039		Preparation Room 30	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 DWS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-040		Exit Bay	1	Operating Theatre Suite	25	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	300	n/a	None	A	80	Automatic Controls	Bed / Trolley 1.45m
1-P1-041		Utility Room	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 DWS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central General Extract	0	39	Negative	None	43	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-042		Bronchoscope Parking Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-043		X-Ray/Ultrasound Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
1-P1-044		Theatre 31	1	Operating Theatre Suite	31	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	25	7	Positive	F7	43	41	1000	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-045		Preparation Room 31	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply Air	15	0	Positive	F7	43	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-046		Scrub Room 31	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central General Extract	0	12	Negative	n/a	43	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-047		Anaesthetic Room 31	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-048		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-049		Clean Scopes Store	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-050		Theatre 35	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	25	7	Positive	F7	43	41	500	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-051		MRI Reporting	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-P1-052		WC-Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-053		Staff Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	35 people at 10 l/s per person (8ach)	35 people at 10 l/s per person (8ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
1-P1-054		Sub-Wait Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	3 people at 10 l/s per person (9ach)	3 people at 10 l/s per person (9ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-055		Holding Bay 2	1	Circulation Equipment Storage Bays	28	16	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply	4	0	Positive	F7	43	41	200	n/a	None	A	80	Automatic Controls	Bed / Trolley 1.45m
1-P1-056		Holding Bay 1	1	Circulation Equipment Storage Bays	28	16	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply	4	0	Positive	F7	43	41	200	n/a	None	A	80	Automatic Controls	Bed / Trolley 1.45m
1-P1-057		Trolley Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer	None	No	None	Central Supply	41	0	Positive	F7	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-058		Angiography Procedures Machine Room	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	6	Balanced	F7	43	n/a	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-059		Angio Preparation Room	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-060		Trolley Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-061		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-063		MRI 5 Preparation Room	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	None	A	90	Switch	Bed / Trolley 1.45m
1-P1-064		MRI 5	1	Diagnostic room	25	18	Warm Air - Reheat Battery	BMS Adjustable Sensor	Yes	Cooling Battery	Central Supply and Extract	15 & 25 (Theatre Mode)	8	Positive	F7	43	n/a	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
1-P1-065		MRI 5 - Control Room	1	Cellular / Ward Offices	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-P1-066		Angio Anaesthetic Room	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-067		Exit Bay 6	1	Operating Theatre Suite	25	18	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Bed / Trolley 1.45m
1-P1-068		Equipment Room - MRI	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	Yes	Floor Mounted Unit Chilled Water	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-069		Anaesthetic Room 37	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-070		Theatre 37	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	25	7	Positive	F7	43	n/a	1000	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-071		Scrub Room 37	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central General Extract	0	12	Negative	None	n/a	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-072		Prep Room 39	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-073		Scrub Room 39	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central General Extract	0	12	Negative	None	n/a	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-074		Anaesthetic Room 39	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-075		Prep Room 37	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-076		Exit Bay 5	1	Operating Theatre Suite	25	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Bed / Trolley 1.45m
1-P1-077		Utility Room 5	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central General Extract	0	39	Negative	None	43	41	500	n/a	10,000 - 100,000	A	80	Switch	General working plane 1m
1-P1-078		Theatre 38	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	25	7	Positive	F7	43	n/a	1000	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-079		Prep Room 38	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-080		Scrub Room 38	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 dows Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central General Extract	0	12	Negative	None	n/a	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-083		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (7ach)	2 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
1-P1-084		Image Intensifier Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-085		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (7ach)	2 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
1-P1-086		Medical Gas Cylinder Store	1	Storage Area Med Gas	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	7	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-087		Clinical Equipment Store	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-088		IPS Room	1	IPS Room	30	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
1-P1-089	P1 Operating Theatres & RHSC Surgical Day Case Unit	DCN Management Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	3 people at 10 l/s per person (5ach)	3 people at 10 l/s per person (5ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-P1-090		Dirty Utility: bedpan disposal & urine test	1	Dirty utility	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	6	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-091		Theatre 39	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local AHU Adjustable	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	25	7	Positive	F7	43	n/a	1000	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-092		Utility Room 6	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local AHU Adjustable	Yes	Comfort Cooled Fresh Air	Central General Extract	0	39	Negative	n/a	43	41	500	n/a	10,000 - 100,000	A	80	Switch	General working plane 1m
1-P1-093		Angiography Procedures Room	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local AHU Adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air	25	0	Positive	F7	43	41	500	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-094		Angiography Procedures Control Room	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local AHU Adjustable	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	500	n/a	1000	A	90	Switch	Desk 0.75 to 0.85m
1-P1-095		Sterile Supplies Store	1	Clean Utility	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	n/a	41	150	n/a	None	A	80	Automatic Controls	General working plane 1m
1-P1-097		Image Intensifier Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	10	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-098		WC-Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-099		Sterile Supplies Store	1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	n/a	150	n/a	None	A	80	Automatic Controls	General working plane 1m
1-P1-100		Female Staff Changing and Lockers	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-101		Clean Trays	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-102		Male Staff Changing and Lockers	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-103		Footwear Machine Washing Area	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	Yes	Ceiling Cassette - Chilled Water	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-104		Dirty Trays	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-105		Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-106		Clean Utility	1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	41	150	n/a	None	A	80	Automatic Controls	General working plane 1m
1-P1-107		Resuscitation Trolley Bay	1	Resus Trolley bay	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-108		Linen Bay	1	Linen Bay	28	16	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-109		Recovery bay: post anaesthetic, 1 place	1	Recovery Bay / Recovery Room	25	20	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	None	A	90	Switch / Dimmer	Bed / Trolley 1.45m
1-P1-113		Staff Base	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
1-P1-116		Consulting Room 2	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-P1-117		IPS Room	1	IPS Room	30	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-118		Consulting Room 3	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-P1-119		Reception	1	Reception	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	2	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-P1-120		Consulting Room 1	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-P1-121		Interview Counselling / Quiet Room	1	Office	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	5 people at 10 l/s per person (9ach)	5 people at 10 l/s per person (9ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-P1-122		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-123		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-124		Store	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-P1-127		Changing Cubicles	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-128		Admissions Lounge	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
1-P1-129		Theatre 33	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local AHU Adjustable	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	25	7	Positive	F7	43	n/a	1000	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-130		Utility Room	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local AHU Adjustable	Yes	Comfort Cooled Fresh Air	Central General Extract	0	39	Negative	n/a	43	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-131		Theatre 32	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local AHU Adjustable	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	25	7	Positive	F7	43	n/a	500	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-132		Anaesthetic Room 32	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local AHU Adjustable	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-133		Scrub Room 32	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local AHU Adjustable	Yes	Comfort Cooled Fresh Air	Central General Extract	0	12	Negative	n/a	43	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-134		Prep Room 32	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local AHU Adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-135		Exit Bay	1	Operating Theatre Suite	25	18	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Bed / Trolley 1.45m
1-P1-136		Prep Room 33	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local AHU Adjustable	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-137		Scrub Room 33	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local AHU Adjustable	Yes	Comfort Cooled Fresh Air	Central General Extract	0	12	Negative	None	n/a	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-138	Anaesthetic Room 33	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local AHU Adjustable	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m	
1-P1-140	Theatre 34	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local AHU Adjustable	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	25	7	Positive	F7	43	n/a	1000	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m	
1-P1-141	Anaesthetic Room 34	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local AHU Adjustable	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m	

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
1-P1-143		RHCYP Management Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-P1-144		Image Intensifier Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-145		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (7ach)	2 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
1-P1-146		Clinical Equipment Store	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-147		Office Staff	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette-Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-P1-148		Scrub Room 34	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 DWS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central General Extract	0	12	Negative	None	n/a	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-149		Prep Room 34	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 DWS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-151		Exit Bay	1	Operating Theatre Suite	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	None	0	0	n/a	None	43	n/a	300	n/a	None	A	80	Automatic Controls	Bed / Trolley 1.45m
1-P1-152		Utility Room	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 DWS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central General Extract	0	39	Negative	None	43	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-153		Prep Room 36	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 DWS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-154		Scrub Room 35	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 DWS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central General Extract	0	12	Negative	None	n/a	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-155		Theatre 36	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 DWS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	25	7	Positive	F7	43	n/a	1000	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-156		Anaesthetic Room 35	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 DWS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-158		Dirty Scopes Store	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-159		Store - Plaster	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-161		Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-162		Staff Reception / Office / Control Base	1	Reception	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-P1-163		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-164		Changing Cubicle 2	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-165		Changing Cubicle 1	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-167		Changing Cubicle 3	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-168		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-169		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-170		Immediate Pre Theatre Wait	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	5	5	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Bed / Trolley 1.45m
1-P1-171		WC-Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-172		Senior Charge Nurse Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-P1-173		Locker Bay	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-174		General Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-P1-175		Reception	1	Reception	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	3	0	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
1-P1-176		Consulting Room 6	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette-Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-P1-177		Consulting Room 7	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
1-P1-178		Main Waiting/Play Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	25 people at 10 l/s per person (7ach)	25 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-179		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-180		WC Access ble	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-183		Anaesthetic Room 36	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 DWS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-184		Anaesthetic Room 38	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 DWS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	10,000 - 100,000	A	90	Switch	Bed / Trolley 1.45m
1-P1-185		Scrub Room 36	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 DWS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central General Extract	0	12	Negative	None	n/a	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-186		Exit Bay 4	1	Operating Theatre Suite	25	18	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	41	300	n/a	None	A	80	Switch	Bed / Trolley 1.45m
1-P1-187		Utility Room (interoperative)	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 DWS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central General Extract	0	39	Negative	None	43	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-193		Toy Wash Store	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-194		Cleaner Cupboard	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-195		Store (RHSC)	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-196		Prep Room 35	1	Operating Theatre Suite	25	18	warm air via AHU Battery	Local 7 DWS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	None	A	90	Switch	General working plane 1m
1-P1-197		IV Store	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-001		Comidor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
1-P1-019		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-037		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-062		Corridor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-082A		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-082B		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-110		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-114		Corridor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-115		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-125		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-126		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-142		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-150		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-166A		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-166B		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-189		Corridor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-190		Corridor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-199		Corridor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-182		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-182A		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-183B		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-191		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
1-P1-192		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-002	Q1 Radiology	IPS Room	1	IPS Room	30	18	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-003		Nappy Change Room with handwash	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-004		General X-Ray Room	1	Diagnostic room	25	18	Warm Air - Reheat Battery	BMS Adjustable Sensor	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	8	8	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-Q1-005		Changing Cubicles	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-006		Changing Cubicles	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-007		Trolley Bay	1	Circulation Equipment Storage Bays	28	16	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-008		Processing Area	1	Diagnostic room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	8	8	Balanced	F7	43	n/a	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-Q1-009		Acute Reporting	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4 people at 10 l/s per person (8ach)	4 people at 10 l/s per person (8ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-010		Ultrasound Room 1	1	Diagnostic room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	15	15	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-Q1-011		Changing Cubicle 3	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-012		General X-Ray Room	1	Diagnostic room	25	18	Warm Air - Reheat Battery	BMS Adjustable Sensor	Yes	Ceiling Suspended Unit	Central Supply and Extract	8	8	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-Q1-013		Changing Cubicle 4	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-014		Ultrasound Room 2	1	Diagnostic room	25	18	Warm Air - Reheat Battery	BMS Adjustable Sensor	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	15	15	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-Q1-015		Changing Cubicle 5	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-016		Fluoroscopy Screening Room	1	Diagnostic room	25	18	Warm Air - Reheat Battery	BMS Adjustable Sensor	Yes	Ceiling Suspended Unit	Central Supply and Extract	15	15	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-Q1-017		Fluoroscopy Preparation Room	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	300	n/a	1000	A	80	Switch	General working plane 1m
G-Q1-018		Ultrasound Waiting Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6 people at 10 l/s per person (10ach)	6 people at 10 l/s per person (10ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-019		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-020		Patient Interview Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply & Extract	4	4	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-021		Baby Infant / Feeding Room	1	Baby Feeding	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	100	n/a	None	A	80	Switch	Floor 0m
G-Q1-022		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-023		Registrars Office (5 desks)	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
G-Q1-024		Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-025		Radioactive Waste Store	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	10	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-027		Cold Waiting Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6 people at 10 l/s per person (8ach)	6 people @ 10 l/s/p + Make Up Air (12ach)	Positive	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-028		Radioisotope Preparation Room	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	300	n/a	1000	A	80	Switch	General working plane 1m
G-Q1-029		WC - Wheelchair accessible (hot)	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-030		Gamma Camera Admin Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-031		Medical Physics Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-032		Radio Nuclide Imaging Reporting	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-033		Emergency Shower	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-034		Hot Waiting Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6 people at 10 l/s per person (8ach)	6 people @ 10 l/s/p + Make Up Air (12ach)	Positive	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-035		Radioisotope Injection Room 1	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply Air	10	0	Positive	F7	43	41	300	n/a	1000	A	80	Switch	General working plane 1m
G-Q1-036		Recovery Area 1	1	Recovery Bay / Recovery Room	25	20	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	None	A	90	Switch / Dimmer	Bed / Trolley 1.45m
G-Q1-037		Changing Cubicles	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-039		Radio Nuclide Imaging 1	1	Diagnostic room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit & Ceiling Suspended Unit	Central Supply and Extract	15	15	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-Q1-042		Control Room	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-Q1-043		Changing Room 2	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-044		Radio Nuclide Imaging 2	1	Diagnostic room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit & Ceiling Suspended Unit	Central Supply and Extract	15	15	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-Q1-045		Radioisotope Injection Room 2	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10	0	Positive	F7	43	41	300	n/a	1000	A	80	Switch	General working plane 1m
G-Q1-046		Stress Room	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	3	3	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-Q1-047		Hot Waiting Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6 people at 10 l/s per person (8ach)	6 people at 10 l/s per person (8ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-048		WC - Wheelchair accessible (hot)	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-049		WC - Wheelchair accessible (cold)	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-050		Cold Waiting Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6 people at 10 l/s per person (8ach)	6 people at 10 l/s per person (8ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-052		Radioisotope Counting Laboratory	1	Laboratory	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6 people at 10 l/s per person (8ach)	6 people at 10 l/s per person (8ach)	Balanced	F7	43	60	500	n/a	None	A	80	Switch	General working plane 1m
G-Q1-053		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-054		Meeting Room 1	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4 people at 10 l/s per person (10ach)	4 people at 10 l/s per person (10ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-055		Meeting Room 2	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6 people at 10 l/s per person (9ach)	6 people at 10 l/s per person (9ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-057		Other Clinical Staff Office (7 Person)	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-058		Acute Reporting	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10 people at 10 l/s per person (5ach)	10 people at 10 l/s per person (5ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-059		CT Room 1	1	Diagnostic room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit & Ceiling Suspended Unit	Central Supply and Extract	15	15	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-Q1-061		Disabled Toilet	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-062		WC - Patients	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-063		Linen Bay	1	Linen Bay	28	16	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-064		Resuscitation Trolley Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-066		Preparation Room	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	300	n/a	1000	A	80	Switch	General working plane 1m
G-Q1-067		Disabled Toilet	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-068		Toilets	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-069		CT - Changing Cubicle 1	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-070		CT - Changing Cubicle 2	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
G-Q1-071		Control Room - CT	1	Cellular / Ward Offices	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	5 people at 10 l/s per person (4ach)	5 people at 10 l/s per person (4ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-072		Imaging Reporting	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4 people at 10 l/s per person (4ach)	4 people at 10 l/s per person (4ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-073		Quiet Reporting	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	8 people at 10 l/s per person (5ach)	8 people at 10 l/s per person (5ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-074		Consultant Office (5 person)	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-075		Consultant Office (5 person)	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-076		Ultrasound Admin Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-077		Admin Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-078		Waiting Area - Main Dept	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	31 people at 10 l/s per person (10ach)	31 people at 10 l/s per person (10ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
G-Q1-079		Reception	1	Reception	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply Air	4	0	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-080		Waiting Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	20 people at 10 l/s per person (8ach)	20 people at 10 l/s per person (13ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
G-Q1-081		Doppler Ultrasound	1	Diagnostic room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-Q1-082		Meeting Room 3	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4 people at 10 l/s per person (9ach)	4 people at 10 l/s per person (9ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-083		Photocopy Room	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
G-Q1-084		Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-086		MRI 4 Control Room (Shelled Space)	1	Cellular / Ward Offices	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-089		Inpatient Holding Bays	1	Circulation Equipment Storage Bays	28	16	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10	6	Positive	F7	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-092		MRI 4 (Shelled Space)	1	Diagnostic room	25	18	Warm Air - Reheat Battery	BMS Adjustable Sensor	Yes	By Specialist	Central Supply and Extract	15	15	Balanced	F7	43	n/a	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-Q1-094		Waiting Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6 people at 10 l/s per person (13ach)	6 people at 10 l/s per person (13ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
G-Q1-095		Cubicle 1	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-096		Cubicle 2	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-097		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-098		Recovery Bays	1	Recovery	28	16	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	None	A	90	Switch	Floor 0m
G-Q1-099		Equipment Room 1 (Shelled Space)	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	Yes	Floor Mounted Unit Chilled Water	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-100		Equipment Room	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	Yes	Floor Mounted Unit Chilled Water	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-102		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-103		Cubicle 3	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-104		Cubicle 4	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-105		Cubicle 5	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-106		Cubicle 6	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-108		Adult Injection Room 1	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	10	0	Positive	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
G-Q1-109		Toilets	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-110		MRI 3	1	Diagnostic room	25	18	Warm Air - Reheat Battery	BMS Adjustable Sensor	Yes	By Specialist	Central Supply and Extract	15	15	Balanced	F7	43	n/a	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-Q1-111		MRI 3/4 Control Room	1	Control Room - MRI	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Suspended Unit	Central Supply and Extract	6	4	Positive	F7	43	n/a	400	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-112		Clean Utility	1	Clean Utility	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply Air	6	0	Positive	F7	43	41	150	n/a	None	A	80	Automatic Controls	General working plane 1m
G-Q1-113		Dirty Utility	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-114		Store Room	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-115		Adult Waiting Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4 people at 10 l/s per person (7ach)	4 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
G-Q1-119		Waiting Area	1	Waiting Room	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4 people at 10 l/s per person (4ach)	4 people at 10 l/s per person (4ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
G-Q1-120		MRI Reporting	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4 people at 10 l/s per person (5ach)	4 people at 10 l/s per person (5ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-121		Baby Infant / Feeding Room	1	Baby Feeding	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	100	n/a	None	A	80	Switch	Floor 0m
G-Q1-123		MRI 2	1	Diagnostic room	25	18	Warm Air - Reheat Battery	BMS Adjustable Sensor	Yes	By Specialist	Central Supply and Extract	15	15	Balanced	F7	43	n/a	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-Q1-124		Equipment Room 3	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	Yes	Floor Mounted Unit Chilled Water	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-125		Recovery Area - 1 place	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
G-Q1-126		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-127		WC - Wheelchair accessible & change	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-128		Cubicle 7 - Accessible	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-129		Cubicle 8 - Accessible	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-130		Induction Area - 1 place	1	Treatment Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	15	15	Balanced	F7	43	41	500	n/a	1000	A	90	Switch	Bed / Trolley 1.45m
G-Q1-131		Staff WC	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-132		WC - Wheelchair accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-133		Equipment Room - MRI	1	IT equipment (comms server)	25	18	None	None	Yes	Floor Mounted Unit Chilled Water	Central General Extract	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m
G-Q1-134		MRI Room	1	Diagnostic room	25	18	Warm Air - Reheat Battery	BMS Adjustable Sensor	Yes	By Specialist	Central Supply and Extract	15	15	Balanced	F7	43	n/a	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-Q1-135		Control Room - CT/MRI	1	Cellular / Ward Offices	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-136		CT Room	1	Diagnostic room	25	18	Warm Air - Reheat Battery	BMS Adjustable Sensor	Yes	Ceiling Suspended Unit	Central Supply and Extract	15	15	Balanced	F7	43	41	300	n/a	1000	A	80	Switch / Dimmer	General working plane 1m
G-Q1-137		Main Reporting	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10 people @ 10 l/s/p	10 people @ 10 l/s/p	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-138		Resuscitation Trolley Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-139		Linen Bay	1	Linen Bay	28	16	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-140		IPS Room	1	IPS Room	30	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-141		Dental Room	1	Consulting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	10	10	Balanced	F7	43	41	300	n/a	1000	A	80	Switch	Bed / Trolley 1.45m
G-Q1-142		Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-143		Staff WC	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-144		Female Staff Changing and Lockers	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-145		Trolley Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	Yes	Comfort Cooled Fresh Air	None	0	0	n/a	F7	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-146		Staff WC	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-148		Store Room	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-149		Resource Room / Library	1	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	24 people @ 10 l/s per person (9ach)	24 people @ 10 l/s per person (9ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-150		Male Staff Changing and Lockers	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-151		Consultant Office (5 person)	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-152		Admin Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-153		Reception Area	1	Reception	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	24 people @ 10 l/s/p	24 people @ 10 l/s/p	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-Q1-160		Shelled Space	1	Shelled Space	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Floor 0m
G-Q1-161		Trolley Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-001A		Comidor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	None	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-001B		Comidor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-026		Comidor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	None	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-038		Comidor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-040		Comidor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-051		Comidor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-056		Comidor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-065		Comidor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Q1-065B		Comidor	1	Corridor	28	18	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
G-Q1-085		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-Q1-087		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-Q1-107		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-Q1-116		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-Q1-122		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-Q1-147		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-Q1-162		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-Q1-155		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-Q1-156		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-Q1-157		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
G-Q1-158		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
2-R1-001		R1 Clinical Management Suite	Staff Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
2-R1-002			Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
2-R1-003			Meeting Room - 4 person	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4 people at 10 l/s per person (9ach)	4 people at 10 l/s per person (9ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
2-R1-004			Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
2-R1-005		Beverage Bay	1	Tea Making	28	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	5	Negative	None	n/a	41	100 (KNX)	n/a	None	A	80	switch	Floor 0m	
2-R1-006		Meeting Room - 6 person	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	6 people at 10 l/s per person (9ach)	6 people at 10 l/s per person (9ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
2-R1-007		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m	
2-R1-008		Store Clinical	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-R1-009		Printer/Photocopier Room	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer Air	None	Yes	Wall Mounted Unit	Central General Extract	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
2-R1-010		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
2-R1-011		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
2-R1-012		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
2-R1-013		WC - Staff (Female)	1	toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-R1-014		WC - Staff (Male)	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-R1-015		Meeting Room - 6 person	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	6 people at 10 l/s per person (8ach)	6 people at 10 l/s per person (8ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
2-R1-016		WC - Wheelchair Accessible	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-R1-017		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
2-R1-018		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
2-R1-019		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
2-R1-020		Printer/Photocopier Room	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Wall Mounted Unit	Central General Extract	0	3	Negative	None	43	n/a	400	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
2-R1-021		Beverage Bay	1	Tea Making	28	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	5	Negative	None	n/a	41	100	n/a	None	A	80	switch	Floor 0m	
2-R1-022		Disposal Hold (small)	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-R1-023		Meeting Room - 4 person	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4 people at 10 l/s per person (8ach)	4 people at 10 l/s per person (8ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
2-R1-024		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
2-R1-025		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
2-R1-026		Beverage Bay	1	Tea Making	28	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	5	Negative	None	n/a	41	200	n/a	None	A	80	switch	Floor 0m	

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
2-R1-027		Meeting Room - 4 person	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4 people at 10 l/s per person (8ach)	4 people at 10 l/s per person (8ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	switch	Desk 0.75 to 0.85m
2-R1-028		Meeting Room - 4 person	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4 people at 10 l/s per person (8ach)	4 people at 10 l/s per person (8ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	switch	Desk 0.75 to 0.85m
2-R1-029		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
2-R1-030		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
2-R1-031		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
2-R1-032		WC - Wheelchair Accessible	1	toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-R1-033		WC - Staff (Male)	1	toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-R1-034		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
2-R1-035		Printer/Photocopier Room	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer Air	None	Yes	Wall Mounted Unit	Central General Extract	0	3	Negative	None	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
2-R1-036		Meeting Room - 4 person	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4 people at 10 l/s per person (9ach)	4 people at 10 l/s per person (9ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-R1-037		Store Clinical	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-R1-038		WC - Staff (Female)	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-R1-039		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
2-R1-040		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
2-R1-041		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
2-R1-042		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
2-R1-043		Store Clinical	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-R1-044		Printer/Photocopier Room	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer Air	None	Yes	Wall Mounted Unit	Central General Extract	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
2-R1-045		Meeting Room - 4 person	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4 people at 10 l/s per person (9ach)	4 people at 10 l/s per person (9ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-R1-046		Meeting Room - 4 person	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4 people at 10 l/s per person (7ach)	4 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-R1-047		Store Clinical	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-R1-048		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
2-R1-049A		2nd Floor Desks	1	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-R1-049B		2nd Floor Desks	1	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-R1-050		2nd Floor Desks	1	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-R1-051A		2nd Floor Desks	1	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-R1-051B		2nd Floor Desks	1	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-R1-051C		2nd Floor Desks	1	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-R1-052A		2nd Floor Desks	1	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-R1-052B		2nd Floor Desks	1	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-R1-052C		2nd Floor Desks	1	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-R1-053		2nd Floor Desks	1	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-R1-054		2nd Floor Desks	1	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-R1-055A		2nd Floor Desks	1	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-R1-055B		2nd Floor Desks	1	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-R1-055C		2nd Floor Desks	1	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
2-R1-055D		2nd Floor Desks	1	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
4-R1-001		Management Conference Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	16 people at 10 l/s per person (7ach)	16 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
4-R1-002		Management Conference Room	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	16 people at 10 l/s per person (8ach)	16 people at 10 l/s per person (8ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
4-R1-003		Meeting Room - 6 person	1	Meeting Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	6 people at 10 l/s per person (9ach)	6 people at 10 l/s per person (9ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
4-R1-004		Beverage Bay	1	Tea Making	28	18	Adjacent Space Transfer Air	None	No	None	Central Supply and Extract	4	3	Positive	F7	n/a	41	100 (KNX)	n/a	None	A	80	switch	Floor 0m	
4-R1-005		WC - Staff (Male)	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-R1-006		WC - Wheelchair Accessible	1	toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-R1-007		Meeting Room - 4 person	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4	4	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
4-R1-008		WC - Staff (Female)	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-R1-009		Staff Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	4	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m	
4-R1-010		4th Floor Desks	1	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	4	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
4-R1-011		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
4-R1-012		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
4-R1-013		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
4-R1-014		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	2 people at 10 l/s per person (6ach)	2 people at 10 l/s per person (6ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
4-R1-015		Store Management	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
4-R1-016		Store Management	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
4-R1-017		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m	
4-R1-018		Disposal Hold (small)	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-R1-019		Printer/Photocopier Room	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
2-R1-057		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-R1-058		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-R1-059		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-R1-060		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-R1-061		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-R1-062		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-R1-063		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-R1-020		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-R1-021		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
2-R1-064		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
2-R1-065		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
2-R1-066		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
2-R1-067		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
4-R1-022		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
4-R1-023		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
4-R2-002	R2	Health Records	Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
4-R2-003		Assistant Health Records Manager / Supervisors	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
4-R2-004		RHSC / DCN Office 17 Person	1	Open Plan Office	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
4-R2-005		WC Staff	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-R2-006		Receipt / Dispatch Counter	1	Reception	28	18	Adjacent Space Transfer Air	None	Yes	Wall Mounted Unit	Central Supply and Extract	3	40	Negative	F7	n/a	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
4-R2-007		Trolley Area	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-R2-008		RHSC & DCN Records Library (160,000 records)	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	2	3	Negative	F7	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
4-R2-010		Accessible WC	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-R2-011		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	3	Positive	F7	n/a	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
4-R2-001		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-R2-009		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S1-001	S1	Kitchen	Preparation/Cooking Area	1	CDS	28	18	None	None	Yes	Ceiling Cassette - Chilled Water	36	42	Negative	F7	n/a	60	500	n/a	None	A	80	Switch	General working plane 1m	
B-S1-005		Temperature Controlled Sandwich Prep	1	CDS	12	10	None	None	Yes	Ceiling Cassette - DX	General Supply and Extract	2 people at 10 l/s per person (2ach)	2 people at 10 l/s per person (2ach)	Balanced	F7	n/a	41	500	n/a	None	A	80	Switch	General working plane 1m	
B-S1-006		Bakery Preparation	1	CDS	12	10	None	None	Yes	Ceiling Cassette - DX	General Supply and Extract	2 people at 10 l/s per person (2ach)	2 people at 10 l/s per person (2ach)	Balanced	F7	n/a	41	500	n/a	None	A	80	Switch	General working plane 1m	
B-S1-007		Staff Room	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	6	8	Negative	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m	
B-S1-008		Office 5 person	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	5 people at 10 l/s per person (4ach)	5 people at 10 l/s per person (4ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
B-S1-009		Female Staff Changing inc. Shower	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S1-010		Male Staff Changing inc. Shower	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S1-012		Pan Wash	1	CDS	28	18	None	None	Yes	Ceiling Cassette - Chilled Water	Central Extract	0	6	Negative	None	n/a	60	300	n/a	None	A	80	Switch	General working plane 1m	
B-S1-013		Returned Trolleys	1	CDS	28	16	Adjacent Space Transfer Air	None	Yes	Comfort Cooled Fresh Air	General Supply and Extract	16	16	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S1-015		Refuse	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S1-016		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S1-017		Clean Trolleys Park	1	CDS	28	16	Adjacent Space Transfer Air	None	No	None	General Supply and Extract	3	3	Balanced	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S1-018		Disposables / Detergent	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S1-019		Raw Meat	1	CDS	8	5	None	None	Yes	DX Cooling Unit	None	0	0	n/a	None	n/a	n/a	300	n/a	None	A	80	Switch	General working plane 1m	
B-S1-020		Veg Store	1	CDS	28	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S1-021		Freezer	1	CDS	-18	-20	None	None	Yes	DX Cooling Unit	None	0	0	n/a	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m	
B-S1-022		Freezer	1	CDS	-18	-20	None	None	Yes	DX Cooling Unit	None	0	0	n/a	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m	
B-S1-023		Receipt Bay	1	Circulation Areas	28	18	Radiant Panels	Remote Sensor Adj.	No	None	General Extract	0	6	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S1-025		Dairy Store	1	CDS	5	2	None	None	Yes	DX Cooling Unit	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S1-027		Dry Goods	1	Storage Area Equipment	28	16	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S1-031		Pick and Pack	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	General Supply and Extract	3	3	Balanced	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S1-024		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S1-030		Lobby	1	Lobby	18	28	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S1-028		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S1-029		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
2-S2-001	S2	e-Health Infrastructure	2-N01 - Core Server Room	1	IT equipment (comms server)	25	18	None	None	Yes	Floor Mounted Close Control	Central Supply Air & Emergency Gas Extract System	1	4	Normal Operation Positive	F7	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m
B-S3-002		Linen Pool (Clean)	1	Linen Bay	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	60	100 (KNX)	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S3-003		Supplies Store	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S3-004		Laundry (microfibre)	1	Laundry	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	6	6	Balanced	F7	43	60	300	n/a	None	A	80	Switch	Floor 0m	
B-S3-005		Linen Pool (Dirty)	1	Dirty utility	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	6	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S3-007		Cleaning Equipment Store	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S3-008		Sanitary Bins Store	1	Dirty utility	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S3-009		DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S3-010	S3	Domestic Services	Bulk Equipment Store	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	60	200	n/a	None	A	80	Automatic Controls	Floor 0m
B-S3-011		Dictation/ 1:1/Phone Booth	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted Unit	Central Supply and Extract	2 people at 10 l/s per person (7ach)	2 people at 10 l/s per person (7ach)	Balanced	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m	
B-S3-012		Domestic Service Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m	
B-S3-013		Curtain Store	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S3-001		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
B-S3-006		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Supply Air	9	0	Positive	F7	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S3-030		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
B-S4-001	S4	Materials Management	Storage/Holding Area	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	5	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
B-S4-003			Mailroom	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
B-S4-004			Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
B-S4-005			Porters Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
B-S4-050			Clocking In	1	Cellular / Ward Offices	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Desk 0.75 to 0.85m
B-S4-002			Lobby	1	Lobby	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-S5-002			S5	Central Staff Changing	Bay for Token Machine	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer	None	No	None	Central General Extract	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80
2-S5-003	DSR	1			DSR	28	18	Adjacent Space Transfer	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
2-S5-004	Male Staff Changing , Shower, WC & Lockers	1			Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m
2-S5-005	Female Staff Changing , Shower, WC & Lockers	1			Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m
2-S5-001	Corridor	1			Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
2-S5-006	Corridor	1			Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
B-S6-003	S6	Estates			BMS Room	1	BMS Room	25	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80
B-S6-004			Workshop (NPD)	1	Small Workshop	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	6	Negative	F7	43	41	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
B-S6-006			Staff Change	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	5	4	Positive	F7	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m
B-S6-007			Shower	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
B-S6-008			Shower	1	Bathroom	28	20	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
B-S6-009			Workshop (NHSL)	1	Small Workshop	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	6	Negative	F7	43	41	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
B-S6-010			Staff WC	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
B-S6-011			Supervisors	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
B-S6-012			Estates Library	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted	Central Supply and Extract	2	3	Negative	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
B-S6-013			Office	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Ceiling Cassette - Chilled Water	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
B-S6-014			Store	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
B-S6-015			Contract Manager	1	Cellular / Ward Offices	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Wall Mounted	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
G-S6-016			Office / Reception	1	Cellular / Offices	28	18	Electric Heater	Remote Sensor Adj.	No	None	Central Supply and Extract	4	3	Positive	F7	43	n/a	300	n/a	None	A	80	Switch	Desk 0.75 to 0.85m
B-S6-019			Staff WC	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-S6-020			Atrium Cleaning Equipment	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
B-S6-021			Staff WC	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-S6-022			WC - Staff	1	Toilet	28	18	Electric Heater	Remote Sensor Adj.	No	None	Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-S6-023			Chemical Store	1	Storage Area Equipment	28	16	Electric Heater	Remote Sensor Adj.	No	None	Dedicated Extract System	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-S6-024			Trolley Holding Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
B-S6-025			Trolley Holding Bay	1	Circulation Equipment Storage Bays	28	16	Adjacent Space Transfer Air	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
B-S6-050	Staff Welfare	1	Common room/staff room/lounge	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	12 people at 10 l/s per person (6ach)	12 people at 10 l/s per person (6ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m		
B-S6-017	Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
4-S7-002	S7	Restaurant	Male WC	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-S7-003			Female WC	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-S7-004			Male WC	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-S7-007			Disposal Hold	1	Disposal Hold	28	16	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-S7-008			Storage/Dishwashing	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	60	200	n/a	None	A	80	Automatic Controls	Floor 0m
4-S7-009			DSR	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m
4-S7-010			Restaurant	1	Eating/Drinking	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	100 people at 10 l/s per person (9ach)	100 people at 10 l/s per person (9ach)	Balanced	F7	43	41	300	n/a	None	A	80	Switch	Floor 0m
4-S7-011			WC Access ble	1	Toilet	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Dirty Extract	0	10	Negative	None	43	41	200	n/a	None	A	80	Automatic Controls	Floor 0m

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane			
4-S7-001		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m			
4-S7-005		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m			
4-S7-013		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m			
4-S7-012		Switch Cupboard	1	Switch Cupboard	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m			
B-S8-001	S8	Sterile Support Store	1	Circulation Equipment Storage Bays	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m			
4-S9-001	S9	Helipad Support	WC Ambulant	1	Toilet	28	18	Adjacent Space Transfer Air	None	No	None	0	10	Negative	None	n/a	41	200	n/a	None	A	80	Automatic Controls	Floor 0m			
4-S9-002A			RFFS Changing / Support	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	10	8	Positive	F7	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m		
4-S9-002B			RFFS Changing / Support	1	Changing Facilities	28	18	Radiant Panels	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Dirty Extract	0	6	Negative	F7	43	41	100	n/a	None	A	80	Automatic Controls	Floor 0m		
4-S9-004A			RFFS Medical Equipment Store	1	Storage Area Equipment	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
4-S9-005			Trolley Bay Equip St	1	Trolley bay	28	18	Adjacent Space Transfer Air	None	No	None	Central General Extract	0	3	negative	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
4-S9-006			Cleaner	1	DSR	28	18	Adjacent Space Transfer Air	None	No	None	Central Dirty Extract	0	6	Negative	None	n/a	60	100	n/a	None	A	80	Automatic Controls	Floor 0m		
4-S9-003A			Lobby	1	Lobby	28	16	Radiant Panels	Remote Sensor Adj.	No	None	Central Supply and Extract	3	3	Balanced	F7	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
4-S9-003B			Lobby	1	Lobby	18	28	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
B-T1-001	T1	Plant	B-N02	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
B-T1-002			B-N04	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
B-T1-003			B-N03	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
G-T1-003			G-N09	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
G-T1-004			G-N08	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
G-T1-005			G-N07	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
G-T1-006			G-N06	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
G-T1-007			G-N05	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
1-T1-001			1-N14	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
1-T1-002			1-N12	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
1-T1-003			1-N11	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
1-T1-004			1-N10	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
1-T1-005			1-N13	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
2-T1-001			2-N20	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
2-T1-002			2-N19	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
2-T1-003			2-N17	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
2-T1-004			2-N18	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
2-T1-005			2-N16	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
2-T1-006			2-N15	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
3-T1-001			3-N25	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	2	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
3-T1-002			3-N24	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
3-T1-003			3-N23	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
3-T1-004			3-N22	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
3-T1-005			3-N21	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
4-T1-001			4-N26	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
4-T1-002			4-N27	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
4-T1-003			4-N28	1	IT equipment (comms server)	25	18	None	None	Yes	Wall Mounted	0	3	Negative	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m			
B-V1-001					Confidential Waste	1	Storage Area Equipment	n/a	n/a	Adjacent Space Transfer	None	No	None	0	3	Negative	None	n/a	n/a	200	n/a	None	A	80	Switch	Floor 0m	
B-V1-002					Store	1	Storage Area Equipment	n/a	n/a	Radiant Panels	Remote Sensor Adj.	No	None	Central General Extract	0	3	Negative	None	43	n/a	200	n/a	None	A	80	Switch	Floor 0m
G-X1-001					EC Plant Room 1	1	Storage Area Equipment	n/a	n/a	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Switch	Floor 0m
G-X1-002					EC Plant Room 2	1	Storage Area Equipment	n/a	n/a	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Switch	Floor 0m
G-X1-003					HV Gen Control Room	1	Storage Area Equipment	n/a	n/a	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Switch	Floor 0m
G-X1-004	HV Generator	1			Storage Area Equipment	n/a	n/a	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Switch	Floor 0m		

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
G-X1-005		HV Plant	1	Storage Area Equipment	n/a	n/a	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Switch	Floor 0m	
G-X1-006		HV Plant	1	Storage Area Equipment	n/a	n/a	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Switch	Floor 0m	
G-X1-008		Entrance Lobby	1	Entrance Lobby	28	16	Radiant Panel	Remote Sensor Adj.	No	None	None	None	0	0	43	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
M-X1-001		Mezz Plant 1	1	Storage Area Equipment	n/a	n/a	Adjacent Space Transfer Air	None	No	None	Natural	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-X1-010		Corridor	1	Corridor	28	18	Adjacent Space Transfer Air	None	No	None	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
B-COR-014		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	Central Supply and Extract	Central Supply and Extract	1	1	Balanced	F7	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
B-Z1-009		Stair 9	1	Stair 9	Not Controlled	Not Controlled	None	None	No	None	None	None	0	0	n/a	None	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-X1-007		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-X1-008		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Z1-012		Stair 9	1	Stair 9	Not Controlled	Not Controlled	None	None	No	None	None	None	0	0	n/a	None	n/a	None	200	n/a	None	A	80	Automatic Controls	Floor 0m
G-Y1-001A		Clinical Waste - Dirty	1	Dirty utility	n/a	n/a	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-Y1-001B		Clinical Waste - Dirty	1	Dirty utility	n/a	n/a	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-Y1-001C		Clinical Waste - Dirty	1	Dirty utility	n/a	n/a	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-Y1-002		General Waste	1	Storage Area Equipment	n/a	n/a	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-Y1-003		Gas Manifold	1	Storage Area Equipment	40	10	Electric Heater	Remote Sensor Adj.	No	None	Natural	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-Y1-004		Kitchen Waste	1	Storage Area Equipment	n/a	n/a	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-Y1-005		Clinical Waste - Clean	1	Storage Area Equipment	n/a	n/a	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-Y1-006		Wash Area	1	Storage Area Equipment	n/a	n/a	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-Y1-008		Medical Gas Cylinder Store	1	Bottle Store	40	10	Electric Heater	Remote Sensor Adj.	No	None	Natural	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-Plant 006		Plantroom 006	1	4-Plant 006	32	8	Ceiling Cassette DX	Remote Sensor Adj.	Yes	Ceiling Cassette DX	Natural	0	0	n/a	None	43	n/a	100	n/a	None	A	80	Switch	Floor 0m	
G-Y1-007		Circulation	1	Circulation	n/a	n/a	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-COR-001		Communication	Corridor	1	Corridor	28	18	Radiant Panel	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply	1	0	Positive	F7	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
B-COR-002			Corridor	1	Corridor	28	18	Radiant Panel	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
B-COR-003			Corridor	1	Corridor	28	18	Radiant Panel	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
B-COR-004			Corridor	1	Corridor	28	18	Radiant Panel	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply	0.5	0	Positive	F7	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
B-COR-005	Corridor		1	Corridor	28	18	Radiant Panel	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-COR-006	Corridor		1	Corridor	28	18	Radiant Panel	Remote Sensor Adj.	Yes	Comfort Cooled Fresh Air	Central Supply	1	0	Positive	F7	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-COR-007	Corridor		1	Corridor	28	18	Radiant Panel	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-COR-008	Corridor		1	Corridor	28	18	Radiant Panel	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-COR-009	Corridor		1	Corridor	28	18	Radiant Panel	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-COR-010	Corridor		1	Corridor	28	18	Radiant Panel	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-COR-011	Corridor		1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-COR-012	Corridor		1	Corridor	28	18	Radiant Panel	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-COR-013	Corridor		1	Corridor	28	18	Radiant Panel	Remote Sensor Adj.	No	None	Central Supply	Central Supply	4	0	positive	F7	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
B-COR-014	Corridor		1	Corridor	28	18	Radiant Panel	Remote Sensor Adj.	No	None	Central Supply and Extract	Central Supply and Extract	4	4	Balanced	F7	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m
B-Z1-002	Stair 02		1	Stair 02	28	18	Radiant Panel	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-COR-001	Atrium		1	Atrium	28	18	Underfloor	BMS Adjustable Sensor	Yes	Comfort Cooled Fresh Air	Central Supply and Extract	4	4	Balanced	F7	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-COR-002	Corridor		1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-COR-003	Corridor		1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-COR-005	Corridor		1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-COR-006	Corridor		1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
G-COR-007	Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
G-COR-008	Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
G-COR-009	Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		
G-COR-010	Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m		

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane	
3-COR-011		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-COR-012		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-COR-013		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-COR-014		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-COR-015		Lift Lobby	1	Lift Lobby	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
3-COR-017		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-COR-001		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-COR-001A		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-COR-001B		Corridor	1	Corridor	28	18	Adjacent Space Transfer	None	No	None	None	0	0	n/a	None	n/a	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-COR-002		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-COR-003		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-COR-004		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-COR-005		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-COR-006		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-COR-007		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-COR-008		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-COR-009		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
4-COR-010		Corridor	1	Corridor	28	18	Radiant Panels	Remote Sensor Adj.	No	None	None	0	0	n/a	None	43	n/a	200	n/a	None	A	80	Automatic Controls	Floor 0m	
B-PLANT-001		Plant	Plant Room	1	Plant Room	Not Controlled	Not Controlled	None	None	No	None	Central Supply & Extract	1	1	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m
B-PLANT-001A			HV Plant Room 01	1	Plant Room	32	Not Controlled	None	None	No	None	Natural & Dedicated Supply	17	17	Balanced	G3	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m
B-PLANT-001B	HV Plant Room 02		1	Plant Room	32	Not Controlled	None	None	No	None	Natural & Dedicated Supply	21	21	Balanced	G3	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-PLANT-001C	HV Plant Room Lobby		1	Plant Room	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-PLANT-002	Heat Station 04		1	Plant Room	Not Controlled	Not Controlled	None	None	No	None	Central Supply & Extract	3	3	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-PLANT-003	Heat Station 01		1	Plant Room	Not Controlled	Not Controlled	None	None	No	None	Central Supply & Extract	3	3	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-PLANT-004	Water Tank Room		1	Plant Room	Not Controlled	Not Controlled	None	None	No	None	Central Supply & Extract	5	5	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-PLANT-005	UPS Plant Room		1	Plant Room	Not Controlled	Not Controlled	None	None	No	None	Central Supply & Extract	1	1	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-PLANT-007	Plant Room		1	Plant Room	Not Controlled	Not Controlled	None	None	No	None	Central Supply & Extract	1	1	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-PLANT-007A	HV Plant Room 03		1	Plant Room	32	Not Controlled	None	None	No	None	Natural & Dedicated Supply	16	16	Balanced	None	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-PLANT-007B	HV Plant Room 04		1	Plant Room	32	Not Controlled	None	None	No	None	Natural & Dedicated Supply	16	16	Balanced	None	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-PLANT-008	Rainwater Tank Room		1	Plant Room	Not Controlled	Not Controlled	None	None	No	None	Central Supply & Extract	0.5	0.5	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-PLANT-009	Plant Room 09		1	Plant Room	Not Controlled	Not Controlled	None	None	No	None	Central Supply & Extract	1	1	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-PLANT-006	Heat Station 02		1	Plant Room	Not Controlled	Not Controlled	None	None	No	None	Central Supply & Extract	3	3	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-PLANT-011	PTS Plant Room		1	Plant Room	Not Controlled	Not Controlled	None	None	No	None	Central Supply & Extract	1.5	1.5	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-PLANT-10	Heat Station 03		1	Plant Room	Not Controlled	Not Controlled	None	None	No	None	Central Supply & Extract	3	3	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-PLANT-12	Plantroom 12		1	Plant Room	Not Controlled	Not Controlled	None	None	No	None	Central Supply & Extract	3	3	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-PLANT-15A	Plantroom 15A		1	Plant Room	Not Controlled	Not Controlled	None	None	No	None	Central Supply & Extract	3	3	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-PLANT-15B	Plantroom 15B		1	Plant Room	Not Controlled	Not Controlled	None	None	No	None	Central Supply & Extract	3	3	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-PLANT-16	Plantroom 16		1	Plant Room	Not Controlled	Not Controlled	None	None	No	None	Central Supply & Extract	3	3	Balanced	F7	n/a	n/a	300	n/a	None	A	80	Automatic Controls	Floor 0m	
B-T2-001:E3	Riser Plant		1	Riser Plant	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
B-T2-002:M3	Riser Plant		1	Riser Plant	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
B-T2-003:V10	Riser Plant		1	Riser Plant	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
B-T2-004:V3	Riser Plant		1	Riser Plant	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
B-T2-005:E2	Riser Plant		1	Riser Plant	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	
B-T2-006:E1	Riser Plant		1	Riser Plant	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m	

RHSC / DCN Environmental Matrix

Room No.	Department	Room Name	Qty	Room Function	Temp (max)	Temp (min)	Heating Type	Heating Control	Cooling (present)	Cooling (type)	Ventilation (type)	Supply (ac/hr)	Extract (ac/hr)	Relative pressure	Min filtration	Surface temp	Water temp	Normal lux	Night lux	Local lux	Standby grade	Colour render	Control	Plane
4-T2-002-V4		Riser	1	Riser	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
4-T2-003-V2		Riser	1	Riser	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
4-T2-004-KEF		Riser	1	Riser	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
4-T2-005-E1		Riser	1	Riser	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
4-T2-006-E2		Riser	1	Riser	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
4-T2-007-M2		Riser	1	Riser	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
4-T2-008		Riser	1	Riser	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
4-T2-009-V10		Riser	1	Riser	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
4-T2-010-E3		Riser	1	Riser	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
4-T2-011-M3		Riser	1	Riser	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
4-T2-017		Riser	1	Riser	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
4-T2-018-QP		Riser Plant	1	Riser Plant	Not Controlled	Not Controlled	None	None	No	None	None	0	0	n/a	None	n/a	n/a	100	n/a	None	A	80	Automatic Controls	Floor 0m
4-PLANT-001		Central AHU Plant Room 01	1	Plant Room 01	Not Controlled	Not Controlled	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m
4-PLANT-002		Central AHU Plant Room 02	1	Plant Room 02	Not Controlled	Not Controlled	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m
4-PLANT-004		AHU Plant Room East	1	Plant Room 04	Not Controlled	Not Controlled	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m
4-PLANT-005		AHU Plant Room West	1	Plant Room 05	Not Controlled	Not Controlled	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m
4-PLANT-006		Water Tank Room	1	Plant Room 06	Not Controlled	Not Controlled	None	None	No	None	Natural	0	0	n/a	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m
4-PLANT-007		Medical Gas Plant Room	1	Plant Room 07	40	10	Electric Heater	Remote Sensor Adj	No	None	Natural	0	0	n/a	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m
4-PLANT-008		Medical Gas Bottle St	1	Bottle Store	40	10	Electric Heater	Remote Sensor Adj	No	None	Natural	0	0	n/a	None	n/a	n/a	300	n/a	None	A	80	Switch	Floor 0m



Principal Differences between SHTM and HTM 03-01

Part A: Design and Validation

- SHTM title changed from “Specialised ventilation” to the more general “Ventilation”. Specialised ventilation is covered in a dedicated Section 7;
- Paragraph 2.6 has been re-written to avoid any ambiguity regarding the combining of clean and dirty extract systems that HTM 03-01 could be interpreted to allow. HTM 03-01 paragraph 2.10 states “There is no healthcare requirement to provide a separate foul/dirty extract system” also suggesting that a single fan/motor unit can be used for the application. The previous SHTM 2025 requirement for separate systems incorporating duty & standby fan/motor units for dirty extract systems has been perpetuated in the new SHTM 03-01;
- Paragraph 2.54 has been re-written to suggest that flexibility will be enhanced and lengthy, large duct runs avoided by having more risers, distributed appropriately;
- The paragraph referring to phenolic foam ducting is 5.14. This has been expanded from the HTM version to ensure that designers are familiar with the limitations and with assembly techniques so that they don’t specify something that can’t be made up or is not up to the job.

Part B: Operational Management and Performance Verification

- The differences between HTM 03-01 Part B and SHTM 03-01 Part B are quite insignificant and the pattern of the former is repeated in the latter. However paragraphs 1.32 and 1.33 in the SHTM are new, referring to the implications of PFI/PPP projects. This issue has not been referred to at all in the HTM.



IHS Lothian Limited
 C/O Pinsent Masons
 13 Queens Road
 Aberdeen
 AB15 4YL

From: IHS Lothian Limited (No SC493676) whose registered office is at 13 Queen's Road, Aberdeen, AB15 4YL ("ProjectCo")

To: Imtech Engineering Services Central Limited (No 00443522) whose registered office is at G&H House, Hooton Street, Carlton Road, Nottingham NG3 5GL (the "Subcontractor")

Date: 20 December 2019

Subcontract Initial Engagement Agreement in relation to Ventilation Works at the Site

1. In this Subcontract Initial Engagement Agreement, the following terms shall have the following meanings:

"Advance Design Works"	has the meaning stated in paragraph 3;
"the Board"	means Lothian Health Board/NHS Lothian a health board constituted in Scotland under the National Health Service (Constitution of Health Boards) (Scotland) Order 1974 (S.I. 1974/267) as amended by the National Health Service (Constitution of Health Boards) (Scotland) Act 1978 as amended by section 28 of the National Health Service and Community Care Act 1990 and having its principal address at Waverley Gate, 2-4 Waterloo Place, Edinburgh EH1 3EG;
"Board Services"	means any management, responsibility, administrative clinical and medical, training/education, non-clinical, catering, volunteer or charitable (including Teenage Cancer Trust) services and/or activities or any other services as are notified by the Board to ProjectCo (and subsequently by ProjectCo to the Subcontractor) from time to time;
"CDM Regulations"	means the Construction (Design and Management) Regulations 2015 or any amendment or re-enactment thereof;
"Designs"	has the meaning stated in paragraph 8.1;
"Documents"	means the requirements and documents detailed in and/or appended to the Schedule, Part 1 and to the extent only that such requirements and documents relate to the Ventilation Works subject to any amendments or additions to them which may be issued by or agreed to by ProjectCo's Representative in writing;
"First Application Date"	means the date designated as such in the Schedule, Part 2;
"Good Industry Practice"	means using standards, practices, methods and procedures conforming with applicable law and exercising that degree of skill and care, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled and experienced person engaged in a similar type of undertaking under

IHS Lothian Limited is incorporated and registered as a private limited company in Scotland with company number SC493676. Registered office is located at 13 Queens Road, Aberdeen, AB15 4YL.

	the same or similar circumstances;
"Initial Engagement Agreement"	means an initial engagement agreement entered into between the Board and ProjectCo on or about the date of this letter for procuring the Advance Design Works;
"Intellectual Property Rights"	means all registered or unregistered trademarks, service marks, patents, registered designs, utility models, applications for any of the foregoing, copyrights, unregistered designs, the sui generis rights of extraction relating to databases, trade secrets and other confidential information or know-how which (or the subject matter of which) is created, brought into existence, acquired, used, intended to be used by ProjectCo, its agents, and contractors and its or their sub-contractors of any tier and its or their directors, officers, employees and workmen in relation to the Site or by third parties (for the use by or on behalf of ProjectCo) for the purposes of the design and construction of the Site, the operation, maintenance, improvement and/or testing of the Site or the conduct of any other operation or otherwise for the purposes of this Initial Engagement Letter;
"Maximum Amount"	means the amount so designated in the Schedule, Part 2 or such other greater amount as may be agreed by ProjectCo pursuant to paragraph 10, plus VAT on that amount (if any) due according to law;
"Project"	has the meaning set out in the Project Agreement;
"Project Agreement"	means the Project Agreement entered into in relation to the Project between the Board and ProjectCo dated 12th and 13th February 2015 (as amended);
"ProjectCo's Representative"	means the person designated as such in the Schedule, Part 2;
"Schedule"	means the Schedule in four parts to this Subcontract Initial Engagement Agreement;
"Site"	means the buildings and other facilities, together with all supporting infrastructure (including plant and equipment), external hard-standings, specialist surfaces and other amenities located at the Royal Hospital for Sick Children, Child and Adolescent Mental Health Service and the Department of Clinical Neurosciences adjoining the Royal Infirmary of Edinburgh, Little France, Edinburgh;
"Subcontract"	means the construction contract based on the NEC4 Engineering and Construction Contract (including design) on a Target or Cost Reimbursable basis (to be confirmed) with such amendments as may be required and such construction contract to be approved by the Board to be entered into between ProjectCo and the Subcontractor for the carrying out of the Ventilation Works and any other works as may be agreed between the Parties;
"Subcontract Initial Engagement Agreement"	means this letter;

"Supplemental Agreement No.2" means the supplemental agreement which may be entered into between the Board and ProjectCo varying the terms of the Project Agreement in respect of the Ventilation Works and matters related thereto; and

"Ventilation Works" means the design, construction, completion and commissioning, of ventilation works to the paediatric critical care ventilation system and the haematology/oncology ventilation system pursuant to the Board's technical requirements detailed in the change notice HVC 107, and as further described in any of the other Documents.

2. It is ProjectCo's wish (but not an obligation) to appoint the Subcontractor in respect of the Ventilation Works, but neither party is yet in a position to enter into a contract to instruct the Ventilation Works by way of a Subcontract.

3. ProjectCo hereby authorises and requests the Subcontractor and the Subcontractor agrees and undertakes to proceed from the last date of signature of this Subcontract Initial Engagement Agreement, regularly and diligently with the Designs and using reasonable endeavours to proceed in accordance with the indicative programme attached in the Schedule Part 1 (as the same may be modified and amended by ProjectCo from time to time)(including such necessary works, surveys or investigations at the Site as may be required in order to prepare such detailed Designs in respect of the Ventilation Works in accordance with the Documents and the terms of the Subcontract Initial Engagement Agreement ("**Advance Design Works**"). The Advance Design Works are intended to form part of the Ventilation Works under the Subcontract. The Subcontractor shall carry out such Advance Design Works in accordance with Good Industry Practice.

4. **Payment for Advance Design**

4.1 In consideration for the Subcontractor providing the Advance Design Works in accordance with and complying with its duties and obligations in this Subcontract Initial Engagement Agreement, and subject to paragraph 6, ProjectCo undertakes to pay the Subcontractor all reasonably and properly incurred costs (including profit and overheads), charges and expenses, and which are vouched on an open book basis and properly documented for all services, work, goods and materials properly provided by the Subcontractor in carrying out the Advance Design Works pursuant to this Subcontract Initial Engagement Agreement, up to the Maximum Amount.

4.2 Payment under this Subcontract Initial Engagement Agreement for the performance of the Advance Design Works shall be made against the Subcontractor's application for payment to be submitted to ProjectCo's Representative monthly, the first such application to be made no earlier than the First Application Date. Each application must be supported by sufficient detail to enable ProjectCo's Representative to check that the amount applied for is in accordance with the terms of this Subcontract Initial Engagement Agreement. Payment shall be due 10 Business Days after the date of receipt by ProjectCo of the Subcontractor's application, and the final date for payment shall be 20 Business Days thereafter.

4.3 Without prejudice to ProjectCo's obligations set out in this paragraph 4 to make payment under this Subcontract Initial Engagement Letter the Subcontractor shall not have any claim against ProjectCo or the Board for breach of contract, loss of profit, loss of reputation by reason only of (i) the termination or the expiry of this Subcontract Initial Engagement Agreement and/or (ii) the parties not entering into the Subcontract.

4.4 ProjectCo grants to the Subcontractor a non-exclusive, licence to use such parts of the Site as indicated edged red in the plan attached at the Schedule, Part 4 for carrying out the Advance Design Works until the earlier of (a) this Subcontract Initial Engagement Agreement terminating or expiring pursuant to paragraph 5, (b) the later of Supplemental Agreement No 2 being entered into by the Board and ProjectCo and the Subcontract being entered into by ProjectCo and the Subcontractor or (c)

ProjectCo ceasing to provide the Advance Design Works pursuant to paragraph 10. Access to and from the office space shall be along designated access routes at the Facilities which are to be pre-agreed between the Board and ProjectCo.

- 4.5 In the event that ProjectCo enters into the Subcontract with the Subcontractor:-
- 4.5.1 any payments made under this Subcontract Initial Engagement Agreement in relation to the Advance Design Works shall be treated as payments on account pursuant to the Subcontract; and
 - 4.5.2 everything done by the Subcontractor and/or on the Subcontractor's behalf pursuant to this Subcontract Initial Engagement Agreement in relation to the Advance Design Works shall be deemed to have been done pursuant to and shall be governed by the Subcontract which shall apply retrospectively to the Advance Design Works; and
 - 4.5.3 the Subcontract shall supersede this Subcontract Initial Engagement Letter which shall cease to have effect.
- 4.6 ProjectCo and the Subcontractor shall use reasonable endeavours to enter into the Subcontract by 31 January 2020. Should the Subcontract not be entered into by 29 February 2020 then the provisions of paragraph 5.2 shall apply.
5. This Subcontract Initial Engagement Agreement shall terminate on the earlier of:
- 5.1 the date ProjectCo enters into the Subcontract with the Subcontractor; or
 - 5.2 29 February 2020, or such other date as ProjectCo shall notify to the Subcontractor.
6. ProjectCo's total liability under this Subcontract Initial Engagement Agreement in relation to payment for the Advance Design Works shall not under any circumstances exceed the Maximum Amount.
7. Prior to commencing any Advance Design Works pursuant to this Subcontract Initial Engagement Agreement,
- 7.1 the Subcontractor shall provide written evidence that it has taken out the insurances specified in, and shall comply with the requirements detailed in the Schedule, Part 3;
 - 7.2 ProjectCo shall provide evidence that the existing operational insurance taken out under the Project Agreement will cover the Advance Design Works; and
 - 7.3 the Subcontractor shall ensure that any necessary statutory consents necessary for carrying out the Advance Design Works (to the extent that the Subcontractor is required to obtain the same) have been obtained and are in effect.
8. The Subcontractor undertakes to:
- 8.1 grant to ProjectCo and the Board free of charge an irrevocable royalty-free non-exclusive and transferable licence (carrying the right to grant sub-licences), and which licence will survive expiry or termination or deemed termination of this Subcontract Initial Engagement Agreement and/or if the Subcontractor ceases to provide any of the Advance Design Works, to use and reproduce all drawings, reports, documents, plans, software, formulae, calculation materials and other data and Intellectual Property Rights (the "**Designs**") hitherto or hereafter prepared by and/or which are or become vested in the Subcontractor or on the Subcontractor's behalf in connection with the Advance Design Works, for any purpose in connection with the Project including for carrying out the Board Services (and its operations relating to the performance of the Board Services), the Board duties and obligations under the Project Agreement and/or any statutory duties that the Board may have, and the design or construction of the Ventilation Works, the operation, maintenance or

improvement of the Ventilation Works and/or the Site and/or the carrying out of operations the same as, or similar to, the operations required to be carried out by ProjectCo under the Project Agreement; and

- 8.2 supply copies of the Designs to ProjectCo and the Board on request.
9. The Subcontractor shall be the "Principal Designer" and "Principal Contractor" under the CDM Regulations for the purposes of all construction work to be performed pursuant to this Subcontract Initial Engagement Agreement, and shall perform and observe its functions and duties under and the requirements and prohibitions imposed upon them by the CDM Regulations and any related approved code of practice and/or industry guidance issued thereunder and all other statutory provisions pertaining to health and safety all as may be amended from time to time.
10. The Subcontractor shall not be required to provide Advance Design Works exceeding in value the Maximum Amount, and if that limit is reached before ProjectCo agrees in writing to increase it, the Subcontractor shall be entitled to cease carrying out the Advance Design Works. The Subcontractor shall use reasonable endeavours to give the Board not less than 10 days advance written notice of when the Subcontractor anticipates that the Maximum Amount limit shall be reached to allow ProjectCo time to consider whether or not to increase the Maximum Amount. If the Subcontractor ceases to provide the Advance Design Works in accordance with this paragraph 10 then this Initial Engagement Agreement shall be deemed to have terminated in accordance with paragraph 5.2.
11. In the event that either:-
- 11.1 pursuant to paragraph 5.2, this Subcontract Initial Engagement Agreement terminates or expires and ProjectCo and the Subcontractor have not entered into the Subcontract; or
- 11.2 the Subcontractor ceases to carry out the Advance Design Works pursuant to paragraph 10 because the Board has not agreed to increase the Maximum Amount
- then paragraphs 11.3 and 11.4 shall apply
- 11.3 The Subcontractor shall deliver to ProjectCo within 10 Business Days all Designs and a full set of any other records and information prepared as part of the Advance Design Works, including the health and safety file applicable to the Advance Design Works (if any) and all other information that is required to be collated under the CDM Regulations, created or in existence at the date when paragraph 11.1 or paragraph 11.2 applies; and
- 11.4 any areas including the office space at the Site where Advance Design Works are being undertaken shall be vacated by the Subcontractor in respect of any of the Advance Design Works as soon as reasonably practicable (but not longer than 14 days) and with as little disruption as practicable to the Project, removing all materials and leaving the Site safe, clean and tidy and in a condition no worse than they were in prior to the commencement of the Advance Design Works.
12. Each of ProjectCo and the Subcontractor shall have the right to refer any dispute arising under this Subcontract Initial Engagement Agreement to adjudication in accordance with Part 1 of the Schedule to The Scheme for Construction Contracts (Scotland) Regulations 1998 (Amendment) (Scotland) Regulations 2011.
13. The Parties agree that:
- 13.1 in the case of any conflict or inconsistency between the terms of this Subcontract Initial Engagement Agreement and the terms of any of the Documents the terms of this Subcontract Initial Engagement Agreement shall prevail; and
- 13.2 the Subcontractor's sole remedies in relation to the Advance Design Works shall be those contained in this Subcontract Initial Engagement Agreement; and

- 13.3 ProjectCo shall be entitled to recover damages for breach of this Subcontract Initial Engagement Agreement by the Subcontractor provided that the Subcontractor's total liability shall not under any circumstances exceed the lesser of
- 13.3.1 an amount equivalent to the aggregate of (a) all amounts already paid by the ProjectCo to the Subcontractor plus b) any amount due to ProjectCo at the date of termination or expiry of this Subcontract Initial Engagement Agreement and
- 13.3.2 the Maximum Amount;
- and the Maximum Amount shall not apply to any rights and/or claims (including any rights and/or claims to insurance proceeds) of ProjectCo under the operational insurance referred to at paragraph 7.2.
14. Any notices shall be in writing and all certificates, notices or written instructions to be given under the terms of this Subcontract Initial Engagement Letter shall be served by sending the same by first class post or by hand to the parties' registered office addresses set out on the first page of this letter. Notices given by post shall be effective upon the earlier of (i) actual receipt, and (ii) five (5) Business Days after mailing. Notices delivered by hand shall be effective upon delivery.
15. Save to the extent expressly provided in this Subcontract Initial Engagement Agreement, it is expressly declared that no rights shall be conferred under and arising out of this Subcontract Initial Engagement Agreement upon any person other than the Subcontractor and ProjectCo and without prejudice to the generality of the foregoing, there shall not be created by this Subcontract Initial Engagement Agreement a *jus quaesitum tertio* nor are any rights in favour of any person whatsoever intended to be conferred pursuant to the Contract (Third Party Rights) (Scotland) Act 2017.
16. This Subcontract Initial Engagement Agreement shall be governed by and construed in accordance with the laws of Scotland and the Scottish Courts shall have jurisdiction over any matters arising from it.
17. This Subcontract Initial Engagement Agreement may be executed in any number of counterparts in accordance with the Legal Writings (Counterparts and Delivery) (Scotland) Act 2015 ("**the 2015 Act**"). No counterpart shall be effective until all counterparts have been executed and one part has been delivered to ProjectCo's solicitors from all parties. ProjectCo and the Subcontractor agree that ProjectCo's solicitors shall be the nominated person in terms of section 2(1) of the 2015 Act. Delivery by electronic transmission in a pdf format shall be permitted.

Yours faithfully

Signed .. [Redacted Signature]

Full Names MATTHEW TEMPLETON

MANNAR RIECK Witness

[Redacted Address] Address of Witness

Date of Signing 07 JANUARY 2020

Place of signing EDINBURGH

for and on behalf of IHS Lothian Limited

For and on behalf of Imtech Engineering Services Central Limited we acknowledge and accept the terms and conditions of this Subcontract Initial Engagement Agreement

SignedDirector

Full Names _____

_____ Witness

_____ Address of Witness

Date of Signing _____

Place of Signing _____

This is the Schedule referred to in the foregoing Subcontract Initial Engagement Agreement between IHS Lothian Limited and Intech Engineering Services Central Limited relative to the Advance Design Works dated 20 December 2019

THE SCHEDULE

PART 1

THE DOCUMENTS

- HVC107
- Expenditure/Payment Schedule
- Indicative programme for the Advance Design Works (document entitled "Short Term Design and Preparation Plan")



High Value Change Notice

Project:	RHCYP + DCN – Little France Edinburgh
----------	---------------------------------------

1 – Issue of Change Notice to Project Co																											
Title:	Paediatric Critical Care and Haematology / Oncology Ventilation																										
Reference No: 0107	Date: 5 th December, 2019																										
Target Cost Capital: £4.6m	Target Cost Revenue: TBA																										
High Value Change Requirements (Schedule Part 16, Section 4, Clause 2.1.3)																											
<p>Single bedrooms and Multi-bedrooms In Paediatric Critical Care</p> <p>In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems which will deliver 10 air changes/hour at +10pa as per SHTM 03-01, Appendix 1, Table A1 to the following rooms at the Facilities:</p> <table border="1"> <thead> <tr> <th>Room Number</th> <th>Room Type</th> </tr> </thead> <tbody> <tr> <td>1-B1-065</td> <td>Neo Natal 3 cot area including 1-B1-022 – Corridor, 1-B1-069 – Staff Base, 1-B1-066 – Clean Utility and 1-B1-071 – Resus Bay which are all open to 1-B1-065. This area does not contain an en-suite.</td> </tr> <tr> <td>1-B1-076</td> <td>Single cot cubicle neo natal including 1-B1-074 en-suite</td> </tr> <tr> <td>1-B1-063</td> <td>Open plan bay 4 bed This area does not contain an en-suite.</td> </tr> <tr> <td>1-B1-037</td> <td>Single bed cubicle This area does not contain an en-suite.</td> </tr> <tr> <td>1-B1-031</td> <td>Open plan bay 4 bed This area does not contain an en-suite.</td> </tr> <tr> <td>1-B1-021</td> <td>Single bed cubicle This area does not contain an en-suite.</td> </tr> <tr> <td>1-B1-020</td> <td>Single bed cubicle This area does not contain an en-suite.</td> </tr> <tr> <td>1-B1-019</td> <td>Single bed cubicle This area does not contain an en-suite.</td> </tr> <tr> <td>1-B1-009</td> <td>Open plan bay 4 bed This area does not contain an en-suite.</td> </tr> </tbody> </table> <p>Isolation Rooms in Paediatric Critical Care</p> <p>In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems for a positive pressure ventilated lobby PPVL Single Bedroom Isolation Suite with a lobby air supply terminal with a HEPA filter, as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1, to the following rooms at the Facilities.</p> <p>Project Co may utilise the supply and extract ventilation system description in SHPN 04-01, Supplement 1, Clause 4.5 for a dedicated ventilation system per Suite or SHPN 04-01, Supplement 1, Clause 4.8 for a common ventilation system to multiple Suites as the basis of their design. If Clause 4.8 is selected as the basis of design, a duplicate air handling / supply unit is considered necessary. A combination of both methods may be used provided Project Co, as far as is reasonably practical, reuse the existing ventilation installations. Regardless of option chosen, all aspects of the design and installation must be technically compliant with all relevant guidance.</p> <p>NHSL require to remove or significantly reduce the risk of losing all isolations rooms due to a single point of failure. Ideally each isolation room would benefit from its own supply and extract, however, NHSL appreciate this may not be possible or practical due to other constraints e.g. space. Therefore, Project Co are requested to provide their best practical solution to reduce the risk as low as possible but maintaining guidance criteria as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1.</p> <table border="1"> <thead> <tr> <th>Room Number</th> <th>Room Type</th> </tr> </thead> <tbody> <tr> <td>1-B1-016</td> <td>Isolation Bedroom This area does not contain an en-suite.</td> </tr> <tr> <td>1-B1-017</td> <td>Isolation Bedroom This area does not contain an en-suite.</td> </tr> </tbody> </table>		Room Number	Room Type	1-B1-065	Neo Natal 3 cot area including 1-B1-022 – Corridor, 1-B1-069 – Staff Base, 1-B1-066 – Clean Utility and 1-B1-071 – Resus Bay which are all open to 1-B1-065. This area does not contain an en-suite.	1-B1-076	Single cot cubicle neo natal including 1-B1-074 en-suite	1-B1-063	Open plan bay 4 bed This area does not contain an en-suite.	1-B1-037	Single bed cubicle This area does not contain an en-suite.	1-B1-031	Open plan bay 4 bed This area does not contain an en-suite.	1-B1-021	Single bed cubicle This area does not contain an en-suite.	1-B1-020	Single bed cubicle This area does not contain an en-suite.	1-B1-019	Single bed cubicle This area does not contain an en-suite.	1-B1-009	Open plan bay 4 bed This area does not contain an en-suite.	Room Number	Room Type	1-B1-016	Isolation Bedroom This area does not contain an en-suite.	1-B1-017	Isolation Bedroom This area does not contain an en-suite.
Room Number	Room Type																										
1-B1-065	Neo Natal 3 cot area including 1-B1-022 – Corridor, 1-B1-069 – Staff Base, 1-B1-066 – Clean Utility and 1-B1-071 – Resus Bay which are all open to 1-B1-065. This area does not contain an en-suite.																										
1-B1-076	Single cot cubicle neo natal including 1-B1-074 en-suite																										
1-B1-063	Open plan bay 4 bed This area does not contain an en-suite.																										
1-B1-037	Single bed cubicle This area does not contain an en-suite.																										
1-B1-031	Open plan bay 4 bed This area does not contain an en-suite.																										
1-B1-021	Single bed cubicle This area does not contain an en-suite.																										
1-B1-020	Single bed cubicle This area does not contain an en-suite.																										
1-B1-019	Single bed cubicle This area does not contain an en-suite.																										
1-B1-009	Open plan bay 4 bed This area does not contain an en-suite.																										
Room Number	Room Type																										
1-B1-016	Isolation Bedroom This area does not contain an en-suite.																										
1-B1-017	Isolation Bedroom This area does not contain an en-suite.																										

HVCN 0107



1-B1-026	Isolation Bedroom This area does not contain an en-suite.
1-B1-036	Isolation Bedroom This area does not contain an en-suite.

Single bedrooms and Multi-bedrooms in Haematology and Oncology

In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems which will deliver 10 air changes/hour at +10pa as per SHTM 03-01, Appendix 1, Table A1 and fit Hepa filters (H12 grade) to the air inlets to the following rooms at the Facilities:

Room Number	Room Type
3-C1.4-059	Single Bedroom including 3-C1.4-060 en-suite
3-C1.4-057	Single Bedroom including 3-C1.4-058 en-suite
3-C1.4-055	Single Bedroom including 3-C1.4-056 en-suite
3-C1.4-046	Single Bedroom including 3-C1.4-047 en-suite
3-C1.4-032	Single Bedroom including 3-C1.4-033 en-suite
3-C1.4-018	Single Bedroom including 3-C1.4-019 en-suite
3-C1.4-016	Single Bedroom including 3-C1.4-017 en-suite
3-C1.4-013	Single Bedroom including 3-C1.4-014 en-suite
3-C1.4-010	Single Bedroom including 3-C1.4-009 en-suite
3-C1.4-074	Single Bedroom including 3-C1.4-075 en-suite
3-C1.4-076	Single Bedroom including 3-C1.4-077 en-suite
3-C1.4-078	Single Bedroom including 3-C1.4-079 en-suite
3-C1.4-084	Multi-Bed (3) Day Care including 3-C1.4-085 en-suite
3-C1.4-061	Multi-Bed (6) Day Care including 3-C1.4-062 en-suite

Isolation Rooms in Haematology and Oncology

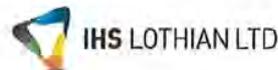
In accordance with Schedule Part 16 (Change Protocol), Project Co is required to design, manufacture, supply, construct, test, commission and complete, and thereafter throughout the Operational Term, provide Services to, maintain, repair, renew and replace, a ventilation system or systems for a positive pressure ventilated lobby PPVL Single Bedroom Isolation Suite with a lobby air supply terminal with a HEPA filter, as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1, to the following rooms at the Facilities.

Project Co may utilise the supply and extract ventilation system description in SHPN 04-01, Supplement 1, Clause 4.5 for a dedicated ventilation system per Suite or SHPN 04-01, Supplement 1, Clause 4.8 for a common ventilation system to multiple Suites as the basis of their design. If Clause 4.8 is selected as the basis of design, a duplicate air handling / supply unit is considered necessary. A combination of both methods may be used provided Project Co, as far as is reasonably practical, reuse the existing ventilation installations. Regardless of option chosen, all aspects of the design and installation must be technically compliant with all relevant guidance.

NHSL require to remove or significantly reduce the risk of losing all isolation rooms due to a single point of failure. Ideally each isolation room would benefit from its own supply and extract, however, NHSL appreciate this may not be possible or practical due to other constraints e.g. space. Therefore, Project Co are requested to provide their best practical solution to reduce the risk as low as possible but maintaining guidance criteria as per SHTM 03-01, SHPN 04-01, Supplement 1: Isolation Facilities in Acute Settings (Version 1.0 September 2008) Table 1.

Room Number	Room Type
3-C1.4-040	Isolation Bedroom including 3-C1.4-041 en-suite
3-C1.4-043	Isolation Bedroom including 3-C1.4-042 en-suite

HVCN 0107



3-C1.4-049	Isolation Bedroom including 3-C1.4-050 en-suite
3-C1.4-052	Isolation Bedroom including 3-C1.4-051 en-suite
3-C1.4-072	Isolation Bedroom including 3-C1.4-073 en-suite

(the "Ventilation Works and Services").

All environmental requirements for all spaces in the Facilities served by or affected by the Ventilation Works and Services systems shall be met and maintained – including but not limited to, ventilation, temperature and control, lighting levels, noise, and humidity. These should be consistent to the agreed parameters throughout the Facilities to meet the specific clinical and operational needs for each space in the Facilities.

The Ventilation Works and Services shall fully comply with SHTM 03-01 requirements which includes, without limitation, implementation of the Ventilation Works and Services so that the system installation, finishes and maintenance regime shall be in accordance with SHTM 03-01 requirements, together with the clinical and operational constraints identified below:

1. All Ventilation Works and Services shall be carried out and monitored after and with reference to a collaborative full Stage 3 HAI SCRIBE assessment being approved by the Board.
2. The fire strategy and systems agreed for the Facilities will be maintained throughout the Ventilation Works and Services and the Operational Term and such that the ventilation systems will integrate with the fire strategy and systems and all other building management systems comprised in the Facilities.
3. The location of the Installation within the rooms, external areas, route across such spaces and the take out of any windows, etc, will enable the current operational functionality and safety policies and procedures to be maintained.
4. The design, layouts, finishes and other details etc for the Ventilation Works and Services, at all stages (including during the design development stages), will require to be agreed with the Board's Representative (and in turn the clinical service and related stakeholders and Project Co recognises that in order to achieve agreement from the Board's Representative the Board's Representative will seek input from the Board and all appropriate stakeholders.
5. Design must provide resilience in compliance with SHTM 03-01 to ensure performance of ventilation to rooms during maintenance downtime.

The Board will, in consultation with Project Co, continue to review costs as the design develops and at other stages. In order for the Board to assess whether the High Value Change Stage 2 Submission offers it value for money the submission shall include as a minimum the following information:

- A detailed and fully quantified pricing schedule for the construction works
- A detailed breakdown of all Preliminaries and general cost items
- Construction issue drawings and specification
- Proposed, construction and commissioning/testing programme
- Construction phase method statement

Date by which parties are required to meet to review the High Value Change Notice and agree the content for the High Value Change Proposal (Schedule Part 16, Section 4, Clause 2.3.1)	13 th December, 2019
--	---------------------------------

To: IHS Lothian

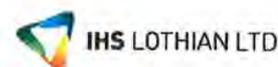
We require the Change described above.
Please advise when Project Co will submit a High Value Change Proposal for the above.

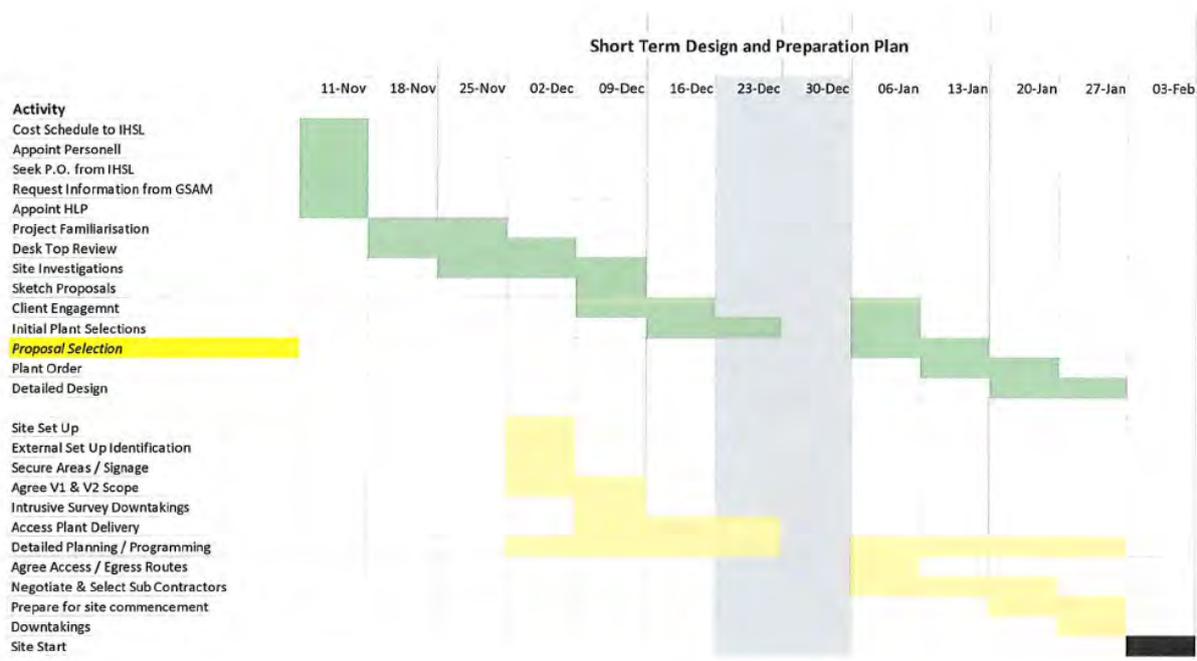
Signed on behalf of NHS Lothian: .. [Redacted Signature]

Name of Signatory (type or print):Brian Currie – Board Rep – NHS Lothian.....

Date: 5th December, 2019

HVCN 0107





PART 2

PAYMENT PARTICULARS

Maximum Amount:	£350,000
First Application Date:	20 December 2019

PART 3 INSURANCE

1. Employer's liability insurance as required by statute for any one accident.
2. Insurance for third party claims for personal injury, death and property damage: not less than €1,500,000 for any one accident (with cover between €1,500,000 and £10,000,000 provided by the Subcontractor's Global Policy) and with an 'indemnities to principals' clause which would apply to the Subcontractor.
3. Professional indemnity insurance for not less than £10,000,000 for any one claim and in the aggregate, subject to unlimited reinstatements, basis to be in place from the date when the Advance Design Works are commenced and to be maintained for a period of 12 years from the earlier of (1) completion of the Advance Design Works or (2) termination or expiry of the Initial Engagement Agreement.

The insurances in paragraphs 1 – 3 above shall be in place at all times when any of the Advance Design Works are being undertaken or any part of the Site is being used or occupied in connection with the Advance Design Works.

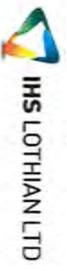
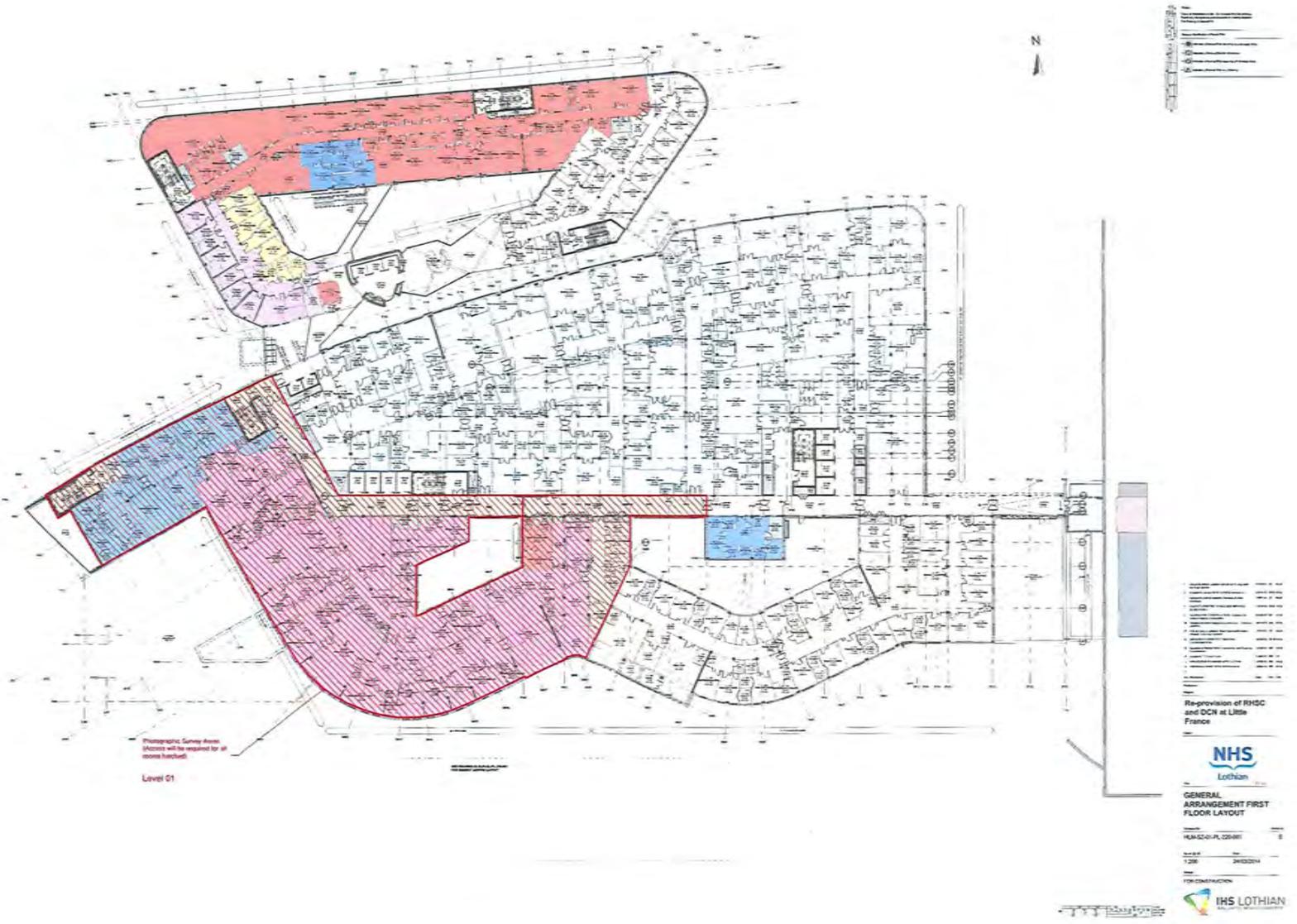
Evidence of insurance cover for all of the insurances referred to being in place shall be provided prior to the commencement of the Advance Design Works and shall be provided to ProjectCo whenever requested from time to time.

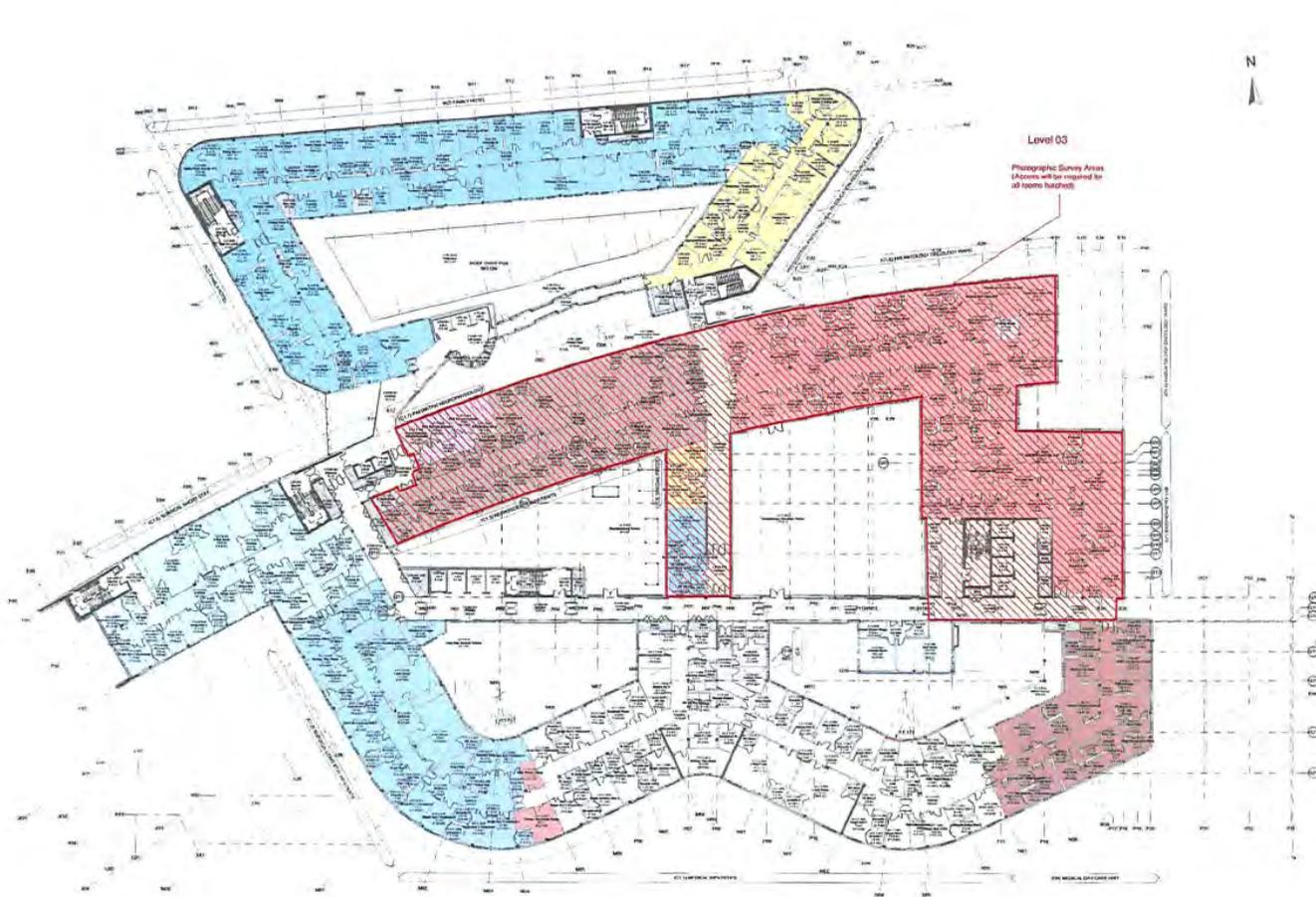
The Subcontractor and ProjectCo shall notify one another within three (3) Business Days of any circumstances which may give rise to a claim under the insurances referred to in this Schedule Part 3.

The Subcontractor shall apply any proceeds of.

1. its third party legal liability or employer's liability insurance, in satisfaction of the claim, demand, proceeding or liability in respect of which such proceeds are payable
2. so as to ensure performance by the Subcontractor of its obligations under this Subcontract Initial Engagement Agreement including where necessary, the reinstatement, restoration or replacement of the Site or any part or parts thereof affected by the event giving rise to the insurance claim and consequent payment of proceeds.

The Subcontractor shall carry out any works necessary to repair, reinstate or replace the Site (or any part or parts thereof) caused by any Advance Design Works at the Site. The Subcontractor will ensure that such repair, reinstatement or replacement works will be carried out in accordance with Good Industry Practice and will be completed as soon as reasonably practicable having regard to the extent and nature of the damage caused by such occurrence. The requirement for any such repair, reinstatement or replacement works will not of itself be a reason for ProjectCo and the Subcontractor not entering into the Subcontract where they have agreed to do so. In the event that repair, reinstatement or replacement works are commenced but not completed ProjectCo and the Subcontractor will nevertheless enter into a supplemental agreement where they have agreed to do so and the Subcontractor shall ensure that such repair, reinstatement or replacement works is completed in accordance with this paragraph. No sums shall be payable by ProjectCo to the Subcontractor in respect of the cost of any works carried out under this paragraph, nor shall there be any increase in the Maximum Amount as a consequence of the same. The Subcontractor shall indemnify ProjectCo against claims for death or personal injury or damage to heritable or moveable property arising out of or in connection with or by reason of carrying out the work and activities authorised by this Subcontract Initial Engagement Agreement.





Level 03
 Photographic Survey Areas
 (Access will be required for
 all rooms marked)

- Room
- Corridor
- Staircase
- Lift
- Window
- Door
- Furniture
- Wall
- Ceiling
- Floor
- External Wall
- External Window
- External Door
- External Furniture
- External Wall
- External Window
- External Door
- External Furniture

Room No.	Room Name	Area (sqm)	Volume (cu m)
03-01	Reception	120	1200
03-02	Waiting Area	150	1500
03-03	Consultation	100	1000
03-04	Examination	80	800
03-05	Procedure Room	120	1200
03-06	Operating Theatre	200	2000
03-07	Recovery Room	100	1000
03-08	ICU	150	1500
03-09	CCU	100	1000
03-10	ICU	100	1000
03-11	CCU	100	1000
03-12	ICU	100	1000
03-13	CCU	100	1000
03-14	ICU	100	1000
03-15	CCU	100	1000
03-16	ICU	100	1000
03-17	CCU	100	1000
03-18	ICU	100	1000
03-19	CCU	100	1000
03-20	ICU	100	1000
03-21	CCU	100	1000
03-22	ICU	100	1000
03-23	CCU	100	1000
03-24	ICU	100	1000
03-25	CCU	100	1000
03-26	ICU	100	1000
03-27	CCU	100	1000
03-28	ICU	100	1000
03-29	CCU	100	1000
03-30	ICU	100	1000
03-31	CCU	100	1000
03-32	ICU	100	1000
03-33	CCU	100	1000
03-34	ICU	100	1000
03-35	CCU	100	1000
03-36	ICU	100	1000
03-37	CCU	100	1000
03-38	ICU	100	1000
03-39	CCU	100	1000
03-40	ICU	100	1000
03-41	CCU	100	1000
03-42	ICU	100	1000
03-43	CCU	100	1000
03-44	ICU	100	1000
03-45	CCU	100	1000
03-46	ICU	100	1000
03-47	CCU	100	1000
03-48	ICU	100	1000
03-49	CCU	100	1000
03-50	ICU	100	1000
03-51	CCU	100	1000
03-52	ICU	100	1000
03-53	CCU	100	1000
03-54	ICU	100	1000
03-55	CCU	100	1000
03-56	ICU	100	1000
03-57	CCU	100	1000
03-58	ICU	100	1000
03-59	CCU	100	1000
03-60	ICU	100	1000
03-61	CCU	100	1000
03-62	ICU	100	1000
03-63	CCU	100	1000
03-64	ICU	100	1000
03-65	CCU	100	1000
03-66	ICU	100	1000
03-67	CCU	100	1000
03-68	ICU	100	1000
03-69	CCU	100	1000
03-70	ICU	100	1000
03-71	CCU	100	1000
03-72	ICU	100	1000
03-73	CCU	100	1000
03-74	ICU	100	1000
03-75	CCU	100	1000
03-76	ICU	100	1000
03-77	CCU	100	1000
03-78	ICU	100	1000
03-79	CCU	100	1000
03-80	ICU	100	1000
03-81	CCU	100	1000
03-82	ICU	100	1000
03-83	CCU	100	1000
03-84	ICU	100	1000
03-85	CCU	100	1000
03-86	ICU	100	1000
03-87	CCU	100	1000
03-88	ICU	100	1000
03-89	CCU	100	1000
03-90	ICU	100	1000
03-91	CCU	100	1000
03-92	ICU	100	1000
03-93	CCU	100	1000
03-94	ICU	100	1000
03-95	CCU	100	1000
03-96	ICU	100	1000
03-97	CCU	100	1000
03-98	ICU	100	1000
03-99	CCU	100	1000
03-100	ICU	100	1000

Re-provision of RHSC
 and DCN at Little
 France

NHS
 Lothian

GENERAL ARRANGEMENT THIRD FLOOR LAYOUT

DATE: 20/03/2014

FOR CONSTRUCTION

IHS **LOTHIAN**





SCOTTISH HOSPITALS INQUIRY
Hearing Commencing
26 February 2024
Bundle 3 – The Works Under Supplementary Agreement 2 (SA2)