SCOTTISH HOSPITALS INQUIRY

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Hearing Commencing 26 February 2024

Bundle 13 – Miscellaneous

Volume 4

SCOTTISH HOSPITALS INQUIRY

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Director-General Health & Social Care and
Chief Executive NHSScotland
Paul Gray

Scottish Government
Riaghaltas na h-Alba
gov.scot

[redacted]

NHS Chief Executives

Cc Directors of Estates

25 January 2019

Dear Colleague

Queen Elizabeth University Hospital

Following my call with you on Tuesday 22 January about the ongoing incident at the Queen Elizabeth University Hospital, I said I would write to you with a set of actions following the meeting of the Strategic Facilities Group on Wednesday 23 January where this issue was discussed at length.

While the cause of the Cryptococcus infections in QEUH is not fully understood at present, and we continue to gather further intelligence on the situation which is resulting in further hypothesises being developed and investigated, there are however, a number of controls that I would like you to confirm are in place and working effectively:

- All plant rooms must be secure and have adequate access controls in place at all times;
- All plant rooms need to be clean and free of vermin;
- Standard Operating Procedures for the management of plant rooms are in place and being followed;
- All critical ventilation systems should be inspected and maintained in line with 'Scottish Health Technical Memorandum 03-01: Ventilation for healthcare premises'.

I have asked Health Facilities Scotland to co-ordinate the responses and would ask that you reply to [redacted] copied to [redacted] by Friday 1 February.

In addition to these control measures, the Strategic Facilities Group has undertaken to share best practice with regard to relevant Standard Operating Procedures and anti-pest management. The Ventilation Group, which reports direct to the Scottish Engineering and Technology Advisory Group (SETAG), will consider whether SHTM 03-01 needs to be revised and updated in view of recent developments.

Yours sincerely

Lothian NHS Board

Office of the Deputy Chief Executive
Waverley Gate
2-4 Waterloo Place
EDINBURGH
EH1 3EG.

www.nhslothian.scot.nhs.uk

Date 7 June 2019
Your Ref
Our Ref JC/KAB

Enquiries to: Karen Burnside
Extension: [redacted]
Direct Line: [redacted]
Email: [redacted]

Wallace Weir
IHS Lothian Limited
C/O Pinsent Masons
13 Queens Road
ABERDEEN
AB15 4YL

Dear Sir

Re-Provision of RHSC and DCN at Little France

I refer to the above matter and to our joint steering group meeting on 28 May 2019.

As you will recall, at that meeting we expressed concerns about the progress of the Post Completion Works, Outstanding Works and Snagging Matters against the agreed programme and other requirements of the Project Agreement and SA1. In particular, we conveyed our dismay that none of the Post Completion Works and Outstanding Works milestones agreed in SA1 have been achieved and anxiety regarding the extent of the Snagging Matters.

We were pleased to receive your reassurance at the joint steering group meeting that all of these issues were being addressed as a matter of urgency. However, following our meeting I have received a further briefing from our site team and they have communicated to me that they remain concerned about the number and significance of the issues, which require to be attended to, and which are critical to the safe and timeous opening of the hospital to staff, patients and visitors. Specifically, our site team have identified the following matters which, although not exhaustive, is a list of main issues known at the current time, which require to be addressed as a matter of urgency:-

1. Double Swing Doors – approximately 70 double swing doors not fully operational or reliable;
2. Access Control System – access control system not fully operational or reliable;
3. Lifts - push buttons not operational and significant aesthetic damage to lifts, e.g. lift's door at the children's entrance;
4. Guardian System – evidence awaited that the system is fully operational for proper protection of all NHSL staff;
5. Water Management (including replacement of Kemper valves and expansion vessel works) – we assume all tests and satisfactory results will be available to the Board prior to Hospital opening, please confirm;

Headquarters
Waverley Gate
2-4 Waterloo Place
Edinburgh EH1 3EG

Chair Brian G. Houston
Chief Executive Tim Davison
Lothian NHS Board is the common name of Lothian Health Board

NHS Lothian

6. Oil feed to boiler - unable to run on oil. This is a significant issue which has a material impact on the safe opening of the Hospital. We require assurance this is being urgently addressed and will be complete before opening;
7. Window restrictor – failure of window restrictors. Please confirm all window restrictors will operate safely for Hospital opening, and there are no health and safety issues;
8. HAI-SCRIBE / Infection Control – implementation of actions from HAI-SCRIBE visit;
9. Snagging – demonstrate evidence that all Snagging Items are being attended to and those that were marked as "closed" in error, have been revisited and re-verified;
10. Fire issues (e.g. Gaps in Fire Doors and the high level vents in the atrium) – we understand work is continuing on all fire issues. Please confirm all necessary works will be completed prior to Hospital opening;
11. Board Operational Changes – all those essential to Hospital opening to be implemented by IHSL/Bouygues prior to Hospital opening;
12. CT Scanner Room - overheating problem, temporary cooling currently being provided to enable commissioning of CT equipment. Please confirm that you will install permanent cooling solution to meet cooling requirements prior to Hospital opening;
13. Excessive temperature in all heat stations – Project Co currently installing mineral fibre insulation as a mitigation measure – Project Co to confirm they will resolve the overheating issue prior to opening;
14. Independent validation of critical ventilation systems in a number of clinical areas (Theatres, Imaging, Critical Care and all Isolation Rooms) – ensure all Project Co works are completed to allow independent validation to take place, including ZUTEC 20779 that had been closed by IHSL/MPX in error;
15. Dishwasher power supplies – single phase has been installed rather than the required three phase. Please confirm the three phase power supply works will be completed prior to Hospital opening;
16. IPS cupboard within Critical Care Department overheating – fire door has been left open with a sticker stating "do not close", please confirm it is safe to close the door and there are no overheating issues;
17. Audiology worktops – worktops are not yet installed in the two audiology control rooms;
18. Medical Gases repeater panel – no panel in a manned 24 hour area;
19. Power supply for Ophthalmology Equipment – no power supplies allowing the specialist equipment to operate;
20. Security for the fourth floor terrace – currently there is a risk of public on fourth floor terrace entering the helipad and being able to access the clinical management suite and classrooms.

We appreciate that some of these issues were discussed at the joint steering group meeting and that you have subsequently issued a status update. However, we remain concerned about progress of these items.

As you know, we are in the process of finalising our preparations for the migration of services to Little France commencing on 5 July, all of which has been publicly reported, in line with the

timescales that all parties agreed and committed to work towards. In the circumstances, we trust that you will prioritise the resolution of the foregoing issues. We also trust that you will work collaboratively with us to ensure that all Post Completion Works, Outstanding Works and Snagging Matters are rectified and completed in accordance with the requirements of the Project Agreement and SA1 immediately.

Your further reassurance in this regard would be appreciated by return.

Meantime, we reserve our whole rights, remedies and pleas.

Yours faithfully

[redacted]

JIM CROMBIE
Deputy Chief Executive
Chief Officer, Acute Services

From: McLaughlin C (Christine)
To: DG Health & Social Care; Connaghan J (John) (Health)
Cc: Healy M (Michael); Roche R (Rowena)
Subject: FW: critical care ventilation timelines
Date: 10 July 2019 13:26:19
Attachments: RHCYP critical care ventilation issues .msg
RHCYP_DCN.msg

Malcolm, John

Given your earlier concerns, does this provide you with the information that you needed. There were clearly a number of issues being managed including water and ventilation in several parts of the hospital.

In think this demonstrates more that the tight timeframe between inspection and occupation meant that there was no room for error at all and is probably one of the areas that will come through the audit work – at what point does this not seem realistic?

Can you let me know whether this provides what you need for the time being and I will go back to Tracey.

Christine

From: Gillies, Tracey [redacted]
Sent: 10 July 2019 12:25
To: McLaughlin C (Christine) [redacted]
Subject: FW: critical care ventilation timelines

From: Gillies, Tracey
Sent: 10 July 2019 12:13
To: 'christine.mclauchlin[redacted]
Cc: Goldsmith, Susan; Executive, Chief; McMahon, Alex
Subject: critical care ventilation timelines

Dear Christine,

Following our meeting on the 9th July, you asked for some more detail about the period of time between 25 June and 1st July, as there remains concern that an opportunity for earlier escalation was missed. I am happy to provide more information as I am able in addition to the email provided on Saturday 6th July below.

I can confirm that the extent of the issue with paediatric critical care ventilation (4 air changes per hour not 10), and the fact that this could not be rectified was not understood until the end of the day on the 1st of July. As we have previously indicated, and you can see from the log of issues related to ventilation submitted by IOM the independent validation engineer on 25 June, which we supplied to you on the 6 July , there were emerging issues related to ventilation in theatres, isolation rooms and critical care.

I provide more detail below:

- Between 25 and 28 June, the onsite teams worked to understand what IOM had measured and what corrections could be made to all ventilation systems. My understanding is that the testing had taken place amid last minute engineering corrections and required meetings and checks to be clear about exactly what had been measured where.
- Additionally the methodology of a NPD project means that the design is provided to meet the specification of the contract rather than being held and owned by the users of the building. This meant that our project team (representing the users) were constantly having to ask MPX and IHSL (the builders and owners) for details of the design rather than directly being able to reference this
- At the meeting on the 28 June at 10am, the priority issue as far as ventilation was concerned appeared to be theatres. The document tabled at that meeting was detail about the measurements in all 10 theatres indicating issues such that, at that time, none was ready for use. We concentrated our efforts on mobilising engineers to work together to test controls and rectify these issues. Our aim was to have 4 theatres (2 for DCN 2 for paeds) fit for purpose for commissioning by 5 July at the latest.
- Our time line around this was also influenced by not knowing the extent to the work to be done (if any of the work had been intrusive- i.e. removing panels or grilles to access ducting, it may have required repeat air sampling- this had already been done and passed as clear at the existing level of ventilation but good practice would require it to be repeated after any intrusive work on a ventilation system. Repeat air sampling involves

growth of bacterial plates, usually for a minimum of 48 hours to give a count of colonies).

- In summary, the morning meeting on 28th June involved discussion of water quality and ventilation in general but concentrated on the specifics in theatres. The afternoon call was to confirm theatre engineers could attend on Monday. It was acknowledged at this that no progress could be made over the weekend.
- On the morning of July 1st, Alex and I provided a briefing to Tim (who was on leave that day), attached
- By the afternoon of the 1st, the situation had changed, as you will see from the later email (attached)
- A conference call with legal advisors MacRoberts was arranged for the morning of 2nd July in the evening of the 1st, providing additional evidence that this issue had just been confirmed as material late on the 1st July.
- Tim returned to work on Tuesday 2nd July and he and other executive directors met ahead of the conference call with MacRoberts and escalated to the Director General immediately afterwards

I hope this provides some additional background which is useful
Tracey

Executive Medical Director
NHS Lothian
Waverley Gate
[redacted]

From: McMahon, Alex
Sent: 06 July 2019 13:04
To: Executive, Chief; Gillies, Tracey; Campbell, Jacquie; judith.mackay[redacted]; Currie, Brian; Graham, Iain; carmel.sherif[redacted]; john.connaghan[redacted]; gillian.provan[redacted]; Goldsmith, Susan
Subject: Fwd: NHS Lothian RHC&YP/ DCN - patient contact information and critical care ventilation timelines

John and colleagues as discussed this morning attached is patient contact numbers re re-booking patients. We will review this tomorrow morning but unlikely to be any significant change until Monday. Also attached is data from NHS 24 from contacts made yesterday.

In terms of the critical care ventilation issue and the timeline, what I can advise and as discussed using:

24th June Brian Currie, Project Director received notification from IOM

25th June Brian Currie received a report highlighting critical care vent issues amongst a longer list of working requiring to be done. This list was circulated to steering group members for information.

Between 25th and 28th June the project team undertook work to check the information against what had been contractually agreed. No escalation to Executive's took place during this time.

On the 28th June Susan Goldsmith, Tracey Gillies and I attended a meeting with the project team and others but the focus of that meeting was water quality and theatre ventilation. Critical care ventilation wasn't raised as an issue at that meeting.

1st July Brian Currie raised the issue re critical care ventilation with Tracey on the late after noon post a 4.30 teleconference.

Evening of 1st July Tracey emailed Tim Davison and others to flag there was an issue.

Morning and afternoon of 2 July further review and escalation to amongst others Malcolm Wright and John Connaghan at SG.

The issue of the timeline for critical care ventilation testing prior to 24th June I will ask Brian Currie to confirm and let you know if this can be made available today or tomorrow, if not Monday. We can pick this and any other issues up at the 11 am teleconference tomorrow.

Alex

From:	Gillies, Tracey
To:	Executive, Chief
Cc:	McMahon, Alex; "susangoldsmith[redacted]"; Goldsmith, Susan; Graham, Iain; Campbell, Jacquie; Currie, Brian; Curley, George; "MACKAY, Judith (NHS FIFE)"
Subject:	RHCYP critical care ventilation issues
Date:	01 July 2019 18:52:05
Sensitivity:	Confidential

Dear Tim,
This emerged today following testing by the independent validation engineer for ventilation on the site (IOM) . The main points are summarised below
I have discussed briefly with Susan and she advises obtaining urgent legal advice and I have asked Iain G to arrange a call for early tomorrow morning.
The points below have been commented on by those at the discussion this afternoon, and there are points to clarify and get further information on.

• IOM have tested critical care ventilation in RHCYP in 4 bedded and single rooms
•It delivers 4 air changes at balanced or slight negative pressure in the multiple occupancy 4 bedded room and single rooms in critical care. The 19 isolation rooms outside critical care are not affected
•The required standard as per SHTM 03-01 Appendix 1 (version 2 February 2014) for Critical Care areas is 10 air changes and less than 10 air changes per hour may facilitate airborne spread of viruses more than if 10 was achieved. Further advice on the likely impact of air change reduction is required.
•the only known way to improve air changes with the current plant is to accept positive pressure ventilation (i.e. increasing further the opportunity for spread primarily of pathogens with airborne transmission e.g. respiratory viruses between individuals :staff, visitors and patients in 4 bedded rooms) A request has been asked of MPX to verify the maximum capability of the existing plant while maintaining current pressure regimes.
• it is expected that a bigger plant would be required to deliver the correct air changes – the team are identifying what potential for existing system capacity enhancements might be (i.e. ramping up the existing air handling plant) and / or within the constraint of the existing ducting (so it would only be the external plant affected). The question has also been asked of MPX to assess what would be required to increase to 10 air changes/hr
•this leads us to question whether the space is fit for purpose
•If occupied now, there is risk to patients, visitors and staff of airborne virus transmission (?how much) and difficulties in correcting (would probably require a decant) Team to contact external experts for advice
• if not occupied now, move needs postponed

Tracey

From:	Gillies, Tracey
To:	Executive, Chief
Cc:	Campbell, Jacquie; McMahon, Alex; Watters, Elaine; Graham, Iain
Subject:	RHCYP/DCN
Date:	01 July 2019 08:51:03
Attachments:	Water and ventilation issues in RHCYP and DCN.docx

Dear Tim

Alex and I went with Susan to follow up on the water quality and ventilation issues on Friday- attached is a briefing and we can give you more detail as required. There is still a lot of work to do is the summary position. There will be regular calls and one of us will dial into these.

Tracey

Water and ventilation issues in RHCYP and DCN

The testing and quality assurance work prior to the move into RHCYP/DCN is not yet sufficiently complete and demonstrating adequate assurance to support the finalised move date. This will be subject to daily work and checks this week. A final decision about the move of patients will need to be made by Wed 3 July.

Water quality

- Testing of outlets taking place with necessary corrective actions.
- The building commissioning standards for handover and occupation differ from the HPS guidance about testing regimes in particular areas where more vulnerable patients are (augmented care areas).
- This has resulted in some lack of clarity between estates and IC.

Ventilation for theatres, critical care and isolation rooms

- Air sampling carried out to date has been negative.
- The independent tester was on site at the end of last week and submitted a report on Friday morning outling issues and faults with all 10 theatres.
- No written report on isolation or critical care areas has been received.
- A minimum of four theatres with fit for purpose ventilation are required for safe occupation.
- Any intrusive corrective engineering work will require replating of air samples (48 hour form sample to result)

A meeting was held on Friday 28 June internally between estates, execs (SG AMcM and TG) and RHCYP team (BC, ED, FM) to discuss the two issues and agree a plan to address them. Additional tests and results are expected this week for water quality in augmented areas with any appropriate corrective action undertaken

A second meeting was held between NHS L, IHSL and Multiplex and Bouyges, with a follow up call at 4pm after further discussion with engineering colleagues and the independent tester. It was agreed that from 1st July, all relevant engineers and sub contractors will work through on theatre at a time (starting at RHCYP end

Water quality: A brief paper summarising the testing regime, corrections and any consequences for safe patient care will be prepared when testing is complete and presented at HCG on 9 July

Ventilation: Twice daily conference calls will be held from 1st July will be held to maintain an overview of progress

TG/AMcM 01.07.19

From:	Gillies, Tracey
To:	Executive, Chief
Cc:	McMahon, Alex; "susangoldsmith[redacted]"; Goldsmith, Susan; Graham, Iain; Campbell, Jacquie; Currie, Brian; Curley, George; "MACKAY, Judith (NHS FIFE)"
Subject:	RHCYP critical care ventilation issues
Sensitivity:	Confidential

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• if not occupied now, move needs postponed

Tracey

DRAFT

RHCYP/ DCN : Commissioning / Ventilation

Note of a meeting held at 1:00pm on Wednesday 3 July 2019 in Meeting Room 6, Waverley Gate, Edinburgh.

Present: Tim Davison (Chair); Janis Butler; Jacquie Campbell; Brian Currie (Teleconference); George Curley (Teleconference); Eddie Doyle; Tracey Gillies (Teleconference); Iain Graham (Teleconference); Linda Guthrie (Teleconference); Duncan Inverarity (Teleconference); Pota Kalima (Teleconference); Judith Mackay and Fiona Mitchell.

In Attendance: Douglas Weir.

Welcome and Introduction

Tim Davison welcomed colleagues to the meeting advising that he was keen to discuss options around the timescale for the move to the new RHCYP given the recent developments around the ventilations system. He commented that a final decision would not be made at this meeting as there would be a need to discuss issues further with the Scottish Government at a meeting scheduled for 2pm later in the day.

1. Agreement of Options

It was agreed that essentially the following were the options available:

- Continue with the planned move and attempt to deliver a permanent fix for the ventilation problem while the Critical Care Unit remained open.
- Continue with the planned move of all services and then decant Critical Care into a modular build unit to allow the optimum solution to be delivered in an empty environment.
- Defer moving into the new building altogether.
- Re-phase the timing of the move into the building to allow a phased occupation over the next few weeks and months.

2. Clinical Team and Clinical Modelling

Fiona Mitchell advised that the clinical team had taken a measured view around the current situation concluding that anything was workable with the caveat that the critical care standard needed to be secure. The lack of robust information had been raised as an issue as most of the detail had been relayed on a verbal basis.

The consequences of moving too early were:-

- Loss of neo-natal capacity. It was noted that there were currently 3 neo-natal beds.
- Availability of 15 ITU HDU beds compared to 16 for the period of the interim position.
- Nurse staffing and ITU bed capacity issues.
- The need to manage/cancel elective beds and discuss with NSD and Greater Glasgow and Clyde Health Board to ensure that they were aware of the need to pick up the slack and potentially cancel elective capacity.
- Interim period.

The issues in respect of waiting until the permanent solution was implemented were:-

- Lack of clarity about how long this would take and how the work would impact on services.
- To date decant issues had not been discussed and these needed to be worked through.
- The least worse option would be to move but this came with an inherent risk of infection allied to the fact that services would be moving into a building with known sub-standard ventilation by current day standards.

Tim Davison provided an update on a teleconference session that he and Jacquie Campbell had held earlier in the day with Health Facilities Scotland (HFS) and Health Protection Scotland (HPS).

It was noted that both organisations had wanted reassurance around the high level of disruption in the short-term and what this delivered and whether this was in fact capable of being delivered. They had felt that there was a lack of detail around the risks and had raised questions around the lack of contingency if core capacity took longer to put in place or did not happen at all. They had questioned the position in respect of decant opportunities. A sense had been obtained that unless there was a clear contingency in place that they would be cautious about any move.

Tim Davison advised that he had discussed the situation with John Connaghan and Malcolm Wright and they were keen to assess issues around possible contingencies. John Connaghan had raised the issue about the provision of a Vanguard style modular unit. George Curley had also suggested using the ward in the main Arc of the main hospital. It was noted that if 19 beds required to be provided then this would need 2 Vanguard units. One proposal to provide intensive care facilities in the adult hospital was to move the renal ward to provide a footprint for the Paediatric Intensive Care Unit. This would provide 16 beds. It was noted that both options resulted in a loss of national capacity. George Curley commented that it was important not to underestimate the complexity of creating capacity.

Tim Davison sought advice on how doable the various options were and how much confidence there would be that the system would be able to deliver on these. George Curley commented that there was no reason why the renal ward proposal could not progress although this would result in less capacity and there needed to be

clarity around renal dialysis issues. He concluded that he was confident that this could be achieved albeit with a need to flex beds downwards.

The need to ring-fence adult capacity for Western General Hospital issues was raised as was the potential impact on adult critical care services. George Curley advised that the Ward 20 DCN work represented a full blown project and would not be concluded until October/ November which did not fit with necessary timelines. An update was provided in respect of the position around moving DCN. Jacquie Campbell commented that moving renal into a different footprint would impact on adult elective work as well as national volumes.

Tim Davison commented that although good ideas had been put forward there was a need to consider the practicality of implementing these to the necessary timescales. Eddie Doyle commented that it was important to consider how paediatric intensive care would interact with the rest of the hospital as well as considering issues around the access to theatres. It was noted that the paediatric emergency team operated on an outreach basis. He suggested that there was a need for careful analysis of the risks around decant.

Tracey Gillies also raised issues around the distance that children would be located in away from the main hospital. George Curley commented that the provision of a mobile unit would make the position even more isolated. The Vanguard unit would require to be located on the car park at the front of the site with the impact on patient car parking spaces being discussed. It was noted that drop-off points would still be available.

George Curley commented that there would be a need to see the specification for the Vanguard unit as another risk would be that services would move from one non-compliant unit to another non-compliant unit. In addition it was noted that there would be a need to create a canopy to join the Vanguard units to the main hospital building. Jacquie Campbell commented that whilst welcoming the good ideas that these were not sufficiently worked up to allow decisions to be made and that there were too many unknowns with issues needing to be risk assessed in respect of patient pathways.

Tim Davison commented that if the move did not occur to the original timescale then it would slip into September because of the availability of Scottish Ambulance Service support. This was due to the fact that the Ambulance Service were keen to avoid additional commitments over the festival period. Tim Davison commented in respect of the permanent solution that he did not feel that there was enough detail yet to be assured that it was workable. He questioned whether another option was available to allow contractors access to the hospital without patients being in wards and what the impact of this would be on the timescale. Brian Currie commented that this would shorten the timescale by around 1 week mainly because there was a lead in time for the procurement of handling units. The timing of the scheduling of works and the impact on the access corridor were discussed. It was noted that the bulk of work would not be in clinical areas. The difficult part would be the work required in the corridor area.

Tim Davison commented that there would be a need to make a decision about whether to move or not and that although good ideas were coming forward that these

required further work and he did not feel comfortable about pressing ahead with the proposed move on the basis of the evidence currently available.

George Curley commented that he felt that there would be a need for further conversations with both HFS and HPS as going against their advice would be difficult to defend if there were downstream issues.

Eddie Doyle commented that remaining in the current facility represented a low risk option and that DCN could move as planned. By delaying the move this would provide a clean sheet on a new site with the ability to risk assess. He commented that if a decision was taken to move before permanent work was undertaken then this would need to be on the basis of a clear understanding of risks based on analysis. He felt that to do otherwise would represent a leap of faith. The need to keep the Intensive Care clinical team on side was stressed with it being noted that further work was needed in this respect. Eddie Doyle commented that it was important to remember that clinical colleagues had not had much time to work through the issues that had been presented to them.

Tim Davison questioned whether anybody was confident about progressing with the move on the currently planned basis. Tracey Gillies advised that if HFS and HPS were concerned then she felt that to move without their air cover would be a big leap and might leave the organisation in a precarious position.

Tim Davison questioned the issues in respect of the proximity of the Neo-Natal Unit being next door to the corridor area and questioned how critical this was in terms of the acuity of the patients and whether noise would be an issue to the wellbeing of the children. The point was raised that there might also be issues in respect of the background noise created by the new ventilation. Eddie Doyle confirmed that this was a potential issue for patients and staff and he felt that further information was needed in respect of the potential for increased noise as a consequence of the velocity of ventilation. Fiona Mitchell reminded colleagues that previously there had been issues at St John's hospital because of noise issues.

Discussion ensued about the viability of retaining existing duct work and improving the air exchange units with it being noted that the key unknown was what the increased air flow impacts would be. It was noted that the size of the ducting was a key issue. George Curley commented that if the move was deferred then this would allow technical issues to be resolved including the provision of acceptable ducting. It was noted that the installation of larger ducting could only be undertaken if the unit was empty.

Tim Davison questioned what the financial impact of the additional works would equate to. George Curley advised that although this had not been costed he felt that to provide a permanent solution would cost between £100,000 and £130,000 and the provision of an interim solution would cost between £50,000 and £60,000. It was noted that this was an area that required further costing.

In summary the following was concluded:

- The permanent solution for Critical Care would be the best way forward and would allow the installation of a bigger duct size which would make the unit compliant.
- It would not be possible to undertaken a permanent solution with patients in the unit.
- There would be a need to question whether to make the move knowing that a permanent solution would require decant proposals with options requiring to be worked up with there being a need to develop solutions. It was noted that even if solutions were deliverable it would take a number of months to procure a Vanguard unit.

Tracey Gillies advised that she needed to leave the meeting and that her opinion based on the evidence available at the meeting was that a move of the Critical Care Unit to the new hospital facility should be deferred. Eddie Doyle commented that over the previous 24 hours it had become clearer that there was a need to work up options in respect of risks given the increase in the number of unknowns and that he felt that this strengthened the need to retain core clinical services in their current location. He was concerned to do otherwise would mean a loss of enhancements from other services albeit he recognised the reputational issues of not moving. Tim Davison commented that at this point in time it was not known whether the decant proposals were achievable and how quickly they could be undertaken nor the impact on capacity.

The point was made that if a re-phased move was undertaken the services that could move over the next few weeks and months would be Ambulatory Paediatric services including outpatients, therapies, programmed investigations and day surgery. The services that would need to remain behind were medical and surgical inpatients, the Emergency Department and critical care.

Tim Davison commented that the fact that the Emergency Department was no longer moving would be the big banner issue. Discussion ensued about the services that could move that were not constrained by the Ambulance Service availability. It was noted that outpatient invitations had already been sent to patients although it was not thought that this would be a difficulty as the system was used to redirecting patients to the current Sick Children's facility from adult services. It was noted that there might be a need for some staff to commute between the current Sick Children's Hospital and the Little France site.

Iain Graham questioned the availability of the Ambulance Service if equipment could be procured quicker albeit at an increase cost. Again the possibility of this being achievable would need to be checked. Fiona Mitchell reminded colleagues that the constraints around Ambulance Service availability was in respect of the festival period.

Tim Davison provided an update on discussion that he had held with Lawyers about restitution in the contract with the advice being that this would be dependent on the specification within the contract and whether this had been delivered.

The following summary position was noted:-

- The permanent solution required a decant because of ducting and noise issues.
- Ideas around the decant were available but issues needed to be clarified in respect of access, reduction in beds from the current base and how long decant proposals would take to deliver.
- It was not certain until further work had been done whether the decant proposals were deliverable and if the move was made on this basis there was potential for the system to become unstuck.
- In the short-term there was a need to work up a plan to move some elements of the service over the course of July. Plans should be developed to move critical care services after the permanent solution had been implemented.

The preferred option was therefore to rephrase the timing of the move in to the building and allow a phased occupation over the next few weeks and months

There was a need to understand in more detail the HPS and HFS concerns as there was a view that some of these might be unfounded.

Tim Davison thanked colleagues for their contribution advising that it was not possible to make final decision at this juncture as there was a need to hold further discussions with colleagues from the Scottish Government at a meeting to be held immediately following the conclusion of the current meeting. An update of the position would be provided as soon as possible.

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NHS Lothian Internal Audit Report

Report for the Audit and Risk Committee 31 July 2020 and the NHS Lothian Board 12 August 2020

Governance and Internal Controls: Royal Hospital for Children and Young People, and Department of Clinical Neurosciences Edinburgh

A47193110

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It is the responsibility solely of NHS Lothian's management and directors to ensure there are adequate arrangements in place in relation to risk management, governance, control, and value for money.

1. Introduction

1. This report sets out our observations arising from our review of the governance and internal controls over the RHCYP project. Our internal audit scope (**Appendix 1**) was agreed in October 2019 following discussions at the Finance and Resources Committee and the NHS Lothian Board.

2. The scope of work was planned in two phases. Phase one, and a potential later phase depending on the work undertaken. As our internal audit work commenced, it was identified that phase one and phase two were in part linked.

3. This report covers:

    - Understanding the key events timeline.
    - Roles and responsibilities of the parties involved, linked to the key event timeline and decisions.
    - Respective controls including governance and assurance.

4. We reviewed documentation retained by NHS Lothian. Documentation included: project board minutes, project steering board minutes (from 2015 onwards), Finance and Resources committee minutes, Board minutes; workstream notes, retained email correspondence; reports and status updates, procurement documentation and settlement agreement.

5. To support our understanding of events and the documentation, we met with several individuals internal to NHS Lothian. In addition, we also spoke with Scottish Futures Trust, MacRoberts UK LLP, Mott MacDonald Limited, and Arcadius. This was to support our understanding only.

Previous reports into the RHCYP project

6. In scoping our work, we recognised previous reports commissioned. We sought not to duplicate previous work. This report builds on the work commissioned by Scottish Government, reported in August 2019, and is focused on seeking to understand why events occurred to compliment the “what happened”, which has been articulated.

7. Following the public inquiry announcement, it is intended that our work will support NHS Lothian in preparing for the inquiry.

Non-Profit Distribution (NPD) model and definition of Project Co

8. The project was delivered using the Non-Profit Distribution (NPD) model. Project Co is the Special Purpose Vehicle (SPV) established to deliver the project. The SPV is Integrated Health Solutions Lothian (IHSL) who are a separate corporate entity, set up to deliver the design, construction, and operation of the facility for the concession period. NHS Lothian’s contract is with IHSL. IHSL have senior debtor holders (EIB and M&G) and junior debt equity interests (Dalmore and Macquarie). The supply chain includes Multiplex (contractor appointed by IHSL to design and construct, supported by other parties including Wallace Whittle as mechanical engineers) and BYES (service provider appointed to deliver hard facilities management post completion).

9. For ease of reference we have referred to Project Co throughout or Multiplex where specifically that is appropriate.

2. Overall summary

Scope of work

10. In our capacity as internal auditors, we were commissioned to review the key events within the Royal Hospital for Children and Young People (RHCYP) and Department of Clinical Neurosciences (DCN) project. Throughout the report we refer to the project as RHCYP. Whilst run as a single project, using the NPD model our review focused on the reasons for the material ventilation issues which delayed the opening of the RHCYP.

11. This report builds on the themes identified in the Scottish Government commissioned review of governance and internal controls (August 2019) and the Auditor General for Scotland's Section 22 Report (December 2019).

12. Our recommendations will support NHS Lothian in strengthening its control environment over capital projects. The RHCYP project spanned a decade so we recognise the controls at the beginning of the project have been developed and enhanced.

13. In addition, the report will support NHS Lothian's planning for the public inquiry as it has identified wider considerations beyond the environmental matrix.

14. To date the focus has been on the environmental matrix. This is the matrix used on the project to set out mechanical and ventilation requirements, alongside other design factors, for all spaces in the new hospital. An error existed over critical care ventilation (and the other four bedded rooms within the hospital) within the versions of the matrix developed first by NHS Lothian (2012) which continued into the versions created by Project Co (2014 onwards).

15. All projects require decisions to be taken which balance risk, delivery, quality, and financial implications. Factors influencing the RHCYP project over the past decade included financial affordability, the site of the hospital, clinical services now and the future, the timescale to deliver a new hospital, alongside external factors beyond the direct control of NHS Lothian. There is currently a suite of guidelines on building a hospital, which may contradict and/or be subject to interpretation, coupled with a lack of clarity over what guidelines are fundamental requirements and must be built into the design specification.

Ventilation

16. Ventilation is important to control infections and is designed considering the functional and clinical use of the space. SHTM 03-01 is the guidance outlining ventilation requirements within a hospital.

17. The error in the RHCYP was an air change rate delivered for the critical care department which did not comply with SHTM 03-01 guidelines. Later in the project, an air change rate of four air changes per hour was accepted in single rooms and the four bedded rooms, which also did not comply with SHTM 03-01.

18. SHTM 03-01 states, amongst other things, the air change rate in critical care should be 10 air changes per hour. SHTM 03-01 is guidance. However, the need to comply with SHTM 03-01 was within the contract and therefore a contractual requirement of the RHCYP project. The settlement agreement signed by NHS Lothian (February 2019) derogated the responsibility for Project Co to comply with SHTM 03-01 and agreed an air change rate of 4 changes per hour within critical care. This is accepted by NHS Lothian to be an error.

19. The settlement in February 2019 cemented the error contractually. However, the lack of clarity and understanding of requirements over ventilation in critical care, including four bedded rooms, existed in the RHCYP project since 2010/11.

20. SHTM 03-01 guidance includes other aspects of ventilation. Ventilation also includes air pressure, which can be positive, balanced, or negative depending on usage of the room. Required temperature ranges are set out, for example between 18 degrees to a maximum of 28 degrees. Lastly, the ventilation solution designed can be mechanical, natural or a combination of both and this alongside other factors influence the energy consumption of the building. Within the RHCYP project air changes, air pressure and air temperature were all factors which contributed to non-compliance with the SHTM 03-01.

Responsibilities – NHS Lothian and Project Co

21. NHS Lothian, the client, set the requirements for the new hospital. These are set out within the Board Construction Requirements of the contract. These requirements consider the use of the clinical space, including space for equipment, and are defined using the concept of operational functionality. NHS Lothian therefore approve the designs created by Project Co which will deliver operational functionality.

22. Project Co are responsible for designing and building the hospital, to meet the Board Construction Requirements. IHSL document the way in which they intend to design and build the hospital to meet the Board Construction Requirements in a set of Project Co Proposals.

23. In practical terms, given the nature of the project and its importance, NHS Lothian, and technical advisers, reviewed design elements beyond operational functionality. This is evidenced through the review comments on the environmental matrix. This may have resulted in confusion or a blurring of responsibility between NHS Lothian and Project Co.

24. The contract, through derogations and change control procedures, allow for inconsistencies when identified to be addressed between both parties. Where any party does identify inconsistency or design not aligned to requirements (within or beyond operational functionality) then it should be identified through the processes established within the contract.

25. However, the inconsistency of interpretation over four bedded rooms and further inconsistency between the Board Construction Requirements, Project Co proposals, and reviewable design data was never identified.

26. The Independent Tester validated requirements back to agreed reviewable design data, including the environmental matrix, where the inconsistency was built in. As what was delivered agreed to the reviewable design data and in the knowledge of the matters to be resolved following the February 2019 settlement agreement, the Independent Tester certified the building complete.

Early inconsistency in the project which was built into the later design

27. Between 2011 and 2014, our view is that NHS Lothian's requirements were ambiguous and may have been applied inconsistently or remained open to interpretation. This led to unintended contradictions and lack of clarity over what NHS Lothian required.

28. In this period there was no contractual obligation between NHS Lothian and Project Co. However, the lack of clarity here may have contributed to ongoing differing views between NHS Lothian and Project Co throughout the project.

29. Examples of this lack of clarity include:

- Four bedded rooms being classified as generic rooms by NHS Lothian, although the three situated in critical care department would require differing ventilation.
- Advice on mechanical and natural ventilation to give a maximum temperature range of 25 degrees, not the 28 degrees allowable in the SHTM 03-01, and the consequences of this on the design of ventilation in the RHCYP.
- The inclusion of the draft environmental matrix within Volume three of the tender documentation.
- The language used within the tender documents, including in the Board Construction Requirements, referring to the environmental matrix.

30. The final unresolved ambiguity is the Board Construction Requirements section within the contract. This sets out NHS Lothian's requirements and we believe, a potentially incorrect reference to the environmental matrix is included. This reference may confuse ownership of the matrix from Project Co to fall under some NHS Lothian responsibility. Although it is emphasised as internal auditors, we are not legal experts or contract specialists.

31. The contract and subsequent positions between both parties is legally and technically complex. This is evidenced in the differing views of experts commissioned to look at the ventilation pressure designed in the four bedded rooms (NHS Lothian's expert and Project Co expert). It is also evidenced by the differing opinions expressed by the two separate QC opinions obtained by NHS Lothian and IHSL, respectively. Views expressed include questions over the contractual status of the matrix, what was designed within reference design, the application of guidance within STHM 2025 (which was superseded with SHTM 03-01), Health Building Notices (HBN), RDS, and other guidance referenced.

Overall conclusion

32. NHS capital projects by their nature are complex. The RHCYP project spanned twelve years and encountered a complex series of circumstances. Alongside ventilation there were other difficulties and layers of issues during the life of the project that together created unique challenges for NHS Lothian. By 2018/19 significant matters were being considered and resolution sought in parallel to each other, not just ventilation.

33. Our review identified a collective failure from the parties involved. It is not possible to identify one single event which resulted in the errors as there were several contributing events.

34. Additionally, there were a series of factors external to NHS Lothian which influenced and shaped the project which were not within the direct control of NHS Lothian. These factors contributed to the complexity.

35. Ultimately the matters identified were of a very technical nature. The contract sets out that Project Co are responsible for designing and constructing the RHCYP to meet NHS Lothian's Board Construction Requirements. NHS Lothian are contractually responsible for approving design and construction matters only to the extent that they relate to operational functionality.

36. However, NHS Lothian and the technical advisers have a professional obligation where there is identified non-compliance to identify and highlight this for Project Co's attention. Significant dialogue between NHS Lothian and the technical advisers was identified with Project Co over reviewable design data. As many areas of non-compliance were identified, it is difficult to understand why the inconsistencies and lack of clarity set out within this report were not identified and/or acted upon. This includes critical care but also the differing interpretations which were unresolved.

NHS Lothian's arrangements

37. Our review identified three principal factors, alongside missed opportunities, where further questions were not asked by the NHS Lothian project team and the technical advisers.

Four bedded rooms

38. A determining factor in the project was the decision, taken in 2010, to have twenty, four bedded rooms. The SHTM 03-01 guidelines do not recognise four bedded rooms as a room type. The option, from a ventilation perspective, would be either single rooms or general wards. In both cases, 6 air changes per hour would be required with differing pressure regimes.

39. In error, it was assumed at an early stage of the project that the four bedded rooms would require the same mechanical and engineering solution and were classed as "generic rooms". However, three of these rooms were designed within critical care and therefore required different ventilation to achieve 10 air changes per hour. This was missed from the outset of the project and remained unidentified until June 2019.

Temperature

40. Clinical groups were engaged throughout the RHCYP project. From the outset, clinicians wanted the temperature capped at 25 degrees. The temperature range in the SHTM guidance allows for a maximum of 28 degrees. The decision by the clinicians was influenced by legacy issues within the Royal Infirmary Edinburgh.

41. In seeking to cap temperature, this informed a certain mechanical and natural ventilation solution. Based on a study undertaken by Hulley and Kirkwood in 2012 (mechanical and engineering advisers at the point of creating a reference design) it was agreed that a mechanical and natural ventilation system could be introduced which would deliver 4 air changes per hour. The SHTM 03-01 guidance sets out 6 air changes per hour, as referenced in the report produced by Hulley and Kirkwood. From the outset 4 air changes per hour was then captured in the environmental matrix and ultimately what Project Co delivered in February 2019 when the building was handed over.

42. The inclusion of 4 air changes per hour in the reference design produced by NHS Lothian instead of the required 6 air changes per hour was never raised for further consideration by the project team at this stage of the project, from what we can evidence.

Sharing the environmental matrix

43. An environmental matrix was produced by Hulley and Kirkwood (2012) for inclusion in the tender documents to support reference design. This matrix incorrectly showed in the detail against critical care 4 air changes per hour, not the 10 air changes per guidance. Although the cover worksheet referenced the need to comply with critical care 10 air changes, this was not in the matrix itself.

44. The draft environmental matrix was included alongside the Board Construction Requirements in Volume three of the tender documents and certain language within the tender documents imply, in error, that the environmental matrix is an NHS Lothian matrix and that bidders need to comply with the matrix.

45. Project Co are responsible for the environmental matrix and they took responsibility at preferred bidder stage for the matrix (September 2014), including making certain changes to the earlier version. Our understanding is that Project Co are responsible for the matrix, as linked to room data sheets, which is a Project Co deliverable in the contract. However, there may be potential ambiguity in the contract. The earlier errors in 2012 remained unidentified, with further errors made, for example, the inclusion of ensuites in the critical care rooms and the insertion of the word “isolation” in the critical care guidance note.

Missed opportunities

46. Our review noted missed opportunities to identify the error, which was subsequently built into the RHCYP project. These included:

- NHS Lothian and Project Co did not identify the lack of clarity on requirements for four bedded rooms and that this was not explicit in the Board Construction Requirements.
- The decision to include the matrix alongside the Board Construction Requirements in the tender documents. In addition, the apparent absence of a review of the matrix, and no documented quality check over the accuracy of the matrix.
- One bidder submitted a revised environmental matrix with the correct air changes identified for critical care which did not raise questions on the matrix submitted by Project Co.
- The inclusion of ensuites within critical care by Project Co in the environmental matrix in September 2014 was not identified until 2016. Although ensuites were flagged as incorrect, it was not identified that air changes were incorrect.
- The change by Project Co in their environmental matrix (2015) which added in the word “isolation” to the critical care air changes per hour guidance note in the first tab of the environmental matrix. This was not identified and demonstrates that Project Co were planning 10 air changes per hour only in the critical care isolation rooms.
- Numerous review comments on the environmental matrix between 2014 and 2017, although none related to critical care. Whilst NHS Lothian and the technical advisers were not responsible for checking on a line by line basis, we understand there was a professional obligation where an error or potential non-compliance was identified for this to be raised.
- Reviewable design data was moved to a category B (approved to progress) despite reservations by the NHS Lothian project team and technical advisers on ventilation compliance (pressure) and other non-compliance in design compared to Board Construction Requirements.
- Air pressure was considered from 2016 to 2018. When air changes were discussed, it was in relation to achieving the desired pressure and was not discussed for critical care.
- The clinical risk assessments completed by NHS Lothian in 2017 only considered air pressure and although three were completed for the critical care rooms, differing requirements for critical care were not identified.
- The Independent Tester did not identify the non-compliance with the guidance within critical care.
- Settlement signed in 2019 did not identify three of the four bedded rooms were within critical care and derogated in error the air change rate to 4 per hour. The settlement, also in error, derogated the single rooms in critical care to 4 air changes per hour.

47. These opportunities were not identified by the clinical director for the project, the Project Director, the project team, the technical advisers, those parties involved in reference design, Project Co including Multiplex, and the Independent Tester. Collectively the error was missed by all parties.

External contributory factors

48. In addition to the above, external to NHS Lothian were direct and indirect events which influenced decision making.

Delivery through an NPD model

49. Scottish Government announced in 2010 that the project would be delivered and funded through the Non-Profit Distribution Model (NPD). This model was new to Acute NHS Hospitals and as such un-tested, albeit the predecessor model (PPP) was not new.

50. Therefore, the project team and governance arrangements already established for the capital project, which commenced in 2007, were retrofitted into the NPD model. Between 2007 and 2010, NHS Lothian had invested in design work on the new hospital and significant consultation with clinical groups. This resulted in financial and time costs to NHS Lothian. Alongside this, the change in funding announcement delayed the project for at least twelve months at the time.

51. Recognising the delay in the project delivery timeline, the costs incurred on design, and the clinical engagement undertaken to date, it was decided that elements of the design within a reference design were to be shared within the procurement exercise. This decision was taken on the advice of Scottish Futures Trust and Scottish Government and noted in minutes as being helpful in reducing the procurement timeline.

52. Sharing a reference design is an option within the NPD model. However, with hindsight, this created potential ambiguity over design requirements by NHS Lothian, including how the environmental matrix was shared compared with Project Co's understanding of their responsibility to design and construct the hospital.

Financial standing of Project Co

53. The procurement for a supplier took place in March 2013 and resulted in a preferred bidder being appointed (Brookfield Multiplex). Then the funders were sought and appointed. The project agreement (contract) was signed between NHS Lothian and IHSL (Project Co) in February 2015. Decisions over this time period, fully supported by Scottish Futures Trust and Scottish Government, sought to minimise any risk to NHS Lothian as a result of the potential economic impact of the referendum and the general economic climate on funders and those interested in the project.

54. There were two key external events, in respect of Project Co, which necessitated certain decision making by NHS Lothian to either avoid additional costs to them and/or significant delays in the project which was already behind agreed timescales. We believe these to also have influenced decision making.

- In February 2015 when the contract was signed, Project Co's Proposals (i.e. their design to meet the Board Construction Requirements) was not agreed by both parties. Accordingly, the parties agreed that many elements of the developing design would be classified as Reviewable Design Data. Reviewable Design Data is a further articulation, including additional detail on how Project Co will deliver the Board Construction Requirements. This was substantial. However, Project Co wanted the contract signed so they could start receiving money, and Scottish Government and Scottish Futures Trust were keen to not delay the project further whilst this got agreed. We understand it is usual to not have Project Co's Proposals fully agreed at contract stage. However, post February 2015, this did result in significant back and forward discussions between NHS Lothian and Project Co and extensive time in following the change control processes set out in the contract. The pressure regime was one aspect of Reviewable Design Data not agreed in February 2015.

- Prior to the settlement in 2019, there was an increasing risk to the existence of Project Co due to a lack of cash flow between IHSL and Multiplex. This was recognised by NHS Lothian and Scottish Government and considered within the risks of agreeing a financial settlement. It was felt that without a settlement being reached, the viability of Project Co was under threat. This would have indefinitely stopped the project whilst a new project Co and associated funders were sought.

Recommendations

55. Our review focused on NHS Lothian's arrangements and documents we reviewed which were retained by NHS Lothian. During our review we noted certain wider observations which may be further explored during the public inquiry.

56. Our recommendations are focused on actions NHS Lothian can take now going forward to strength the control environment. Some of the points we identified were at a point in time, and the environment has already been amended. We acknowledge these recommendations may need to be taken forward in partnership with the NHS Scotland centre of excellence which is being developed.

Overall management commentary:

The Executive team welcomes the report and is committed to implementing its recommendations. We would like to acknowledge the extent of analysis that the Chief Internal Auditor has undertaken, particularly the review of complex and significant documentation over a 12-year period. This will assist the Board's preparations for the Public Inquiry.

This overview sets out some of the issues the Board will require to consider in preparation for the Inquiry. Inevitably the audit could only examine documentation held by the Board and it will be for the Public Inquiry to consider the relevant documents from other parties. This is particularly relevant to the key findings in the Audit that there was a collective failure by all parties to identify that 3 of the 4 bedded rooms were in critical care and SHTM03-01 applied. By the time the Settlement Agreement was signed in February 2019 the Hospital had already been designed and built with critical care ventilation to provide 10ACH in the isolation rooms and 4ACH in the 4 bedded and single rooms within critical care.

3. Contextual factors

57. During our review we identified contextual factors which shaped the project. The RHCYP project spans nearly twelve years. The project by its nature is complex. Alongside the complexities that come with building a new hospital, there were specific factors unique to NHS Lothian.

58. The factors summarised below contributed to the project timeline and decisions taken. Whilst not contributing to the root cause, they did shape and influence the project and are relevant considerations.

Early decision making

59. The need for a new children's hospital was first discussed in 2006. An option appraisal exercise was concluded, with the preferred site being adjacent to the Royal Infirmary Edinburgh (RIE). This decision followed guidance which recommended children's hospitals are co-located with an adult acute hospital. Once the preferred site was approved, the project developed through outline business case (OBC) and early capital design work in the period 2008 to 2010.

The site

60. The RIE is a Public Finance Initiative (PFI) hospital. This was an older, non-standard contract with an underlying ground lease which needed amended. The RIE was designed, built, financed, and maintained by Consort. Complex negotiations took place between NHS Lothian and Consort between 2010 to 2015. Negotiations focused on, but were not limited to, access to the land, the site of the RHCYP, drainage, and car parking. This was legally complex, and NHS Lothian were supported by the legal advisers, MacRoberts UK LLP.

61. Resolving the matters with Consort took significant focus by the NHS Lothian RHCYP project board particularly between 2011 and 2013. These discussions ran alongside the procurement exercise being undertaken.

62. Legal matters were resolved in an agreed settlement between NHS Lothian and Consort in 2014/15 (SA6 agreement) to allow the new hospital development to commence.

63. NHS Lothian, as evidenced in the project board documentation, had a difficult contractual relationship with Consort due to legacy RIE matters.

64. Given the relationship between both parties and the complexity of the matters being agreed, the focus of the project board including Senior Responsible Officer (SRO) and Director of Finance was on this contractual matter.

First Acute Hospital Non- Profit Distribution (NPD) and the change of funding arrangement

65. The RHCYP was initially to be delivered through Scottish Government capital funding. However, in 2010, the Scottish Government introduced a policy change and announced that the RHCYP would be funded instead as a Non- Profit Distribution (NPD) model.

66. The RHCYP was the first acute children's hospital to be built in Scotland, and NHS hospital under the NPD model. This funding model was new to NHS Lothian. NHS Lothian were actively supported by Scottish Futures Trust in understanding the procurement and governance arrangements and received their guidance and hands on support between 2010 and 2015.

67. NHS Lothian were not consulted on the change in funding model in advance of the decision being taken. Scottish Government representatives confirmed they could not identify a risk assessment being completed at the time.

68. Between 2006 to 2010, NHS Lothian commissioned design work on the new hospital, appointed a framework of advisers, and constructed a project team to oversee the delivery of the new hospital.

69. The change in approach required a new business case to be submitted and signed off by the Scottish Government in 2011 and did delay the planned timeline for delivering a new RHCYP by circa 18 months.

70. In 2010/11, NHS Lothian undertook a new procurement exercise for technical, legal, and financial advisers. The contract in place with principal design consultants (BAM) was stopped, and discussions took place, involving legal advice, over the aspects of the early design work BAM completed. This focused on what design work was the property of NHS Lothian and for NHS Lothian future use.

71. The RHCYP project board structure set up previously by NHS Lothian remained for the new project, as did the NHS Lothian team including the externally appointed programme director, to oversee the project.

72. By the time of the procurement commencing in 2012/13, NHS Lothian's initial timelines for the new hospital had already been pushed back by three years. In the period 2008 to 2010, there had been financial costs incurred to date and clinical time involved, when the project was to be capital funded. There was a desire, by the project team, fully supported by Scottish Government and Scottish Futures Trust, that this work was not lost. A decision was taken by the NHS Lothian project board that this work could inform the reference design to be shared within the procurement.

73. No assessment was completed by NHS Lothian on whether this early work was still applicable, particularly given the Department of Clinical Neurosciences (DCN) was then built back in, when funded through the NPD model.

74. In addition, although work had been progressed to create all the documents shared with bidders in the tender process, a substantial amount of additional work was undertaken through a series of contractors, overseen by the technical adviser appointed by NHS Lothian. The resultant reference design was shared within the tender documents. Further detail on this is set out in Section 4 key findings.

Department of Clinical Neurosciences (DCN)

75. In early considerations, the Department of Clinical Neurosciences (DCN) was to be co-located next to the new RHCYP. This was subsequently reconsidered by NHS Lothian and the Scottish Government and was determined to be run as a separate project on a different site. Therefore, this was not included in the capital OBC submitted. However, when the funding of the RHCYP changed, it was decided that DCN would in fact be co-located with the new children's hospital. This was finally decided in 2010/11. This resulted in the DCN and RHCYP projects being run as one project overseen by the same project team.

External factors outside of NHS Lothian's control and influence

76. Based on our review we noted certain factors, external to NHS Lothian, that influenced the decisions taken by NHS Lothian. These included:

- The need to issue the tender in 2012/13 and complete the procurement phase. The project was already behind planned timescales and any delays in procurement would push the project back further.
- There was a downturn in the economy at the time the tender was being advertised through the Official Journal of the European Union (OJEU). This created a concern for Scottish Futures Trust and Scottish Government that any extended timeline for procurement, alongside the economic outlook, would result in a reduction in potential bidders. There was a risk the economy would also impact interest from funders.
- The desire in 2012/13, expressed by Scottish Future's Trust and Scottish Government, to re-look at the competitive dialogue timeline and make that as short as possible. This was linked to the interests of funders and a concern on number of bidders and timeline to complete the new hospital.
- The need to keep to the planned financial close timetable agreed due to potential risks on funding leading up to and post the Scottish Independence Referendum.

Project Co financial position during the project

77. Out with the control of NHS Lothian is the underlying financial viability of the Project Co over the life of the project. Under the NPD model, Project Co consisted of IHSL and a series of funders who financially backed the project. At key points in time we can evidence in documentation the financial position of Project Co influencing decisions and project direction:

- NHS Lothian signed the Project Agreement (the contract) in 2015 as approved by the Finance and Resources Committee and the NHS Lothian Board. At this point in time, several matters were not agreed between both parties related to reviewable design data. However, IHSL and Multiplex, the builders, were keen to start the construction work. Up until this point IHSL and Multiplex had invested heavily in design and contract discussions so were keen to be on site so payments could be received. This was needed to support the cash flow of Multiplex.

- Leading up to the settlement (February 2019), given the ongoing discussions and disputes between IHSL and NHS Lothian, it was noted that there was a risk through a lack of cash flow that IHSL were no longer financially sustainable and would in effect collapse. If this happened, potentially a new Project Co and alternative funders would be required further delaying the project. This influenced NHS Lothian (with Scottish Government approval) to agree to the £11.2 million financial settlement.

NHS Lothian contextual matters

78. The RHCYP project started in 2006. From 2006 the landscape of the NHS in Scotland has changed. In addition, guidelines and best practice for new hospitals continues to be issued, including for example revised guidance on infection control. The design of the RHCYP was modelled using forecasted patient data and forecasted clinical needs with the aim of having a flexible space which can meet future service demands.

79. An external Project Director was appointed, pre-dating the NPD decision. A project team was created, and this project team remained in place over the life of the project, albeit individual roles changed.

80. NHS Lothian recognised from the outset that they required additional skills to deliver the project and appointed financial, legal, and technical advisers. The technical adviser role, undertaken by MML, was key to the project and the timeline of key events.

81. The Project Director and the Clinical Project Director were full-time project roles. Others, including the SRO, were involved in the project alongside fulfilling their wider NHS Lothian roles and responsibilities. Clinical groups were brought in to support the early design work alongside an ongoing engagement and sign off role and remit. Skills were brought into the project from within NHS Lothian for their clinical knowledge and experience.

Ventilation matters

82. From our review of the guidelines, including SHTM 03-01 and Health Building Notices (HBN) relevant to ventilation, we would note there are several key components to ventilation of a new hospital.

- Temperature. The ability to control temperature and the ability for that temperature to operate within a range, varying depending on what the clinical function of the space is used for.
- Natural and/or mechanical ventilation and how these operate together.
- Air change rates per hour.
- Air pressure, including how air is extracted between rooms and corridors. Depending on clinical use pressure can be positive, balanced, or negative.
- Energy consumption and environmental factors.

83. These do not operate in isolation. For example, to achieve a certain temperature would require a mechanical engineering solution which may only drive a certain air rate change per hour, based on an assumption that pressure between the room and the ensuite would need to be positive. There are 1700 rooms in the RHCYP with different clinical usage and therefore specific ventilation requirements.

84. The error within the RHCYP was on air change rates. Within the key timeline of events, air change rates were discussed, relative to pressure, but were never contentious. Air pressure was the dispute from 2015 onwards alongside a focus on temperature control.

4. Key events

85. Our internal audit work identified key points in time and/or decisions which we believe are important to the RHCYP project in respect of ventilation. These are set out in this section of the report, and where possible aligned to the project timeline.

Procurement through to preferred bidder stage (2011 to 2014) [1]

The twenty, four bedded rooms designed in the RHCYP

86. The initial design work (2008 to 2010) for RHCYP was for the hospital to be all single rooms.

87. In 2010 the Clinical groups involved in the project determined the design should include four bedded rooms. This would allow patients with similar clinical needs to be treated together, recognising the social and wellbeing benefits for the children. This was also decided to best fit a financially affordable workforce model for the new hospital.

88. A Chief Executives Letter (CEL 1999) required all new hospitals to be designed as single rooms. Therefore, four bedded rooms were a variation on this requirement. A request was submitted by NHS Lothian to the Scottish Government Chief Medical Officer for approval. Approval was granted in 2011 for the inclusion of twenty, four bedded rooms in the RHCYP. Of the twenty, four bedded rooms, three of these rooms were planned within the critical care department.

89. At this stage, and then throughout the project, it was not identified by NHS Lothian and the other parties involved[2] that the SHTM 03-01 guidelines on ventilation did not set out what the ventilation requirements would be for the twenty, four bedded rooms. Model room types referenced in Appendix 1 of the SHTM 03-01 include single rooms, critical care, theatres, isolation single rooms, and general wards.

90. Where no guidance exists, NHS Lothian should set out what they require within the Board Construction Requirements (within the contract). Where the contractor cannot comply with the Board Construction Requirements or has a different design solution proposal then Project Co, under the terms of the contract, should submit a derogation for approval. The contract sets out that where competing guidelines exist, the more onerous should be followed. However, it is silent on when there are no guidelines.

91. In our view, based on review of documentation and our understanding, the ventilation requirements for the four bedded rooms remained open to interpretation. First within NHS Lothian and then subsequently between NHS Lothian and Project Co. There was never clarity and agreement reached over this matter.

Four bedded rooms designed within the critical care department

92. The lack of clarity noted above is further complicated by the inclusion of three, four bedded rooms designed within critical care.

93. SHTM 03-01 includes requirements for critical care. Critical care, as set out in Appendix 1 to the SHTM, requires 10 air changes per hour and positive pressure. Whilst what constitutes critical care is not defined in the SHTM 03-01, it is our understanding that all space used to treat patients within critical care is a clinical area and would require 10 air changes per hour.

94. However, from the outset there is a failure by NHS Lothian to identify that the four bedded rooms within critical care require a different ventilation regime from the rest of the four bedded rooms within RHCYP. This is subsequently not identified by Project Co.

95. There is then a continued failing within the project, when the four bedded rooms are being disputed over air pressure, to subsequently identify those within critical care. This is not acknowledged by NHS Lothian or by Project Co.

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[1] This stage shaped the project design and decisions taken by NHS Lothian and other parties involved in the project. It is noted that between 2011 and 2014 NHS Lothian had not entered a contract. The contract signed in February 2015 legally binds both parties contractually, and only from this date onwards.

[2] Mott MacDonald Limited (MML) and other technical advisers appointed, Multiplex Brookfield Construction (design and build), Wallace Whittle (mechanical engineers appointed by Multiplex), and Acadis (Independent Tester).

96. Throughout the project, discussions and review took place between the NHS Lothian technical advisers, the NHS Lothian project Team including Clinicians, IHSL, and Multiplex, yet no party identified firstly the lack of clarity and secondly that three four bedded rooms (out of the twenty) were located within critical care.

Generic and key rooms at design stage

97. The report produced, outlining the creation of a reference design (2012), recommended that within the ITPD reference design only drawings and specifications which should be shared are those for the rooms determined as “generic” and for the list agreed as key rooms.

98. Generic rooms were defined as “rooms which occur multiple times in the new RHCYP and require the same design”. The generic room clinical output specification was produced and agreed by NHS Lothian with input from MML and the clinical project team members.

99. There are 1,839 rooms within the RHCYP design. Of these, 756 rooms (41%) were covered by 31 generic room specifications.

100. We believe at this stage that four bedded rooms were incorrectly classified as a generic room. This is what was subsequently shared with bidders through clinical output specifications and broader reference design information. Given three four bedded rooms are within the critical care department and per SHTM 03-01 guidelines require a differing air change rate and pressure, the same mechanical and ventilation criteria cannot be applied to these rooms.

101. The critical care department was determined as a key room and a separate clinical output specification was shared in 2013 for critical care.

102. At this stage NHS Lothian and MML did not identify a risk of differing interpretation, and how the generic specification was to be interpreted and applied within critical care, and the differing requirements both of which are contradictory.

103. Both the generic room specification and the critical care clinical output specification were marked as approved by the clinical Project Director. Both documents were shared within Volume three of the tender documents.

104. The importance of this lack of clarity is demonstrated in the creation, and subsequent updates of the environmental matrix. Each room is classed per type of room. Four bedded rooms were specified as having 4 air changes per hour. Within the critical care department, where a four bedded room is referenced the generic specification was automatically copied across. This failed to identify that the four bedded room was in critical care. It is this error which is later not identified through review.

Early design work completed by NHS Lothian and determining how to use this work within the new procurement required

105. In January 2011 it was decided by the Project Director and project board to use the completed early design work through the creation of a reference design. This was to recognise early work completed including involvement of clinicians in design and the costs NHS Lothian incurred between 2008 and 2010 on the project.

106. Sharing of the reference design was intended to provide guidance to prospective bidders over the design principles and requirements of NHS Lothian.

107. This approach was endorsed by Scottish Government and Scottish Futures Trust to reduce the procurement timeframe. This also ensured work to date was not wasted.

108. Technical advisers MML produced a procurement option paper for the project board to consider and approve.

109. The paper outlined three options on reference design including the benefits to NHS Lothian and the bidders in adopting the differing approaches:

- Option A: Mandate clinical functionality (clinical functionality was the terminology used in the paper but within an NPD project the language is operational functionality).
- Option B: Mandate full design. This would mean that bidder needed to comply with the full design as already prepared by NHS Lothian.
- Option C: Mandate more detailed design with room for innovation from bidders. This was a hybrid approach which would still allow the bidders to innovate in design, which they would not be allowed to do under option B.

110. The options paper presented recommended the project board approve option A. This is not clearly captured in the project board minutes but we understand through discussions that option A was endorsed.

111. In our opinion, based on the review of the documentation and the subsequent reference design that was shared with the bidders during procurement, we believe what happened in practice went beyond what was approved by the project board. There is not a rationale documented that sets out why this was the case and how decisions on reference design were later taken by the reference design team and brought back into the NHS Lothian project team.

Operational functionality

112. Operational functionality is recognised NPD terminology. Operational functionality is a spatial concept.

113. NHS Lothian's responsibility is to define room layout, adjacencies, and how each individual clinical space will be utilised, including equipment.

114. Operational functionality is the only risk that NHS Lothian retain under the contract whereas design and construction risk rests with Project Co. If NHS Lothian incorrectly define operational functionality, for example the space no longer fits the equipment needs, then the cost to rectify the design, including any delay to the project, is solely incurred by NHS Lothian.

This boundary, between NHS Lothian and Project Co needs to remain clear.

Operational functionality is defined in the Project Agreement (Page 160 to 163 within definitions) as:

1. The following matters as shown on the 1:500 scale development control plan and site plans: point of access to and within the site and facilities; the relationship between one or more buildings that compromise the facilities; and the adjacencies between different hospital departments and within facilities.
2. The following matters shown on the 1:200 scale plans: point of access to and within the site and facilities; the relationship between one or more buildings that compromise the facilities; the adjacencies between different hospital departments and within facilities; and the adjacencies between rooms within hospital departments within the facilities.
3. The quality, description, and areas (in square metres) and the minimum critical dimensions of those rooms and spaces as indicated on drawings.
4. The location, and relationship of equipment, furniture, fittings and user terminals as shown in 1:50 plans in respect of: all bed and trolley positions; internal room elevations; actual ceiling layouts; the non-clinical services and supplies, storage distribution and waste management spaces; and ICT requirements.
5. The location of and the inter-relationships between rooms within the departments within the facilities.

115. Based on the above definition, mechanical and engineering requirements do not fall into the definitions of one to five as these are spacial in nature.

Creation of a reference design

116. NHS Lothian worked with MML between June 2011 and May 2012 to agree an approach to the creation of a reference design.

117. Approval was sought and granted to use early design work produced by BAM as principal consultants between 2008 and 2010. The decision to make use of this work was supported by Scottish Government and Scottish Futures Trust. The benefit of this was set out in the project board minutes as being able to make the procurement timeline as short as possible.

118. MML produced a report entitled “Reference design approach” dated May 2012. This was approved by the project board.

119. The report defines operational functionality and how within the reference design created, NHS Lothian would be mandating operational functionality. As operational functionality was to be mandated, the bidders could not make any amendments to these requirements and had to demonstrate compliance in the final proposals submitted.

120. Various versions of the reference design approach were considered and captured in differing drafts of the overall report produced by MML. This recognises the evolution of the approach and how the approach and thinking was developed between NHS Lothian, MML, Scottish Futures Trust, and Scottish Government. As the first Acute NPD in Scotland, thinking was still being developed and tested.

121. The report sets out that alongside mandated operational functionality, other information will be shared with bidders as helpful for bidders in articulating their proposals. This was noted as including room data sheets, output specifications for all generic rooms (including four bedded rooms), and key rooms (of which critical care was included).

122. In earlier versions of the reference design report produced by MML we noted:

- In one version the environmental matrix is classified as being mandated operational functionality.
- An updated draft states, “Similarly the environmental matrix specifies parameters and criteria that need to be met and for which bidders will be required to advise the levels that will be achieved in their particular design”.
- There is reference to the environmental matrix forming an appendix of the Board Construction Requirements.

123. Whilst the above points were updated in the final reference design report, there was no mention of the environmental matrix. We believe this evolution of thinking then moved through to the work of the reference design team and further ambiguity was seen in documentation. As a result, not all parties involved in the creation of the reference design may have had the identical level of understanding. Ambiguity, unintentionally, may have continued also into the documents which were shared within the tender process, and clarity over the purpose of the documents being shared.

Involvement in reference design team

124. A reference design team was established to oversee the development of the agreed reference design and the documents agreed for inclusion in Volume three and four of the tender documentation (Invitation to Participate in Dialogue, ITPD).

125. The reference design team consisted of:

- Hulley and Kirkwood, mechanical engineering
- Davis Langdon (led design team)
- Nightingale Associates (concept architects)
- Turner and Towsend
- BMJ (clinical architect)
- ARUP (infrastructure, transport, and fire)
- Montague Evans (limited town planning role)

126. In addition to the external parties noted above, NHS Lothian representatives attended the reference design team meetings, including the clinical Project Director.

127. Davis Langdon were appointed as the principal sub-contractor by MML. The role of Davis Langdon was project management.

128. Prior to 2010, Davis Langdon, Hulley and Kirkwood, Nightingale Associates, and BMJ were working with NHS Lothian on the capital RHCYP project. We understand, given their roles previously, they continued to be involved. As noted, David Langdon were sub-contracted by MML. Davis Langdon further sub-contracted to the other parties involved.

129. During 2012, Davis Langdon ceased to exist as an organisation and at that stage any roles fulfilled by Davis Langdon were transferred to MML.

130. A concern was highlighted by Scottish Futures Trust over the reference design team arrangements. The concern was over the number of advisers and that the advisers could gain a competitive advantage by joining the organisations who were bidding on the procurement.

131. NHS Lothian took steps to ring fence the work of the reference design team and ensured that this team had no access to the wider procurement information, which could give a competitive advantage. Once the reference design was completed, all parties involved were no longer contracted and could join bidding teams.

132. However, the point on the number of advisers involved, and their contracting arrangements, remained unaddressed. The concern by Scottish Futures Trust did not appear to be escalated within a key stage report and we noted no further discussion.

Reference design team project arrangements

133. The reference design team worked separately from the NHS Lothian project team and board. The linkage was between MML and Davis Langdon and the lead clinicians. From what we can evidence there was no clear reporting line in place between the reference design team and the project board. As a result, it may have been possible for this group to expand on the agreed remit and go beyond what was agreed by the project board. The reference team appeared to work independently on decision making.

134. As the reference design team left the project as the tender documentation went to bidders, they were unable to answer any questions of design detail the bidders may have had during competitive dialogue. This was acknowledged as a risk. However, this would be addressed by the Project Director and MML if design questions raised in competitive dialogue.

135. Given Hulley and Kirkwood created the matrix, and also supported wider on mechanical and engineering advice, specific thinking on the planned 4 air changes per hour through a combination of mechanical and natural ventilation may not have been fully understood by all parties.

136. We reviewed a series of project plans produced which governed the documentation and timeline for producing the reference design for inclusion in the tender. Inconsistencies were noted in the project plan, including:

- The incorrect inclusion of the environmental matrix as a mandated document.
- Environmental matrix referenced as included in an appendix.
- No reference to the environmental matrix as a shared document in either Volume three or Volume four.
- Documentation listed as within Volume three subsequently changed to Volume four.

137. This demonstrates a further lack of clarity over the status of the environmental matrix in the tender documents, and for what purpose the environmental matrix was being shared.

Documentation produced by reference design team

138. Whilst we could locate some minutes and documents produced by the reference design team, we do not believe these were the full suite of documents. As well as retaining documents on a shared internal NHS Lothian drive, an additional portal system was used to exchange documents between Project Co and NHS Lothian. The search functionality and overall user friendliness of the portal is limited.

139. Based on our understanding of the documentation reviewed, it is noted that the reference design team decided not to produce standard room sheets. However, the information to be included in the Invitation to Participate in Dialogue (ITPD), some of which would traditionally be in room sheets, included:

    1. General requirements
    2. Clinical output specifications (generic rooms and key rooms including critical care)
    3. Environmental matrix
    4. Design notes and schedule of operational equipment
    5. Accommodation schedule
    6. Operational functionality by reference design, as described in the documentation

140. It is unclear what control was in place to review the suite of ITPD documentation for completeness, accuracy, and consistency. In addition, the differing schedules were signed as approved by different members of the NHS Lothian project team, depending on the nature of the output.

141. Disclosable design data and information only was implied rather than explicitly stated in each of the documents shared within Volume three and Volume four of the tender documents. We believe a bidder, experienced in similar projects, would understand what NHS Lothian's responsibility was compared with Project Co's responsibility. However, there could have been a risk of misinterpretation, particularly where there was contradictory information.

142. Within the suite of documents listed, contradictions existed in:

    - The environmental matrix showed single rooms and four bedded rooms to have 4 air changes per hour
    - Clinical output specifications record the need for Project Co to comply with SHTM 03-01, which is 6 air changes for single rooms, 10 air changes for critical care, and no definition of guidelines for four bedded rooms.

Tender documentation – Inclusion of the environmental matrix in Volume three of the ITPD

143. The draft environmental matrix was included in Volume three of the ITPD. Volume three was overseen and produced by the reference design team. Sitting within Volume three were the clinical output specifications and schedule of accommodation, which directly relate to NHS Lothian requirements and what was defined as operational functionality. Hulley and Kirkwood produced the environmental matrix dated 2012 for inclusion in the tender. The matrix is identifiable as Hulley and Kirkwood via the logo. The matrix does not, and never, included NHS Lothian's branding.

144. Hulley and Kirkwood were specifically commissioned by Davis Langdon to deliver a mechanical and engineering project specification. Within this specification, an environmental matrix is recorded as a deliverable.

145. We noted an earlier matrix produced by Hulley and Kirkwood when working for principal consultants BAM. This version produced in 2010, correctly records critical care as requiring 10 air changes per hour in accordance with SHTM 03-01. This earlier version would have been produced on a design that pre-dated 2010. At this stage, four bedded rooms were not within the design.

146. The environmental matrix dated 2012 which was included in the tender documentation records, in the detail, includes critical care as requiring 4 air changes per hour. The guidance note tab at the front of the matrix (an excel document) correctly stages the SHTM 03-01 critical care guidelines of 10 air changes per hour. It is unclear how this is then subsequently incorrect in the detailed matrix. This looks to be, based on our review, human error in copying across the four bedded room generic ventilation criteria into the critical care room detail.

147. It would be reasonable to conclude that a control should have existed for Davis Langdon to confirm the accuracy and completeness of the environmental matrix. In addition, MML, as Davis Langdon was a sub-contractor, are contractually responsible for the quality of work undertaken.

148. NHS Lothian should have had a control in place to seek and be provided with assurance over the technical accuracy of the environmental matrix, and wider documentation related to reference design prior to inclusion in the tender. We have not been able to evidence a control within Davis Langdon, MML or NHS Lothian.

Mechanical and Engineering considerations by Hulley and Kirkwood on Temperature Control

149. In February 2012 Hulley and Kirkwood produced a report titled "Ward room thermal comfort analysis". This focused on mechanical and engineering solutions to achieve temperature control.

150. Based on our review of documentation, we identified strands of discussions (but not one paper or articulation of the problem and potential solutions) on:

- The clinical teams desire to cap temperature in the RHCYP to 25 degrees. This appears to flow from historical issues at the Royal Infirmary Edinburgh where temperatures were considered too high. The SHTM 03-01 allows for a temperature range with a maximum of 28 degrees. However, the clinical teams wanted to ensure no more than 25 degrees was reached.
- The desire to achieve this temperature while obtaining the most efficient energy solution for the building resulted in a mechanical and engineering solution which would have the optimum result.

151. The report outlines a ventilation solution to achieve the maximum 25-degree temperature cap. The solution set out is for ventilation with an air change rate of 4 air changes per hour.

152. We understand, based on discussion with the Project Director and Director of Capital Planning this would be a combination of mechanical ventilation (4 air changes per hour) and natural ventilation. The combination of mechanical and natural ventilation would result in 6 air changes per hour. This is what is required in the SHTM.

153. However, the combination of ventilation to that effect is not explicitly set out in the Hulley and Kirkwood report.

154. It appears that this report was accepted as the reference design, as articulated in the draft environmental matrix, which sets out air change rates of 4 per hour. We believe this is the origin of the 4 air changes being in the matrix from the outset.

155. However:

- The report did state that critical care required 10 air changes per hour and therefore did not inform the study undertaken by Hulley and Kirkwood. Given this acknowledgement, it is unclear why Hulley and Kirkwood did not ensure 10 air changes per hour was reflected in the environmental matrix for critical care.
- The draft environmental matrix states 4 air changes for all single rooms and four bedded rooms. There is no reference in the matrix to a combination of natural and mechanical ventilation to achieve the 6 air changes per the SHTM 03-01 guidelines.
- Natural ventilation includes the ability to open a window. Within critical care, due to infection control, a window would not be able to be opened.

Invitation to Tender documentation – The structure

156. The ITPD had four Volumes:

Volume	Content
One	Background and structure to the Invitation to Tender. Included NHS Lothian overview and financial and technical pro-forma.
Two	Project Agreement (draft contract, Project Co would be required to sign). Articles of association.
Three	Board Construction Requirements. This included clinical output specifications and the draft environmental matrix as an appendix.
Four	Data including reference design, civil/engineering structures, site drawings, planning, mechanical and engineering concept drawings, and energy outlines.

157. What information was included in the tender and where it was located evolved as the ITPD was built. From our review we were unable to note a rationale for why the draft environmental matrix was included in Volume three. As Volume four included reference design, this would have been the more obvious place for inclusion, if required at all.

158. The ITPD states there is no legal obligation between the bidder and NHS Lothian at this stage. A contractual obligation exists when the contract is awarded and signed by both parties. There are caveats within Volume one of the ITPD in relation to sharing of information only. However, individual documents are not marked information only (or as disclosable data). Recognising Volume four contains the reference design based on our understanding from how reference design was developed, this would be information only. However, the environmental matrix is included in Volume three alongside NHS Lothian requirements including clinical output specifications. Therefore, it is potentially less clear the overall status of the matrix – as a requirement or to inform the bidders design.

Approval of the ITPD

159. As evidenced in the project board minutes, significant time was spent reviewing Volume one and Volume two. Both documents were developed through ongoing iterations including legal adviser input.

160. It is noted that whilst the legal adviser's input into the project agreement included in Volume two, they did not write the Board Construction Requirements. We understand Board Construction Requirements were drafted by MML, reviewed, and signed off by the Project Director. However, we cannot evidence this in the documentation we reviewed.

161. From a review of the Board Construction Requirements shared within the tender documents, we noted within the mechanical and engineering section a statement that "Project Co shall provide the works to comply with the environmental matrix." This further creates a question over the status of the matrix. In addition, given the Board Construction Requirements list all guidelines for Project Co to comply, we believe this statement is not required.

162. The project board minutes note the approval of the ITPD for issue to the bidders shortlisted. However, from the project board minutes, it is unclear if Volume three and Volume four were reviewed.

Competitive dialogue phase (2012/13)

163. Three bidders participated in the competitive dialogue stage of the procurement. This stage took place between March 2013 and November 2013. An agreed structure was established, and a series of individual bidder meetings were held. These meetings were facilitated by the NHS Lothian project team and attended by MML for the technical input. After each stage, feedback was given to the bidder to support them in preparing their final tender submission. Where non-compliance was identified or a response at this stage was considered below expectation this was fed back.

164. We noted one bidder, not the appointed Project Co, outlined in their submissions that reference design was 4 air changes per hour and not 6 changes per hour as required in the SHTM guidelines, but this was acceptable to NHS Lothian. In the same submission, the bidder also notes the positive pressure to corridor, built into reference design, and acknowledges this is one option allowable, the alternative being balanced or negative pressure. We were unable to identify any further discussion or approval of this, by the NHS Lothian project team, in the documentation we reviewed.

Tender evaluation

165. Design and construction were one of the workstreams established. Guidelines for evaluating the tenders was produced and approved by the project board. This was to ensure consistency in approach and scoring within each evaluation workstream.

166. Mechanical and engineering submissions were evaluated within the design and construction workstream. The evaluation team comprised the Project Director, a representative from estates and facilities, and a technical adviser from MML. The team evaluated all three bidders mechanical and engineering submissions.

167. Design and construction submissions were allocated 23% of the quality assessment (out of 40% set for quality). Within this, the mechanical and engineering score constituted 3% (3 marks out of a possible 100).

168. Of the three bidders, Multiplex scored the lowest on the mechanical and engineering submission. Based on our review of the three bidder responses, the Multiplex bid appeared to lack detail compared to other tenders received. As we are not technical experts, we cannot comment on the quality of the technical information submitted.

169. Question eight within the submission required the bidder to answer: “Bidders are asked to confirm they comply with the NHS Lothian environmental matrix. Where they do not comply, to explain areas of non-compliance”. Multiplex’s response noted, “We comply with the environmental matrix”.

170. Another bidder responded to this question noting compliance alongside the inclusion of a revised environmental matrix where the bidder had identified changes they would propose. The changes included by this bidder did correct the environmental matrix to record critical care as requiring 10 air changes per hour. Other corrections were also made.

171. We note:

- The language used in the tender document implies the matrix is the responsibility of NHS Lothian, which bidders must comply with in their tender response, rather than a document shared by NHS Lothian to inform the bidders design only.
- Multiplex included a contradiction in the response which was not identified. The submission confirms compliance with all guidelines, including SHTM 03-01, whilst also confirming they will comply with the environmental matrix included in the tender (which is now known not to comply with SHTM 03-01).
- 3% for assessing mechanical and engineering is low, given the significance of this to the design and construction of the hospital (although at the time the high-profile issues were not reported and it is acknowledged a number of matters are important in the design and construction of a hospital).
- The evaluation team did not identify that one bidder corrected the error within critical care in the environmental matrix and there was not a read across between bidder responses.
- If one of the requirements was to demonstrate the mechanical and engineering design complied with the guidelines, including SHTM 03-01, two out of three bidders in confirming compliance with the draft environmental matrix may have submitted a non-compliant tender.

Clinical output specifications

172. A clinical output specification (COS) was prepared by each individual clinical team for all RHCYP departments. These were all approved by the Clinical Project Director. The output specifications and wider decisions, involving clinical engagement, were approved by the Clinical Project Director. Although the Clinical Project Director was a member of the NHS Lothian project board, little clinical discussion took place at the project board.

173. Healthcare planners were commissioned by NHS Lothian in 2011 to support with the preparation of the COS. The remit was to review the COS’s focused on ensuring that single clinical solutions were not presented in error, and incorrectly transferring risk to NHS Lothian which should rest as Project Co risk.

174. COS’s set out:

- Anticipated patient numbers modelled
- Number of rooms and room types including clinical and non-clinical spaces
- Equipment required including IT requirements

175. Each COS includes a section entitled environmental criteria.

176. Certain COS’s were included in reference design and the tender, including the critical care specification. The remainder were completed during 2014 and included as an appendix to the Board Construction Requirements within the signed contract.

177. A paper was presented by the Clinical Project Director to the project board. This set out an overview to producing the COS and an example COS. The full pack of COS’s was not submitted to the project board for review or approval. These were signed as approved by the Clinical Project Director.

178. Between 2011 and 2012, there were eight versions of the COS for critical care produced. There was little difference between the eight.

179. The final version dated October 2014, included in the contract, did not reflect all the review comments shared by the healthcare planners in early reviews. Annotations by healthcare planners noted where the COS was setting out one clinical solution, and a risk re operational functionality being prescribed. Not all these references appeared to be removed.

180. From our review of the final COS for critical care we note:

- The environmental section references the need to comply with SHTM 03-01, as well as Health Building Notices.
- Whilst the environmental section cross references to guidelines, other sections do stray into environmental requirements, for example “positive pressure lobbies”. It is not clear if this is across all rooms, or only limited to isolation rooms, which we believe was the intention.
- There is a reference to cohorting patients and all rooms requiring the same specification, but this is not further articulated, and the implications are unclear.
- It is not clear, based on our review, if the COS’s are more detailed than they needed to be as in places they were prescriptive when the cross reference to the guidance to be complied with may have been sufficient, to avoid contradictory comment.

181. From 2016/17 there was an ongoing dispute between Project Co and NHS Lothian regarding pressure regimes. This focused on the four bedded rooms. NHS Lothian determined rooms were to be balanced or negative in pressure. Project Co had designed the rooms as positive pressure. Project Co interpreted positive being what NHS Lothian required per the COS. There is ambiguity over the COS which may have led to either interpretation, based on our review.

Room data sheets

182. Room data sheets are contractually the responsibility of Project Co. There is a requirement, within the contract, that these are produced and submitted to NHS Lothian. The project team review the room data sheets and mark these as approved, where the information contained relates to operational functionality. Room data sheets show in greater detail the design and construction elements of the RHCYP including mechanical and engineering requirements.

183. Room data sheets are connected to the environmental matrix. The environmental matrix is the one document which captures all requirements for the 1,839 rooms. It is used by Project Co as a reference point without the need to refer to individual room data sheets.

184. Room data sheets are a recognised element of new build projects. There is not a prescribed way that these are created. In the case of the RHCYP, the environmental matrix was developed first, and this information replicated in the room data sheets.

185. The room data sheets submitted by Project Co at preferred bidder stage in September 2014 included:

- Generic four bedroom (multi-bed) within critical care specifies 4 air changes per hour with positive pressure.
- High acuity room in critical care incorrectly identifies 4 air changes per hour with positive pressure.
- Single bed isolation room in critical care is recorded correctly as 10 air changes per hour in accordance with the SHTM.
- Reference to ensuite facilities being within the design of critical care rooms.

186. As at September 2014 the project team did not approve the room data sheets. This unapproved status was acknowledged in the contract and formed reviewable design data which was not approved at point of contact.

187. The inaccuracies in the individual room data sheets correspond to what is set out in the environmental matrix. The inclusion of ensuites within critical care is a new error that first appears in the September 2014 environmental matrix produced by Project Co.

188. There are two reviews by the project team at this stage (and beyond) which may have identified the ventilation errors: the environmental matrix and the room data sheets. Despite numerous review comments being captured on both the matrix and room data sheets by the project team, and MML on behalf of the project team, these errors were missed.

Infection Control

189. The Board Construction Requirements include the need for Project Co to comply with Infection Control requirements (including specific reference in the mechanical and engineering section). This references guidelines:

- SHFN 30 “Infection control in the built environment: Design and planning”
- HAI-Scribe
- Health Facilities Scotland – Healthcare Associated Infection – Systems for controlling risk in the built environment
- NHS Lothian Infection Control manual

190. Throughout the project there are key prescribed points for Infection Control engagement, via the HAI-Scribe process.

191. The NHS Lothian Infection control team undertook, at preferred bidder stage, a review of the design to assess compliance with infection control requirements (HAI-Scribe 2). The review is based on the design drawings, room data sheets, and other information provided by Project Co. The assessment in November 2014 included a “no” response, against ventilation. The response included comment that further drawings were awaited to allow infection control to confirm ventilation was appropriate.

192. As drawings were not agreed at the point of contract, caveats were included in the contract over the respective status of the reviewable design data submitted by Project Co to NHS Lothian.

193. Based on our review we did not evidence the ventilation assessment being escalated through to the SRO and project board.

194. In November 2014, there was a flag that infection control was not able to assess ventilation as being compliant with infection control requirements. This issue got wrapped up into the wider outstanding reviewable design data between both parties. This was an early warning sign over ventilation which was not acted upon until later in the project, when both parties disputed ventilation pressure.

195. We can evidence infection control input during the project and consultation, or inclusion of infection control representatives, within specific design and construction consultations. Infection control also supported the clinical groups at points in time.

196. From review of the timeline of Infection Control engagement we note:

- Infection control involvement in the decision to endorse the environmental matrix to status B in 2016 was not evident
- Attendance at meetings with Multiplex to discuss the pressure requirements during 2016
- Involvement in July 2017 four bedded clinical risk assessments considering pressure. Whilst involved, we did not identify any evidence that Infection control raised concerns over critical care’s inclusion in the pressure discussions and need for different air changes.
- Representatives attended the project operational commissioning group meetings
- Infection Control were copied into emails between clinical teams and between clinical teams and the project team.

197. It is unclear, based on the limited documentation we have reviewed relevant to Infection Control, the relationship between the clinical teams and Infection Control in respect of who’s view would take precedence over the other. It is also difficult to fully understand how Infection Control were engaged in decision making compared with being included for information or action. In certain emails Infection Control were one of many receiving the email.

The Project Agreement (contract, signed in February 2015 at financial close)

Derogations agreed at financial close between Project Co and NHS Lothian

198. When the Project Agreement was reached, 42 derogations were agreed between NHS Lothian and Project Co. Derogations are where Project Co are unable to deliver a requirement within the Board Construction Requirements or propose an alternative solution. These need to be approved by NHS Lothian.

199. Of the 42 derogations, those relevant to our review were:

- Identification by Project Co of the incorrect guidance reference in a clinical output specification (an HBN is noted instead of the SHTM) and corrected to relevant SHTM.

- One in respect of the environmental matrix. The detail captured in this request by Project Co is less detailed than others and looked incomplete. Through discussion we understand this derogation arose to recognise at the time of signing the contract not all reviewable design data was agreed between both parties, and the matrix was included within reviewable design data.

- Derogation to accept non-compliance with the guidelines on 100% single rooms.

200. Although derogations were agreed, at this stage Project Co appears to have not identified that the SHTM 03-01 was silent on four bedded rooms, and that the Board Construction Requirements did not articulate NHS Lothian's specific requirement for these rooms.

Project Agreement (Contract)

201. Scottish Futures Trust have a model NPD contract, although this model contract does not include the technical specification element (Board Construction Requirements). The model contract was reviewed and updated by the legal advisers where changes were required.

202. The contract is 750 pages with numerous sections. Certain sections of the contact are owned by NHS Lothian, others are Project Co sections. The contract sets out what the change control requirements are, and how derogations to the contract are to be managed and agreed.

203. A draft project agreement was issued with the tender documents. This is what was signed by both parties in February 2015. The contract was considered by Finance and Resources Committee who recommended approval. This was endorsed by the NHS Lothian Board and approved by the Scottish Government. Scottish Government approval was required given the financial value of the contract.

Contract sections relevant to our review were:

Schedule 6 construction matters:

- Section 3: NHS Lothian's Board Construction Requirements
- Section 4: Project Co proposals
- Section 5: Reviewable design data (Project Co's expansion in more detail on how Project Co proposals will be delivered to meet Section 3)

Other relevant schedules include:

- Schedule 8: Review procedures (Derogations) including clause 12.6 (Board design approval-RDD review)
- Schedule 12 Change control

204. The contract, within Schedule 6, Section 3 states that where contradictory guidelines are within the Board Construction Requirements then the more onerous shall take precedence, and the more recent guidelines take precedence. NHS Lothian would determine what constitutes the more onerous requirement.

205. Where there is a conflict resulting from the use of the guidelines, Project Co should involve NHS Lothian in the decision making. The final decision rests with NHS Lothian.

Board Construction Requirements

206. Board Construction requirements are where NHS Lothian set out clinical and operational requirements for the RHCYP including specific design or construction requirements NHS Lothian want, which Project Co are to comply with. Within this section there is a list of all guidelines that Project Co are to comply with. This listing includes SHTM 03-01.

207. Therefore, we understand as at February 2015 there was a contractual obligation for Project Co to design and construct the RHCYP to comply with SHTM 03-01. Specifically, the critical care department should have had 10 air changes per hour. However, there is, we believe, an incorrect reference to the inclusion of the environmental matrix within the BCR's, which may, depending on legal interpretation, mean Project Co had to comply with the matrix and SHTM 03-01 guidance, which are now known to be contradictory.

208. SHTM 03-01 are guidelines. Our understanding is that as guidelines, they can be deviated from. However, the inclusion of the SHTM 03-01 in the contract makes this contractual.

Reviewable Design Data (RDD)

209. Reviewable design data includes detailed drawings of the RHCYP, room data sheets, and the environmental matrix. RDD is an extension of detail, setting out how Project Co proposals will be implemented to comply with the Board Construction Requirements. This will include detail that was not yet known or fully articulated when Project Co proposals were produced.

210. At the point, the contract was signed, RDD was not agreed by both parties. RDD had been assessed by NHS Lothian. Where the RDD item has been assessed as being category A or B in status then this was accepted, and Project Co could proceed with that build element. Where an RDD item was categorised as C or D this was not accepted, and review comments were outstanding to be able to move the categorisation.

211. The listing and corresponding categorisation of all RDD items was collated by MML and reviewed by the project team. This listing was included in the contract, with legal advice sought on how to contractually reflect the position.

212. Following the contract being signed, the contract protocol was followed by both parties to sign off the outstanding RDD items. NHS Lothian would only sign off RDD where it concerned operational functionality. It is difficult to understand, on review of the environmental matrix in particular, how this constituted operational functionality.

213. Where a design change was identified by Project Co, this had to follow the change protocol. Agreeing outstanding RDD was not a mechanism to agree changes to design and construction which were not previously captured in Project Co proposals.

214. The Volume of RDD that was outstanding at the point of the contract being signed was in our view substantial. Whilst we understand through discussion it is not unusual to have RDD matters outstanding at the point of contract, agreeing RDD and the exchange of paper work back and forward between both parties between 2015 and 2017 was extensive.

215. We could not identify a risk assessment as at February 2015 on the outstanding RDD and the need to enter the Contract, and the consequences for NHS Lothian on both possibilities. However, we do note the desire from Project Co to start the construction, to support their cash flow, given significant work on design to date had been incurred and payments could not start until the contract was signed. We also noted in project minutes the impact on a further delay on the timeline for delivery.

216. The assurance paper prepared by MML for the Finance and Resources Committee in 2015 did not identify any significant technical risks to NHS Lothian regarding the outstanding RDD.

Construction (2015 to 2019)

Environmental Matrix

217. An environmental matrix was included within the tender documentation.

218. Project Co took ownership for the matrix, in 2014 and the environmental matrix was a live document, subject to review by NHS Lothian project team and updates by Multiplex as the building construction commenced.

219. Some comments were successfully closed off and amended in the matrix. However, based on our review of the comments across each version of the matrix, no explicit concern was noted on the environmental matrix recording that what was set out in the matrix for critical care was incorrect. This remained the case throughout the entire project.

220. As noted earlier, the environmental matrix was an aspect of RDD which was not agreed by both parties prior to the contract being signed.

221. The environmental matrix was given a level B endorsement in 2016 from the project team. This allowed Project Co to carry on with the construction, as set out in the matrix. At the stage, the project team approved the environmental matrix and the ventilation equipment had started to arrive on the RHCYP site.

222. However, in endorsing the matrix, we note the following comments by MML:

"The Board have serious concerns over the upgrading Environmental Matrix to Status B considering some of the issues raised (as per MM-GC-2084) being the same as the issues that had been raised since FC. There are also concerns over the potential inaccurate information being transferred to the Room Data Sheets being submitted through RDD.

However, as requested by Project Co, the Board has upgraded the Environmental Matrix to status B, noting the Board still does not believe the Environmental Matrix and resultant design complies with the Project Agreement. Project Co's failure to comply with the BCRs / PCPs (as per MM-GC-002084) the Board believes would result in a non-compliant Facility.

The Board would suggest that Project Co resolved the non-compliant and other issues as a matter of urgency, and requests that Project Co issues a strategy for resolution of these issues."

223. Given the comment, and the ongoing concern of non-compliance, it is unclear why the matrix was subsequently endorsed. And whether full consideration was given by the project team, including advisers, on any implication for this to the future project delivery. The non-compliance referred to included pressure of the four bedded rooms, which was only resolved via Settlement in February 2019, four years after the comments were raised.

224. As no flag was included in the matrix as the principal route to start with of identifying non-compliance with the Board Construction Requirements, the default position was that critical care arrangements were assumed to be correct.

225. Further commentary on versions of the Environmental Matrix, the requirements set out for critical care, and the comments by the project team are set out in **Appendix 3 of the report.**

Ventilation correspondence

226. In the documentation reviewed, we identified certain ventilation correspondence between Project Co and NHS Lothian. The first one was in 2016, then further dialogue in early 2017. The correspondence did not relate to critical care. However, they did indicate a potential confusion between Multiplex's mechanical engineers and the clinical commissioning team on exact ventilation requirements. This included ventilation requirements to meet HSCRIBE infection control, and what arrangements would need to be in place to satisfy these requirements. The responses back to the queries by the project clinical director, copied to others in the project team, including MML give short responses and re-direct Project Co back to the incorrect environmental matrix.

227. This correspondence, if identified at the time, may have raised an increased flag to the project team on ventilation and the understanding of Project Co and whether this was aligned to NHS Lothian's understanding.

Relationship between Project Co and NHS Lothian

228. From our review of project documentation, we note a deterioration in relationship between NHS Lothian and Project Co. Many matters were submitted back and forth between both parties, and either partially or unresolved for longer periods of time. Examples include:

- Comments on the environmental matrix and up to a six-month gap before an updated environmental matrix was shared.
- Communication coming to NHS Lothian direct from Multiplex, rather than via IHSL, and equally NHS Lothian corresponding directly with Multiplex not IHSL, in attempts to see resolution.

- Pressure was flagged as a review comment on the environmental matrix in 2015 but only started to get resolved in 2018.

229. At the same time, from 2016 onwards the project team and MML were identifying concerns over design and installation compliance. As a result, the project team and MML increased their review and commentary on the submissions by Project Co, within the RDD process.

230. Our understanding is that the NPD contract ensures that Project Co are fully responsible for design and construction. The remit of NHS Lothian, and therefore the technical advisers supporting the project, only relates to operational functionality. However, when on review, an area of non-compliance is identified, then under professional obligations to deliver the project, this was notified to Project Co for correction. From 2016 onwards parallel matters were being debated between both parties routinely.

Four bedded rooms and pressure regime

231. There was an assumption by all parties that by 2016/17, everything already set out to date had been agreed and was correct.

232. When future discussions shifted to the pressure regime, this did not trigger the need to re-look at air changes, and wider compliance with the guidelines. Although comments existed in the environmental matrix, none were specifically raised within critical care.

233. The environmental matrix references ongoing comment by the project team on pressure regimes. This is not specifically related to the critical care department. The design of the four bedded room was positive pressure. The project team comment is that pressure should be balanced or negative. This was identified firstly in the four bedded room within Haematology and then broadened out to all four bedded rooms.

234. Project Co submitted in May 2016 a ventilation derogation request, for pressure and adjusting pressure via ensuite extracts. This was rejected by NHS Lothian and further discussion took place.

235. Comments in response from Project Co is initially to make the adjustment to ventilation in the ensuites, to give the room ventilation pressure desired. However, on further review, this was leading to excessive air changes per hour being required, impacting on energy efficiency.

236. It is on the review of the annotations by Project Co within the environmental matrix to change air rates to achieve desired pressure that it is identified by the project team and MML that critical care incorrectly references the inclusion of ensuites. However, no comment is made on critical care ventilation, pressure, or air changes.

237. Ongoing discussions took place between Project Co and the project team on pressure regime. This included NHS Lothian reviewing what they required, and what changes would be necessary.

Risk assessment for critical care (ventilation)

238. The subsequent risk assessments completed by the clinical teams in 2017/18 for the multi-bed rooms focused on the ventilation pressure regime, not air changes. The risk assessments were completed when it became apparent that Project Co, were not planning on changing the ventilation pressure designed. Risk assessments were completed to support the project team's evaluation of options available.

239. However, the opportunity to identify that three out of the twenty rooms were in critical care, and that critical care requirements were set out in the SHTM 03-01 was missed.

240. The completed risk assessments were undertaken by the clinical teams and did not appear to consider the guidelines that needed to be complied with, for example SHTM 03-01, and how these were complied with or otherwise.

241. Each risk assessment was signed off by the Deputy Associate Nurse Director. These were then assessed by the project clinical director and two commissioning managers. The risk assessments were first undertaken in 2017, but not signed off by the project clinical director until February 2018. It is unclear why there was delay in signing off these assessments.

Independent tester

242. The independent tester is a joint appointment between NHS Lothian and Project Co and is built into the contract.

243. The Independent Tester routinely visited the RHCYP site and reviewed the testing that Multiplex, and others, were completing. Following the Independent Tester visit, a report was produced for NHS Lothian and Project Co which identified a list of matters arising. Matters identified were categorised by the Independent Tester using a red/amber/green rating. A red rating was used to identify significant deficiencies which would delay the project delivery.

244. Within the contract there is a scope of work for the Independent Tester. This includes:

> Undertake regular inspections during the works, as necessary, in accordance with the Project Agreement. Report on the completion of the project identifying any work that is not compliant with the Board Construction requirements, Project Co's proposals and the Approved Reviewable Design Data (Approved RDD) and/or the completion criteria.
>
> Within Section 3 of the scope of services (design review) it states:
>
> Monitor the detailed working drawings and specifications for a sample number and type of rooms which in his professional judgment is appropriate to be selected by the Independent Tester to verify that they comply with the Approved RDD as described in the Project Agreement.

245. From a review of the contract, it does allow for the Independent Tester to certify based on the approved Reviewable Design Data. How this sits with the clause on identifying work not compliant with the Board Construction Requirements is unclear.

246. It is unclear if the Independent Tester should be responsible for identifying non-compliance with guidelines, including SHTM 03-01 within approved RDD, or where there are discrepancies between the guidance and what is agreed within RDD.

247. Reviewable design data agreed between Project Co and NHS Lothian includes the individual room data sheets.

248. Within the SHTM 03-01, it is stated "specific requirements for individual spaces and departments are included in the Health Building Notes (HBNs) and Activity Database (ADB) A-Sheets, or Scottish Health Planning Notes (SHPNs)".

249. In discussion with the Independent Tester it was noted, in their view, the specific requirements contained in the A-Sheets (the room data sheets) as incorporated into the environmental matrix takes precedence.

250. Schedule Part Ten "Outline Commissioning Programme" notes that the Independent Tester reviews the commissioning test results against the room data sheets, and the environmental matrix, not the general requirements within SHTM 03-01. However, this interpretation still appears to be subject to agreeing what is delivered is in accordance with the contract.

251. The room data sheets for critical care were not compliant with 10 air changes per hour as set out in the SHTM 03-01. The room data sheets were developed using the information in the environmental matrix, which shows critical care as being designed to have 4 air changes per hour.

252. Between financial close to approval of the environmental matrix, within the RDD process there were no changes to critical care.

253. From review of the Independent Tester reports, we note they were aware of the dialogue between Project Co and NHS Lothian on ventilation in the four bedded rooms. They did not identify any non-compliance within critical care testing as the testing validated what was in the agreed critical care room data sheets – 4 air changes per hour.

254. In discussion with the Independent Tester, we noted this role is not an arbitrator in disputes. From our review of the project steering board minutes, we note references to both parties, NHS Lothian, and Project Co, seeking to engage the Independent Tester in providing a view over which judgement on pressure within the four bedded rooms was correct.

255. The dispute between NHS Lothian and Project Co only related to ventilation pressure. It did not at any stage cover the air change rates designed. Both parties felt the other was unreasonably trying to influence the work of the Independent Tester and therefore compromise the independence of the role.

256. In 2018, following requests by Project Co and NHS Lothian, the Independent Tester provided a view. The view set out that there were conflicting views regarding the standards for the four bedded rooms and that in the circumstances the Board had the final decision regarding the standards. Following the commercial and technical meetings, NHS Lothian delegated the 6 air changes to 4 air changes within the settlement for the four bedded rooms.

257. In February 2019, the Independent Tester signed off the completion certificate and the building was handed over to NHS Lothian. The Independent Tester references the agreed financial settlement between IHSL and NHS Lothian in February 2019 and notes this resolves the disputed items between both parties.

258. Given the Independent Tester's expertise and knowledge, including SHTM 03-01, it would not be an unreasonable assumption that non-compliance within critical could have been identified and raised with Project Co and NHS Lothian.

Site visits by MML

259. In 2018 MML, on behalf of NHS Lothian, commenced a programme of site visits.

260. We understand this was considered necessary given the increasing number of concerns MML and the project team had on design compliance and the quality of work being undertaken. This was separate from the work of the Independent Tester.

261. The MML reports produced after the site visits focused on identifying poorer construction or evidence where the contractor appeared to be behind the project schedule. These were considered by the project team and raised in liaison meetings between NHS Lothian and Project Co.

Identification of ventilation and pressure regime

262. From 2016 to 2019, certain matters were subject to ongoing discussion between NHS Lothian and IHSL.

263. Ventilation was identified through comments in the environmental matrix on non-compliance with SHTM 03-01. Initial comments were noted in September 2014. This was in respect of the pressure regime, not air changes. It related to how Multiplex were proposing to ensure pressure within the room, between pressure in the room to ensuite. This was designed as positive. In achieving pressure overall in each room, it was identified there would be an impact on energy consumption and temperature under Multiplex plans. It is emphasised this non-compliance was identified as pressure only. No comments on ventilation were annotated on the matrix on critical care. The only annotation, through review by both parties on the matrix, was the identification in 2016 that critical care was identified incorrectly as having ensuite facilities.

264. The points raised continued to be unaddressed in subsequent updates of the matrix. Initially Project Co agreed to resolve the comments on pressure (February 2017). However, subsequently on review, determined they did not agree with the comments and would not make a change. When this happened, the issue was escalated. An early technical workshop was held by both parties and a resolution agreed, which was later withdrawn.

Differing view and interpretation

265. The project team and MML disagreed with Project Co, specifically Multiplex on the design of the ventilation pressure in the four bedded rooms. NHS Lothian stated the design should be balanced or negative pressure, not positive as was designed.

266. NHS Lothian commissioned an expert to consider the design on their behalf and form a view (David Rollinson, October 2017). This view was considered by Project Co, who separately commissioned DSSR Consulting engineers (December 2017). Subsequently two QC opinions were sought, as both parties considered legal action, prior to agreeing to seek contract resolution.

267. As internal auditors we are not legal experts, in what is a complex legal matter. Our review of these reports, and the QC opinions, recognising the legal privileged nature of these documents, noted:

- Reference to a Chief Executive Letter (CEL) 19 (2010) and SHTM 2.60 which require compliance with ADB sheets. ADB sheets require balanced or negative pressure to corridor in multi-bedrooms. There is a note on the Environmental matrix, from 2012 throughout, which implies the existence of the environmental matrix is in replacement of ADB sheets on the project.

- Industry guidelines for infection control set out the need for balanced or negative pressure.

- SHTM 03-01 allows for positive pressure on general wards

- Project Co understanding that the design of the four bedded rooms were the same in design as a general ward. A general ward, per SHTM 03-01, can have natural ventilation and therefore a different pressure regime.

- Question of was there clarity over whether the design was to treat the four bedded room as a single room or a general ward, and did both parties have the same view in design from the outset.

- Reference to Scottish Health Planning Notes (SHPN 04-01) and how these interfaces with SHTM 03-01. SHPN 04-01 – is Adult In-Patient facilities guidelines which reference four bedded rooms.

- 8.5.3 of the Board Construction Requirements references Air Quality. The section notes that "Project Co shall provide natural ventilation wherever possible, except where……e) Clinical requirements, as detailed in the Room Data Sheets, do not allow in areas such as isolation rooms, where positive or negative pressure are required…".

- Understand the Board may have an issue with air change rates but not subject to this report.

268. The expert report commissioned by NHS Lothian in October 2017 records "Understand the Board may have an issue with air change rates but not subject to this report". We believe this was about the 6 air changes versus the 4-air change rate. We identified no future further consideration of air change rates, the focus up to settlement continued to be on air pressure.

Dispute Resolution

269. Alongside ventilation significant matters of disagreement existed between Project Co and NHS Lothian. NHS Lothian explored options on how these matters could be resolved, including potential legal action. Several contract commercial meetings were held between both parties, on advice from NHS Lothian's legal advisers. At one stage resolution looked unlikely and NHS Lothian planned to pursue legal action through Court proceedings. At this point Project Co indicated a willingness for further discussion and resolution, resulting in ultimately the settlement in February 2019.

270. At this stage it is understood Project Co were experiencing cash flow difficulties. A risk was identified that the funders of the project could withdraw their funding support. The consequences, for NHS Lothian, would have been significant including a substantial time delay on the project and a risk that new funders may not be identified. Following discussions at the NHS Lothian Board and with Scottish Government approval, NHS Lothian entered commercial discussions to reach a settlement.

271. To reach a settlement (February 2019) there were a series of technical workshops, alongside commercial negotiation throughout 2018, to seek resolution on the technical matters. This included ventilation pressures.

Signed settlement agreement (SA1)

272. The settlement agreement was signed in February 2019. This followed a period of 18 months of discussions and negotiation. Whilst discussing and agreeing the more significant matters (including ventilation, but also discussions on drainage, fire dampeners and heater batteries), smaller items were agreed between both parties.

273. MacRoberts had a significant role in advising and concluding the settlement agreement. This included supporting NHS Lothian in contract negotiations, reviewing the legal contract and liaising with IHSL's legal advisers. This did not involve the completeness or accuracy of the technical items collated and included in the settlement, as this was technical in nature.

274. In reaching the settlement agreement, the position on ventilation and the accepted change happened within the technical workshops. We have not located all the minutes and decisions taken in the various technical workshops that led to the settlement agreement. We note certain documents are legally privileged and these are retained by MacRoberts. However, MacRoberts were not involved in the technical workshops.

275. The listing for inclusion in settlement was firstly developed by Project Co and subject to iterations through the commercial and technical workshops. The Project team, including MML, were involved in reviewing the listing. We did not identify an independent review of this listing, from anyone who had not been involved in the discussions, and therefore were removed from the detail history and look objectively.

276. As ventilation had been agreed, unlike drainage, heater batteries and fire dampeners it was not prominent in the papers prepared for the NHS Lothian Board.

277. NHS Lothian approved the signing of the Settlement Agreement in February 2019, following Scottish Government approval over the financial settlement. The settlement agreement approved for signing included a list of 81 items.

278. Within the settlement agreement it was agreed that the pressure within all twenty, four bedded rooms would be changed to negative or balanced.

279. The settlement agreement re-iterates what was already shown throughout the project in the environmental matrix that these rooms would have 4 air changes per hour. Captured in the settlement is the formal sign off that the three four bedded rooms within critical care were to have 4 air changes per hour. It was not identified at this stage, as it had not been previously identified, that critical care required 10 air changes per hour in accordance with SHTM 03-01.

280. Included in the settlement was the confirmation that all single rooms were to have 4 air changes per hour instead of 6. Whilst this was designed from the outset, this settlement inadvertently accepted 4 air change rates per hour within the single rooms located in critical care, in error.

5. Further observations not within NHS Lothian's influence

281. Within our review we identified further observations, which were not within the direct control or influence of NHS Lothian. These factors shaped the project and are points of context. As outside of our agreed internal audit scope, we have captured these observations below. These observations may be further explored within the public inquiry. Considering these points may lead to further improvements in delivering projects within the NHS and may fall under the remit of the centre of excellence being established within NHS National Services Scotland.

Guidance vs requirements

282. As set out in the Board Construction Requirements (of the contract) there is a substantial listing of all relevant documentation a contractor must comply with in their design and construction.

283. These include SHTMs, HBNs, and Chief Executive Letters (CELs). The documentation referred to has been developed and built up over a period. Consequently, there is not one comprehensive guide. In addition, there is no real clarity over what a guideline is, and open to interpretation and local decision, compared with what is a requirement and must be delivered.

284. The current suite of documentation cross-references multiple times to further guidelines or requirements. It is unclear how any contradictions across all these documents are subsequently addressed, and what would take precedent.

285. Lastly, in the case of the RHCYP project, when a project spans a lengthy period, if new guidelines are introduced over this timeframe at what point do you change approach. Albeit there would be a likely time and cost associated with the change.

286. It is a complicated map which needs greater clarity including what must be complied with, what is optional, and how contradictions are addressed. There should be one comprehensive source of standards setting out a clear framework.

287. Within the contract there is a list of requirements and guidelines that the contractor must comply with when building a hospital. What is unclear is whether these are requirements, so need to be in place, or if guidelines, what is the degree of interpretation that both NHS Lothian and/or IHSL have. There is not one suite of comprehensive standards that set out a clear framework.

288. A clarity over requirements versus guidelines would also help NHS Board's forecast in the costs and/or time of complying with all requirements, from the start of the project.

Assessment of mechanical and engineering requirements at procurement stage

289. The procurement for RHCYP took place in 2013. NHS Lothian followed the Scottish Futures Trust model weighting at the time which was sixty percent price and forty percent quality. Now greater weighting is given to quality than price in procurements.

290. The forty percent allocated to quality was segmented into elements with a combination of pass/fail questions and weighted questions. Mechanical and engineering accounted for three percent of the forty percent.

291. Given the history of ventilation, alongside wider design and build issues across the public sector, how much weighting mechanical and engineering should be given in the future should be considered.

Infection Control

292. The role of infection control is principally set out in Scottish Health Facilities Note 30 Version 3 "Infection control in the built environment: design and planning" (January 2007).

293. Infection control involvement is described in an advisory capacity. Infection control offer advice and guidance at certain points in time during the project.

294. The guidance and advice should be currently weighted up alongside financial implications, project delivery, and clinicians who are providing the services. It is not seen as more or less significant.

295. The role of infection control in future projects should be considered and built in. This could include role and remit through attending the project board, the sign off at points in time, and the weighting of the advice particularly where there are conflicting views.

Independent Tester role on NPD projects

296. Within NPD projects, the role of an Independent Tester is set out in the contract. This is an independent role appointed by both parties (NHS Lothian and Project Co). The contract sets out that the Independent Tester will validate that the design and build is following the Board Construction Requirements, Project Co proposals, and Reviewable Design Data.

297. The Independent Tester is an independent role and does not mediate between both parties. The contract sets out the need to comply with Board Construction Requirements and Project Co proposals, and the Independent Testers duties in respect of this obligation. However, it is not clear on what happens when there is an identification of inconsistency in requirements, what is the process in this circumstance, and what is the role of the Independent Tester.

298. The Independent Tester validates compliance through own testing and overseeing Project Co testing, completed by Project Co.

299. The Independent Tester asserts it is not a role that provides blanket assurance that all guidelines will be met, and that the building complies with all guidelines. The final certificate issued by the Independent Tester allows the building to be handed over and confirms the design as agreed is what is delivered.

300. Once the building was handed over, NHS Lothian were required to validate ventilation before moving patients into the new RHCYP. A third party, IOM, was commissioned in May 2019 to undertake this validation. IOM were commissioned to check ventilation against the SHTM 03-01 standards. This did not consider what was designed and contracted.

301. In future, there may be options to expand or better articulate the role of the Independent Tester. For example, if the Independent Tester had been validating back directly to SHTM 03-01, the error would have been identified. There is also consideration of whether the Independent Tester could have a broader role and/or be complemented through an on-site clerk of works role.

Building handover – sequencing

302. SHTM 03-01 requires an independent validation of ventilation to be commissioned. This is post building handover but before the facility is open to patients. This can only take place when building work is completed. For RHCYP, this stage was reached in May 2019. The building was handed over in February 2019.

303. Currently this is a client activity. Any non-compliance would then be discussed between both parties and resolved within the terms of the contract in place.

304. Given the significance of ventilation, it could be better to have the sign off on ventilation compliance before the building is handed over.

Technical Expertise

305. In March 2011, Scottish Government wrote to all NHS Board Chief Executives setting out the Scottish Government's conditions for delivering projects through the NPD model.

306. Within the letter it notes that the project team should provide a challenge function to advisers. In the case of NHS Lothian, technical advisers were appointed as NHS Lothian did not have these skills. The technical advisers worked alongside the project team, providing advice and guidance, which was subsequently followed by NHS Lothian.

307. Given the technical matters that arose, and the need for technical input and expertise, it is unclear how the project team would be able to effectively challenge the advice provided.

308. Going forward, a framework on how technical advice should be followed on these projects which considers much of this expertise will rest with advisers rather than within the NHS, would be beneficial. In particular, how a reasonable challenge can be established over the accuracy of advice and what assurance can be formally sought from technical advisers via the project director role.

Clinical involvement

309. Significant clinical engagement and direct involvement occurred over the life of the RHCYP project. Clinical groups are brought in for their clinical expertise. Those brought in to the project, do so for a period typically in addition to their clinical roles. Whilst fully understanding clinical requirements, they may be less familiar with the balancing, on capital projects, over clinical service delivery, financial impact, and project impact.

310. There may be merit in exploring how future clinical engagement takes place, including supporting clinical groups in whether the contribution is clinical services or supporting the delivery of the project, to achieve clinical requirements within the framework of guidelines for building new hospitals. At times, given the multiple guidelines, the two roles may contradict. There is also limited clarity on what the guideline states compared with what solution clinical groups may prefer, and how this is determined.

Timescales

311. By their nature capital projects bring complexity and delivery over a long period. It would be beneficial for clarity over how changes in guidelines or potential difficulties identified in other capital projects across the NHS and wider public sector are captured and factored into ongoing projects. All project decisions need to consider financial implications, quality factors and impact on project delivery timelines.

312. Building on this would provide greater clarity over decision making within the governance framework and how decision-making flows through the project governance established.

Scottish Futures Trust

313. The RHCYP project was the first large Acute NPD being undertaken in Scotland. NHS Lothian worked with Scottish Futures Trust to develop arrangements and inform NHS Lothian understanding. The project evolved rather than followed a descriptive set out pathway, particularly in the early stage.

314. Scottish Futures Trust had a dual role – advice and guidance to NHS Lothian and assurance over the project through key stage reviews. This assurance was undertaken on behalf of Scottish Government.

315. Observations relevant to Scottish Futures Trust are:

- Between 2010 and 2014 Scottish Futures Trust were represented on the NHS Lothian project board providing advice and supporting decision making. Alongside this role, they were providing independent assurance. Whilst each key stage report has a second reviewer, there may remain a potential conflict in fulfilling both roles.

- Based on our review of NHS Lothian project board minutes there was not always clarity on what decision was solely NHS Lothian's decision, or what decision needed to be taken based on advice from Scottish Futures Trust and Scottish Government to satisfy their requirements.

- The key stage review reports (five in total) identified areas for further consideration by NHS Lothian. The further considerations/actions were not risk assessed. On review, it was not clear what action NHS Lothian must take to progress to the next stage, and whether the observation was an improvement or a gap in NHS Lothian's arrangements to be addressed. In turn, the reports could have been clearer on what Scottish Government needed to be aware of, in terms of project delivery.

- Scottish Futures Trust appointed a Public Interest Board Member (PIBM). The PIBM is a member of Project Co Board and fulfils their responsibilities as an independent company director. The PIBM is to represent the public interest, fulfilled through the Board member role, as set out in the job description. When both parties encounter difficulties, the independence of the PIBM may be challenged.

Scottish Government Health and Social Directorate remit and responsibility

316. During the project, Scottish Government Health and Social Care Directorate sought and received assurances through a range of sources. In particular:

- Active attendance at NHS Lothian Project Board between 2010 to 2015 by the Deputy Director of Finance and Capital planning (at the time).
- Through Scottish Futures Trust key stage assurance reports.
- Formal sign off by Scottish Government on outline business case, full business case, prior to Financial Close and in 2019 in approving the financial settlement.
- Routine meetings between the NHS Lothian Director of Finance and/or NHS Lothian Chief Executive and relevant individuals within Scottish Government.

317. Going forward there may be benefit in greater clarity between the organisation, Scottish Futures Trust and Scottish Government over the expected sources of assurance over the life of the project and reporting lines. This should be clear on decision making responsibility versus assurance.

318. Where there is a change in Scottish Government policy, Scottish Government should work with the organisation to understand the impact, including unintended consequences. This should include a risk assessment.

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6. Recommendations

319. During our review we identified recommendations for management consideration. These are focused on the more significant matters arising from our review, designed to support NHS Lothian in strengthening its internal control environment. It is acknowledged that recommendations here may become superseded or impacted by the creation of the new National Centre for Reducing Risk in the Healthcare Build environment, which may result in a different framework for delivering projects.

Project route map outlining management activity and assurance activity

Report reference	
Section 4 and Appendix 4	**Recommendation:** Capital projects are governed by the scheme of delegation and standing orders. In the case of the RHCYP there was a project board, the involvement of Finance and Resources Committee and the NHS Lothian Board. Responsibility for decision making on the RHCYP project was not always clear and there was potentially less of a distinction between management and assurance. For future capital projects a road map approved from the outset, setting out the following would be beneficial: • The activities management have in place to identify and mitigate project risk and how this is to be reported • Role and remit of the SRO and the interface between the SRO and governance structures • The role of the Accountable Officer • The required skills, including capacity, and how this is going to be achieved • The structures in place to provide assurance to the SRO, to support the SRO in decision making. • Who has oversight of the "whole" project e.g. a single pair of eyes, in particular linked to contract responsibilities and ensuring delivery of the contract and can triangulate matters across the project. • How advisers are engaged, direct to support decisions or in an assurance role, and their interface into the project reporting lines • How governance structures, for example Finance and Resources and the NHS Lothian Board will receive assurance over the mitigation of risk and project decisions, and when and how this assurance will be received. • The distinction between assurance compared with updates for information, and the differing role anticipated This road map may then evolve during the project but would give clarity of management vs assurance, and the respective roles individuals, groups, and committees have within the project.
	Management Response: Within our current Scheme of Delegation, we have already defined for capital projects the roles of Senior Responsible Officer, Project Director, Project Manager, and Director of Capital Planning & Projects. Within that we have stipulated that the Director of Finance may not be a Senior Responsible Officer. There is also a link to the national capital process. It should be noted that the content of the Scheme was not in place at the start and during most of this project. A framework for decision making will be developed for capital projects. This will identify any required amendments to the Board's Standing Orders/Scheme of Delegation, and distinguish the role of management from those of the Board's Committees Action owner: Director of Finance Timescale: December 2020

Responsibility for making and approving decisions

Report reference Section 4 Appendix 4 and 5	**Recommendation:** The RHCYP project was complex, involving significant complex negotiations, both of a legal and technical nature. Throughout the project decisions were made routinely for example by clinical teams, the project team including technical advisers and project director. It is not always clear based on the project documentation retained what decisions were made when and by who, and how these were shared with the SRO, through the project board or project steering group or an alternative reporting process. Examples include: • Advice by the technical advisers and how this was formally captured as advice • How the project director and project team received assurance from the technical advisers and how this was assessed • The engagement of technical advisers direct with Project Co and how this was recorded as on behalf of NHS Lothian, and the clarity of who has a relationship with Project Co and for what purpose • How project changes and/or derogations are documented, assessed, and approved There should always be clarity over who, within NHS Lothian, is responsible for decision making, and what assurance has been provided to support that decision.
	Management Response: A process for agreeing and documenting technical changes/derogations is currently being developed for all Capital Projects. This will require to take account of the role and responsibility of the Centre of Expertise, as well as that of Technical advisers. This process for all Capital projects will be agreed by the Executive team Action owner: Director of Finance Timescale: December 2020

Clinical engagement

Report reference Paragraphs 86 – 88, 172-181, 189-197, 238-241 Appendix 4	**Recommendation:** Clinical stakeholders were identified and very involved in the project. However, there was not a clarity over the alignment (or otherwise) of the clinical need compared with guidelines and in which instance, what, would take a greater importance over the other. In addition, where clinical decisions were set out, how these linked and/or impacted on other decisions within the project. A framework for clinical engagement on future projects would support: • Clinicians being engaged and actively bought into the planned NHS Lothian outcomes. • Clarity over the specifications including how clinical practices, quality, financial, delivery is aligned and the weighting of the respective factors. • An understanding of the purpose of the engagement and involvement e.g. clinical expertise for a specific service. This could include how clinicians are trained to be involved in capital projects compared with trained through experience. • The balance between local ownership in the project vs responsibility for overall design • Involvement of Infection Control and how Infection Control advice, links to advice of others and how potential conflicting views are resolved If this framework were supported by greater clarity over what is a requirement compared with guidelines and a minimum requirement for a new hospital, this would support a greater understanding of what could be changed and what is required.
	Management Response: The Centre for Expertise will provide the clear framework for the minimum requirements for capital builds including an explicit determination of what is guidance and what is mandated. Inevitably local engagement with clinical teams will continue to be a key feature of capital projects going forward, given the need for local ownership and the rapidly changing nature of healthcare delivery. This requires the organisation to define from the outset what the Board's outcomes and specifications need to be, and each Project explicitly linked to the relevant Clinical Strategy A framework for clinical engagement, training requirements, and the process and delegated authority for derogations will be developed. This will be in line with the process for the agreeing and documenting technical changes referred to in Recommendation 2 Action owner: Director of Finance Timescale: December 2020

External Advisers

Report reference: Section 4 Appendix 5	**Recommendation:** NHS Lothian had technical, legal, and financial advisers. How each adviser engaged in the project, depended on the role and remit. The advisers with the most significant input through the project were MML as technical advisers. Over time the engagement with MML developed and whilst change orders were established, to approve new scopes of work, how NHS Lothian worked with MML on the project became less clear. Going forward, when working with external advisers we would recommend: • Ensuring clarity over reporting line • The distinction is clear between when the adviser is offering technical advice directly contributing to the decisions to be taken, compared with providing assurance to support NHS Lothian is taking a decision • How the advisers formally report into the project vs informal custom and practice as a member of the project team • Steps are taken to maintain the adviser's independence and objectivity We noted during our review the advice and input from the legal advisers was formal in nature, captured either through reports or formal email correspondence. This practice could be something to consider across all advisers.
	Management Response: It is fully accepted that there requires to be more clarity of the role of advisers, and their responsibilities at each stage of a capital project. The Board's Scheme of Delegation sets out that the Director of Capital is responsible for the implementation of the Board's overall capital plan through delivery of capital projects and applying project management resource and practices. This includes resource for Technical advisers. It is proposed that a review of the procurement of technical advisers is undertaken. This will include how the appropriate due diligence is undertaken on their brief, and how changes to this are managed. This review will include input from both the Board's Head of Procurement and the Centre of Expertise Action owner: Director of Finance Timescale: December 2020

Role, remit, and involvement in project boards

Report reference Appendix 4	**Recommendation:** In the case of the RHCYP project although the project board (and then the project steering board) had an agreed term of reference, this was not clear about who should attend, for what purpose and how this particular board was to support decision making. In particular, the project steering board (from 2015 onwards) had over 30 routine attendees. Going forward a clear framework for project boards for capital projects should be in place. This should include: • Ensuring right attendees are involved and defining what should be input into decision making. This should be a core group to facilitate the strategic discussions and focus on decisions. • The attendees have the capacity and skills required • Smaller sub-groups could support the project board and report to the project board, and this should be a defined reporting line. • Reporting lines from the project board into NHS Lothian's governance structure, including SRO (as referenced in earlier recommendations).
	Management Response: Over the last 15 years there has been a range of reports on how Projects should be managed. This includes the Scottish Capital Investment Manual which was updated during the course of the project. This is now reflected in the Board's Standing Orders with the role and responsibilities of the SRO, Project Director, Director of Finance, and Director of Capital Planning in relation to Capital projects set out. The Standing Orders requires that all Business Cases should be prepared in accordance with SCIM. The capital programme currently has several significant projects in comparatively early development. It is intended to undertake a rapid gap analysis of the membership, skills, and experience for Strategic Project / Programme Boards, in line with SCIM business case requirements and taking into account any emerging advice from the Centre of Excellence. This will be reported to Finance and Resources Committee. Action owner: Director of Capital Timescales: December 2020

NHS Lothian Framework for decision making

Report reference: Paragraphs 66, 77, 107 Appendix 4 and Appendix 5	**Recommendation:** Whilst most decision making rested directly with NHS Lothian, other parties were involved in either directly supporting the decision-making process or approval. In particular, the role of Scottish Futures Trust, as a member of the project board alongside producing key stage reviews. Without the sign off at key stages, NHS Lothian would not have been allowed to progress to the next project stage. The key stage reviews informed Scottish Government decision making, and the sign offs on the project as out with NHS Lothian's delegated authority. Based on our review of documentation the respective roles and responsibilities were not always clearly understood, by all parties involved in the project. On future projects it would be helpful for NHS Lothian to set out an overarching framework and timeline for the project, which can be approved by the NHS Lothian Board and/or Finance and Resources Committee (depending on delegations) This can build in: • Decisions to be taken by the NHS Lothian Board • Decisions where authority rests with Scottish Government and what informs Scottish Government decision making • How parties out with NHS Lothian inform decision making. This could be linked to the broader capital project route map, and built in here, or as a separate project document.
	Management Response: Scottish Government essentially defines health strategy and policy, and all Boards operate within the delegated authority that they have. Any capital scheme over £10m (and previously £5m) is beyond the Board's authority to take forward autonomously. NHS Lothian routinely works closely with Scottish Government and Scottish Futures Trust on capital and infrastructure projects/issues. For all major capital projects NHS Lothian requires approval from Scottish Government at key stages of the Project. Equally for Non-Profit Distributing (NPD) projects there was a gateway approach adopted by Scottish Futures Trust as the "owners" of the NPD process. NPD projects no longer exist. To address this recommendation further dialogue will be required with Scottish Government and Scottish Futures Trust colleagues. It is proposed that the outcome of this dialogue is incorporated within the actions set out in the Management responses above so that there is clear distinction in responsibilities amongst Scottish Government/Scottish Futures Trust/ NSS Centre of Expertise/NHS Lothian Action owner: Director of Finance Timescales: December 2020

Appendices

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The following appendices set out additional information and detail, expanding further on commentary in the main body of the report.

Appendix 1 Internal Audit scope including limitations

Review of NHS Lothian's internal controls and governance, including engagement with advisors, over the period of the project to seek to understand why NHS Lothian ended up in the current position.

Background

A1 In July 2019 the opening of the new Royal Hospital for Children and Young people (RHCYP) and Department of Clinical Neurosciences was deferred. Following this announcement, the Cabinet Secretary for Health and Social Care commissioned two separate reports which were published in September 2019. The KPMG report focused on certain aspects of governance and decision making ("the what") and the report from NHS National Services Scotland – Health Facilities Scotland (NSS – HFS) focused on the technical aspects of the new hospital and the failings identified. In addition to the two reports commissioned by the Cabinet Secretary, NHS Lothian's External Auditors (Scott-Moncrieff) reported on certain arrangements in their Annual Report to those charged with governance, focused on financial management, as requested by Audit Scotland.

A2 Following the publication of the two reports the Scottish Government announced the appointment of a Senior Programme Director who will oversee the actions taken to ensure that the facility is fit for operation, reporting directly to SGHSCD.

A3 The Cabinet Secretary for Health announced that there would be a public inquiry into the delay, and the NHS Lothian Chief Executive and Chairman have been having ongoing discussions with the Director General for Health and Social Care/Chief Executive for Scotland in respect of the NHS Lothian action plan. As part of the creation of the action plan the NHS Lothian Finance and Resources Committee (alongside the NHS Lothian Board) are keen to explore various aspects of accountability over the timeline of the project, who was involved and when (in what decision making capacity) and the how and why NHS Lothian found themselves in the situation they did.

A4 The Finance and Resources Committee met in September 2019 and considered the NSS and KPMG Reports and agreed that given the Board's responsibilities on governance and internal controls it was important that action was taken to develop a robust action plan in response, to allow NHS Lothian to make the necessary improvements in its control environment and learn lessons for the future. The Committee also recognised the accountability of NHS Lothian and that there may be a need to take appropriate internal action, depending on the contractual arrangements in place with the respective advisors and/or follow NHS Lothian HR arrangements (depending on the findings identified in the review).

A5 Given the wider link to internal control and governance the Finance and Resources Committee in September 2019 discussed and agreed the involvement of internal audit.

Scope

A6 The scope is set out in phases and depending on the outcome of phase 1, phase 2 will be undertaken. This will allow us to better understand the internal controls and governance in place over the period of the project, and will support management in determining if there is further action NHS Lothian can take, either in respect of individuals or the advisors, which may then require specific HR and/or legal advice.

A7 It is recognised in the scope of our work that this was a complex project involving multiple project roles and stakeholders, and as an NPD project needed to operate within certain arrangements, including financial arrangements, and throughout the project these complexities and requirements would have informed decision making.

A8 Our work is designed to support NHS Lothian in collating a factual record in advance of the public inquiry, clarifying the timeline of events and critical decision making and to support NHS Lothian in pulling the findings of the three reports together to come up with an action plan to be agreed and implemented, demonstrating how lessons have been learned within the organisation.

Phase 1 (reflecting discussions within Finance and Resources Committee and a follow up conversation with the Deputy Director of Finance, as internal auditor sponsor):

- To produce a timeline of the key events and decisions over the project lifecycle up until the announcement to delay the opening. The timeline will seek to build in the context for the decision making, and the rationale for how/why events occurred, where this can be determined. This timeline will act as a formal record for all NHS Lothian Board members, supporting the timeline for the public inquiry and providing a factual record of events.
- Linked to the timeline we will consider the scope and remit (including commissioned role and expertise, ownership and involvement in decision making, alongside roles in providing assurance) for all advisors* to the project over the timeline. For each advisor, a record will be maintained of the involvement in the project, outlining respective roles, providing a factual record. Where we identify potential failings or gaps in internal control/governance this will be identified, and this will cover NHS Lothian staff and advisors.

A9 *Advisors will include for example those internal to NHS Lothian for example Accountable Officer/Chief Executive, Project Sponsor, project owner as well as external parties including MacRoberts, Mott MacDonald, Independent Tester, Scottish Future's Trust and Scottish Government. To explore the root cause of the underlying issues (focused on why). This will help understand any gaps in NHS Lothian's governance or internal control arrangements so that management can devise new or amended internal controls (detective and preventative) to demonstrate lessons have been learned and the future approach at NHS Lothian is strengthened, particularly in relation to programme management.

Phase 2:

A10 Phase 2 is dependent on the outcome from phase 1. If during the course of our work we identify any matters which indicate that either individuals and/or advisors did not act in accordance with the agreed role and remit we would look to use our healthcare advisory specialists to support a further review to determine any potential failings and the actions the NHS Board could consider taking.

A11 Grant Thornton specialists that would be available to support this work include specialists in NPD and PFI models, Health Estate, procurement and contract management and forensics. We also have access to relevant technical advisors who we can utilise, if required.

Internal Audit review sponsor

A12 The internal audit review will be overseen by the agreed internal audit sponsors. They are the Deputy Director of Finance; Chair of Finance and Resources; and Chair of Audit and Risk. Internal audit is an independent assurance function. The three sponsors are named in an overseeing role only not to direct the work or influence the conclusions of internal audit. The Internal Audit sponsors, as set out, have seen and agreed this scope.

Approach

A13 For phase 1 our approach will include:

- Reviewing the three reports and pulling out key messages and synergies
- Speaking to KPMG to understand the methodology for their review and process followed
- Reviewing all documentation that has been collated by NHS Lothian for the project, focusing on understanding and evidencing the internal controls in place, the governance arrangements, timeline, and role/remit of advisors and their involvement.
- Based on the above 3 points we will then determine what interviews are required and the interviews will be based on our documentation review, and questions arising from that - focused on internal control, governance, and key roles (internal and external to NHS Lothian).

Limitations of Scope

A14 Our review was undertaken in our capacity as NHS Lothian's internal auditors, and under the Public Sector Internal Audit Standards framework. Our work focused on governance and internal control based on review of documentation and meetings with relevant individuals. The content of this report is solely based on the documentation retained by NHS Lothian which we reviewed alongside meetings with individuals we considered necessary to support our understanding.

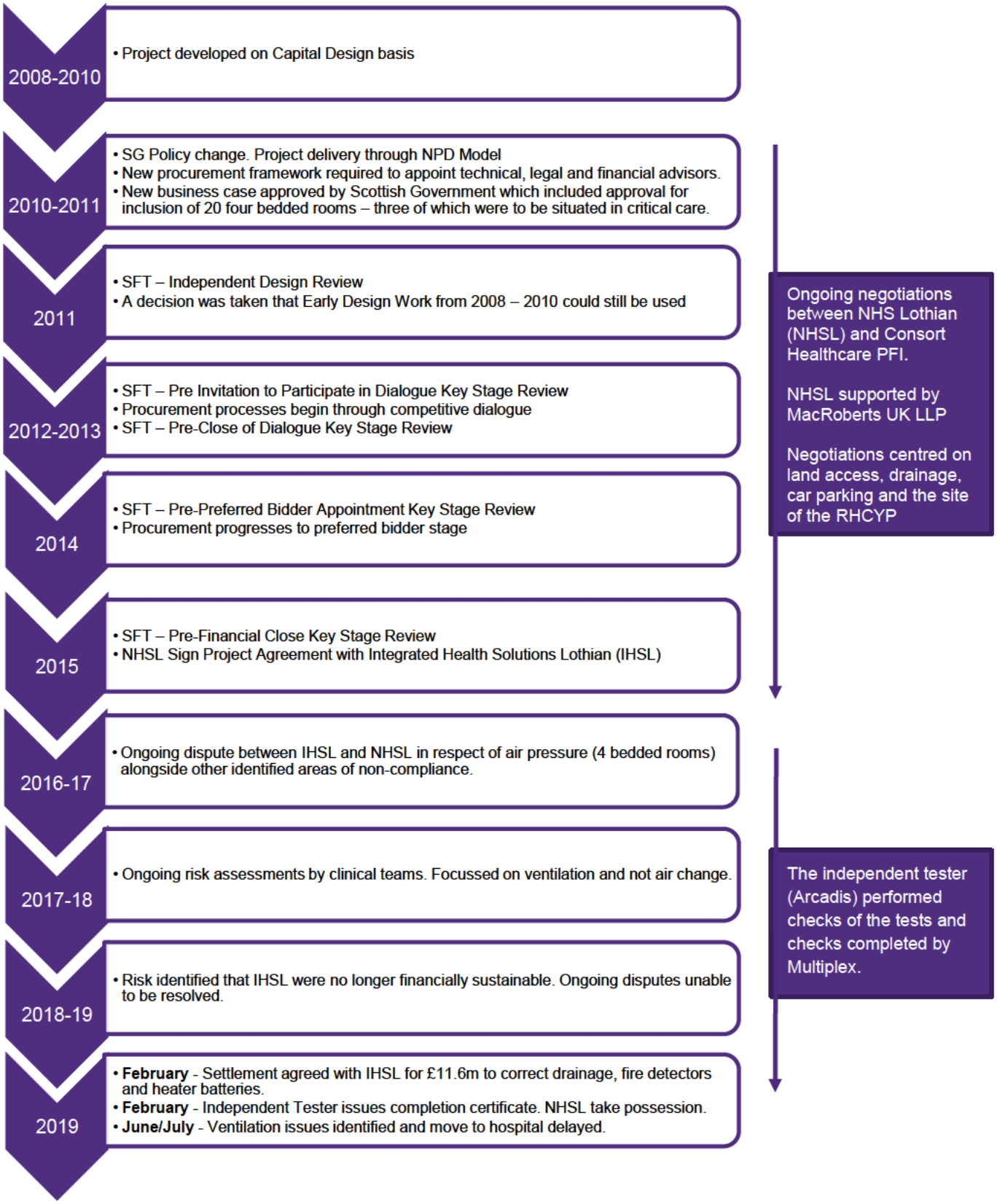
A15 Comments and conclusions made by internal audit in this report are based on our review of the documents we obtained and should not be regarded as offering legal advice or opinion. It is a matter for NHS Lothian to consider whether our findings merit further consideration and action and seek external views where appropriate.

A16 We identified several recommendations to support NHS Lothian going forward alongside certain wider observations which may be further considered within the public inquiry. These recommendations and observations are made in the context of our experience as internal auditors and may not represent all future actions. Should any additional information or documentation subsequently become available, relevant to our scope, we reserve the right to amend our findings considering that information.

A17 This report has been produced solely for the benefit of NHS Lothian and in our capacity as internal auditors for NHS Lothian. In preparing this report we have not considered the interests, needs, or circumstances of anyone apart from NHS Lothian.

A18 Any other party, other than NHS Lothian, that obtains access to this report or a copy under the Freedom of Information (Scotland) Act 2002 or through NHS Lothian's publication scheme or otherwise and chooses to reply on this report (or any part of it) does so at their own risk. To the fullest extent permitted by law Grant Thornton UK LLP does not assume any responsibility and will not accept any liability in respect of this report to any other party other than NHS Lothian.

Appendix 2 Project Timeline



Appendix 3 Environmental Matrix

A19 The environmental matrix is a tool which captures mechanical engineering requirements (as well as other data) for the hospital in an excel workbook.

A20 The mechanical engineering requirements set out in the matrix, in the case of RHCYP, were then replicated in the individual room data sheets and detailed drawings.

A21 The matrix has 3 worksheets:

- One: Guidance notes. These reference specific requirements NHS Lothian requested, per the Board Construction Requirements, alongside specific SHTM and HBN guidelines which need to be complied with.
- Two: Sets out all the room types within the new hospital for example single bedroom, corridor, office, theatre etc. This includes for each room type the mechanical and engineering requirements have
- Three. Records all rooms in the hospital, split by department. There is a column showing room type, and data for this room type from worksheet two is copied over.

A22 There are 1,839 rooms/spaces within the RHCYP and therefore the environmental matrix is large. Alongside air change rates it captures heating, type of ventilation, pressure and other mechanical engineering aspects related to the plant to be installed.

A23 As the matrix is mechanical engineering in focus, we understand it is the responsibility of the Project Co, as Project Co are responsible for the mechanical and engineering design.

A24 The report into governance and internal control (August 2019) referred to the environmental matrix as an NHS Lothian document. Whilst a version of a matrix was included by NHS Lothian in the tender documents this matrix was never branded with an NHS Lothian logo.

A25 Under the NPD model, all NHS Lothian should retain responsibility for is operational functionality and the mechanical engineering of the RHCYP does not, we believe, meet this definition.

A26 We reviewed the copies of the environmental matrix retained by NHS Lothian. Where we have included dates, these reflect the dates per the NHS Lothian document being saved. Not all versions of the matrix included formal dates. Our comments on the matrices are set out below, for each version we obtained and reviewed.

When*	Who	Purpose	Internal Audit Comments
2010	Hulley and Kirkwood employed by BAM (principal consultants) for when the project was capital funded.	Early mechanical and engineering considerations to support the design of the RHCYP.	• Correctly identifies critical care as requiring 10 air changes per hour. • Does not include four bedded rooms, as these did not form the early design. • The matrix was not complete, representing the status of the design work in 2010.

*When is determined using the date of the document retained by NHS Lothian. It is noted that in agreeing RDD, including the environmental matrix, Project Co's system was used to support the sharing and review of documents by both parties. Therefore, the dates may differ between parties depending on how records were saved and filled.

When	Who	Purpose	Internal Audit Comments
2012	Hulley and Kirkwood. This version was commissioned by Davis Langdon under a mechanical and engineering specification to support reference design.	This version was commissioned by Davis Langdon (sub-contractor of MML) under a mechanical and engineering specification to support reference design. The specification included specific reference to the environmental matrix to support design. This matrix was included in Volume three of the tender documents, alongside Board Construction Requirements and Clinical Output Specifications. The tender specification, and all four volumes were NHS Lothian documents.	The guidance note worksheet (worksheet one) includes the following guidance: • **HDU**: HBN57, SHTM 03-01 and 10 ac/hr • **Critical care**: SHTM 03-01 and 10 ac/hr Worksheet two, the master room type, records four bedded rooms as requiring 4 air changes per hour. For critical care (worksheet three) all rooms are recorded as being 4 air changes per hour, positive pressure. Worksheet one notes: *'This workbook is prepared for the Reference Design Stage as an easier reference tool to replace ADB RDS M&E Sheets for the Environmental Criteria elements as described on these sheets.'* The narrative above continues in all future versions. This arises later, in the independent engineering specialist report commissioned to support Project Co, in their interpretation of pressure and NHS Lothian requirements, as a potential source of interpretation difference between the parties. Whilst the guidance note (worksheet one) is correct the detail shown within the critical care department is not in compliance with the SHTM.

When	Who	Purpose	Internal Audit Comments
September 2014	Wallace Whittle (Multiplex mechanical and engineering design consultants).	This version of the matrix was produced at preferred bidder stage, leading up to Financial close. This formed Project Co proposals.	On review of this matrix we note the following: • Hulley and Kirkwood logo has been removed • Guidance notes (worksheet one) remain the same, alongside a reference referring to preparation for financial close • Guidance for Critical care and HDU is still recorded as 10 ac/hr in accordance with SHTM 03-01 (worksheet one) • In worksheet two, the room master type, it sets out “Bedroom” (4 ac/hr and balanced) • HDU as a room master type has been removed • Bedroom 4 ac/hr via ensuite and balanced pressure (worksheet two) • Multi-bed wards 4 ac/hr via ensuite and positive pressure to ensuite (worksheet two) • B1 (Critical care) open plan four bed (multi-ward) 4 ac/hr via ensuite and positive to ensuite (Worksheet three) The room master type states the four bedded rooms as having ensuites and this is what has then been copied into worksheet three for all 20 four bedded rooms in the RHCYP. The three four bedded rooms in critical care do not have ensuites so this is an error. The first version of the matrix (2012) did not show critical care as having ensuite facilities. The air changes shown for critical care continues to not be in accordance with SHTM 03-01 guidance (4 air changes per hour not the 10 specified). The air-change rate for the individual bedrooms is not in accordance with SHTM 03-01 as the SHTM 03-01 appendix one shows bedrooms as requiring 6 air changes per hour. Within the matrix all bedrooms have 4 air changes per hour.

When	Who	Purpose	Internal Audit Comments
2015 (Version 3, post Project Agreement being signed)	Project Co	Project Co proposals, forming part of Reviewable Design Data (RDD) discussion. Noted in Project Agreement (February 2015) as part of RDD not agreed.	In addition to the three worksheets a tracker has been added into worksheet one tracking comments received by the NHS Lothian project team. The NHS Lothian project team included MML as technical advisers. Whilst comments are recorded it is not possible to determine who in the project team made what comments. Note 4 annotated on the matrix states “detailed plans awaited on bedroom ventilation to achieve balanced/negative pressure to corridor. Single bed ensuite extract to be increased noted”. Whilst not specific to critical care it indicates a review comment by NHS Lothian querying pressure regime. Worksheet one (guidance) has had the word “isolation” inserted after the note “critical care air changes 10 per hour”. The insertion of isolation implies 10 air changes per hour only applies to the isolation rooms in critical care. Who inserted the work isolation is unclear, but a reasonable assumption would be this was Multiplex as they are responsible for the matrix and have ownership for the changes to the matrix.
Version ww-xx-dc-xxx-001 (Revision 2)	Project Co	Iteration of the matrix as design was being developed.	This version of the matrix does not have a date. On review there are no material differences between this version, and the version dated 26 November 2015.

When	Who	Purpose	Internal Audit Comments
Version 5 (dated 26 November 2015 and 11 February 2016)	Project Co (branded with the Wallace and Whittle logo)	Environmental matrix with tracker, tracking changes made by Project Co following NHS Lothian review. Part of process of agreeing RDD, including detailed drawings.	There is a reference in here to 2nd batch of comments There is a schedule (built into worksheet one), which is marked up with either a tick or a cross noting if there is a drawing implication, comment received at financial close, or a comment post financial close. This schedule includes a column headed NHS Lothian reference. Comments from the NHS Lothian project team include references back to guidance and relevant SHTM detail and whether Multiplex are complying with the guidelines in their design. A comment by NHS Lothian includes “refer back to reference design drawings. Extract via ensuite (SHPN-04). If no ensuite – via room”. Specifically related to critical care we noted: • B1 Room 063: 4 air changes extract via ensuite. Response states “refer to reference design drawings if no ensuite extract is via room”. There is then a tick to say this was a post financial close comment, and a note saying no action required. • B1 Room 090: Area of 8m squared. Project co to populate areas. Response: review carried out; update schedule of accommodation required for this item. Now updated. From our review of the project team comments it is noted that a substantial number of comments are raised, identifying questions over design and subsequent compliance with guidelines. However, no comments were raised directly against critical care, specific to air change or pressure (other than the point on ensuites above).

When	Who	Purpose	Internal Audit Comments
Environmental matrix Version 7 (19 September 2016)	Project Co	Updated following NHS Lothian comment – continuing to track changes.	Note included stating this version had been updated to suit revised accommodation schedule and general mechanical updates per drawings. There is a specific comment from the NHS Lothian project team which notes critical care does not have ensuites and the need for this to be updated. The NHS Lothian review comment is only in respect of the inclusion of ensuites. It does not state that what is included in the matrix for critical care does not comply with the guidelines in SHTM 03-01. From review of comments and correspondence to Project Co on this version, we noted the following relevant comments from MML: *"The Board have reviewed the Environmental Matrix and still has significant concerns on items that do not appear to comply with the BCRs...some ventilation rates don't appear to comply with BCRs. The Board would like to point that is still awaiting response from Project Co to the issued raised as per MM-RFI-00172 & MM-GC-002006 relating to ventilation rates.".* Based on our review, and looking at the comments, this is specific to pressure. The NHS Lothian project team endorsed the EM to status B. However, it was noted by MML on 7 November 2016: *"The Board have serious concerns over the upgrading Environmental Matrix to Status B considering some of the issues raised (as per MM-GC-2084) being the same as the issues that had been raised since FC. There are also concerns over the potential inaccurate information being transferred to the Room Data Sheets being submitted through RDD.* *However, as requested by Project Co, the Board has upgraded the Environmental Matrix to status B, noting the Board still does not believe the Environmental Matrix and resultant design complies with the Project Agreement. Project Co's failure to comply with the BCRs / PCPs (as per MM-GC-002084) the Board believes would result in a non-compliant Facility.* *The Board would suggest that Project Co resolved the non-compliant and other issues as a matter of urgency, and requests that Project Co issues a strategy for resolution of these issues.".* This comment was made by MML direct to Project Co.

When	Who	Purpose	Internal Audit Comments
Version 9 May 2017	Project Co	Continued dialogue between Project Co and NHS Lothian.	This notes that the matrix has been updated to reflect comments from the meeting on 17 January 2017, and responses (by Multiplex) dated 18 May 2017. For critical care this shows the following revision: • Open plan. 4 ac/hr. 1.8 positive pressure. • Open plan (3 cots). 4 ac/hr 1.9 positive pressure • Open plan (4 beds). 4 ac/hr. 0.5 positive pressure The guidance front cover tab remains unchanged and still records 10 air changes per hour in critical care (isolation rooms).
Version 10 September 2017	Project Co	Continued dialogue between Project Co and NHS Lothian.	This matrix notes updated NHS Lothian comments 28 August 2017 and then 12 September 2017 The tracker of comments between NHS Lothian and Multiplex are still recorded. There are now a cumulation of 50 review points NHS Lothian have raised in this matrix since 2015. Critical care in this version has changed: • B1 063 4 bed. 4 ac/hr. Extract of 3 and positive pressure • Open plan (cots). 4 ac/hr. Extract of 4 and balanced pressure Changes are still being made in red, to support tracking, and updated in the front tracker The guidance front cover tab remains unchanged and still records 10 air changes per hour in critical care (isolation rooms).

When	Who	Purpose	Internal Audit Comments
Version 11 October 2017	Project Co	Continued dialogue between Project Co and NHS Lothian.	NHS Lothian project board comments still included and notes revised schedules of accommodation. The information on critical care is still the same as previous, including the front cover tab referenced 10 air changes per hour in critical care (isolation rooms).

Summary

A27 Based on our review we note the following:

- No explicit comments were included by the NHS Lothian project team (and MML) related to critical care and compliance with SHTM 03-01
- Versions 3, 4, 6 or 8 could not be obtained. These may not exist; it may be due to referencing.
- The change to insert “Isolation” in the guidance tab was not marked in red by Multiplex, when at that stage all changes were to be marked in red to ensure easily identifiable. This change went unidentified by NHS Lothian.
- Each version of the matrix was reviewed by the NHS Lothian project team. MML in their project management support role collated comments and annotated the matrix directly with their observations as well, based on our understanding.
- Technical comments were made, including areas of non-compliance with guidelines, including non-compliance with SHTM 03-01 (out with critical care). None of these were in respect of critical care.

A28 There were substantial NHS Lothian project team (including MML) comments on the environmental matrix. Given NHS Lothian’s role was only to comment on operational functionality it is difficult to understand the connection between the matrix and operational functionality, given the purpose of the matrix and its focus on mechanical and engineering design. In addition, in reviewing the comments made, and other areas of non-compliance with guidelines identified, it is difficult to understand, why non-compliance with critical care was not identified.

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Appendix 4 NHS Lothian project and governance arrangements

A29 From the outset, as capital and then NPD NHS Lothian identified the need to appoint technical, legal, and financial advisers to support the project. The change to NPD delivery required a new procurement exercise to appoint advisers, including relevant experience of NPD/PPP projects.

A30 Project team arrangements were established pre 2010 and these remained the same, including the project director who was appointed on a full-time basis to the project.

A31 Scottish Futures Trust wrote to NHS Lothian outlining conditions of funding and support for the project. Within this letter, Scottish Futures Trust raised a question over the PPP/NPD experience within the project team and whether that was considered sufficient.

A32 Following the Scottish Futures Trust correspondence, and the change in funding, NHS Lothian reviewed the respective roles and responsibilities within the project. As part of this review, the SRO and project director reviewed the model roles provided by Scottish Future's trust with the NHS Lothian arrangements. The project team structure, roles and remits were discussed at the Finance and Resources Committee and approved.

A33 The full business case submitted to the Scottish Government in 2014, summarised NHS Lothian's roles as:

Role	Summary of Role
Senior Responsible Owner (SRO) (Director of Finance)	Overall responsibility for the project, being directly accountable to the NHS Lothian Board. Provides strategic direction and leadership and ensures that the business case reflects the views of all stakeholders.
Project Director	Lead responsibility for delivering the facilities and services agreed in the business case. Provides strategic direction, leadership and ensures that the business case reflects the views of all stakeholders.
Board Observer	NHS Lothian representative who will attend and participate (but not vote) at Project Co board meetings after financial close. This was determined to be the project director.
Project Clinical Directors	Represents clinical services in the project. Works with preferred bidder to financial close to complete design in line with the Board's Construction Requirements within the financial limits. Leads the implementation of the agreed service model in respective clinical services to deliver the associated benefits.
Head of Commissioning and Service Redesign	Ensures that the clinical enabling projects required in the RIE are delivered. Leads the overall service change and workforce planning implementation for the project. Leads planning for and co-ordinate the transition of services into the new facility in conjunction with Project Co.
Commercial lead (Director of Capital planning)	Manages the legal, commercial, and financial workstreams for NHS Lothian. Liaises with SFT regarding the funding competition. Interface with the RIE PFI contract. Supports the project director in relation to wider Board capital plan requirements.
Head of Property and Asset Management Finance	Responsibility for all finance aspects relating to NHS Lothian's capital plan / programme and lead financial input into the project.
Contracts Manager	Ensures that NHS Lothian expenditure is effective and efficient and that a productive relationship is established and maintained with Project Co. This role is endorsed by SFT and described in SCIM Guidance.

A34 A project board was created, chaired by the SRO. Whilst including the roles above this also included financial, estates and facilities representation from within NHS Lothian alongside the Director of Finance for Scottish Futures Trust and the Assistant Director of Finance and Capital for Scottish Government Health Directorate.

A35 A pivotal role was the project director. The project director was the interface between the project delivery teams, the professional advisers appointed, and the project board and SRO. Based on the organisation chart agreed in 2011, there were thirty different individuals, via groups, reporting to the project director.

A36 Project governance was fulfilled by the Finance and Resources Committee, the NHS Lothian Board and then Scottish Government (as the level of investment required ultimate decision making to rest with Government).

Observations

A37 Below we have identified our main observations in respect of NHS Lothian's governance and project management arrangements. Over a decade the control environment within NHS Lothian has changed. Given the nature of the technical matters, it is unlikely that differing management and governance arrangements would have identified the problem.

Governance observations	
NHS Lothian Board	NHS Lothian Board delegated business case consideration to Finance and Resources, as would be the usual arrangement for capital projects. Assurances over the project were received from Finance and Resources. In addition, update papers were presented. The NHS Lothian Board approved the contract in February 2015 and the settlement agreement in February 2019. Whilst routine updates were provided, often for information, they could have been more clearly structured to provide assurance to the Board. Despite the scale and the new NPD model, the Board, in terms of engagement, treated the project like any other capital project.
Finance and Resources Committee	Finance and Resources Committee can approve business cases within delegated financial limits. The NHS Lothian board approved an increase in delegated limits to Finance and Resources for the RHCYP project. The Committee were predominantly focused on the financial assurances for the project. Regular updates were provided either by the Director of Finance (in capacity as SRO and/or Director of Finance capacity) and/or the Director of Capital planning. The project director also attended the Finance and Resources Committee to present certain papers but was not a consistent attendee. Regular papers were presented, but like the Board there could have been greater clarity over what was an information paper, a paper providing assurance and a decision paper. Finance and Resources, following papers from the SRO and the advisers to the project reviewed the contract, which was ratified by the Board. From the outset there was no agreement, that we could evidence, which articulated the assurance needs of finance and resources over the project and how the assurances would be sought and achieved. If this had been agreed, there would have been a framework for reporting and clarity. Two Non-Executive members of the Committee attended the project board. Based on the documentation this was determined by Finance and Resources Committee, designed to support the project team. This was at the stage of complex Consort discussions and then the procurement of Project Co. We believe this created less of a distinction between the Finance and Resources non-executive assurance and scrutiny role, and that of operational management.
Scottish Futures Trust	Scottish Futures Trust have a role in providing assurance over the procurement and governance arrangements. This is done through formal key stage reviews. If Scottish Futures Trust were unable to provide assurance, Scottish Government would not approve.

Scottish Government	The RHCYP project was beyond the Board's delegated authority. Therefore, decision making rested with Scottish Government including the approval for NHS Lothian to sign the contract, and also the settlement in February 2019.

Project management observations	
Project Board (2010 to 2015)	SFT and the Scottish Government were members of the project board, contributing to discussions and providing advice. Whilst decisions rested with NHS Lothian, their roles were influential. The project board had many attendees and many groups supporting the project, who provided updates to the board or were in attendance. Collectively the project board made decisions. An alternative would have been to retain the larger project board structure, which then reported into a smaller leadership group. This would have allowed a strategic overview to be maintained as the SRO would not have been so close to detail.
Project Steering Board (2015 onwards)	This group had over 30 members and was too large to fulfil a steering board remit. On review of minutes it was more an information sharing group. Whilst the disputes between NHS Lothian and Project Co were outlined via project director updates the underpinning technical matters were not set out and discussed in detail. Ventilation is mentioned three times in the minutes between 2015 and 2019. Within the minutes there is no evidence over the scale of the difficulty and the exact dispute. Actions are noted including correspondence with the Independent Tester and Project co but follow up action and resolution is not reported back in a consistent way.
Clinical engagement	The appointed project clinical director was a member of the project board. Supporting this role was a myriad of clinical teams and clinical engagement. All these workstreams reported to the clinical director who updated the project board. From a review of project board minutes there is little updates on the clinical aspects of the project. Sign off, of documents relevant to the clinical aspects of the project were all signed by the clinical project director. In the governance structure, the clinical project director and the project director sat side by side. In practice, for sign-off of drawings (for operational functionality) if a clinical space the project clinical director signed off, if non-clinical the project director signed off. Although the project board was designed to include clinical input clinical engagement and decisions ran alongside but out with the project board.
SRO role and remit	When a capital project, an SRO was appointed. The first project SRO, due to a change in circumstance, had to step down and the Chief Executive asked the Director of finance to act in the SRO role. At the time of this decision NHS Lothian did not have a Chief Operating Officer. The SRO changed again in 2015 to the Deputy Chief Executive (Chief Operating Officer). The change was made by the Chief Executive. In practice, given the contract disputes, whilst the SRO was formally the Deputy Chief Executive, the Director of Finance was still involved heavily. It wasn't clear in the documentation we reviewed whether this was due to the significant financial and legal inputs required and acting in capacity as Director of Finance or whether the SRO was fully understood by all involved and who was doing what, as SRO. The Chief Operating Officer role is not a Board Member role, whilst they attend the Board. Therefore, Board updates continued to be provided by the Director of Finance. Lastly for a period the Deputy Chief Executive acted in capacity as Accountable Officer, whilst doing the SRO Role. This is an example of poor internal control, creating a risk over segregation of duties and review and oversight.

SFT Key stage reports	SFT produced key stage reports. These were acknowledged and referred to in update papers to the Finance and Resources Committee. The full reports were not shared with the Committee. Given the focus on this committee seeking assurances, the decision to share reports would rest with management.
Advisers	A framework for how advisers would report to NHS Lothian, including differentiating between technical input vs assurance over decision making was not clearly set out. Custom and practice built up over time, particularly with the technical advisers, who had the bigger adviser role on the project. The project team operated as one project team. When the technical advisers liaised directly with Project Co it is understood this was on behalf of NHS Lothian, but this was not articulated that we could evidence. From the outset, based on project team diagrams the technical advisers (finance, legal and technical) reported to the project director. Over time, the legal advisers, whilst still involving the project director, reported to the SRO for the project. An alternative could have been for day to day management this to rest with the project director, with the advisers then preparing papers for the project board, covering their remit, advice and assurance provided. At two stages in the project the advisers directly reported into NHS Lothian's governance structures. First, in 2015 when each adviser provided a supporting paper to give assurance to Finance and Resources and the NHS Lothian Board prior to signing the contract. There was varying degree of detail between the three advisers in these assurance statements. Subsequently there were legal assurances in February 2019 over the legal process, to support the NHS Lothian Board in agreeing the settlement. It is noted there was not the same degree of detail or input from the technical advisers to the NHS Lothian board at the stage of the settlement.
Liaison meetings and dispute resolution	A series of meetings were in place, providing project oversight between NHS Lothian and Project Co including liaison meetings. These became more important as disputes between both parties arose. Most dialogue and decision making appeared to take place in this forum. The minutes and agreed actions for all these meetings are not all retained by NHS Lothian. Although many will relate to legally privileged discussions and therefore, we understand will have been retained by the legal advisers. These discussions involved the Project director, Director of Finance, Director of Capital Planning and SRO. The Accountable Officer was not involved in these discussions. Evidence of Accountable Officer engagement and involvement is only at the NHS Lothian Board meetings contributing to discussions during the Board and certain Finance and Resources Committee meetings.
Settlement agreement	The dispute and discussions between both parties commenced in late 2017 and formal settlement was only reached in February 2019. This resulted in commercial dialogue alongside technical workstreams. The listing of items agreed within the settlement was developed over this time. Ventilation was an agreed settlement item. The full settlement agreement was presented to the NHS Lothian Board alongside statements from MacRoberts as the Board's legal advisers. Significant items including drainage and heater batteries were referenced explicitly in the covering papers as these remained disputed. Based on our review we could not evidence an independent review of the technical items compromising the settlement agreement. Everyone who was close to the detail, prepared the detail with no objective overview. Given the size of the listing, and that the error had been built into the project at an early stage the likelihood of it being picked up, would be reduced, but this was another opportunity missed.

Capacity and skills	Advisers were sought from the outset to support NHS Lothian. The technical advisers fulfilled general project management support and technical specialists. This skill was required and was brought into the project team with the project team working jointly together. Other roles in the project were fulfilled either through 100% project team for example project director, seconded into the project on a full-time basis from their substantive post e.g. clinical project director or fulfilled the role alongside other NHS Lothian roles and responsibilities. This was the case for the SRO, which is currently normal practice. Clinical input was through the views of clinicians aligned to clinical practices. Their role was not to understand the balance of clinical decisions vs project delivery and financial impact. They were not trained in project management or the delivery of capital projects. Recognising the scale and complexity of the project it is necessary to ensure individuals have the right skills but also the capacity to deliver the roles.

Appendix 5 Advisers and other parties involved, external to NHS Lothian

A38 The RHYCP is a complex project which evolved over a decade. The NHS Lothian project team recognised expertise was required for a project of this scale. In 2007/8 NHS Lothian appointed BAM as principal Supply chain partner to support the capital design.

A39 BAM appointed a series of consultants to work with them in fulfilling this role. NHS Lothian appointed Davis Langdon at this stage in a project manager capacity. In addition, as a capital project Ernst and Young UK LLP (EY) were appointed financial advisers.

A40 When the funding changed to an NPD, NHS Lothian, in accordance with procurement rules, undertook a procurement exercise to appoint technical, legal, and financial advisers, under procurement framework contracts.

A41 In 2010/11, the following advisers were appointed:

- Financial Advisers. Ernst and Young UK LLP (EY). This was a continuation of advice.
- Legal Advisers. MacRoberts UK LLP (MacRoberts). The CLO were not used as they did not have the required PPP/NPD experience or construction contract law expertise.
- Technical Advisers. Mott MacDonald Limited (MML). Prior to this stage MML had a small role, directly appointed by NHS Lothian as NEC Supervisor within the capital procurement process.

A42 There were two other key parties, external to NHS Lothian, involved in the project:

- Scottish Futures Trust (SFT). SFT were involved in providing advice and guidance to NHS Lothian on the NPD approach alongside assurance (procurement and governance) via key stage reviews.

- Scottish Government as project sponsor with ultimate approval through minsters from outline and full business case submissions.

A43 Role and responsibilities were set out in the covering paper to Finance and Resources in 2014, alongside the full business case. Extracted below is the summary table. What is set out remained the case throughout the project.

Role	Responsibilities
Project Manager – Mott Macdonald	The project manager will be co-ordinate the inputs of the appointed advisers and their interface with NHS Lothian and Project Co.
	Following financial close: • Coordinate due diligence on bidder solutions
Legal Advisers – MacRoberts LLP	The role of the legal adviser is to give appropriate advice in their areas of expertise, including up to financial close: • Evaluating and advising on all legal and contractual solutions. • Developing the contract documentation for the project, using SFT specific standard documentation where appropriate; and • Undertaking legal due diligence on Project Co's solutions.
	Following Financial Close: • Supporting the Commercial Lead in clarification and fine tuning of legal aspects. • Assisting NHS Lothian on implementation of the contract

Role	Responsibilities
Financial Advisers - Ernst & Young LLP	The role of the financial adviser is to give appropriate advice in their areas of expertise, including up to financial close: • Supporting the development of financial aspects of the FBC. • Developing the payment mechanism in conjunction with the technical advisers. • Reviewing funding and taxation aspects of the solutions; and • Preparing the accounting opinion for the Director of Finance.
	Following financial close: • Supporting the Commercial Lead in clarification and fine tuning of financial aspects. • Assisting NHS Lothian on implementation of the contract, for instance in the operation of the payment mechanism and reviewing calculation of the annual service payment.
Technical Advisers - Mott MacDonald Limited	The role of the technical adviser is to give appropriate advice in their areas of expertise, including up to financial close: • Supporting the development of technical aspects of the FBC. • Review of Project Co's proposals to ensure they meet NHS Lothian's objectives. • Developing the payment mechanism in conjunction with the financial advisers. • Undertaking technical due diligence and scrutinising costs of Project Co's proposals • Reviewing Project Co's planning submission. • Supporting the Project Director in clarification and fine tuning of technical issues.
	Following financial close: • Assist with general queries and assist with technical due diligence. • Support the Project Director in the construction and commissioning phase.

A44 Based on our review of documentation, other relevant points are below.

MacRoberts UK LLP

A45 Following early discussion between NHS Lothian and the Central Legal Office (CLO) by the Director of Finance and SRO for the project it was agreed that the CLO did not have the contract legal skills required for the project and sufficient legal expertise over NPD contracts.

A46 Key areas of legal input were:

- The SA6 agreement, which was the agreement between NHS Lothian and Consort Healthcare around the site, including the inclusion of the DCN.
- Any amendments to the contract templates for NPD projects, provided by SFT.
- Review of any legal documentation and/or contracts before signing, including the contract between NHS Lothian and IHSL.
- Litigation advice between 2017 and 2019 as contract discussions were ongoing between NHS Lothian and IHSL.
- The SA1 agreement which was the signed settlement in February 2019.

Mott McDonald UK LLP (MML)

A47 MML were the appointed technical advisers in 2011. Their services were procured via a public sectors contract framework and the contract signed by the SRO for the project in June 2011. The costs of the technical advisers were the largest costs NHS Lothian incurred, on external advisers for the project.

A48 MML employed sub-contractors Davis Langdon and Turner Townsend. We understand the appointment of Davis Langdon was requested by NHS Lothian as up to 2010/11 Davis Langdon had invested in the project, had cumulative knowledge, and had an established role. The contract in place was between MML and Davis Langdon.

A49 Within the 2011 contract a scope of work was included which broke down activities into deliverables, days input and who was responsible.

A50 The contract with MML, signed in 2011 has remained in place. In addition to this contract, project work orders were produced by MML throughout the project which were approved by NHS Lothian. These work orders consider changing scope, from the initial contract and additional work undertaken by MML. There are a substantial number of these over the life of the project.

A51 Specific roles that different individuals within MML have had on the project to date include:

- Technical advisers across a suite of specialist areas including mechanical and engineering advice.
- Developed the approach to reference design in 2011 following agreement by the NHS Lothian project board on procurement options.
- Involvement in the reference design work.
- Project management services providing support through project management working alongside the NHS Lothian project team.
- Involvement in technical workshops where technical advice was required.
- Supporting the technical evaluation of the three tenders received.
- Providing commissioned specialist advice for example an engineering report on the site of the RHCYP to support the SA6 agreement.
- Site visits. These were ad hoc and at the request of NHS Lothian.

A52 Based on the agreed roles and remits within the project, MML's principal reporting line with the NHS Lothian Project Director.

Number of advisers involved in the project between 2011 and 2013

A53 The number of parties, external to NHS Lothian involved between 2011 to 2013 was substantial and involved differing contractual arrangements.

A54 NHS Lothian directly contracted with:

- MML (contract signed in June 2011)
- Tribal Consulting. Tribal were appointed healthcare planners. Subsequently Tribal were taken over by Capita and between 2010 and 2012 both organisations were named in documentation.

A55 MML undertook work directly alongside the two sub-contractors MML entered into an agreement with – Davis Langdon and Turner Townsend. In addition, Thomson Gray were a sub-contracted party of MML's providing a cost advisory service.

A56 Davis Langdon, further sub-contracted work under their contract with MML to:

- Hulley and Kirkwood (H&K). Overseeing the mechanical and engineering project advice
- Nightingale Associates. As architects they were original appointed by BAM in the early stage of the project and this appointment retained their knowledge and experience to date.

A57 Davis Langdon initially acted in a project management role and oversaw the reference design work. Once reference design work was completed Davis Langdon left the project. At this stage (March 2013) the project management function transferred to MML. From March 2013 onwards MML were the only technical advisers working on the project.

Scottish Government remit

A58 Scottish Government:

- Representative attendance the project board to contribute to discussions and decisions. The project board was attended by the Scottish Government's Deputy Director of Finance and Capital planning covering the period 2011 to 2015.
- Scottish Government decision making and approval for example full business case.

A59 Scottish Government took the policy decision to change the project from being funded from capital to being funded as an NPD project. This decision was announced in 2010 without any prior discussion with NHS Lothian on potential implications or consideration of options.

A60 The deviation from the guidance in an NHS Scotland letter to Chief Executives (CEL) for all new hospitals to have 100% single rooms was signed off by the Chief Medical Officer for the Scottish Government in 2011. This allowed NHS Lothian to design the RHCYP with four bedded rooms.

A61 In addition, Scottish government signed off the revised outline business case in 2011, the final business case in 2015 to allow the contract to be signed, and the sign-off of the settlement sum in February 2019.

A62 Over this time Scottish Government approval was informed by the assurances from Scottish Futures Trust via key stage review reports, and direct representation on the NHS Lothian project board.

A63 Throughout the project, as they would with other capital projects, NHS Lothian kept the Scottish Government updated, and Scottish Government signed off the respective plans.

Independent Tester – Arcadis LLP

A64 In 2015 NHS Lothian and Project Co procured the services of an Independent Tester. This is a recommended role for NPD projects. The role is based on a risk assessment, to consider compliance with the build phase of the hospital with the contract between NHS Lothian and Project Co (namely the board construction requirements, project co proposals and reviewable design data). Routinely the Independent Tester provides reports to both parties and this included risk assessed actions, to be rectified, typically by Multiplex as the builder. The hospital cannot be handed over to NHS Lothian without the Independent Tester's final completion certificate.

Post building handover ventilation – I.O.M.

A65 As required in SHTM 03-01 post building handover an independent compliance check should be undertaken on the ventilation before the building is occupied. NHS Lothian commissioned I.O.M. to undertake these required checks. This is in accordance with the current guidelines in the SHTM 03-01. Although the building was handed over in February 2019 this only happened in May 2019 as the remaining work had not yet been completed by Multiplex for the testing to take place.

Scottish Futures Trust

A66 The role of SFT was notified to NHS Lothian in a letter, related to conditions of the NPD model. Within an update on the project to Finance and Resources, covering the funding change, the role of SFT was set out. SFT were automatically involved in the project, as agreed by Scottish Government and SFT.

A67 SFT attended the project board meetings between 2010 and 2015. In addition, SFT were also represented on the project steering group board established in 2015 and attended on an ongoing basis. SFT were the only party external to NHS Lothian who had membership of the steering group beyond 2015.

A68 SFT were engaged from an early stage. SFTs role is providing assurance, on behalf of the Scottish Government that the project is being delivered effectively and within the financial model agreed. This is done through the completion of key stage reviews. Key stage review reports are produced and signed off by NHS Lothian, submitted to Scottish Government. Without SFT sign off at each stage, NHS Lothian would be unable to progress to the next stage of the project.

A69 Alongside assurance, SFT also provided advice. Advice included sharing experiences of NPD projects, what skills and experience were required, key points in time, and templates. In addition, specific to this project, additional advice was needed over the site and the arrangements between NHS Lothian and Consort.

A70 There were 5 key stage reviews completed and reported by SFT:

- Stage 1: Approval of project pre-OJEU stage 2012
- Stage 2: Pre-ITPD stage. March 2013
- Stage 3: Pre-close of dialogue. December 2013
- Stage 4: Pre-preferred bidder appointment. February 2014
- Stage 5: Pre-financial close. February 2015

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
Alex Joyce, Employee Director
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:

23 August 2019

7. DATE BY WHICH THESE TERMS SHOULD BE REVIEWED:

From: Henderson C (Calum) on behalf of DG Health & Social Care
To: Executive, Chief; Houston (Brian [redacted]
Cc: DG Health & Social Care; McLaughlin C (Christine)
Subject: Letter from Malcolm Wright - 13 September 2019
Date: 13 September 2019 13:12:00
Attachments: Letter - MW - B Houston and T Davison - NHS Lothian Level 4 Escalation - Sept 2019.pdf

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Both

Please find attached from Malcolm Wright

Regards

Calum

Calum Henderson
Assistant Private Secretary to Malcolm Wright, DG Health and Social Care and Chief Executive NHSScotland
[redacted]
E: [redacted]
Telephone: [redacted]

Director-General Health & Social Care and
Chief Executive NHSScotland
Malcolm Wright

Scottish Government
Riaghaltas na h-Alba
gov.scot

[redacted]

Brian Houston, Chairman of NHS Lothian
Tim Davison, Chief Executive of NHS Lothian
Waverley Gate
2-4 Waterloo Place
Edinburgh
EH1 3EG

13 September 2019

Dear Brian and Tim

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

Following the decision to halt the move to the new hospital, the Cabinet Secretary commissioned two independent reviews. The first by NHS National Services Scotland (NSS) to undertake a detailed assessment of all systems in the new hospital that could impact on safe operation for patients and staff. The second by KPMG to conduct an independent audit of the governance arrangements for RHCYP, ensuring a full understanding of the factors that led to the delay in the hospital's opening on 4 July 2019.

Having reviewed the contents of both reports that were published on Wednesday 11 September I have concluded, on the basis of scale of the challenge in delivering the Royal Hospital for Children and Young People, that NHS Lothian is escalated to Level 4 of our performance framework for this specific project. This level is defined as 'significant risks to delivery, quality, financial performance or safety; senior level external transformational support required.

In her statement to Parliament on Wednesday 11 September, the Cabinet Secretary set out the steps that will now be taken to strengthen the management and assurance arrangements for completing all of the outstanding works necessary to open the facility. We will retain the RHCYP Oversight Board which includes senior figures from Scottish Government Health and Social Care Directorates, NHS National Services Scotland, Scottish Futures Trust and NHS Lothian. The Oversight Board will continue to take overall responsibility for the completion of the works and opening of the hospital, reporting directly to the Cabinet Secretary. Underneath that Board a Senior Programme Director will be appointed, reporting directly to Scottish Government and this will be further supported by additional independent technical advice, to give the confidence that is required over the management and oversight of the actions identified to ensure the facility is fit for occupation.

I have appointed Mary Morgan to the role of Senior Programme Director, effective from Monday 16 September. Mary is currently Director of Strategy, Performance and Service Transformation in NHS National Services Scotland and most recently was Director for the Scottish National Blood Transfusion Service and led the successful completion of the new

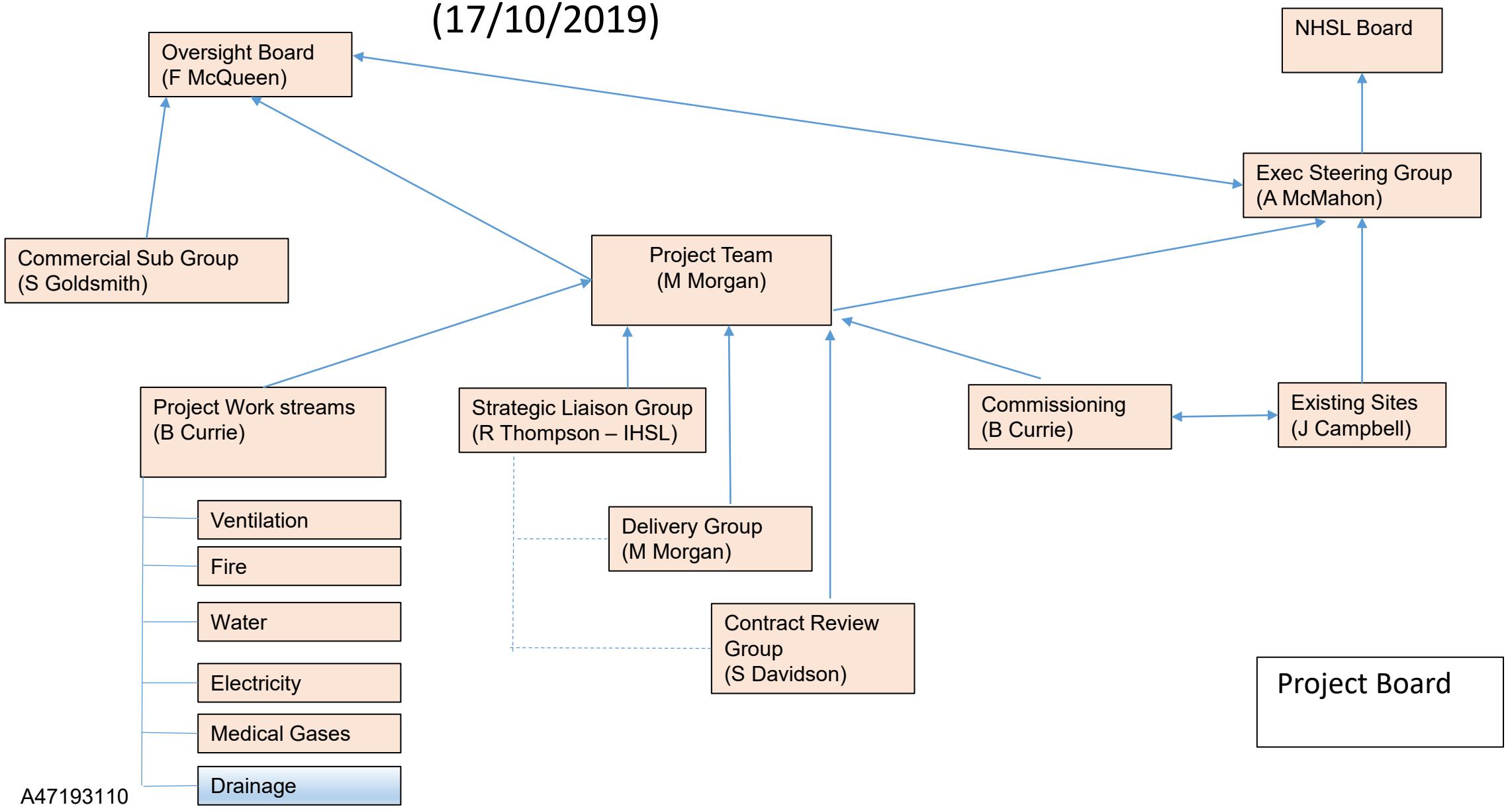
SNBTS facility (Jack Copland Centre). In her role as Senior Programme Manager Mary will have responsibility for the actions to ensure that the facility is fit for occupation. All other actions relating to the existing site and to the service migration to the new facility, will remain the direct responsibility of NHS Lothian. I expect Mary to work as part of the NHS Lothian team and within your existing governance arrangements, whilst also formally reporting to the chair of the Oversight Board.

The Cabinet Secretary has also clearly set out in parliament her concerns about the issues that have led to the delay and the non-compliance with standards and guidance. It is my intention to hold further meetings with you over the coming weeks to discuss the response of the Board to the two reports, and to address the accountability questions that have been raised in relation to the current status of the project and findings of fact made by KPMG and NSS.

Yours sincerely

Malcolm Wright
Director General for Health & Social Care and Chief Executive of NHSScotland

DCN/RCHYP Project Governance (17/10/2019)



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/Executive Steering 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

NHS National Services Scotland

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

Scottish Government
Riaghaltas na h-Alba
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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 NHSL 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.

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	**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.	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.
	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.
	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.	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.
	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	A full assessment of the services and patient population should be carried out and mechanisms for monitoring established.

	relied upon when windows are open.	
	External doors to plant rooms	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.
	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.	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
	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.	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.
3	**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.	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.
	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	Move ceiling supply to opposite side of room from extract. In room 30, move supply away from door.

	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. *NHS Lothian has advised that the appropriate pressure differentials are maintained when only one theatre is operation. Validation evidence is to be provided.*
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

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

3	**Water Services Non Augmented Care** - Swarf and biofilm found in tap strainers, contrary to SHTM 04-01 Water safety for healthcare premises.	Replace tap strainers in all areas.
2	**Showers -** Shower hose lengths do not comply with Scottish Water byelaws 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.
3	**Water General** - 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.
	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.	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.
	Designated roles and responsibility as per SHTM 00 Best practice guidance for healthcare engineering.	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.
	Water tanks as per SHTM 04-01 Water safety for healthcare premises.	To be inspected. The Raw Water and Filtrate water tanks are interconnected at the drain. These must be separated.
	Hot and cold water temperatures / flushing. SHTM 04-01 Water safety for healthcare premises	There was an issue with raised cold water temperatures during the boiler outage – this requires investigation.

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

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

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Independent Assessment of Governance Arrangements

NHS Lothian Royal Hospital for Children and Young People

NHS National Services Scotland

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NHS National Services Scotland

KPMG LLP

9 September 2019

This Report contains 81 pages

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Glossary

73 Issues	73 issues which formed part of the Settlement Agreement
Ac/hr	Air-changes per hour
Approved RDD	RDD which is classified as Level A or Level B by NHSL Board Representatives
BCR	Board's Construction Requirements
Bouygues	Bouygues Energies and Services
Critical Care Clinical Output Based Specifications	Specific clinical requirements for Critical Care, contained within Sub-Section D of the BCR
CFO	Chief Financial Officer
DCN	Department of Clinical Neurosciences
DCPP	Director of Capital Planning and Projects
Delay	The opening of the Hospital, due to be on 9 July 2019, was postponed due to issues identified with the air ventilation system
DRP	Dispute Resolution Process
EM	Environmental Matrix
F&R Committee	Finance and Resources Committee
Financial Close	The date when the conditions of the financial agreement are fulfilled, prior to the funds being made available

HCP	HCP Management Services Limited
HDU	High Dependency Unit
HFS	Health Facilities Scotland
Hospital	NHS Lothian Royal Hospital for Children and Young People
HPS	Health Protection Scotland
IHSL	Integrated Health Services Lothian Limited
IMT	Incident Management Team
IOM	Institute of Occupational Medicine
IPC	Infection Prevention & Control
Issue	The non-compliance with the SHTM standards for air change rates in the Critical Care areas of the Hospital
IT	Independent Tester
ITPD	Invitation to Participate in Dialogue
ITPD EM	The Environmental Matrix provided as part of Room Information within the ITPD
KPMG	KPMG LLP
MacRoberts	MacRoberts LLP
Mott MacDonald	Mott MacDonald Group Limited
MRI	Magnetic Resonance Imaging
Multiplex	Brookfield Multiplex
NHSL	NHS Lothian

NHS-NSS	NHS National Services Scotland
NPD	Non-Profit Distributing
OJEU	Office Journal of the European Union
PAMIP	Project Asset Management Investment Programme
PCC	Project Co Change
PCNOC	Project Co Notice of Change
Preferred Bidder Letter	A letter issued by NHSL to IHSL on 5 March 2014, advising that their Final Tender, submitted on 13 January 2014, had been accepted
Programme Board	Had day-to-day responsibility for managing the Project
Project	The design and construction of the Hospital
Project Agreement	An agreement between the NSHL Board and IHSL for the design, build, finance and maintenance of the Project, dated 13 and 14 February 2015
Project Agreement EM	The Environmental Matrix included with the Project Agreement documentation
Project Co	IHSL and Macquarie Capital, along with the following contractors: Brookfield Multiplex, Bouygues Energies and Services and HCP Management Services Limited
Project Team	The Financial & Resources Committee established the Programme Board and a smaller team (the “Project Team”)
RDD	Reviewable Design Data
RDS	Room Data Sheets
Room Information	The specific room requirements for the Hospital contained within the Project documentation
Settlement Agreement	An agreement signed between the NHSL Board and IHSL on 22 February 2019

SG	Scottish Government
SHTM	Scottish Health Technical Memoranda
SHTM 03-01	Scottish Health Technical Memoranda 03-01 (Ventilation for healthcare premises)
Standards	Scottish Health Technical Memoranda 03-01 (Ventilation for healthcare premises)
The Client	NHS-NSS
TOR	Terms of Reference
TS	Technical Schedule

1 Introduction

1.1 Background

1.1.1 On 4 July 2019 it was announced by the Scottish Health Secretary that the opening of the newly built NHS Lothian Royal Hospital for Children and Young People (the **"Hospital**"), due to open on 9 July 2019, was to be postponed due to issues identified with the air ventilation system at the Hospital (the **"Delay**").

1.1.2 The Health Secretary took the decision to delay the opening of the Hospital following final safety checks which revealed that the ventilation system within the Critical Care department required further work to meet national standards, the relevant standards being the Scottish Health Technical Memoranda ("**SHTM**").

1.2 Our instructions and approach

1.2.1 KPMG LLP ("**KPMG**" or "**we**") has been instructed by NHS National Services Scotland ("**NHS-NSS**"), to independently establish the facts surrounding the decision to delay the move to the Hospital. As part of this assessment KPMG has specifically been instructed to consider the following areas:

a) To establish what decisions were made by NHS Lothian ("**NHSL**"), when these were made, by whom and on what basis these decisions were taken in relation to the air ventilation issues and any other material issues that led to the Delay;

b) To determine the extent to which the design specifications with regard to air ventilation complied with the SHTM standards at each stage of the Hospital

project[1], the 'project' being the design and construction of the Hospital (the "**Project**")[2];

c) To understand what professional and technical advice was given to the NHSL Board, in particular when derogations were proposed, who agreed them and the risk assessments that were undertaken to reach a final decision; and

d) To establish the governance arrangements that were in place in relation to the Project and the line of sight of NHSL and the Scottish Government ("**SG**"), along with the escalation arrangements to NHSL and SG.

1.2.2 The focus of our review has been on the activities and decisions taken within NHSL.

1.2.3 We have held discussions with individuals from NHSL, along with individuals from the following entities:

a) Mott MacDonald Group Limited ("**Mott MacDonald**") – NHSL's technical advisors and project managers for the Project;

b) MacRoberts LLP ("**MacRoberts**") – NHSL's legal advisors;

c) Integrated Health Services Lothian Limited ("**IHSL**") - the party that the NHSL Board entered into a project agreement with for the design, build, finance and maintenance of the Project;

d) Institute of Occupational Medicine ("**IOM**") – a third party firm of specialist validation experts whom NHSL instructed to undertake testing on the Hospital's ventilation;

e) Health Facilities Scotland ("**HFS**") - a division of National Services Scotland which provides operational guidance to NHS Scotland bodies on a range of healthcare facilities topics; and

[1] To design, build, finance and maintain a new facility to re-provide services from the Royal Hospital for Sick Children, Child and Adult Mental Health Service and the Department of Clinical Neurosciences in a single building adjoining the Royal Infirmary of Edinburgh at Little France (Source: Project Agreement, dated 13 February 2015, page 5)

[2] It was agreed that KPMG would not undertake a technical review in this respect but confirm whether the SHTM standards were included within the design specifications.

f) Arcadis NV - the Project's Independent Tester (**"IT"**).

1.2.4 In addition, we reviewed key documentation provided by NHSL and the above entities.

1.3 Structure of this Report

1.3.1 In Section 2, we set out the Executive Summary.

1.3.2 In Section 3, we set out the background to our work, including details of the Project relating to the build of the Hospital and the timeline of events leading up to the Delay.

1.3.3 In Section 4, we set out our observations in relation to whether the design specifications with regard to air ventilation made reference to the SHTM standards.

1.3.4 In Section 5, we set out details of the professional and technical advisors that advised the NHSL Board and the extent to which they were involved in providing advice in respect of derogations.

1.3.5 In Section 6, we set out our observations in relation to the governance arrangements that were in place for the Project.

1.4 Limitations of scope

1.4.1 The content of this Report is based on information provided to KPMG by representatives of NHSL, Mott MacDonald, MacRoberts, IOM and the IT. Except where explicitly stated, we have not independently verified this information and have relied on statements made and documents and data provided.

1.4.2 Whilst we make reference to SHTM in this Report, we are not technical experts on ventilation standards and give no comment on the technical accuracy of the content of documents we have been provided. We understand that the Health Secretary has commissioned a separate independent review in relation to the technical aspects of the Delay. Comments made in this Report by KPMG are

made in the context of our review and our understanding of the documents made available to us.

1.4.3 In undertaking our work we have had regard to elements of the contractual documentation relating to the Project, and have set out extracts of these in this Report. However, nothing in this Report should be regarded as constituting legal interpretation of such documents or the provision of legal advice.

1.4.4 We have not been instructed to determine exactly what led to the Issue[3] or to opine on the accountability of individuals or organisations in respect of the Issue.

1.4.5 Whilst we have considered the governance arrangements in place from the date of the project agreement, being an agreement with IHSL for the design, build, finance and maintenance of the Project on 13 February 2015 (the "**Project Agreement**"), we have not considered the governance arrangements prior to this time.

1.4.6 Should any additional information or documentation subsequently become available which is relevant to our scope of work, we reserve the right to amend our findings in light of that information.

1.4.7 The scope of our work is different from that of an audit and does not provide the same level of assurance as an audit.

1.5 Notice: About this Report

1.5.1 This Report has been prepared on the basis set out in our Engagement Letter addressed to NHS-NSS ("**the Client**").

1.5.2 Nothing in this report constitutes legal advice.

1.5.3 We have not verified the reliability or accuracy of any information obtained in the course of our work.

[3] As defined in paragraph 2.2.1

1.5.4 This Report is for the benefit of the Client and has not been designed to be of benefit to anyone except the Client. In preparing this Report we have not taken into account the interests, needs or circumstances of anyone apart from the Client, even though we may have been aware that others might read this Report. We have prepared this Report for the benefit of the Client alone.

1.5.5 This Report is not suitable to be relied on by any party wishing to acquire rights against KPMG LLP (other than the Client) for any purpose or in any context. Any party other than the Client that obtains access to this Report or a copy (under the Freedom of Information Act 2000, the Freedom of Information (Scotland) Act 2002, through the Client's Publication Scheme or otherwise) and chooses to rely on this Report (or any part of it) does so at its own risk. To the fullest extent permitted by law, KPMG LLP does not assume any responsibility and will not accept any liability in respect of this Report to any party other than the Client.

1.5.6 In particular, and without limiting the general statement above, since we have prepared this Report for the benefit of the Client alone, this Report has not been prepared for the benefit of any other Health Board nor for any other person or organisation who might have an interest in the matters discussed in this Report, including for example those who were involved in the Project detailed in this Report.

2 Executive Summary

2.1 Introduction

2.1.1 On 4 July 2019, the Scottish Health Secretary announced that the opening of the newly built NHS Lothian Royal Hospital for Children and Young People (the **"Hospital**"), due to open on 9 July 2019, was to be postponed due to issues identified with the air ventilation system at the Hospital (the **"Delay**").

2.1.2 The Scottish Health Secretary took the decision[4] to delay the opening of the Hospital following final safety checks which revealed that the ventilation system within the critical care areas of the Hospital required further work in order to meet national standards.

2.1.3 KPMG LLP ("**KPMG**" or **"we"**) has been instructed by NHS National Services Scotland ("**NHS-NSS**"), to independently establish the facts surrounding the decision to delay the move to the Hospital.

2.1.4 The focus of our review has been to establish what decisions were made by NHS Lothian ("**NHSL**") in relation to the air ventilation issues and any other material issues that led to the Delay. We have detailed our main observations in relation to this in Section 2.2 below, and provide further details on specific areas of our scope in Sections 2.3 to 2.5.

2.2 Summary of findings

2.2.1 The information available to us indicates that:

a) The key issue which led to the Delay was the non-compliance with the Scottish Health Technical Memoranda 03-01 ("**SHTM 03-01**" or the "**Standards**") for air change rates in some of the Critical Care areas of the Hospital (the **"Issue"**). This Issue was brought to the attention of the NHSL Board on 1 July 2019 as a result of testing undertaken by a third party

[4] The Cabinet Secretary announced this decision following communication with the NHSL chief executive regarding the identification of the ventilation system issues.

contractor, Institute of Occupational Medicine (**"IOM"**). This was as a result of IOM reporting the issue in relation to Critical Care to the NHSL Project Team[5] on 24 June 2019. The actions taken by the Project Team before the Issue was reported to the NHSL Board are reported in Section 3.4. Further details as to the decisions that were made by NHSL once the Issue had been identified, when these were made, by whom and on what basis, are provided in Section 3 of this Report;

b) Throughout all stages of the Project we have seen references made to the requirements of the Project Co[6] to adhere to the Scottish Health Technical Memoranda ("**SHTM**"), including specifically SHTM 03-01 relating to ventilation systems. However, notwithstanding any contractual obligations, it appears that there has been confusion between the parties as to the application of these Standards. This appears to have stemmed from a document which was contained within the Project tender documentation, a version of which was used throughout the Project, which included details on the environmental specifications of the Hospital, the Environmental Matrix ("**EM**"). Elements of the EM were inconsistent with SHTM 03-01 from the tender process (which commenced in late 2012) onwards. Further details in relation to design specifications and air ventilation standards are provided in **Section 2.3** below;

c) We have seen evidence of professional and technical advisors being involved throughout the Project. This included specific involvement in relation to ventilation issues. However, we have seen no evidence that professional or technical advice identified the Issue prior to June 2019. Further details in

[5] The NHSL Board delegated responsibility for oversight of the Project to the Financial & Resources Committee which established the Programme Board and a smaller team (the **"Project Team"**)

[6] Being Integrated Health Services Lothian Limited and Macquarie Capital, along with the following contractors: Brookfield Multiplex, Bouygues Energies and Services and HCP Management Services Limited. Collectively for the purposes of this Report referred to as **"Project Co"**

relation to professional and technical advice are provided in **Section 2.4** below;

d) The governance processes and procedures surrounding the construction and commissioning of the Hospital operated in line with the structure that was put in place. There was regular dialogue between NHSL and the Scottish Government ("**SG**") throughout the Project, with evidence of escalation of issues where required, albeit this was more focused on financial rather than technical matters. Further details of the governance arrangements are provided in **Section 2.5** below; and

e) Once the Issue in relation to air change rates was known to the NHSL Board, steps were taken to assess the impact of the Issue, resulting in the Delay (see Section 3.4).

2.2.2 Aside from the specific Issue referred to in this Report, other ventilation systems were identified by IOM as having some deficiencies. We understand that all these deficiencies were considered rectifiable by NHS-NSS, and NHSL have an action plan in place to address each issue.

2.3 Design specifications and air ventilation standards

2.3.1 Our specific instructions were:

To determine the extent to which the design specifications with regard to air ventilation complied with the SHTM standards, and specifically SHTM 03-01, being the ventilation for healthcare premises standards, at each stage of the Project. It was agreed that KPMG would not undertake a technical review in respect of this but confirm that the Standards were included within the design specifications.

2.3.2 A summary of our observations are detailed below, with further details provided in Section 4 of this Report.

2.3.3 Throughout all stages of the Project we have seen references made to the requirements to adhere to SHTM, and specifically SHTM 03-01 in respect of ventilation systems; in particular within the Board's Construction Requirements

("**BCR**") document which is the primary document at both the tender and Project Agreement[7] stages. The BCR stated that Project Co must comply with SHTM for the design of the Hospital and that all recommendations and preferred solutions contained within the SHTMs must be adopted as mandatory.

2.3.4 It appears that there has been confusion between NHSL and Project Co as to the application of these Standards throughout the Project. This appears to have stemmed from the EM, details of which were inconsistent with SHTM 03-01 from the tender process, as we describe below.

2.3.5 A version of the EM was included within the BCR at both the tender and Project Agreement stages. The EM was referred to within the tender document as detailing *"…the room environmental condition requirements of the Board required within each department / unit / space / area [of the Hospital]*[8]. The room environmental conditions included air change rates. There are inconsistencies within the tender process documentation in relation to the EM, with the BCR stating that bidders should *"…provide the Works to comply with the Environmental Matrix*"[9] and the tender submission requirements stating that whilst bidders were required to *"undertake their own design, the Board [has] provided a draft Environmental Matrix"*[10] and that *"bidders must confirm acceptance of the Board's Environmental Matrix, highlighting any proposed changes on an exception basis"*[11].

2.3.6 Our work has identified issues within the EM, including inconsistencies with SHTM 03-01 and discrepancies within the document itself. Specifically:

a) The version of the EM document provided by NHSL to bidders as part of the tender process, and referred to in the BCR as detailed above, included

[7] The Project Agreement being an agreement with IHSL for the design, build, finance and maintenance of the Project on 13 February 2015
[8] IPTD: Volume 3 Board's Construction Requirements, Rev C, Subsection B, B (page 9)
[9] IPTD: Volume 3 Board's Construction Requirements, Rev C, Subsection C, Section 8 (page 102)
[10] IPTD, Volume 1, Revision A, Appendix A (ii), Submission Requirements, Point C8.3 (page 105)
[11] IPTD, Volume 1, Revision A, Appendix A (ii), Submission Requirements, Point C8.3 (page 106)

reference to both the single bed cubicles and four-bed rooms in Critical Care as requiring four air changes per hour[12] ("**ac/hr**"). We understand this was not in compliance with SHTM 03-01 and should have been 10 ac/hr. This reference remained in subsequent versions of the EM; and

b) The guidance note at the front of the EM document, provided at the tender and Financial Close[13] stages of the Project, suggested that all Critical Care areas should be in accordance with SHTM 03-01, being the relevant part of the standards relating to ventilation, and *"10ac/hr Supply"*[14]. This is inconsistent with the content of the matrix, as detailed above. We note that this inconsistency appears to have been removed after Financial Close by the insertion of the words *'for isolation cubicles'*[15], suggesting that only 'isolation cubicles' in Critical Care should have an air change rate of 10 ac/hr. However, we were informed by NHSL that this change was made by the Project Co, but was not flagged to NHSL (see paragraph 4.4.10 for further details).

2.3.7 We have not been instructed to consider how the inconsistency made its way into the initial matrix. However, we have seen no evidence that any party to the Project identified the issue, specifically in relation to the incorrect air change rates having been applied to Critical Care rooms, until June 2019 (see paragraph 3.4.7 to paragraph 3.4.14 for further details).

2.3.8 NHSL told us they had not reviewed the EM in detail from a technical perspective and they reviewed it for 'operational functionality', as detailed in the Project Agreement (as referred to further in paragraphs 4.4.6 and 4.4.7 below). It was

[12] Reference Design Envisaged Solution – RHSC / DCN Environmental Matrix version third issue, dated 19 September 2012 (page 5)
[13] Being the date when the conditions of the financial agreement are fulfilled, prior to the funds being made available ("**Financial Close**")
[14] Document reference (tender version): Reference Design Envisaged Solution – RHSC / DCN Environmental Matrix version third issue, dated 19 September 2012 (page 2, note 15)). Document reference (Project Agreement version): WW-XX-XX-DC-001. Page 2, Note 15. Contained within Schedule Part 6, Construction Matters, Part 6 of the Project Agreement
[15] Full wording read: *"10ac/hr Supply for isolation cubicles"* in a version of the EM dated 26 November 2015

assumed by NHSL that any changes to the EM would be highlighted by Project Co for discussion with them, and that it would be in compliance with SHTM 03-01, as detailed in the BCR. Despite this, the "exception-basis" approach to highlight proposed changes, referred to at paragraph 2.3.5 above, may have contributed to an assumed position that the original document, provided as part of the tender process, was correct.

2.3.9 Despite our understanding that NHSL and its advisors did not consider that they had an obligation to review the EM in detail from a technical perspective, we have identified multiple instances of comments being provided by the 'Board'[16] on particular sections of the EM. These included those elements which specifically related to the four-bed rooms in the Critical Care department. However, at no point did these comments refer to there being incorrect air change rates for those rooms.

2.3.10 Through correspondence between NHSL and Project Co regarding the EM, we have seen evidence of Mott MacDonald (on behalf of the Board) reminding Project Co that they must comply with the BCR and SHTM and that the *"Board not commenting, does not remove that obligation on Project Co"*[17].

2.3.11 In addition to all of the above, in January 2019, the Board asked Integrated Health Services Lothian Limited ("**IHSL**")[18] for specific assurance that all critical ventilation systems were to be *"inspected and maintained in line with 'Scottish Health Technical Memorandum 03-01: Ventilation for healthcare premises"*[19]. IHSL confirmed in their response that all ventilation systems had been designed, installed and commissioned in line with SHTM 03-01[20].

[16] We understand from Mott MacDonald that the 'Board' in this context refers to both themselves and the Project Team and not the ultimate NHSL Board.
[17] Email from Mott MacDonald to Multiplex, among other recipients, on 17 October 2016 (document reference: 161017 MM-GC-002084). We understand from Mott MacDonald that the 'Board' in this context refers to both themselves and the Project Team and not the ultimate NHSL Board.
[18] The party that NHSL Board entered into a project agreement with for the design, build, finance and maintenance of the Project and who formed part of the Project Co
[19] Document: 10.11.4 31-01-19 IHSL.NHSL Plant Rooms Ventilation Systems
[20] Document: 10.11.4 31-01-19 IHSL.NHSL Plant Rooms Ventilation Systems

2.3.12 We have not been instructed to opine on the accountability of individuals or organisations in respect of the failure to identify the Issue and it is not within our area of expertise to consider the contractual implication of the failure. However, through our identification of the above matters, the following relevant observations have also come to light:

a) Lack of clarity in the Standards

Our work has identified that consideration of the Standards on a standalone basis, in relation to air change rates in rooms within the Critical Care areas of the Hospital, could be open to interpretation. Specifically, our review has identified that there is no definition of "Critical Care" in the Standards, and the extent to which "Critical Care" includes all types of rooms within that area of a hospital. Further, there is no explanation of the hierarchy which should be applied where different areas of the hospital overlap, for example, which standard should be applied to a 'clean utility' within a Critical Care unit.

However, the Project Agreement documentation, and specifically the BCR, referred to in paragraph 4.3.8 below, includes Clinical Output Based Specifications for each department. We note that the Critical Care Clinical Output Based Specification makes reference to the areas included in Critical Care with, for example, references to single cubicles, four bedded bays, isolation cubicles and clean and dirty utilities.

b) Opportunities to identify the Issue

It is our observation that, notwithstanding that the initial version of the EM issued by NHSL at the tender stage contained the inconsistency which ultimately resulted in the Delay, NHSL and its advisors did not regard the EM as their document and did not consider it their responsibility to ensure compliance with SHTM 03-01. Instead, NHSL considered the EM to be the responsibility of Project Co. NHSL considered it their responsibility to approve

it for 'operational functionality'[21] and it was for Project Co to highlight any inconsistencies between the EM and the Standards.

We have seen evidence that NHSL and its advisors did challenge and seek explanations in relation to certain aspects of the EM relating to specific rooms in Critical Care, but this did not include specific reference to the air change rates.

Regardless of the contractual responsibilities, our work identified at least three specific instances where errors regarding the details of the air change rates relating to the four-bed rooms could have been identified by either NHSL (and their advisors) or Project Co:

- **November 2016:** Correspondence between the Board[22] and Project Co referred to the air extraction of the four-bed rooms in Critical Care via the en-suite facilities. The specific comment noted by the Board was *"1-B1-063 Stated as supply of 4 ac/h, extract via en-suite, this room does not have en-suite facilities*"[23]. Project Co's response was *"Room extract rate added"*[24]. This suggests that both parties were in correspondence regarding a room in Critical Care (on the basis that rooms starting 'B1' were defined on the cover sheet of the EM as being located in Critical Care), which contained reference to four air changes an hour.
- **July 2018**[25]: A document entitled 'Multi Bed - Ventilation Amendment Proposal to Achieve Room Balance [pressure]' was provided by Project Co, and subsequently approved by an individual from NHSL. Whilst this document was focused on the pressure regime, it stated *"Retain the*

[21] As referred to a paragraphs 4.4.6 and 4.4.7
[22] We understand from Mott MacDonald that the 'Board' in this context refers to both themselves and the Project Team and not the ultimate NHSL Board
[23] REV 07 ww-xx-xx-dc-xxx-001 - signed copy. Environmental Matrix comments, Second Batch, NHSL reference 7 (page 4)
[24] REV 07 ww-xx-xx-dc-xxx-001 - signed copy. Environmental Matrix comments, Second Batch, NHSL reference 7 (page 4)
[25] Being the date of approval of the document 'Multi Bed - Ventilation Amendment Proposal to Achieve Room Balance'

supply ventilation at 4ac/hr…"[26] as part of the proposed solution against each of the four-bed rooms. This included rooms located in Critical Care, albeit this was not directly referenced on the document; and

- **February 2019**: As a result of a number of ongoing issues in dispute between NHSL and Project Co, an agreement was signed between the NHSL Board and IHSL on 22 February 2019 (the "**Settlement Agreement**"). The Settlement Agreement states *"The resolution of the Dispute submitted by Project Co through the Schedule Part 8 (Review Procedure) and agreed by the Board, is for 14 No 4 bed rooms to be balanced or negative to the corridor at 4 ac/hr"*[27]. This wording was approved by both parties.

Furthermore, we also identified one example of comments provided to the Project Co by Mott MacDonald[28] (on behalf of NHSL) referred to as *"…initial technical comments on draft 1 of the Environmental Matrix"*, dated 13 October 2014[29]. This document included 12 comments, one of which specifically refers to ventilation standards in respect of bedrooms stating *"Bedrooms 4ac/hr, SHTM says 6 ac/hr"*[30]. Whilst this comment was not specific to a Critical Care bedroom, this suggests that comments other than those relating directly to 'operational functionality' were raised by NHSL.

c) Role of the Independent Tester ("IT")

The IT advised KPMG that its role was to certify that the design had been built in accordance with what had been agreed between the parties. This is reflected in the IT's scope of work, as set out in paragraph 4.7.2. The EM had been used as the basis for this agreement between the parties and, as such, the IT did not consider that it was responsible for reviewing its accuracy.

[26] Multi Bed - Ventilation Amendment Proposal to Achieve Room Balance
[27] Settlement Agreement, Schedule 1, Part 1, Technical Schedule, Item 7 (page 30)
[28] Attached to an email from Mott MacDonald to Multiplex, among others, dated 14 October 2019. (Document reference: 141014 MM-GC-000399)
[29] Document reference: 141013 Environmental Matrix Comments
[30] Comment 7. Document reference: 141013 Environmental Matrix Comments

Instead, the IT stated that it expected both parties to the Project to have undertaken a detailed review of the EM.

2.4 Professional and technical advice

2.4.1 Our specific instructions were:

To understand what professional and technical advice was given to the NHSL Board, in particular when derogations were proposed, who agreed them and the risk assessments that were undertaken to reach a final decision.

2.4.2 A summary of our observations are detailed below, with further information provided in Section 5 of this Report.

2.4.3 A number of professional and technical advisors were involved throughout the Project. Specifically, in respect of the Issue pertinent to the Delay:

a) From the various documents we have seen, and the discussions we have held, there is evidence that, in arriving at the agreed resolution in the Settlement Agreement in respect of the changes required to the pressure regime to 14 of the four-bedded rooms, advice and support was provided to the Project Team by both technical advisors and internal clinical advisors, which was visible to the NHSL Board; and

b) We have seen evidence that Mott MacDonald was involved in the Project on an ongoing basis, specifically in respect of reviewing and commenting on the EM.

2.4.4 We have not been instructed, and it is not within our area of expertise, to consider the responsibility of external professional or technical advisors to identify this Issue. However, despite the extensive internal and external technical advice received in relation to the Project, the Issue was not spotted.

2.5 Governance arrangements

2.5.1 Our specific instructions were:

To establish the governance arrangements that were in place in relation to the Project and the line of sight of NHSL and SG, along with the escalation arrangements to NHSL and SG.

2.5.2 A summary of our observations are detailed below, with further information provided in Section 6 of this Report.

2.5.3 From the information we have seen, the governance structure surrounding the construction and commissioning of the Hospital was operating in line with that described to us and issues were being escalated through the appropriate channels.

2.5.4 Oversight of the Project had been delegated by the NHSL Board to the Finance & Resources committee (the **"F&R Committee"**), which included four executives from the NHSL Board. The F&R Committee established a Project Programme Board which had day-to-day responsibility for managing the Project (the "**Programme Board**"). The Programme Board did not report directly to the F&R Committee. Instead, any key issues arising on the Project would be reported to the Director of Capital Planning and Projects (the **"DCPP"**) or one of the Project's Executive Leads who would, in turn, escalate this to the NHSL Board and also inform the F&R Committee if the issue had an impact on the financing of the Project or its duration. As there was overlap between members of the various committees and boards, this facilitated the executive leaders of NHSL being kept informed of progress and issues.

2.5.5 Throughout our review, we have seen evidence of these governance arrangements operating in practice and it appears that, at each stage of the Project, personnel with the appropriate technical and clinical skills and experience were involved.

2.5.6 Further, where appropriate, external advice and guidance was sought. An example of such external advice being commissioned is the instruction of an independent third party to carry out checks following concerns raised by the

Infection Prevention & Control team (the "**IPC**") in relation to the reporting format for ventilation checks. A further example is in relation to changes to the design requirements where we have seen evidence of the involvement of technical specialists such as Mott McDonald, as well as clinicians and medical professionals from relevant departments within NHSL.

2.5.7 In addition to the governance processes within NHSL itself, we understand that there was regular dialogue between NHSL and SG throughout the Project, with escalation of issues where required, albeit this was typically more focused on financial rather than technical matters.

2.5.8 The timeframe for moving to the Hospital was set in February 2019 when the Settlement Agreement was signed. At this time, it was known that significant work was still required in order to complete the Hospital, including a number of critical areas which were required to be completed before the building could be considered habitable. Such works continued into July 2019, including a significant amount of post-completion works. As such, the time available for rectification of any identified problems, prior to the scheduled opening date of the Hospital of 9 July 2019, was challenging and left little margin for error. The governance process established in order to implement the required actions, set out in the Settlement Agreement, is discussed in Section 6.4.

2.5.9 Once the Issue which led to the Delay had been identified, steps were taken by NHSL to notify SG of the Issue which led to the decision by the Health Secretary to delay the opening of the Hospital. We note that, due to the urgency of the matter, the ultimate escalation of the ventilation issues was made direct to the NHSL Board and not through the normal governance structure.

3 Background to the Project and the Delay

What decisions were made by NHSL, when these were made, by whom and on what basis these decisions were taken in relation to the air ventilation issues and any other material issues that led to the Delay.

3.1 Introduction

3.1.1 In this Section, in considering the facts surrounding why NHSL made the decision to delay the opening of the Hospital, we set out the chronological background to the Project, based on information communicated to us and documents provided to us.

3.1.2 Whilst this summary provides a high-level introduction to the Project and its timeline, the summary focuses on the timeline of events that led to the Delay and, in particular, the period between the signing of a Settlement Agreement by NHSL and IHSL on 22 February 2019 (the "**Settlement Agreement**")[31] and the planned opening of the Hospital on 9 July 2019.

3.1.3 In preparing this summary, we have considered the decisions taken by NHSL in relation to the air ventilation issues (and any other material issues that led to the Delay), when these were made, by whom and on what basis these were taken.

3.2 Pre-financial close

3.2.1 The NHSL Board approved a capital-funded business case for the Hospital in 2008. This business case was approved by SG for a Children's Hospital only.

3.2.2 In November 2010, SG announced a Non-Profit Distributing[32] (**"NPD"**) funding route, not only in relation to the Children's Hospital but also the

[31] Referred to in the NHSL Annual Audit Report dated June 2019 (https://www.audit-scotland.gov.uk/report/nhs-lothian-annual-audit-report-201819)
[32] A form of public-private partnership procurement programme

Department of Clinical Neurosciences (the **"DCN"**). Various enabling works were required to be performed before construction could commence.

3.2.3 As a consequence of this preparation work, NHSL did not go to the market for a partner for the Project until November 2012. The Project was advertised in the Office Journal of the European Union (the **"OJEU"**), published on 5 December 2012. The NHSL Board proceeded to engage with three bidders during a nine-month competitive process. This process began in March 2013 and ended in December 2013. The winning bidder selected by the NHSL Board would then form an NPD company to deliver the Project.

3.2.4 Supporting the NHSL Board throughout this process were a group of professional advisors which included Mott MacDonald (technical advisors and project managers), MacRoberts (legal advisors) and Ernst and Young (Financial Advisors). The NHSL Board delegated responsibility for oversight of the Project to the Financial & Resources Committee (**"F&R Committee"**) which established the Programme Board which had day-to-day responsibility for managing the Project (the "**Programme Board**") and a smaller team (the **"Project Team"**).

3.2.5 The Programme Board comprised the Project Team as well as representatives from clinical and operational areas, the Director of Finance, the Director of Communications, an NHSL Non-Executive Director and other stakeholders.

3.2.6 In March 2014, the NHSL Board appointed IHSL as its preferred bidder. IHSL's team comprised Macquarie Capital[33], along with IHSL's subcontractors; Brookfield Multiplex (**"Multiplex"**), Bouygues Energies and Services ("**Bouygues**") and HCP Management Services Limited ("**HCP**") (collectively for the purposes of this Report referred to as **"Project Co"**).

3.2.7 The NHSL Board entered into a Project Agreement with IHSL for the design, build, finance and maintenance of the Project on 13 February 2015. It was a requirement for the Project design, installation and operation to comply with

[33] Initially referred to along with IHSL as Project Co

guidance issued by HFS. Further details of the standards issued by HFS[34] is set out in Section 4.2.

3.2.8 The planned scheduled opening date for the Hospital was July 2017.

3.2.9 As required by the Project Agreement, an IT was appointed by the NHSL Board, IHSL, and IHSL's funders, as an advisor to provide certain services independently, fairly and impartially in connection with the Project. Arcadis NV was appointed to this role in February 2015[35].

3.2.10 We understand that, at the time of financial close in February 2015, being the date when the conditions of the financial agreement are fulfilled prior to the funds being made available ("**Financial Close**"), the designs for the Hospital had not been fully developed. This included issues relating to the design of the ventilation systems, including comments on the pressure regime which would be in operation in the Hospital and whether this was in compliance with the relevant standard (Scottish Health Technical Memoranda 03-01 ("**SHTM 03-01**" or the "**Standards**").

3.3 Construction phase

3.3.1 In early 2017, it became clear that the Hospital would not be opening on time, as originally planned in July 2017. Three specific issues were identified at that stage:

a) The design of the high voltage power resilience mechanism;

b) Ventilation issues (pressure regime[36]); and

c) An issue with the provision of a Magnetic Resonance Imaging ("**MRI**") room.

3.3.2 Throughout the remaining period of 2017, discussions with Project Co on a) and b) above, and other emerging issues, continued without resolution. This

[34] The SHTM standards
[35] EC Harris was initially instructed, which was later acquired by Arcadis NV
[36] In relation to four-bedded rooms

ultimately resulted in both parties seeking legal advice and contemplating court action in order to resolve the issues in dispute.

3.3.3 It is our understanding that, in early 2018, the parties entered into a process of negotiated settlement. This included a number of technical workshops held in order that all of the unresolved issues could be raised and resolutions sought. At the workshops, which were held to consider the ventilation issues, there were detailed discussions regarding the required pressure regime in four bedded rooms.

3.3.4 In moving towards resolving this issue, a proposed solution was put forward in relation to the pressure in single bedrooms. This involved an adjustment of the air change rate from 6 air changes per hour ("**ac/hr**") to 4 ac/hr with 2 ac/hr natural ventilation, which we understand from NHSL meant this still achieved 6 ac/hr, but through a 'mixed mode'.

3.3.5 However, an issue remained regarding the pressure regime in multi-bed rooms. NHSL required 14 of the multi-bed rooms to be adjusted to have balanced or negative pressure. Four of the rooms considered as part of this process were located within the Critical Care areas of the Hospital[37]. Reference was made in the proposed resolution of this issue to an air change rate of 4 ac/hr.

3.3.6 During this period, it became apparent that, whilst some of the earlier issues appeared to be resolved or solutions proposed, there were a significant number of other technical issues emerging at the Hospital which required the attention of various project teams.

3.3.7 On 22 February 2019, the Settlement Agreement was signed by NHSL Board and IHSL with the ultimate aim of resolving all known issues and opening the Hospital in July 2019.

3.3.8 The Settlement Agreement set out a total of 76 issues identified by the parties that required resolution. These 76 issues consisted of (a) 73 known issues

[37] Per SHTM 03-01, Appendix 1, Critical Care areas of a hospital require 10 ac/hr

where a solution had been agreed[38] (the **"73 Issues"**); and (b) three technical issues, being:

a) Void detection;

b) Heater batteries; and

c) Drainage.

3.3.9 The Settlement Agreement included an agreed resolution to the ongoing issue relating to ventilation pressure in four-bed rooms (one of the 73 Issues) and also included reference to the agreement made in relation to the single bedroom pressure change.

3.3.10 In the context of achieving the air pressures required by NHSL, this agreed resolution stated *"…agreed by the Board, is for 14 No 4 bed rooms to be balanced or negative to the corridor at 4 ac/hr. The remaining 6No 4 bed wards remain as per the environmental matrix…"*[39]. Of these 14 rooms, four of these 4-bed rooms were located within the Critical Care area of the Hospital.

3.3.11 We discuss the background to this agreed resolution in further detail in Section 5.3.

3.3.12 In relation to the other three technical issues (i.e. not the 73 issues), listed at paragraph 3.3.8 above, solutions were agreed and a programme of work planned to implement the solutions prior to the opening of the Hospital in July 2019.

3.4 Operational phase

3.4.1 The IT provided a "Certificate of Practical Completion" on 22 February 2019. This meant that the construction phase of the Project came to an end and the

[38] The Settlement Agreement contains a table with 81 items, however eight of these stated 'NOT USED'

[39] Settlement Agreement, Schedule 1, Part 1, Technical Schedule, Item 7 (page 30)

Project entered into its operational phase. At this point, NHSL began payment of the annual services payment to IHSL.

3.4.2 During this operational phase, a significant number of outstanding works were required to be carried out by Project Co. In accordance with the Settlement Agreement, these works were performed in parallel with the NHSL Board's commissioning activities[40] for the Project.

3.4.3 Under the requirements of SHTM 03-01, a report on the ventilation system commissioning should be provided to the 'user department', 'infection control (where required)' and 'estates and facilities', following the commissioning[41]. In January 2019, the Project Team provided the Infection Prevention & Control (the "**IPC**") team with a copy of the proposed validation checklists that Multiplex was due to complete in respect of validating the ventilation system in the theatres. This was in order to ascertain if the checklists would be sufficient to meet the report requirements set out in SHTM 03-01[42].

3.4.4 In May 2019, following ongoing correspondence with the Project Team, the IPC confirmed that they were of the view that validation checklists in the format submitted by Multiplex were not sufficient for the purposes of the requirements and instead requested that the Project Team arrange a third party validation of the ventilation systems in order to obtain the required report.

3.4.5 On 30 May 2019, the Project Team contacted the IOM, a third party firm of specialist validation experts with experience in hospital ventilation. The firm that NHSL typically used for validation for hospital ventilation was conflicted from undertaking this testing, as it was used by IHSL[43].

3.4.6 On 5 June 2019, IOM attended a site visit and familiarisation at the Hospital and testing commenced on 17 June 2019. IOM's testing involved the validation of

[40] Commissioning activities were in effect the preparation for receiving patients into the Hospital e.g. ensuring the equipment and relevant supplies were in place, that staff were familiar with the layout and that the Hospital was cleaned
[41] SHTM 03-01, Part A, February 2014, Section 8.65
[42] The requirements are set out in SHTM 03-01, Part A, February 2014, Section 8.64 to 8.65
[43] H&V Commissioning Services Limited

critical ventilation systems at the Hospital, which focused on a list of critical areas provided to them (including theatres, isolation suites, Critical Care areas and recovery areas). We understand that, at the time of testing, some elements of remedial work were still ongoing, which restricted IOM's access to particular areas of the Hospital. Mott McDonald helped to facilitate IOM's testing.

3.4.7 SHTM 03-01 states that an air change rate of 10 ac/hr is required in Critical Care areas[44]. On 18 June 2019, IOM identified that some areas within Critical Care were not achieving 10 ac/hr. This was queried by IOM with Mott MacDonald and further testing was subsequently performed which was completed on 21 June 2019.

3.4.8 On 24 June 2019, IOM verbally informed the Programme Board of the ventilation issues that had been identified, in that the readings in terms of air change rates were not in line with SHTM 03-01, particularly in relation to operating theatres, isolation areas and Critical Care. This was followed by a written report dated 25 June 2019, which was circulated to the Programme Board, incorporating an issues log, which showed:

a) 12 issues with Operating Theatres;

b) 12 issues with air handling units; and

c) One issue with Critical Care (referred to as "HDU" by IOM).

3.4.9 On 25 June 2019, IHSL assured NHSL that all of the issues identified by IOM could be resolved.

3.4.10 Between 25 June 2019 and 1 July 2019, various meetings were held by the Programme Board, together with representatives from the IPC team, Mott MacDonald, IOM, IHSL and Multiplex. These meetings focused on operating theatres and sought to establish:

a) Whether the readings for ventilation found by IOM were correct;

[44] SHTM 03-01, Part A, February 2014, Appendix 1: Recommended air-change rates

b) Whether the readings related to a sample or the whole area;

c) Whether the readings were taken correctly;

d) Whether the issues found could be resolved; and

e) The minimum requirement for compliant operating theatres to allow the hospital to open.

3.4.11 As well as pursuing solutions to operating theatre ventilation, meetings were also held to try and establish, in relation to IOM's first reports regarding the Critical Care ventilation, whether:

a) IOM's measurements were in fact correct;

b) How extensive the results were across Critical Care;

c) What the air handling units could actually deliver if they were adjusted; and

d) The legal and contractual position in relation to these issues.

3.4.12 At 10am on 28 June 2019, a 'Joint Steering Group' meeting was held with NHSL, Multiplex and IHSL to discuss the emerging issues and the detail of IOM's report in relation to operating theatres. We understand that, detail of the Critical Care ventilation issues was not provided for this meeting and that the discussion focused on operating theatres. This was followed by a conference call later the same day to mobilise the necessary engineers to resolve issues with the operating theatres. At 4pm on 28 June 2019, IHSL informed NHSL that the operating theatre issues could be resolved from the following Monday (1 July 2019) but that the work required could not commence until the required engineers were available.

3.4.13 Additionally, on 28 June 2019, we understand that IOM informally provided more detail to the Programme Board regarding the issue of Critical Care air change rates. At this time, IHSL was asked whether Critical Care could, in fact, achieve the required rate of 10 ac/hr and IOM was asked whether the existing ventilation equipment could deliver 10 ac/hr.

3.4.14 On 1 July 2019, IOM provided more detail of the Critical Care ventilation issues it had found which indicated that the equipment was not capable of delivering 10

ac/hr. We understand from NHSL that on the same day, IHSL and Multiplex responded verbally that 10 ac/hr could not be achieved.

3.4.15 At 4:30pm on 1 July 2019, a meeting was held, called by the NHSL executive management team and the Project Team, which included the IPC Lead Nurse and Consultant Microbiologist, the Medical Director, the Children's Services Director and Associate Medical Director, and the Programme Board with two representatives of Multiplex, one representative of IHSL and one representative of IOM, to discuss the air ventilation issues in the operating theatres. Critical Care rooms were not discussed in this meeting as the NHSL Board required the opportunity to discuss this element of the issue internally first given its significance and that IHSL had confirmed that same day that 10 ac/hr could not be achieved using the current system.

3.4.16 Following this meeting, the Programme Board informed a representative of the NHSL Board of the issues with the air change rates within the Critical Care areas of the Hospital. This is the first time that the issue of Critical Care air change rates was escalated to a member of the NHSL Board.

3.4.17 On the evening of 1 July 2019, the issues with Critical Care were shared with other members of the NHSL Board which resulted in an urgent internal meeting being called at 9am on 2 July 2019. The Hospital was due to open only one week later, on 9 July 2019, and it was clear that the issues in Critical Care would not be resolved by this time. As such, attendees were tasked with investigating potential courses of action to address this situation. Attendees reported back at 1pm that day and a list of potential options was generated.

3.4.18 During 2 July 2019, the NHSL Board also briefed the Director General of Health & Social Care at SG and the Chief Performance Officer at NHS Scotland on the situation and the options.

3.4.19 Additionally, a conference call was arranged for 3 July 2019 between NHSL, HFS and Health Protection Scotland (**"HPS"**). HFS and HPS concluded that there was not enough information available to give assurance that the planned move to the Hospital should go ahead on 9 July 2019.

3.4.20 At 2pm on 3 July 2019, the NHSL Board met with the Chief Performance Officer for NHS Scotland in order to discuss the options available. This was followed by an email setting out the respective options.

3.4.21 A communications plan was created by NHSL on 3 July 2019 and press and staff briefings were scheduled for 4 July 2019.

3.4.22 On 4 July 2019, it was decided by SG that in order to ensure consistent and up to date briefings were provided to staff, patients and the wider general public, all announcements would be routed through the Cabinet Secretary.

3.4.23 At 4pm on 4 July 2019, the postponement of the move to the new site was announced by the Cabinet Secretary.

3.5 Summary

3.5.1 Whilst there were significant issues relating to ventilation throughout the life of the Project, the specific issue (being air change requirements in Critical Care areas not complying with the SHTM 03-01 standard) which gave rise to a decision to delay the opening of the Hospital was not identified to the NHSL Board until 1 July 2019. Indeed, this issue only became apparent to any member of NHSL when IOM completed its testing of the ventilation system and reported the issue in relation to Critical Care on 24 June 2019.

4 Design specifications and air ventilation standards

To determine the extent to which the design specifications with regard to air ventilation complied with the SHTM standards, and specifically SHTM 03-01, being the ventilation for healthcare premises standards, at each stage of the Project. It was agreed that KPMG would not undertake a technical review in this respect but confirm that the Standards were included within the design specifications.

4.1 Introduction

4.1.1 In this Section, we have considered the extent to which the design specification with regard to air ventilation included reference to, and complied with, the SHTM at each stage of the Project. Our consideration of this includes:

a) At Section 4.2, we summarise the standards relating to air ventilation which were relevant to the Project and provide the relevant extracts from SHTM;

b) At Sections 4.3 to 4.5, we consider whether the design specifications with regard to air ventilation were referred to at each stage of the key stages of the Project; being:

- Invitation to Participate in Dialogue ("**ITPD**") (the tender process);
- Financial Close, being the signing of the Project Agreement; and
- The Settlement Agreement.

c) At Section 4.6, we detail the process that was to be followed in order to make any changes to the Project Agreement and in turn to designs of the air ventilation;

d) At Section 4.7, we provide details on the ITs role in the Project, specifically in respect of its involvement in monitoring the works for compliance with the BCR, and in effect the design specifications; and

e) At Section 4.8, we provide details of assurances provided by IHSL in January 2019 in respect of compliance with SHTM 03-01.

4.2 SHTM standards

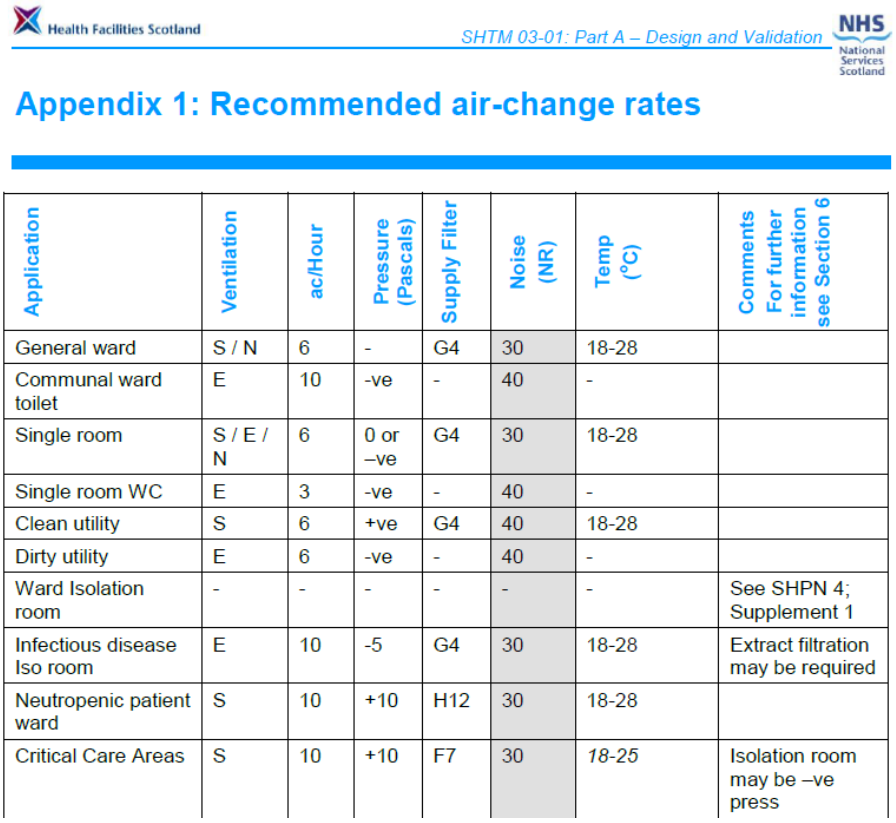
4.2.1 HFS provides operational guidance to NHS Scotland bodies on a range of healthcare facilities topics. As part of its role, HFS issues guidance publications known as "SHTMs". SHTMs give comprehensive advice and guidance on the design, installation and operation of specialised building and engineering technology used in the delivery of healthcare. The focus of SHTM guidance remains on healthcare-specific elements of standards, policies and up-to-date established best practice. They are applicable to new and existing sites, and are for use at various stages during the whole building lifecycle.

4.2.2 SHTM 03-01 'Ventilation for healthcare premises' is the relevant guidance which is pertinent to the ventilation issues and the Delay. Part A 'Design and validation', of the latest version of SHTM 03-01[45], provides details of the recommended air change rates for each component of a hospital[46].

4.2.3 Section 7 'Specialised ventilation systems', of the latest version of SHTM 03-01, contains design information for a range of healthcare ventilation applications, listing *'critical areas and high-dependency units of any type'* as being one of the departments that require a degree of specialised ventilation[47]. This section of SHTM 03-01 describes how ventilation systems should be designed for various departments and references recommended air-change rates as being contained within SHTM 03-01 Appendix 1: Table A1 ("**Appendix 1**"). An extract from Appendix 1 is provided below:

[45] Version 2 dated February 2014
[46] Within Appendix 1: Recommended air-change rates
[47] SHTM 03-01, Version 2 dated February 2014, page 82

Figure 1: Extract from Appendix 1: Table A1 of SHTM 03-01



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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

4.2.4 It is noted from the above table that 'Critical Care Areas' require 10 ac/hr. As set out in Section 3 of this Report, the source of the Delay was rooms within the Critical Care department of the Hospital not meeting this required 10 ac/hr.

4.2.5 We have been unable to identify any definition of 'Critical Care Areas' within the SHTM. It is therefore unclear, from SHTM alone, if the definition of Critical Care Areas within SHTM 03-01 includes, for example, single rooms and clean utility areas located within Critical Care, or if these fall under the different recommended air change rates shown in the table above. However, we note that the Project Agreement documentation, and specifically the BCR, referred to in paragraph 4.3.8 below, includes clinical output based specifications for each department. The specifications relating to Critical Care (the "**Critical Care Clinical Output Based Specifications**") include references to the areas

included in Critical Care with, for example, references to single cubicles, four bedded bays, isolation cubicles and clean and dirty utilities.

4.2.6 We also note that SHTM 03-01 refers to, *"Specific requirements for hospital departments"* and states *"Specific requirements for individual spaces and departments are included in the Health Building Notes (HBNs) and Activity Database (ADB) A-Sheets, or Scottish Health Planning Notes (SHPNs)* [48]".

4.2.7 As previously mentioned, the Delay itself was as a result of both the 'single bed cubicle' and 'four bedded bays' within Critical Care being identified as non-compliant with the air change rates set out in SHTM 03-01. Individuals at NHSL are of the view that SHTM 03-01 is predominately focused on an adult care environment and does not explicitly consider the different ways in which children's hospitals manage patients in Critical Care, for example, through the use of four-bedded bays to cohort patients with the same infection at times when admission rates are high and Critical Care support required may exceed isolation room capacity.

4.2.8 Without clarity on the definition of Critical Care Areas in the Standards as a stand-alone basis and, in particular, in respect of how four-bedded bays should be classified under SHTM 03-01, the relevant air change rate for particular rooms could be open to interpretation.

4.2.9 NHSL are of the view that such four-bedded bays should be included under 'Critical Care Areas' in the table at Appendix 1 of SHTM 03-01, and included reference to four-bedded bays in their Critical Care Clinical Output Based Specifications. However, an alternative interpretation from the Standards alone could lead to them being classified under a 'General Ward', which carry different recommended air change rates.

[48] SHTM 03-01 V2 Part A paragraph 2.60

Previous standards

4.2.10 The SHTM standard that preceded SHTM 03-01[49] was SHTM 2025. Through review of the documents we have been provided in relation to SHTM 2025, we cannot see any reference to any recommended air change rates for Critical Care areas.

4.3 ITPD stage (March 2013)

4.3.1 The ITPD issued to bidders, dated 11 March 2013, makes reference to the specific room requirements for the Hospital (the **"Room Information**") being detailed in a number of documents, including[50]:

a) The BCR;

b) The EM;

c) The Schedule of Operational/Design Notes;

d) The Equipment Schedule;

e) The Equipment Responsibility Matrix;

f) The Draft Schedule of Accommodation; and

g) The Operational Functionality elements of the Reference Design.

4.3.2 As part of their response to the ITPD, bidders were required to develop 'Room Data Sheets' ("**RDS**") for 11 of the rooms within the Hospital. None of these rooms appear to be located in the Critical Care area of the Hospital[51]. The RDS were to incorporate the Room Information, as detailed above. RDS for the

[49] October 2011 was the date of the first publication of SHTM 03-01
[50] ITPD Volume 1, section 2.5.3 'Room Data Sheets'
[51] On the basis that the EM index refers to the department code for Critical Care being 'B1' and none of the 11 room references detailed in section 2.5.2 of the IPTD have the prefix B1

remaining rooms were to be developed by the preferred bidder prior to Financial Close.

4.3.3 We understand from NHSL that, of the documents listed above, it is only the BCR and the EM that refer to SHTM 03-01 and/or Critical Care. Details of these documents are set out below.

Board's Construction Requirements

4.3.4 The BCR are the NHSL Board's detailed requirements for the Project. The BCR included within the ITPD[52] make a number of references to SHTMs, as detailed in the following paragraphs.

4.3.5 Section 2.3 (NHS Requirements) of the BCR states that, *"unless the Board has expressed elsewhere in the Board's Construction Requirements, a specific and different requirement, the Facilities shall comply with but not be limited to the provisions of the NHS Requirements…"*[53]. These NHS Requirements include the following in relation to SHTM:

> ***"v. Health Technical Memoranda & Scottish Health Technical Memoranda (HTM & SHTM)***
>
> *Project Co shall, in relation to all SHTM and all HTM (except HTM where an SHTM exists with the same number and covering the same subject matter): take fully into account the guidance and advice included within such SHTM and HTM; ensure that the Facilities comply with the requirements of such SHTM and HTM; and adopt as mandatory all recommendations and preferred solutions contained in such SHTM and HTM"*[54].

[52] ITPD: Volume 3, Board's Construction Requirements, Rev C, August 2013
[53] ITPD: Volume 3, Board's Construction Requirements, Rev C, August 2013, Section 2.3 (page 22)
[54] ITPD: Volume 3, Board's Construction Requirements, Rev C, August 2013, Section 2.3, part v. (page 24)

4.3.6 The BCR[55] makes direct reference to SHTM 03-01 on a number of occasions within the Project Agreement, specifically in Sub-Section C:

a) Section 5.2 Infection Prevention & Control:

"Project Co shall ensure all aspects of the Facilities allow for the control and management of any outbreak and/or spread of infectious diseases in accordance with the following:

…

f) Ventilation in Healthcare Premises (SHTM 03-01)"[56]

b) Section 8.1 Minimum Engineering Standards:

"The following is a non-exhaustive list of SHTM's, HBN's and HTM's applicable to the Facilities:

…

h) SHTM 03-01: Ventilation in Healthcare Premises"[57]

c) Section 8.5.3 Air Quality, i. Internal:

"Particular attention shall be given to the risk of cross infection within the hospital… Project Co shall demonstrate through submission of information to the Board as Reviewable Design Data for review by the Board…how the proposals facilitate the control and management of an outbreak and spread of infectious diseases, and in particular shall comply with the requirements of SHTM 03-01…"[58]

d) Section 8.7.8 (Mechanical Ventilation & Air Conditioning) also makes direct reference to SHTM 03-01 and how the "*Project Co shall demonstrate how the*

[55] ITPD: Volume 3, Board's Construction Requirements, Rev C, August 2013
[56] ITPD: Volume 3, Board's Construction Requirements, Rev C, August 2013, Subsection C, Section 5.2 (page 68)
[57] ITPD: Volume 3, Board's Construction Requirements, Rev C, August 2013, Subsection C, Section 8.1 (page 104)
[58] ITPD: Volume 3, Board's Construction Requirements, Rev C, August 2013, Subsection C, Section 8.5.3 (page 104)

proposals facilitate the control and management of an outbreak and spread of infectious diseases in accordance with SHTM 03-01…"[59].

4.3.7 Specific reference is also made to ventilation of 'isolation rooms' as being required to be designed and installed in accordance with SHTM 03-01[60].

4.3.8 Subsection D of the BCR sets out a number of specific clinical requirements, including the Critical Care Clinical Output Based Specifications[61]. We note that the Critical Care Clinical Output Based Specifications refer to *"SHTM 2025: Ventilation"* as containing 'design guidance' for the Project[62], as opposed to the updated standard, SHTM 03-01. As referred to in Section 4.2.10, these previous standards did not specify air change rates recommended for Critical Care areas.

4.3.9 Subsection B of the BCR defines the EM as detailing *"…the room environmental condition requirements of the Board required within each department / unit / space / area…"*[63]. Sub-Section C, Section 8, states that the *"Project Co shall provide the Works to comply with the Environmental Matrix"*[64]. We have provided further details on the EM below.

Environmental matrix

4.3.10 An EM was provided as part of the Room Information within the ITPD[65] (the "**ITPD EM**") from which the bidders were asked to develop their RDS and their design specifications.

[59] ITPD: Volume 3, Board's Construction Requirements, Rev C, August 2013, Subsection C, Section 8.7.8 (page 119)
[60] ITPD: Volume 3, Board's Construction Requirements, Rev C, August 2013, Subsection C, Section 8.7.22 (Ventilation and Air Conditioning of Isolation Rooms) (page 124)
[61] B1 Critical Care, Clinical Output Based Specifications, dated January 2013
[62] Section 1.9 Design Guidance, page 15 of the B1 Critical Care, Output Based Specifications, dated January 2013
[63] IPTD: Volume 3 Board's Construction Requirements, Rev C, Subsection B, B (page 9)
[64] IPTD: Volume 3 Board's Construction Requirements, Rev C, Subsection C, Section 8 (page 102)
[65] Entitled the 'Reference Design Envisaged Solution – RHSC / DCN RDS Environmental Matrix'

4.3.11 The bidder's technical submission requirements contained within the ITPD referred to the EM in the following context:

> *"Whilst Bidders are required to undertake their own design, the Board has provided a draft Environmental Matrix as part of the ITPD documentation. Bidders must confirm acceptance of the Board's Environmental Matrix, highlighting any proposed changes on an exception basis"*[66].

4.3.12 The EM details environmental standards (for example, temperature, heating, ventilation) on a room-by-room basis. The EM consists of a cover sheet 'index' showing the different department codes, and references the page on which the associated details can be found. Department 'B1' is listed as 'Critical Care / HDU / Neonatal Surgery'.

4.3.13 Following the index, there is a page of guidance notes which include[67]:

> *"**HDU bed areas** - Design Criteria - HBN 57 gives specific guidance as well as SHTM 03-01 - esp Appendix 1 for air change rates - 10ac/hr Supply…"*
>
> ***"Critical Care Areas** – Design Criteria – SHTM 03-01 – esp Appendix 1 for air change rates – 10 ac/hr Supply…"*

4.3.14 The main body of the EM includes tables detailing, for each department and each respective room, the corresponding environmental standards. These include, among other things, details of the temperature, heating, cooling and ventilation (including supply air change and pressure).

4.3.15 Despite the guidance note, referred to at paragraph 4.3.13 above, advising that all Critical Care Areas should be in accordance with SHTM 03-01 and, specifically, 10 ac/hr supply, we identified that the ITPD EM table for Critical Care

[66] Appendix A (ii) Submission Requirements, Section C8.3 (page 105)
[67] The ITPD EM, entitled 'Reference Design Envisaged Solution – RHSC / DCN RDS Environmental Matrix' version third issue, dated 19 September 2012 (page 2, note 15)) (Document reference: 20120919 Environment Matrix (ITPD))

(Section B1 – page 5[68]) includes the following types of rooms - 'Single Bed Cubicles', 'Open Plan Bay (4 bed)' and 'Open Plan Bay (3 cots)', all of which are detailed with supply air change rates of 4 ac/hr.

4.3.16 The ITPD EM was therefore inconsistent between the guidance notes and detailed content contained within it. The detailed content which stated supply air change rate of 4 ac/hr was also inconsistent with the Critical Care air change rate of 10 ac/hr detailed in SHTM 03-01. We understand the current Project Team are not aware of why the document states 4 ac/hr.

4.3.17 We understand from NHSL that, as part of the process of developing the capital-funded project (see paragraph 3.2.1), documentation relating to the design and build was produced. We understand that an EM was developed by the Design Consultant used for this capital scheme and a version of this was shared as part of the tender process[69].

4.3.18 We have seen a 'first issue' of an EM, which we understand was part of the capital scheme, which is dated 9 September 2010 and is described as 'Royal Hospital for Sick Children – Edinburgh, HK Doc - RDS Environmental Matrix', which within the 'B1 – Critical Care / HDU / Neonatal Surgery' section refers to 'open plan bay (4 beds)' as having 10 ac/hr and balanced pressure[70]. We note, however, that the ITPD EM is entitled 'Royal Hospital for Sick Children and Department for Clinical Neurosciences – Edinburgh Reference Design Envisaged Solution - RHSC / DCN RDS Environmental Matrix'[71]. The version control within the ITPD EM shows the 'first issue' of this document as being dated 3 February 2012 and not 9 September 2010 as referred to above[72]. However, from the dates detailed within them, it would appear that these are two different documents, but

[68] Reference Design Envisaged Solution – RHSC / DCN RDS Environmental Matrix version third issue, dated 19 September 2012 (page 5)

[69] The ITPD EM

[70] Document reference: RHSC RDS Environmental Matrix Sept 2010_iss1_rev-

[71] Document reference: Reference Design Envisaged Solution – RHSC / DCN RDS Environmental Matrix version third issue, dated 19 September 2012

[72] Reference Design Envisaged Solution – RHSC / DCN RDS Environmental Matrix version third issue, dated 19 September 2012

that the IPTD EM could be an iteration of the 'first issue' document[73] provided to us.

Preferred bidder letter

4.3.19 A letter was issued by NHSL to IHSL on 5 March 2014, advising that their final tender, submitted on 13 January 2014, had been accepted (the "**Preferred Bidder Letter**")[74].

4.3.20 As part of the Preferred Bidder Letter, IHSL was asked to *"…use its best endeavours to diligently develop…",* among other things, Project Co proposals and RDS'[75]. These technical schedules were to be *"…finalised in conjunction with the Board to ensure that both parties are satisfied that these technical Schedules robustly address[ed] the Board's Construction Requirements…"*[76].

Period between issue of Preferred Bidder Letter (March 2014) and Financial Close (February 2015)

4.3.21 During the period between NHSL issuing the Preferred Bidder Letter and Financial Close, we have seen evidence of ongoing correspondence between NHSL and Project Co in respect of comments on the EM. We understand from Mott MacDonald and NHSL that, when the 'Board' has been referred to in the below correspondence, this refers to comments from both themselves and the Project Team and not the ultimate NHSL Board. This correspondence includes the following:

a) Comments provided to Project Co[77] referred to as *"…initial technical comments on draft 1 of the Environmental Matrix"*, dated 13 October 2014[78].

[73] Document reference: RHSC RDS Environmental Matrix Sept 2010_iss1_rev-. Dated 9 September 2010
[74] Document reference: 7.1.13 Preferred Bidder Status Letter dated 5 March 2014
[75] Section 4.4 of Schedule Part 1 - Terms of Preferred Bidder Appointment (Document reference: 7.1.13 Preferred Bidder Status Letter dated 5 March 2014)
[76] Section 4.4 of Schedule Part 1 - Terms of Preferred Bidder Appointment (Document reference: 7.1.13 Preferred Bidder Status Letter dated 5 March 2014)
[77] Attached to an email from Mott MacDonald to Multiplex, among others, dated 14 October 2019. (Document reference: 141014 MM-GC-000399)
[78] Document reference: 141013 Environmental Matrix Comments

This document included 12 comments, one of which specifically refers to ventilation standards in respect of bedrooms[79]:

"Bedrooms 4ac/hr, SHTM says 6 ac/hr

Bedrooms have no extract

Bedroom en-suites 10 ac/hr, SHTM says 3 ac/hr

Bedrooms stated as positive pressure, SHTM says 0 or –ve pressure…"[80].

b) IHSL responded to the above comments on 27 October 2014. Specifically, in respect of comment 7 detailed above, IHSL stated:

"The scheme is based on the Reference design throughout which is essentially mixed mode with openable windows and 2/3rds mechanical supply air to all bedrooms. This gives physiological benefits with access to fresh air control by user and obvious Energy benefits. We have amended the environmental schedule to show the room being balanced which is provided by the opening window" 81.

c) An email from Mott MacDonald (on behalf of NHSL) to Multiplex[82], among others, attaching the notes from a meeting held on 11 November 2014. The notes attached state:

"Project Co shall update the Environmental Matrix to reflect the following Board comments"[83].

A specific comment relating to bedroom ventilation was:

[79] Comment 7. Document reference: 141013 Environmental Matrix Comments
[80] Document reference: 141013 Environmental Matrix Comments
[81] Document reference: 20141027 Environmental Matrix Comments
[82] Document reference: 20141111 RE Environmental Matrix NHSL Comments Feedback 3
[83] Document reference: 111114 RDD Part 4 Enviro Matrix comments

"Detailed proposal awaited on bedroom ventilation to achieve balanced/negative pressure relative to corridor."[84]

d) On 19 January 2015, Multiplex emailed sketches of the proposed pressure regime to Mott MacDonald and NHSL[85]. A report was also provided to Mott MacDonald and NHSL detailing Project Co's review of air movement within single bedrooms under various ventilation scenarios[86]. Mott MacDonald responded to the email containing the sketches with a number of comments, including:

"The critical factor from SHTM 03-01 for infection control will be the resultant pressure within the room being balanced with or negative to the corridor"[87].

4.3.22 We note that throughout the above correspondence there is reference to ventilation and SHTM 03-01. However, there is no specific reference to Critical Care rooms and the focus of the discussions appears to have been centred on the pressure regime in the rooms, rather than air change rates.

4.4 Project Agreement stage (February 2015)

4.4.1 The Project Agreement, dated 12 and 13 February 2015, states that the overall responsibility of Project Co is to carry out the works *"so as to procure satisfaction of the Board's Construction Requirements"*[88]. Details of the BCR contained in the Project Agreement are detailed in paragraph 4.4.4 below.

4.4.2 The Project Agreement also includes a list of Reviewable Design Data ("**RDD**") and the status of the approval of such data as at Financial Close. Further details on this are provided in paragraph 4.4.5 below.

[84] Bullet point 4. Document reference: 111114 RDD Part 4 Enviro Matrix comments
[85] Document reference: 150129 MM-GC-000432
[86] RHSC – DCN Edinburgh. Air Movement Report For Single Bedrooms (Draft). Document reference: 13.01.15 20141127 air movement
[87] Document reference: 150129 MM-GC-000432
[88] Project Agreement, Schedule Part 6 (Construction Matters), Section 3 (Board's Construction Requirements), Revision I

4.4.3 The RDD relevant to air change rates is included within the RDS and the EM. We have provided details of the RDS and EM in paragraphs 4.4.8 to 4.4.12 below.

Board Construction Requirements

4.4.4 The references to SHTM 03-01 within the Project Agreement BCR[89] are consistent with those in the BCR provided at the ITPD stage, as detailed in paragraph 4.3.6 above. We note that the reference to SHTM 2025 in the Critical Care Clinical Output Based Specifications also remained in the Project Agreement version.

Reviewable Design Data

4.4.5 The process for RDD is detailed in Schedule Part 8 (review procedure) of the Project Agreement. RDD is classified as either approved or non-approved based on the classification level ascribed by NHSL Board Representatives[90]. Level A (no comment) or Level B (proceed subject to amendment as noted) are in effect approved (collectively "**Approved RDD**"), whereas Level C or Level D are classified as non-approved[91].

4.4.6 Appendix 1, Table A, of Schedule Part 8 (review procedure) of the Project Agreement provides details as to the meaning of the aforementioned approval levels against each category of RDD. The table refers to the Level A and Level B approvals for RDS' as follows:

> *"endorsement of any room data sheet means that Project Co may proceed to construct in accordance with the Submitted Item and that the Board is satisfied that the design and other information in the relevant room data sheet satisfies Operational Functionality."*[92]

[89] Project Agreement, Schedule Part 6 (Construction Matters), Section 3 (Board's Construction Requirements). Document reference: RHSC DCN BCRs A B C Rev I clean 230115
[90] Project Agreement, Schedule Part 8, Review Procedure, Appendix 1 (page 241)
[91] As detailed in Schedule Part 6 (Construction Matters), Part 5, Reviewable Design Data (page 27)
[92] Project Agreement, Schedule Part 8, Review Procedure, Appendix 1 (page 241)

4.4.7 NHSL has advised us that reviewing such documents for 'operational functionality' did not, in their opinion, consist of a technical review as to the extent to which they were in compliance with the Standards.

Room Data Sheets and Environmental Matrix

4.4.8 Relevant design data included within the Project Agreement includes the RDS and an updated version of the EM[93] ("**Project Agreement EM**"). The RDS contain environmental data for each room, including supply air change rates. We understand that the Project Agreement EM was a summary of the RDS.

4.4.9 We note that the Project Agreement EM format and design is similar to the ITPD EM, with the same index and a page of guidance notes. As with the ITPD EM, the Project Agreement EM guidance notes refer to Critical Care Areas design criteria being SHTM 03-01 and *"10ac/hr Supply"*[94]. However, again consistent with the ITPD EM, included within the 'B1' section of the Project Agreement EM[95] (referred to as 'Critical Care / HDU / Neonatal) are rooms referred to as 'Single Bed Cubicles', 'Open Plan Bay (4 bed)' and 'Open Plan Bay (3 cots)', all of which are detailed with a supply air change rate of 4 ac/hr. The Project Agreement EM therefore remained inconsistent between the guidance notes and detailed content contained within it. The detailed content which stated a supply air change rate of 4 ac/hr was also inconsistent with the Critical Care air change rate of 10 detailed in SHTM 03-01.

4.4.10 We note that, whilst the Project Agreement EM guidance notes refer to Critical Care Areas design criteria being SHTM 03-01 and *"10ac/hr Supply"*[96], that a later version of the EM, dated 26 November 2015, contains guidance notes that state *"10ac/hr Supply for isolation cubicles"*[97]. We understand from NHSL that the

[93] Contained within Schedule Part 6, Construction Matters, Part 6 of the Project Agreement. Document reference: WW-XX-XX-DC-001

[94] Document reference: WW-XX-XX-DC-001. Page 2, Note 15. Contained within Schedule Part 6, Construction Matters, Part 6 of the Project Agreement.

[95] Document reference: WW-XX-XX-DC-001. Section B1 – page 5

[96] Document reference: WW-XX-XX-DC-001. Page 2, Note 15. Contained within Schedule Part 6, Construction Matters, Part 6 of the Project Agreement

[97] Document reference: WW-XX-XX-DC-XXX-001 (rev 1)

addition of the words 'for isolation cubicles' in this version of the EM was never flagged as a change to the Project Team. We note that this version of the EM contains other parts of the guidance notes in red. This small change in the text had the effect of removing the inconsistency between the guidance notes and the detail in the matrix, as referred to above.

4.4.11 We note that the Project Agreement EM was classified as 'non-approved' at the date of the Project Agreement, with the Board requesting that Project Co update the EM to reflect a number of comments, including *"Detailed proposal awaited on bedroom ventilation to achieve balanced/negative pressure relative to corridor"*[98]. We have seen initial reference to this comment in November 2014, in an attachment to an email from Mott MacDonald to Multiplex[99] (see paragraph 4.3.21 above). We note that this comment remained in all versions of the EM provided to us, from the Project Agreement EM[100] to the EM included as part of a Settlement Agreement in February 2019[101] (see Section 4.5 for further details of the Settlement Agreement).

4.4.12 Whilst the EM was classified as 'non-approved' under the RDD process at the point of Financial Close, we have not identified any Board comments within the RDD document specifically relating to air change rates and Critical Care.

4.5 Settlement Agreement (February 2019)

4.5.1 As set out in paragraph 3.3.7, on 22 February 2019, a Settlement Agreement was signed by NHSL Board and IHSL. The Settlement Agreement contained a schedule detailing 73 items[102] which had been in disagreement between the parties and the agreed resolutions for each issue.

[98] Bullet point 4. Document reference: 111114 RDD Part 4 Enviro Matrix comments
[99] An email from Mott MacDonald to Multiplex, among others, dated 14 October 2019. (Document reference: 141014 MM-GC-000399)
[100] The document itself was undated but the Project Agreement was dated 12 and 13 February 2015
[101] We understand from NHSL that the version included within the Settlement Agreement was version 11 which is dated 25 October 2017
[102] Schedule 1, Part 1, Technical Schedule of the Project Agreement (Pages 26 to 54)

4.5.2 Two of these agreed resolutions were pertinent to the Delay and related to disputes between the parties as to the extent to which bedroom ventilation was in compliance with SHTM 03-01. Both of the resolutions in effect resolved to deviate from recommendations included within SHTM 03-01. Details of the agreed resolutions for these were as follows:

a) 'Item 7 – 4 bed ventilation': for *"14 no 4 bed rooms to be balanced or negative to the corridor at 4 ac/hr"*[103]; and

b) 'Item 13 – Single Bedroom Ventilation air changes'[104]: to decrease *"the mechanical air change ventilation rate within single bedrooms from 6 air changes per hour (6 ac/hr) to 4 air changes per hour (4 ac/hr)"*[105].

4.5.3 We have commented on the above resolutions further in Section 5.3 below.

4.6 Changes to the Project Agreement

4.6.1 In projects of any nature, it will often become necessary for changes to be made to design plans, which in turn may impact compliance to a contractual requirement. In this Project, the design and build were required to be in compliance with the BCR which refer to SHTM 03-01, among other standards. In effect this makes compliance with SHTM 03-01 mandatory. As such, in order to ensure changes were adequately reviewed and agreed upon, a process to make any required changes was necessary.

4.6.2 During the tender process, bidders could put forward proposed 'derogations', being proposed changes to the proposed project agreement (including the BCR). At Financial Close, any accepted derogations were then incorporated into the

[103] Schedule 1, Part 1, Technical Schedule of the Project Agreement (Page 30)
[104] We understand from NHSL that the details of this agreed resolution were those contained within Project Co notice of change dated 14 May 2018
[105] Project Co notice of change dated 14 May 2018, Section 1.0. Document reference: 180522 Schedule 16 Project Co Change Notice No 051

contractual drafting of the BCR. From the NHSL's perspective, these matters were assumed closed or completed at Financial Close.

4.6.3 Following Financial Close, any deviations from the BCR and the signed Project Agreement, proposed by Project Co, could only be initiated and approved through the Project Co Change ("**PCC**") process. A PCC was defined in the Project Agreement as being, *"a Change that is initiated by Project Co by submitting a Project Co Notice of Change to the Board pursuant to Section 5 (Project Co Changes) of this Schedule Part 16 (Change Protocol)"*[106].

4.6.4 We understand from the Project Agreement[107] and discussions with NHSL that the PCC process was as follows:

a) If Project Co wishes to introduce a PCC, it shall serve a Project Co Notice of Change ("**PCNOC**") to the NHSL Board;

b) The PCNOC shall set out the proposed PCC in sufficient detail to enable the NHSL Board to evaluate it in full. It should specify Project Co's reasons for proposing the PCC, indicate any implication of the PCC, indicate if any savings will be generated by the PCC, and request the NHSL Board to consult with Project Co with a view to deciding on whether to agree to the PCC and, if so, what consequential changes the NHSL Board requires as a result;

c) The NHSL Board shall evaluate the PCNOC in good faith, taking into account all relevant issues, including, among other things, whether the PCC *"may affect the quality of the Services and/or the Works or the likelihood of successful completion of the Works and/or delivery of the Services (or any of them)"*[108];

d) As soon as practicable after receiving a PCNOC, the parties should meet and discuss the matters referred to in it. We understand from NHSL, that on

[106] Project Agreement, Schedule Part 16, Change Protocol, Section1, Definitions (page 389)

[107] Contained within Schedule Part 16: Change Protocol Section 5: Project Co Changes

[108] Project Agreement, Schedule Part 16, Change Protocol, Section 5, Project Co Changes (page 418)

receipt of a PCNOC, the Project Team and its advisors (including Mott MacDonald and MacRoberts) would review and comment on it. Comments and amended versions would then pass between Project Co and the NHSL Board, as required; and

e) If the NHSL Board accepts the PCNOC (with or without modification), the parties shall consult and agree the remaining details as soon as practicable. Upon agreement, the NHSL Board shall issue a notice confirming the PCC, which shall set out the agreed details.

4.6.5 As part of the signing of the Settlement Agreement in February 2019, the resolution of a number of issues was reached. This incorporated a number of changes which had already been raised through the aforementioned PCC process, but had yet to be approved, along with further areas which remained in dispute and which were resolved in the Settlement Agreement. The agreed resolutions which had not been approved prior to the Settlement Agreement were termed 'derogations'. The agreed resolutions included, among others, two which were pertinent to the Delay. We have provided further details of these, and the professional and technical advisors involved in the approval of them, in Section 5.3 below.

4.7 Independent Tester

4.7.1 As part of the ITPD, an IT was required to be appointed as an independent resource to provide inspection review and certify completion in respect of the Project.

4.7.2 The IT was jointly instructed by the NHSL Board and Project Co as part of the Project Agreement. The scope of work of the IT[109] included, among other things:

a) Providing monthly reports and undertaking regular inspections during the works[110];

[109] Project Agreement, Schedule Part 13 'Independent Tester Contract', Appendix 1 'Scope of Services – Independent Tester Contact

[110] Scope item 1.1

b) Providing details of any tests carried out by Project Co, together with results obtained[111];

c) Reporting on the completion status of the Project, identifying any work that was not compliant with the BCR, Project Co Proposals', Approved RDD and/or the Completion Criteria[112];

d) Monitoring the works for compliance with the BCR and Project Co's Proposals and compliance with law[113]; and

e) Monitoring the detailed working drawings and specifications for a sample number and type of rooms which, in their professional judgment, is appropriate to be selected by the IT to verify that they comply with the Approved RDD[114].

4.7.3 In respect of identifying work that was not compliant with BCR, the IT stated that in its view the ventilation flow rates were compliant with the BCR and in particular the EM and RDS. We understand from the IT that, the flow rates are derived by the design consultant from the air change rates specified in the EM and RDS.

4.7.4 We understand from the IT that it reviewed the testing and commissioning results for compliance with the EM and RDS, as required by the Completion Criteria detailed in the Project Agreement[115]. The IT used the EM as the basis for this review process, as this information is the referenced criteria for compliance and it was the IT's understanding that this would have been reviewed by the NHSL Board.

4.7.5 Specifically, in respect of SHTM 03-01 and air change rates, we understand from the IT that, it physically witnessed a proportion of the commission testing of the flow rates, as undertaken by Multiplex's specialist sub-contractors, and reviewed the results of all the tests that were completed. We understand from the IT that,

[111] Scope item 1.3
[112] Scope item 1.2
[113] Scope item 1.9
[114] Scope item 3.2
[115] Contained within Schedule Part 10, Outline Commissioning Programme, Appendix B – Completion Criteria

in accordance with its scope of service, it did not physically test any systems but reviewed the following:

a) That the testing methodology was in accordance with CIBSE[116] commissioning code C;

b) That the equipment that was used for testing flow rate and velocity was within certification/calibration test dates;

c) That the testers were correctly recording the figures; and

d) That the flow rates and pressure were in accordance with the design of the system itself.

4.7.6 The IT advised us that the design flow rates were used as part of the design process and, as such, the IT would not be expected to replicate that design process or reverse it to obtain the actual air change rates.

4.7.7 The actual calculation of air change per hour rates was considered by the IT to be a design function and, as such, outside their scope of work.

4.7.8 Following discussions with the IT, and from reviewing a sample of the monthly reports produced by the IT, we note that, whilst there was reference to other ventilation issues prior to April 2018, there was no reference to any ventilation issues specifically in respect of four-bedded rooms until April 2018. The IT key issues report dated April 2018[117] states that the issue (no. 212) was raised in 2016, details of which are as follows:

> *"The IT understands that NHS Lothian and Multiplex are currently discussing an arrangement by which 14 of the 4 bedded rooms would receive negative pressure to the corridor ventilation systems. The IT is awaiting confirmation of this agreement in a format that would take preference to any other stated requirement."*

[116] Chartered Institute of Building Services Engineers
[117] The Royal Hospital for Children and Young People Edinburgh Key Issues Report No. 37, April 2018, Appendix D Compliance Issues Outstanding (reference nr 212, page 26)

4.7.9 Issue no. 212, as set out above, remains in the subsequent IT reports each month, with the September 2018 report including an additional explanation that Multiplex were *"…going to forward on the Aconex Transmittal document to progress close out"*[118]. We understand that the September 2018 report was the last report issued by the IT and that issue no. 212 was eventually rolled-up as part of the Settlement Agreement.

4.8 Compliance assurance from IHSL (January 2019)

4.8.1 In a letter dated 31 January 2019, a Project Co representative for IHSL, provided their responses to a number of queries raised by the NHSL Board regarding assurances in respect of plant rooms and ventilation systems. Specific assurance had been sought by the NHSL Board for IHSL to provide assurance that *"All critical ventilation systems [to be] inspected and maintained in line with 'Scottish Health Technical Memorandum 03-01: Ventilation for healthcare premises"*[119]. The IHSL's Project Co representatives response to this was "*Construction: - All ventilation systems have been designed, installed and commissioned in line with SHTM 03-01 as required, systems are maintained in such a manner which allows handover at actual completion to meet SHTM 03/01 standards*" [120].

4.9 Summary

4.9.1 Throughout all stages of the Project we have seen references made to the requirements of the Project Co to adhere to SHTM, including specifically, SHTM 03-01 relating to ventilation systems.

4.9.2 Our work has identified issues within the EM, including inconsistencies with SHTM and discrepancies within the document itself. Specifically:

[118] The Royal Hospital for Children and Young People Edinburgh Key Issues Report No. 42, September 2018, Appendix D Compliance Issues Outstanding (reference nr 212, page 25)
[119] Document reference: 10.11.4 31-01-19 IHSL.NHSL Plant Rooms.Ventilation Systems
[120] Document reference: 10.11.4 31-01-19 IHSL.NHSL Plant Rooms.Ventilation Systems

a) The version of the EM document provided by NHSL to bidders as part of the tender process, and referred to in the BCR, as detailed above, included reference to both the single bed cubicles and four-bed rooms in Critical Care as requiring 4 ac/hr. We understand this was not in compliance with SHTM and should have been 10 ac/hr. This reference remained in subsequent versions of the EM; and

b) The guidance note at the front of the document provided at the tender and Financial Close stages of the Project suggested that all Critical Care Areas should be in accordance with SHTM 03-01, being the relevant part of SHTM relating to ventilation, and "*10ac/hr Supply"*[121]. This is inconsistent with the content of the EM as detailed above. We note that, this inconsistency appears to have been removed after Financial Close by the insertion of the words 'for isolation cubicles'[122], suggesting that only 'isolation cubicles' in Critical Care should have an air change rate of 10 ac/hr. However, we were informed by NHSL that this change was made by the Project Co and was not flagged to NHSL by the Project Co (see paragraph 4.4.10 for further details). Despite this change, the EM itself still referred to single bed cubicles and four-bed rooms in Critical Care as requiring 4 ac/hr, which we understand remained not in compliance with SHTM and should have been 10 ac/hr.

4.9.3 We have not been instructed to consider how the inconsistency made its way into the initial EM. However, notwithstanding contractual obligations, it appears that there has been confusion between the parties as to the application of these Standards. This appears to have stemmed from a document which was contained within the tender documentation, a version of which was used throughout the Project, which included details on the environmental specifications

[121] Document reference (tender version): Reference Design Envisaged Solution – RHSC / DCN Environmental Matrix version third issue, dated 19 September 2012 (page 2, note 15)). Document reference (Project Agreement version): WW-XX-XX-DC-001. Page 2, Note 15. Contained within Schedule Part 6, Construction Matters, Part 6 of the Project Agreement

[122] Full wording read: *"10ac/hr Supply for isolation cubicles"* in a version of the EM dated 26 November 2015. Document reference: WW-XX-XX-DC-XXX-001 (rev 1).

of the Hospital, the EM. Elements of the EM were inconsistent with SHTM 03-01 from the tender process (which commenced in late 2012) onwards.

5 Professional and technical advice given to the NHSL Board

To understand what professional and technical advice was given to the NHSL Board, in particular when derogations were proposed, who agreed them and the risk assessments that were undertaken to reach a final decision.

5.1 Introduction

5.1.1 In this Section, we have provided details of the professional and technical advice given to NHSL, which was visible to the NHSL Board through the Project governance structure.

5.1.2 In particular, we have considered when derogations were proposed, who agreed them and the risk assessments that were undertaken to reach a final decision. In seeking to answer this point, in Section 5.3 below, we have focused on one of two changes to the Project Agreement that were pertinent to the Delay.

5.2 Professional and technical advisors

5.2.1 Throughout the Project, a number of advisors assisted NHSL in decision-making from a practical and clinical perspective, as well as from a technical perspective regarding designs and standards.

5.2.2 The Project Team itself consisted of technical and clinical professionals, whom we understand had many years of experience in the health sector. In addition to the Project Team, the other professional and technical advisors involved throughout the Project consisted of[123]:

a) Medical and non-medical experts from within NHSL;

[123] We understand Ernst and Young provided financial advisory support to the Project. We have not commented on their involvement in the Project further in this Section as they were not involved in providing technical advice

b) Mott MacDonald – external technical advisor and project manager;

c) MacRoberts – external legal advisor; and

d) IOM – an independent ventilation tester appointed on 30 May 2019.

Medical and non-medical experts from within NHSL

5.2.3 In order to assist with the development of clinical output specifications and any ongoing queries or changes throughout the Project, the Project Team had access to medical expertise within NHSL, such as the IPC team and clinical care teams for each department.

5.2.4 The IPC team had a nominated individual who worked with the Project Team. This individual was invited to the design meetings, although it was at their discretion if they attended. They were asked to comment on drawings shared with them and ongoing discussions were held with them. The IPC team members were predominantly involved to provide operational functionality advice (as referred to at paragraph 4.4.6 and 4.4.7), rather than to comment on technical elements, such as the specifics of SHTM 03-01.

5.2.5 The clinical care teams were involved in the development of the Critical Care Clinical Output Based Specifications for the Project (as referred to in paragraph 4.3.8 above) and also attended design meetings for their department(s). The Critical Care Clinical Output Based Specifications were initially drafted by the Project Team and then passed to the relevant clinical teams to obtain more specific input and confirmation on, for example, the types of patients going into the wards, what functions the rooms had and the specific requirements of each room. Each ward and department nominated who they were going to involve in these advisory teams. The Critical Care clinical team consisted of a lead consultant, a lead nurse and a charge nurse.

5.2.6 In addition to the clinical care teams and IPC, NHSL also had access to non-medical professionals within its workforce, such as, estates and facilities staff, along with other NHSL contractors, such as the Authorised Engineers. These individuals were available as advisors to the estates team, NHSL-wide, in order to assist with a wide range of technical design elements should the Project Team

feel they required further input. We understand from the Project Team that, such input was not required on a regular basis and would be limited to ad hoc queries.

Mott MacDonald

5.2.7 Mott MacDonald was appointed in 2011 in order to provide project management and design services for the Project[124]. We understand from Mott MacDonald that the design services related solely to 'enabling works'[125]. The 'Post Financial Close Support Services Proposal'[126], prepared by Mott MacDonald, specifies a "*Technical Advisory and Project Management Appointment*"[127].

5.2.8 Mott MacDonald worked alongside the Project Team in order to assist in day to day and ongoing matters, including attending weekly or bi-weekly project management group meetings, as well as meetings relating to proposed PCC.

5.2.9 To this end, Mott MacDonald provided input and assistance with ongoing matters through the RDD process, such as providing comments on the EM and being on hand to support in the drafting of contractual documentation, including those containing health standard guidance, such as the BCR.

5.2.10 We understand from both Mott MacDonald and NHSL that, neither of them ever undertook a detailed review of the EM against SHTM 03-01 and that they responded on an exceptions basis, as and when operational functionality queries came to light[128]. NHSL's understanding of the contractual terms was that it was the Project Co's responsibility to ensure the EM complied with the Standards.

5.2.11 We have seen evidence of the 'Board's' ongoing involvement in the review of the EM both prior to, and after, Financial Close. We understand from Mott MacDonald that, the 'Board' in this context refers to both themselves and the Project Team and not the ultimate NHSL Board. We have seen specific comments made by the Board (including specifically comments referred to as

[124] Document: Mott MacDonald and NHSL Board contract
[125] Required to be performed before construction could commence (prior to IPTD stage)
[126] Drafted in 2015
[127] NHS Lothian – RHSC + DCN, Post Financial Close Support Services Proposal.
[128] Operational functionality being as described at paragraph 4.4.7

'technical') in respect of air change rates and pressure within bedrooms. An example of this is provided below:

a) Comments provided to the Project Co[129] referred to as *"…initial technical comments on draft 1 of the Environmental Matrix"*, dated 13 October 2014 (being pre Financial Close) [130]. This document included 12 comments, one of which referred specifically to ventilation standards in respect of bedrooms:

> *"Bedrooms 4ac/hr, SHTM says 6 ac/hr*
>
> *Bedrooms have no extract*
>
> *Bedroom en-suites 10 ac/hr, SHTM says 3 ac/hr*
>
> *Bedrooms stated as positive pressure, SHTM says 0 or –ve pressure…"*[131].

b) Comments were provided by Mott MacDonald (on behalf of NHSL) in an email they sent to Multiplex on 17 October 2016[132] stating that:

> *"The Board have reviewed the Environmental Matrix and still has significant concerns on items that do not appear to comply with the BCR's.*
>
> *The Board notes the following general comments:*
>
> 1. *The Board has highlighted cells in blue and red bubble on the hard copy which require PCo review."*

The email went on to explain that *"Whilst the Board has noted general and specific comments above, the Board reminds Project Co that unless the Board has already accepted a derogation, it is Project Co's obligation to comply with the BCR's / SHTMS etc, and*

[129] We understand that both MM and the Project Team reviewed the EM and provided their collective comments to Project Co.

[130] Document reference: 20141027 Environmental Matrix Comments

[131] Document reference: 20141027 Environmental Matrix Comments. Comment 7

[132] Document reference: 161017 MM-GC-002084

the Board not commenting, does not remove that obligation on Project Co."

5.2.12 We note that the version of the EM with highlighted cells in blue and red[133], includes highlighted cells relating to four-bedded bays. Some of the four-bedded bays are included in the matrix part B1 which, as detailed in the index to the EM, is '*Critical Care / HDU / Neonatal Surgery'* (these bays being pertinent to the issue that led to the Delay). The specific NHSL comments included in the EM includes one that states, "*1-b1-063 Stated as supply air 4ac/h, extract via en-suite, this room does not have en-suite facilities"*[134]. We understand from NHSL and Mott MacDonald that, this comment was from a review of the 'operational functionality' detailed in the EM, as referred to at paragraph 4.4.6 and 4.4.7. However, at no point is the fact that the air change rates in this room is not in line with the SHTM 03-01 standard of 10 ac/hr noted. Project Co's response is *"room extract rate added"*[135].

5.2.13 The version of the EM referred to above was subsequently signed off by a member of the Project Team as 'Level B' per the RDD approval process. The covering email from Mott MacDonald (on behalf of NHSL) to Multiplex for the approval at Level B, dated 7 November 2016, states that:

"the Board have serious concerns over the upgrading Environmental Matrix to Status B considering some of the issues raised…being the same as the issues that had been raised since FC… However, as requested by Project Co, the Board has upgraded the Environmental Matrix to status B, noting the Board still does not believe the Environmental Matrix and resultant design complies with the Project Agreement."[136].

[133] Document reference: REV 07 ww-xx-xx-dc-xxx-001 - signed copy from C to D

[134] Document reference: REV 07 ww-xx-xx-dc-xxx-001 - signed copy from C to D. Environmental Matrix comments, Second Batch, NHSL reference 7 (page 4)

[135] Document reference: REV 07 ww-xx-xx-dc-xxx-001 - signed copy from C to D. Environmental Matrix comments, Second Batch, NHSL reference 7 (page 4)

[136] Document reference: 161107 MM-GC-002155

5.2.14 We note that, within this version of the EM, the air change rates included within the bedrooms listed in table B1[137] (relating to Critical Care as per the index to the EM) all remain at a supply air change rate of 4 ac/hr, consistent with previous versions of the EM.

5.2.15 The last version of the EM provided to us (rev 11) was dated 25 October 2017 and signed off at Level B for operational functionality (as referred to in paragraphs 4.4.6 and 4.4.7) by NHSL on 17 November 2017. The covering email from Mott MacDonald to Multiplex notes that:

> *"The Board would also like to note the design for single and multibedroom ventilation design being progressed by Project Co remains non compliant and this non compliance should either be rectified, a PCo change submitted for the Board's consideration or a dispute raised between the parties"[138].*

5.2.16 Mott MacDonald were also involved in correspondence regarding an ongoing dispute as to the bedroom ventilation pressure issues. For example, an email from Mott MacDonald (on behalf of NHSL) to an IHSL representative, cc'ing in Multiplex, on 5 June 2017[139] explains why Mott MacDonald believed a PCC was required in respect of the changes to the pressure within four-bedded rooms and why they were of the view that the proposed design was not in line with the Standards.

5.3 Advice sought in respect of changes to the Project Agreement

5.3.1 As mentioned in paragraph 4.5.2 above, two of the agreed resolutions, which formed part of the Settlement Agreement, were pertinent to the Delay in that they impacted the ventilation regime and in turn its compliance with SHTM 03-01. Details of the agreed resolutions for these were as follows:

[137] Page 5
[138] Document reference: 20171117 MM-GC-003531
[139] Document reference: NEW 170619 R.A.M-GC-000285 Bedroom Ventilation. Contained within email trail.

a) Item 7 – 4 bed ventilation: agreed resolution was for *"14 no 4 bed rooms to be balanced or negative to the corridor at 4 ac/hr"*[140]*;* and

b) Item 13 – Single Bedroom Ventilation air changes[141]: The agreed resolution was to decrease *"the mechanical air change ventilation rate within single bedrooms from 6 air changes per hour (6 ac/hr) to 4 air changes per hour (4 ac/hr)"*[142]*.*

5.3.2 There are interconnectivities in the history and context surrounding both of these agreed resolutions, which is described in the 'background to the agreed resolution' Section below. However, for the purposes of this Report we have focused on the detail of one of the agreed resolutions, Item 7 above, in order to illustrate the professional and technical advice sought in respect of it. Item 7 has not been previously approved through the PCC process and was therefore referred to as a 'derogation'. We have used this terminology when explaining the details of it below.

5.3.3 The Item 7 agreed resolution specifically relates to changes to the pressure regimes in the 14 four-bedded rooms, however the wording used in the agreed resolution also refers to an air change rate at 4 ac/hr.

5.3.4 Of these 14 rooms, four of them were located in Critical Care. These were four of the rooms identified by IOM in their report dated 15 July 2019, along with the single bed cubicles, as not being in compliance with SHTM 03-01, and specifically the required 10 ac/hr rate, ultimately leading to the Delay in the Hospital opening.

5.3.5 All versions of the EM provided to us, which detailed the air change rates being applied to each respective room within the hospital, referred to an air change rate of 4 ac/hr for the Critical Care bedrooms, notwithstanding the guidance note in the IPTD EM and Project Agreement EM versions (referred to at paragraph

[140] Schedule 1, Part 1, Technical Schedule of the Project Agreement (Page 30)
[141] We understand from NHSL that the details of this agreed resolution were those contained within Project Co notice of change dated 14 May 2018
[142] Project Co notice of change dated 14 May 2018, Section 1.0. Document reference: 180522 Schedule 16 Project Co Change Notice No 051

4.4.10) which referred to an air change rate of 10 ac/hr. Therefore this agreed resolution in the Settlement Agreement did not in effect ever change the air change rate that had been detailed in the EM, albeit it was in effect, inadvertently, 'approving' an air change rate in these rooms of 4 ac/hr.

Background to the agreed resolution

5.3.6 As mentioned above in paragraph 4.3.22, we have seen evidence that issues with ventilation in respect of bedrooms, albeit not specific to single or multi-bed rooms, were raised by the Board[143] as far back as October 2014. We understand from conversations with NHSL and Mott MacDonald that, as a result of these comments having been made, there were ongoing discussions relating to ventilation design. From the evidence of the continued correspondence between the Project Team and Project Co that we have been provided, there is no direct reference to four-bedded rooms until September 2016. Prior to this all references had been made to 'bedrooms' or 'single bed rooms'.

5.3.7 Project Co raised two derogation requests, dated May and July 2016 respectively[144], which specifically referred to single bedrooms. Mott MacDonald's response on behalf of the 'Board'[145] in September 2016[146] rejected the derogations and, whilst the derogations referred only to single bedrooms, NHSL's response included a specific reference to a four-bedded room[147]. We note that NHSL's response asked Multiplex if the Project Co could "*confirm how compliance with SHTM in relation to air change rates, balanced ventilation and room heat recovery [would] be met.*" It is from this point in time that reference

[143] We understand from Mott MacDonald that the 'Board' in this context refers to both themselves and the Project Team and not the ultimate NHSL Board.
[144] Document reference (WW014): 03.06.16 Copy of 20160525 Derogation Deliverables - WW014. Document reference (WW015): 26.07.16 Derogation Deliverables - WW015-1
[145] We understand from Mott MacDonald that the 'Board' in this context refers to both themselves and the Project Team and not the ultimate NHSL Board.
[146] Document reference:160922 MM-GC-002006 - Boards rejection of WW014 and WW015
[147] "*4 bedded room 1-L1-100*". Document reference:160922 MM-GC-002006 - Boards rejection of WW014 and WW015.

appears to have been explicitly made to air pressure in multi-bedded rooms[148] as well as single bedrooms.

5.3.8 We understand from NHSL that, in late 2016, following one of the ventilation design workshops to discuss the ongoing ventilation issues, the Project Team highlighted to the clinical team that the air pressure for the four-bedded rooms had been designed to be positive. We understand that due to the Project Team's prior clinical experience, they were aware that this would not allow for patients to be cohorted with the same infection; in direct contravention to the practical requirements of those rooms.

5.3.9 Project Co had classified all four-bedded rooms as 'general wards' in respect of the pressure regime, under the guidance provided in the table illustrated at Figure 1, page 33, and thus felt that the rooms having positive pressure had been designed in compliance with SHTM 03-01 pressure requirements given that no pressure regime was specified in the guidance for 'general wards'. However we understand from NHSL that they and their advisors were of the view they should be classified as having the same function as a 'single room' under the guidance, and should achieve balanced or negative pressure.

5.3.10 We understand from NHSL that the Project Team, including the clinical team members, met with Project Co in order to discuss this issue. Following this meeting, discussions were held with the Children's Clinical Management team which included a Director, Associate Medical Director, Nurse Director and two Clinical Nurse Managers (noting that this was only an issue for the Children's Hospital and not DCN). The basis of these conversations were the implications of not being able to cohort patients and whether this was something they could manage with, without a change being made to the air pressure regime. We understand that the focus of these discussions were on the air pressure regime, and its impact on operational matters.

[148] The terminology 'multi-bedded rooms' and 'four-bedded rooms' is used interchangeably

5.3.11 As the above discussions confirmed that it was not possible to cohort patients and, in turn, use the rooms as needed without a change to air pressure, the clinical team undertook a risk assessment on 5 July 2017. Such risk assessments were required in respect of any proposed changes to the project design which may result in impact to patient care. The risk assessment was in effect an operational review, as opposed to a technical assessment, and required input from the various specialists who were party[149] to the original discussions in order to accurately reflect the discussed risks in the document itself.

5.3.12 The output of the risk assessment was discussed with Project Co. However, Project Co stood by its view that the design as it stood was compliant with SHTM 03-01 and therefore did not agree to a PCC, being the only way to formally agree a change to the design. This was detailed in the Programme Board Paper 'Compliance Issues and Commissioning Delay' dated 24 July 2017[150]:

> "*Ventilation to 4 bedded rooms – PCo design is based on an interpretation of a table contained in guidance where they have applied the ventilation regime for a general ward to the 4 bedded rooms. NHS Lothian, HFS Principal Engineer, the boards Authorising Engineer and Technical Advisors strongly disagree with this interpretation. A risk analysis has been carried out by the Clinical Director and the clinical Project Managers in collaboration with the Clinical Management Team and this work is felt to be essential in order for the new hospital to function safely and at optimal levels. Without the ventilation in the 4 bed rooms being installed correctly these areas will not be able to cohort and safely manage the influx of small children over the winter with infectious respiratory disorders as well as new and emerging conditions and also reduce the future proofing for these services."*[151]

[149] Parties involved are set out in an email dated 6th July 2017 'RE: Risk Assessment re 4 bedded room Ventilation'
[150] Document reference: Compliance Issues and Commissioning Delay 240717 FINAL
[151] Point 5.2. Document reference: Compliance Issues and Commissioning Delay 240717 FINAL

> *"Two 'without prejudice' meetings have now been held, chaired by IHSL with two of their Directors present, to see if the two parties, NHS Lothian and Multiplex, can come to some agreement on the way forward. These meeting follow numerous meetings between the respective technical teams and copious amounts of correspondence. To date there has been no movement from either side with both sides believing their interpretation/analysis is correct."*[152]

5.3.13 In January 2018, given that there had been a number of months without progression on this matter, the Project Team asked the clinical team to revisit the original risk assessment to validate that it remained correct. The outcome of the updated risk assessment remained the same, being that 13 rooms required a change to their air pressure (three of which were in critical care)[153]. This dispute remained and, as such, was brought into the Settlement Agreement (see further details in the Section below).

Approval of the agreed resolution

5.3.14 As part of the Settlement Agreement, Project Co agreed to amend the pressure in 14 rooms[154], with the agreed resolution detailed in the Technical Schedule ("**TS**") of the Settlement Agreement reading as follows:

> *"The resolution of the Dispute submitted by Project Co through the Schedule Part 8 (Review Procedure) and agreed by the Board, is for 14 No 4 bed rooms to be balanced or negative to the corridor at 4 ac/hr"*[155].

[152] Point 5.4. Document reference: Compliance Issues and Commissioning Delay 240717 FINAL
[153] Record of General Risk Assessment, dated 28 January 2018. 13 rooms consisting of 7 for which it was "*essential"* to change, and 6 for which it was "*desirable*" to change.
[154] We understand from NHSL that one additional room was included in the Settlement Agreement, compared to the 13 rooms listed in the risk assessment
[155] Settlement Agreement, Schedule 1, Part 1, Technical Schedule, Item 7 page 30

5.3.15 The agreement was detailed in the document *'Multi Bed – Ventilation Amendment Proposal to Achieve Room Balance'*[156] which showed the 14 room numbers included. Whilst this document did not explicitly state that four of these were Critical Care rooms, the room number prefixes for Critical Care all start '1-B1' as opposed to a different letter. The proposed solution detailed for all four rooms stated "*retain the supply ventilation at 4ac/hr…*". This document was approved at 'Level A'[157] through the RDD process[158] in July 2018, the process for which includes review by Project Co, the Project Team, clinical teams and Mott MacDonald. We have seen no evidence that the air change rate of 4 ac/hr being applied to the Critical Care rooms was questioned during these reviews.

5.3.16 The approved document referred to in the paragraph above was then incorporated into the TS that ultimately formed part of the Settlement Agreement. We have detailed in Section 6.4 the governance arrangements in relation to approving of the Settlement Agreement and associated TS, and the extent of the awareness by the NHSL Board, and associated project committees, of the professional and technical advice sought in approving the content of the resolutions contained in the TS.

5.4 Summary

5.4.1 We have seen evidence of professional and technical advisors being involved throughout the Project. This included specific involvement in relation to ventilation issues.

5.4.2 We have not been instructed, and it is not within our area of expertise, to consider the responsibility of external professional or technical advisors to identify the Issue[159].

[156] Document reference: WW-SZ-XX-DC-XXX-010 Rev 7 Status A
[157] Signed by NHSL and Project Co on 26 July and 27 July 2018 respectively
[158] RDD process – in accordance with the levels as set out in the Project Agreement, Schedule Part 8 (Review Procedure), Clause 4.3 (page 239): Level A: No Comment, Level B: Proceed subject to Amendment as noted, Level C: Subject to amendment as noted, Level D: Rejected
[159] As defined in Section 2.2.1

5.4.3 However, in any event, we have seen no evidence that professional or technical advice identified the Issue prior to June 2019.

6 Governance and escalation arrangements

To establish the governance arrangements that were in place in relation to the Project and the line of sight of NHSL and SG, along with the escalation arrangements to NHSL and SG.

6.1 Introduction

6.1.1 In this Section, we consider the structure of the governance arrangements that were in place for the Project from the point of the Project Agreement onwards, and how matters were escalated through this structure to the NHSL Board and, ultimately, to SG. This is addressed in Sections 6.2 and 6.3 and in Section 6.4 we detail the escalation specifically in respect of the Delay.

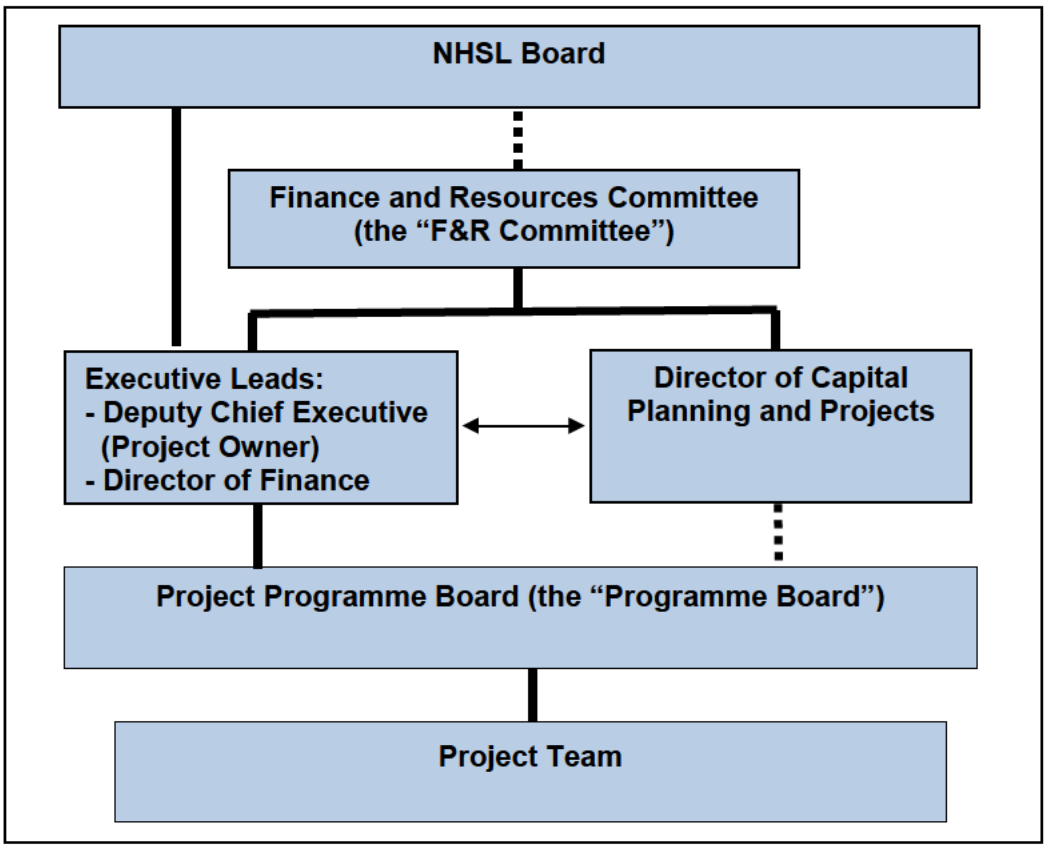
6.1.2 In undertaking our review of the governance and escalation processes, we have, to the extent that the information was available to us allows, sought to obtain evidence that these processes were working in practice.

6.1.3 As set out in Section 5.3, the Settlement Agreement specifically addressed two of the agreed resolutions which were pertinent to the Delay. As such, in Section 6.4, we have also separately presented the governance arrangements which, we understand from our discussions and document review, were in place in relation to the Settlement Agreement and its implementation.

6.2 Governance and escalation structure within NHSL

6.2.1 The governance structure for the Project within NHSL is set out in the diagram below:

Figure 2: Governance structure



6.2.2 We set out further information in relation to each party in the governance structure and their respective interactions with other parties in the paragraphs which follow.

6.2.3 This summary is compiled from interviews performed during the course of our work, together with a review of available documentation, including minutes of the NHSL Board, Programme Board and F&R Committee. The minutes we have

seen indicated that the governance structure was operating in line with that described and issues were being escalated through the appropriate channels.

Project Team

6.2.4 The Project Team, led by the Project Director, is responsible for the day-to-day Project activities and is located at the Hospital site. The Project Director provides a monthly presentation to the Programme Board, detailing progress on the Project and areas of non-compliance, along with next steps in terms of Project activities.

6.2.5 We are advised by NHSL that individuals were selected for the Project Team on the basis of their experience, both in their specialism and involvement in other projects. The Project Team includes individuals with diversified specialisms, including those with engineering, clinical, medical and operational backgrounds. The Project Team also includes technical advisors from Mott MacDonald.

Programme Board

6.2.6 As set out in Section 3 above, the Programme Board comprises of the Project Team as well as representatives from clinical and operational areas, the Deputy Chief Executive, the Director of Finance, the Director of Communications, an NHSL Non-Executive Director, a representative from SG and other stakeholders.

6.2.7 We understand that the Programme Board is responsible for oversight of the Project. Specifically, this involved:

a) Creation of a business case for the Project for approval by the F&R Committee and the NHSL Board;

b) Ownership of the procurement process and tender documentation, and the selection of three bidders (the final selection of the preferred bidder was performed by the F&R Committee); and

c) Oversight of the Project through to commissioning and completion.

6.2.8 The specific Terms of Reference ("**TOR**") for the Programme Board changed over time as the Project evolved from the tender stage, through to the construction of the Hospital and beyond.

6.2.9 The Programme Board meets on a bi-monthly basis, although we are advised by NHSL that ad-hoc meetings were also held during the course of the Project, as required. The Programme Board receives a progress update from the Project Director at each meeting. In our discussions with NHSL personnel, we were informed that any actual or potential issues in respect of the Project (including the technical details) would be discussed and challenged by the Programme Board. Further, we were advised that solutions put forward by the Project Team would also be challenged and either supported or rejected by the Programme Board.

6.2.10 Matters or recommendations that needed to be escalated were typically referred to the Director of Finance as one of the two Executive Leads (the other being the Project Owner (the Deputy Chief Executive)), or the DCPP . Issues escalated would include significant changes to design, cost escalation, issues of non-compliance identified and any matters where an opinion or a decision was required from the Executive Leads. The respective Executive Lead would escalate this to the NHSL Board and also inform the F&R Committee if the issue had an impact on the financing of the Project or its duration.

6.2.11 We were advised by NHSL that, during the course of a project, it is normal practice for the Executive Leads to regularly attend the Programme Board meetings. Due to the nature of the issues that were being raised on this Project, one or more of the Executive Leads attend the bi-monthly meetings, with the Deputy Chief Executive typically chairing the meetings.

F&R Committee

6.2.12 The F&R Committee comprises:

a) Four executive directors (who were also members of the NHSL Board); and

b) Seven non-executive directors.

6.2.13 It is our understanding that the F&R Committee has delegated authority from the NHSL Board in relation to financial governance, property and asset management strategy and strategic capital projects (such as the Hospital). The F&R Committee meets on a bi-monthly basis and its remit is to ensure that value for money is obtained from projects.

6.2.14 In advance of the F&R Committee's bi-monthly meetings, a paper called the Property and Asset Management Investment Programme ("**PAMIP**") is prepared by the DCPP for discussion at the F&R Committee. This document provides an independent view of all projects overseen by the F&R Committee and gives an update on the status of the Project and any issues identified which require the F&R Committee's consideration. The DCPP receives updates from the Programme Board and/or Project director on the status of the Project for the purpose of compiling this report.

6.2.15 We were advised by NHSL that, as the problems with the Project started to escalate around November 2015, supplemental documents were prepared by either the Project Director, DCPP or the Director of Finance, outlining these issues and recommendations which were submitted to the F&R Committee along with the PAMIP.

6.2.16 We were advised by NHSL that the papers submitted by the DCPP for any project should provide a level of assurance on specific individual matters. This level of assurance is determined by reference to NHSL's assurance model. This model provides a rating indicating the level of assurance attributed to the issue or action, being "Significant", "Moderate", "Limited", "None" or "Not Assessed Yet". This rating is included in any recommendations made to the F&R Committee. We have seen examples of this rating being given on some, but not all, of the documents we have reviewed. We understand from our discussions that, the F&R Committee would concentrate its review on those areas where the assurance rating attributed was "Moderate" or below.

6.2.17 A copy of the PAMIP and associated documents, together with a copy of the F&R Committee minutes, are approved by the NHSL Board (although, as noted above,

there is significant overlap between the members of the Programme Board, F&R Committee and the NHSL Board in any event).

6.2.18 A Risk Register is also provided to the F&R Committee. This is completed by the Project Director and uses a "RAG"[160] rating system to assess the risks identified and associated with the Project. A copy of the Risk Register is provided to the F&R Committee for review and to inform its view of the overall level of assurance and/or risk attached to the Project.

6.2.19 As noted above, the Programme Board does not report directly to the F&R Committee. Instead, the Executive Lead for the Project updates the F&R Committee in relation to key issues that have arisen with the Project, such as issues leading to instigation of the Dispute Resolution Process (**"DRP"**) and any significant changes to design. The F&R Committee also approves the business case for the Settlement Agreement, which is discussed in more detail in Section 6.5.

6.2.20 While the Programme Board does not have a direct reporting line to the F&R Committee, the F&R Committee does have clear sight of the operation and status of the Project and the issues that are being identified. We were advised by NHSL that, the F&R Committee provide challenge and ask questions in relation to the Project, which would normally be answered by either the DCPP or the Director of Finance (who is also a member of the F&R Committee). The technical information provided to the F&R Committee is less granular than at Programme Board level.

NHSL Board

6.2.21 As detailed above, the NHSL Board delegated its authority for the Project to the F&R Committee. The F&R Committee does not formally report into the NHSL Board. However, there is significant overlap in terms of membership.

[160] Rating methodology: "Red, Amber, Green"

6.2.22 While the NHSL Board has delegated authority to the F&R Committee, the minutes of the F&R Committee are reviewed and approved by the NHSL Board. As such, the NHSL Board has oversight of the status of the Project and any issues raised.

6.2.23 Issues escalated by the Programme Board to the Executive Leads for the Project are formally discussed with the NHSL Board. The NHSL Board either provide support to help resolve the position, or accept or reject recommendations made to it after discussion of the issue.

6.2.24 The Programme Board submits papers to the NHSL Board containing recommendations for the NHSL Board's consideration. An example of this was the Programme Board suggesting that the DRP should be implemented following issues of non-compliance having been identified on the Project.

6.2.25 The NHSL Board raise challenge and questions on papers presented in respect of the Project. However, this is not a technical level of challenge. The papers submitted to the NHSL Board make reference to the technical advice provided by professional advisors on the Project. We were advised that it is not expected that the NHSL Board will review the technical advice in detail.

6.3 Escalation process for reporting to Scottish Government

6.3.1 We understand that quarterly meetings are held between the DCPP, the Head of Property and Asset Management Finance (both of NHSL) and a representative from SG's Health Finance and Infrastructure team[161].

6.3.2 These quarterly meetings are in relation to all projects being undertaken by NHSL and primarily focus on the monitoring and future expectations for the funding of major projects.

6.3.3 The meetings (together with written correspondence between NHSL and SG) became more frequent when issues arose on the Project (for example, the dispute which arose between NHSL and IHSL and the Delay), in order to allow

[161] Part of SG's Capital Investment team within the Health and Social Care Directorate

the Cabinet Secretary to be briefed on the position, its potential impact on the financial aspects of the Project, and the proposed course of action.

6.3.4 We were advised by NHSL that a representative from SG has a formal role on the Programme Board. However, whilst they rarely attend in person, they receive a copy of the minutes of these meetings.

6.3.5 In addition to the above meetings, NHSL provide an annual report to the Chief Financial Officer (**"CFO"**) for Health and Social Care at SG, giving an update on ongoing and potential future projects, together with a monthly Finance and Performance report. We understand that there was (and remains) open dialogue between the NHSL Board and the CFO at SG to allow any significant issues to be raised and discussed.

6.3.6 In summary, there is a formal process, in addition to an open dialogue, for the NHSL Board to raise issues with SG.

6.3.7 We were advised by NHSL that, following the Settlement Agreement, there were no issues raised to the NHSL Board in relation to the Project that required escalation to SG, or that would prevent the Hospital opening as planned on 9 July 2019.

6.3.8 In Section 3, we set out the background to the ventilation issue which ultimately prevented the Hospital from opening and how this was communicated through NHSL to SG. As set out at Section 3, once the issues which caused the Delay were brought to the attention of the NHSL Board on 1 July 2019, these were escalated to SG within 24 hours.

6.4 Escalation in respect of the Delay

6.4.1 We note that, due to the urgency of the matter, when it became known, the ultimate escalation of the ventilation issues was made direct to Executive Directors (as members of the NHSL Board) and not through the normal governance structure (by-passing the Programme Board and F&R Committee). However, by virtue of their roles in other parts of the governance structure (as described below), members of the Programme Board and F&R Committee were

automatically involved in the discussions of the options that could be available to resolve the issue and not postpone the move into the new Hospital.

6.4.2 It is clear from the minutes that, ventilation issues regarding air pressure, although not specific to Critical Care, were discussed by the Programme Board and contributed to its recommendation to pursue a DRP, which was accepted by the NHSL Board. This issue was escalated through the normal governance process.

6.4.3 We have seen no discussion of, or reference to, issues specific to air changes in any of the minutes for the respective boards and committee. This is in line with our understanding that, the specific issue (being ac/hr requirements in Critical Care areas not complying with the SHTM 03-01 standard), which gave rise to a decision being made to delay the opening of the Hospital, was not known to NHSL until 24 June 2019, when IOM completed its testing of the ventilation system, and subsequently identified to the NHSL Board on 1 July 2019.

6.5 Governance arrangements in relation to the Settlement Agreement

6.5.1 In this Section, we summarise the governance arrangements that were in place in relation to the Settlement Agreement and its implementation.

Approval of the Settlement Agreement

6.5.2 As referred to in Section 5.3, we were advised by NHSL that the Settlement Agreement contained resolutions to a number of issues which had arisen during the course of the Project. We understand from NHSL that these issues had built up over time and came from a variety of sources, including the residual risk register, Project Co Changes, a list of outstanding works and proposed, but not yet approved, Project Co changes.

6.5.3 We understand from NHSL that, depending on how they had arisen, some of these issues had been subject to discussions between the Project Team, Mott MacDonald and Project Co. Such issues were raised with the Programme Board

and discussed and noted at the time they arose (for example, the ventilation issue relating to pressure in four bedded rooms).

6.5.4 The negotiated solutions to these issues became the TS that was incorporated into the Settlement Agreement. The governance around approval for the TS and the Settlement Agreement are detailed below.

6.5.5 As described in Section 6.2 above, pursuing the DRP was proposed by the Programme Board and approved by the NHSL Board. Once the approval to pursue the DRP was given, discussions centred around the content of the commercial proposal put forward by IHSL to resolve the issues and avoid litigation. This proposal formed the basis of the Settlement Agreement. The F&R Committee approved the Programme Board's recommendation to engage with IHSL to discuss their proposal and, consequently, the business case for the Settlement Agreement. The NHSL Board ratified this decision and delegated responsibility to the F&R Committee to authorise the Director of Finance and Deputy Chief Executive to sign the Settlement Agreement on behalf of NHSL.

6.5.6 The negotiations leading up to the Settlement Agreement were conducted by the "Principals Group", which comprised the Deputy Chief Executive and Director of Finance of NHSL, and Directors from IHSL and Project Co. Others were involved, such as the Project Director and DCPP, as appropriate.

6.5.7 We set out further information in relation to each party in the governance structure and their respective interactions with other parties in relation to the Settlement Agreement in the paragraphs which follow. As before, this summary is compiled from interviews performed during the course of our work, together with a review of available documentation, including minutes of the NHSL Board, Programme Board and F&R Committee. These minutes indicated that the governance structure was operating in line with that described and issues were being escalated through the appropriate channels.

Programme Board

6.5.8 We were advised by NHSL that the issues ultimately included in the TS had evolved over a period of time and been considered by the Programme Board as

they arose. We have seen evidence that, in July 2018, the Programme Board was advised by the Project Director that the TS was to be included as part of the Settlement Agreement.

6.5.9 NHSL advised us that a lot of the items in the TS were being negotiated between the Project Team and Project Co and that, as such, the TS evolved over time, with the items to be included in the TS being discussed between July 2018 and early 2019, prior to the Settlement Agreement being signed. We are advised that the TS discussed with the Programme Board included proposed resolutions to issues that were not "ideal" from NHSL's perspective, but were "safe" for the purposes of moving towards an agreed resolution in order to open the Hospital as soon as practicable.

6.5.10 We were advised that the Programme Board was aware that Mott MacDonald (as technical advisor) was consulted in the drawing up of the TS. This was on the basis that the Project Team had been working closely with the technical advisors on the Project. The Programme Board would be provided with details of each item in the TS so they could review this and raise questions on it.

6.5.11 We are advised that the Programme Board supported and approved the content of the TS within the Settlement Agreement, although there was no formal "sign-off" process for this. In addition, in November 2018, the Project Team identified a further three major issues for inclusion in the proposed Settlement Agreement, being the void detection system, drainage, and heater batteries.

6.5.12 The Programme Board minutes in February 2019 evidence that, by that point, the Settlement Agreement had been updated for these three issues, had been agreed between the parties, and would be signed soon.

F&R Committee

6.5.13 We were advised by NHSL that, the business case for the Settlement Agreement was detailed in a paper dated 25 July 2018, presented to the F&R Committee by members of the Programme Board. Challenges and questions by the F&R Committee were answered primarily by the Project Director and DCPP, but also by the Deputy Chief Executive and Director of Finance, as required. As

mentioned in Section 6.2 above, the business case for the Settlement Agreement was approved by the F&R Committee.

6.5.14 In January 2019, the F&R Committee minutes noted that the Settlement Agreement was to go to the NHSL Board for approval in February 2019.

NHSL Board

6.5.15 As described at paragraph 6.2.19, the F&R Committee provided copies of its minutes to the NHSL Board for review and approval as standard. However, a specific briefing and papers were provided to the NHSL Board by the Director of Finance on 6 February 2019 outlining the Settlement Agreement. Again, this demonstrates the escalation of issues through the governance process. We were advised by NHSL that whilst no technical details were provided regarding the proposed solutions, all papers submitted to the NHSL Board contained reference to the legal or technical assurance that underpinned the solutions. Given the governance structure in place, the technical assurance given in respect of the Settlement Agreement and TS was visible to the NHSL Board.

6.5.16 The NHSL Board minutes from February 2019 evidence that the NHSL Board discussed the draft Settlement Agreement, its terms and the potential risks arising from entering into it. Approval for the Settlement Agreement was granted by the NHSL Board on 6 February 2019 and the Deputy Chief Executive and the Director of Finance were authorised to continue negotiations on its behalf, and for either of them to sign the agreement.

Implementation of the Settlement Agreement

6.5.17 The Settlement Agreement was signed on 22 February 2019. The Hospital was due to open 19 weeks later, on 9 July 2019.

6.5.18 We understand that the implementation of the Settlement Agreement was monitored through weekly on-site meetings between the Project Team and Project Co, and that the Project Team was also on-site to observe the progress being made. At these weekly on-site meetings, Project Co were required to provide a plan of the work they were going to perform over the course of the

following week. We were advised that this gave the Project Team the opportunity to challenge or question the Project Co as appropriate.

6.5.19 In addition, we understand that daily "huddles" were held amongst specialist teams, such as with clinical representatives, who would discuss matters with members of Project Co to resolve any issues identified through commissioning, or to determine when access to certain areas could be obtained. We were advised by NHSL that these regular meetings ensured that progress was being made.

6.5.20 We were advised by NHSL that the above process provided assurance to NHSL that the work that had been agreed was progressing as planned.

6.5.21 NHSL advised that the final level of assurance would be given following the sign-off by the IT. The IT would be providing sign-off based on what was contained in the design specifications. The IT would expect that these design specifications had been agreed by both parties, i.e. NHSL and IHSL/Multiplex. NHSL therefore expected that, as the IT had signed off on the building, there would be no issues when IOM performed its testing. As such, NHSL was surprised when the ventilation system was highlighted to not be performing in line with requirements.

6.5.22 We were informed that, once the issue in relation to air ventilation had come to light through the IOM report, an internal Incident Management Team ("**IMT**") was set up by the NHSL Board to investigate the matters raised in the IOM report and to liaise with IHSL going forward in relation to how these matters could be rectified.

6.6 Summary

6.6.1 The governance processes and procedures surrounding the construction and commissioning of the Hospital operated in line with the structure that was put in place.

6.6.2 There was regular dialogue between NHSL and SG throughout the Project, with evidence of escalation of issues where required, albeit this was more focused on financial rather than technical matters.

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NHS Scotland Assure Service Design Reference Group

Terms of Reference

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1. Official Name of Group

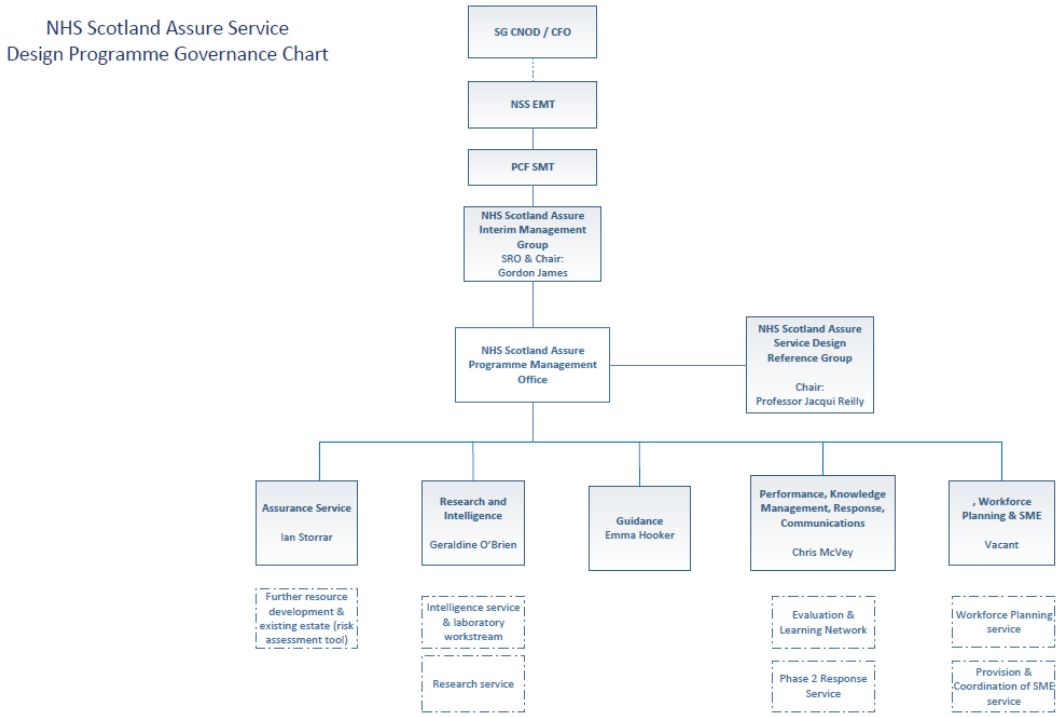
NHS Scotland Assure Service Design Reference Group.

2. Purpose of Group

The Reference Group will provide overall guidance, advice and recommendations to inform activity within the 2021/22 NHS Scotland Assure Service Design Programme.

3. Accountable to

The Reference Group is accountable to the NHS Scotland Assure Interim Management Group via the Programme Management Office as depicted below.



4. Remit

The Reference Group has an advisory remit, representing key user groups and stakeholders to inform the design and development of the NHS Scotland Assure services within the scope of the 2021/22 NHS Scotland Assure Service Design Programme.

The Reference Group is responsible for the tasks listed below:

- Provide overall guidance, advice and recommendations to inform programme service design activity;
- Actively participate in programme service design activity;
- Support the programme to effectively access and engage users and stakeholders;
- Review service design outputs and provide feedback;
- Support programme communications amongst networks;
- Invite stakeholders or other interested parties to provide evidence or views where appropriate.

5. Membership

Name	Role	Responsibilities
Professor Jacqui Reilly NSS Nurse Director Deputy Anna Lamont, PCF Medical Director, NSS	Chair	• Chair meetings • Share successes/learning. • To participate in engagement events as required. • Ensure strong linkages with senior professional groups of several disciplines. • Enable the programme through collating advice and representing colleagues.
Gordon James PCF Director, NSS Deputy NHS Scotland Assure Director	Programme SRO	• Senior Responsible Officer for NSS. • Responsible owner for the programme and accountable for all deliverables. • Maintain momentum on programme. • Identify risks/issues/exceptions in a timely manner and mitigate them. • Share successes/learning. • To participate in engagement events as required.

Name	Role	Responsibilities
		• Ensure strong linkages with professional groups of several disciplines.
Julie Critchley NHS Scotland Assure Director, NSS Deputy TBC	NHS Scotland Assure Director	• Connect to and report on BAU NHS Scotland Assure programme. • Identify risks/issues/exceptions in a timely manner and mitigate them. • Share successes/learning. • To participate in engagement events as required. • Connect programme work to staff in NHS Scotland Assure and wider stakeholders
Laura Imrie, Consultant Lead, ARHAI Scotland & NHS Scotland Assure Interim Clinical Lead, NSS Deputy TBC	NHS Scotland Assure Interim Clinical Lead	• Connect to and report on clinical aspects of BAU NHS Scotland Assure programme. • Identify clinical risks/issues/exceptions in a timely manner and mitigate them. • Share successes/learning. • To participate in engagement events as required. • Connect programme work to clinical staff in NHS Scotland Assure and wider specialist and clinical stakeholders
Paul Allen Director of Facilities and eHealth, NHS Grampian Deputy Robert Aitken, Associate Director of Facilities, NHS Lothian	Scottish Facilities Management Advisory Group Representative	• Provides NHS Board facilities expertise • Provide information on existing facilities arrangements • To participate in engagement events as required. Enable programme service design activity and deliverables through collating advice and representing colleagues.
Irene Barkby CNOD SGHSCD Deputy Lesley Shepherd, CNOD,SGHSCD	CNOD Professional Lead Co-sponsor Representative	• Represents co-sponsor • Provides assurance that the service design work of the programme is meeting the commission purpose • Liaison within SG regarding any changes to the commission

Name	Role	Responsibilities
		• Provides relevant information from related SG committees / departments.
Jason Birch, CNOD, SGHSCD Deputy TBC	Co-sponsor Representative	• Represents co-sponsor • Provides assurance that the service design work of the programme is meeting the commission purpose • Liaison within SG regarding any changes to the commission • Provides relevant information from related SG committees / departments.
Lawson Bisset Head of Estates and Facilities, NHS Shetland Deputy Marie Porteous Head of Sustainability & Environment Manager	NHS Scotland Environmental Sustainability Group Representative	• Provides Sustainability expertise • Provide information on sustainability policies and how these may impact on the programme. • To participate in engagement events as required. • Enable programme service design activity and deliverables through collating advice and representing colleagues.
Dr Martin Connor Infection Control Doctor, NHS Dumfries and Galloway Deputy Dr Aleks Marek Infection Control Doctor, NHS Greater Glasgow and Clyde	Scottish Microbiology & Virology Network Representative	• Provides ICD expertise and ensures strong linkages with ICD professional groups of several disciplines. • Provide information on existing health protection arrangements. • To participate in engagement events as required. • Enable programme service design activity and deliverables through collating advice and representing colleagues.
George Curley Director of Operations – Facilities, NHS Lothian	Scottish Engineering Technology Advisory Group Representative	• Provides NHS Board facilities expertise • Provide information on existing facilities arrangements • To participate in engagement events as required.

Name	Role	Responsibilities
<u>Deputy</u> Tommy Logan , Head of BSAM		• Enable programme service design activity and deliverables through collating advice and representing colleagues.
Fiona Smith Senior Infection Control Nurse, NHS Grampian <u>Deputy</u> TBC	Infection Control Nurse Network Representative	• Provides ICN expertise and ensures strong linkages with ICN professional groups of several disciplines • Provide information on existing health protection arrangements • To participate in engagement events as required. • Enable programme service design activity and deliverables through collating advice and representing colleagues.
Gerry Donald Head of Property & Asset Development, NHS Grampian <u>Deputy</u> Iain Graham, NHS Lothian	Scottish Property Advisory Group Representative	• Provides NHS Board facilities expertise • Provide information on existing facilities arrangements • To participate in engagement events as required. • Enable programme service design activity and deliverables through collating advice and representing colleagues.
Anna Lamont, PCF Medical Director, NSS	PCF Medical Director	• Share successes/learning. • To participate in engagement events as required. • Ensure strong linkages with SAMD and wider medical networks • Enable the programme through collating advice and representing colleagues.

Name	Role	Responsibilities
Heidi May Board Nurse Director, NHS Highland Deputy TBC	HAI Exec Lead Representative	• Provides NHS Board clinical expertise • Provide information on existing HAI exec lead arrangements • To participate in engagement events as required. • Ensure strong linkages with HAI exec leads and SEND • Enable programme service design activity and deliverables through collating advice and representing colleagues
Chris McVey, Performance, Communications & Response Interim Lead Deputy TBC	NHS Scotland Assure Performance, Communications & Response Interim Lead	• Reports and informs discussion regarding NHS Scotland Assure service delivery • Provides update on service progress, challenges and opportunities • Participate in engagement events, co-ordinating constructive input
Alan Morrison Health Finance SGHSCD Deputy Philip McClean	Co-sponsor Representative	• Represents co-sponsor • Provides assurance that the service design work of the programme is meeting the commission purpose • Liaison within SG regarding any changes to the commission • Provides relevant information from related SG committees / departments.
Nick Phin, Clinical Director and Director of Health Protection, Public Health Scotland Deputy TBC	Public Health Scotland Representative	• Ensure linkages between the services and with public health professionals • Maintain and further develop strategic relationship between PHS and NSS for NHS Scotland Assure delivery • Enable programme service design activity and deliverables through collating advice and representing colleagues

Name	Role	Responsibilities
Catherine Stokoe, ICM, NHS Highland Deputy TBC	Infection Control Managers Network Representative	• Provides ICM expertise and ensures strong linkages with ICM professional groups of several disciplines • Provide information on existing health protection arrangements • To participate in engagement events as required. • Enable programme service design activity and deliverables through collating advice and representing colleagues.
Kenneth Donaldson Medical Director, NHS Dumfries & Galloway and SAMD Co-Chair Deputy (TBC)	Scottish Association of Medical Directors Representative	• Provides NHS Board medical expertise • Provide information on existing HAI exec lead arrangements • To participate in engagement events as required. • Ensure strong linkages with Medical Directors and other professional groups • Enable programme service design activity and deliverables through collating advice and representing colleagues
Lesley Whyte Associate Director Nursing & Midwifery, NHS Education for Scotland (NES) Deputy TBC	NES Representative	• Ensure linkages between the services and with professional groups of several disciplines. • Enable programme service design activity and deliverables through delivery of the NES SLA and collating advice and representing colleagues
Ian Smith Head of Quality of Care, Health Improvement Scotland (HIS)	HIS Representative	• Ensure linkages between the services and with professional groups of several disciplines. • Enable programme service design activity and deliverables through delivery of the HIS MOU and collating advice and representing colleagues
TBC	Patient / Lay Representative	• To ensure the patient voice is part of the decision making process

Name	Role	Responsibilities
		• To ensure the services designed meet the needs of patients and families as users of health care facilities

Group membership may be modified during its course as appropriate.

The Reference Group will be supported by a Programme Management Office as follows:

Name	Programme Role	Responsibilities
Mel McIlvar Programme Manager, PgMS, NSS	Programme Manager	• Provide programme management expertise to the programme. • Ensures workstream activity is fully scoped and aligned with agreed programme governance arrangements. • Ensure the delivery of the products meets the programme requirements, adhering to service design principles. • Reports on progress to the Reference Group. • Develops programme management documentation.
Lynne Edwardson, Communications Manager, NSS	Communications Lead	• Provides communications subject matter expertise, support and guidance. • Produce and manages the programme Communications Strategy and Plan.
Project Support Officer PgMS, NSS	Programme Support	• Provide secretariat support to the Reference Group.

6. Decision Making

The NSS NHS Scotland Assure Interim Management Group is the decision-making body for the Programme. Advice and guidance from the Reference Group will be used to help inform decisions.

7. Group Conduct and Behaviours

It is the responsibility of each member of the Reference Group to:

- Actively participate in attendance and discussions at meetings;
- Access papers and prepare accordingly prior to meetings;
- Provide feedback where required;
- Report back on activities of the programme to relevant stakeholders

- Ensure deputy is briefed and attends in absence of member

8. Meetings

Meetings will occur quarterly and will be primarily held via Microsoft Teams.

9. Minute of Meetings

Agenda and papers will be distributed at least 5 working days in advance of each meeting.

All minutes will be circulated no later than 5 working days after each meeting.

10. Confidentiality

Papers, unless confidential as otherwise stated, from these meetings are available for review upon request and will be held in a secure folder within the NSS network.

Please contact the Programme Manager / Project Support Officer for any papers required.

11. Lifespan

The Lifespan of the Reference Group is until 31 March 2022

Terms of Reference Agreed:

Signature: _____

Date: _____

12. Document Control Sheet

14.1 Key Information

Title	NHS Scotland Assure Service Design Reference Group - ToR
Date Published / Issued	05 July 2021
Date Effective From	02 September 2021
Version / Issue Number	V1.0
Document Type	Terms of Reference (ToR)
Document Status	Approved
Author	Mel McIlvar
Owner	Jacqui Reilly, Chair
Approver	Service Design Reference Group
Approved by and Date	Service Design Reference Group 2 September 2021

14.2 Revision History

Version	Date	Summary of Changes	Name	Changes Marked
v0.1	08-04-21	Initial Draft	Mel McIlvar	No
V0.2	20-04-21	Updates to draft following SRO feedback	Mel McIlvar	No
V0.3	22-04-21	Acceptance of track changes from Chair	Mel McIlvar	No
V0.4	10-05-21	Changes to role and membership following CoE Programme Board feedback	Mel McIlvar	No
V0.5	05-07-2021	Inclusion of NES and HIS representatives. Updated governance chart.	Mel McIlvar	No

14.3 Approvals

This document requires the following signed approvals:

Version	Date	Name	Role	Signature
	02-09-2021	NHS Scotland Assure Service Design Reference Group	Reference Group	Recorded in the meeting minute

14.4 Distribution

This document has been distributed to:

Version	Date of Issue	Name	Role / Area
V0.1	09-04-21	Jacqui Reilly, Gordon James	Chair, SRO
V0.2	20-04-21	Jacqui Reilly, Gordon James, Chris McVey	Chair
V0.3	May 2021	CoE Programme Board	CoE Programme Board
V0.5	27-08-21	Service Design Reference Group members	Service Design Reference Group

From:	Hancock C (Craig) on behalf of Minister for Mental Health
To:	DG Health & Social Care; Minister for Mental Health; Hutchison D (David); Sheriff C (Carmel); Cabinet Secretary for Health and Sport
Cc:	Wright M (Malcolm); Rogers S (Shirley); Connaghan J (John) (Health); Murray D (Diane); Hart S (Suzanne); Low S (Stuart); Chief Medical Officer; House D (Dan); Bateman C (Catriona); Smith G (Gregor)
Subject:	RE: Update to First Minister
Date:	05 July 2019 22:10:14
Attachments:	Edinburgh Children"s Hospital - Note from Cab Sec to FM.docx

Callum,

Many thanks for picking this up and redrafting the note, it's much appreciated. Please find attached the final version I issued to the First Minister's office.

Thanks,
Craig

From: Henderson C (Calum) [redacted] **On Behalf Of** DG Health & Social Care
Sent: 05 July 2019 20:07
To: Minister for Mental Health [redacted]; Hutchison D (David) [redacted]; Sheriff C (Carmel) [redacted]; Cabinet Secretary for Health and Sport [redacted]
Cc: DG Health & Social Care [redacted]; Wright M (Malcolm) [redacted]; Rogers S (Shirley) [redacted]; Connaghan J (John) (Health) [redacted]; Murray D (Diane) [redacted]; Hart S (Suzanne) [redacted]; Low S (Stuart) [redacted]; Chief Medical Officer [redacted]; House D (Dan) [redacted]; Bateman C (Catriona) [redacted]; Smith G (Gregor) [redacted]
Subject: RE: Update to First Minister

Craig

We have been unable to get a hold of Carmel.

Please find attached suggested note to FM. This has been cleared by both John Connaghan and Malcolm Wright

Thanks

Calum

From: Hancock C (Craig) [redacted] **On Behalf Of** Minister for Mental Health
Sent: 05 July 2019 18:33
To: Hutchison D (David) [redacted]; Sheriff C (Carmel) [redacted]; Cabinet Secretary for Health and Sport [redacted]
Cc: DG Health & Social Care [redacted]; Wright M (Malcolm) [redacted]; Rogers S (Shirley) [redacted]; Connaghan J (John) (Health) [redacted]; Murray D (Diane) [redacted]; Hart S

(Suzanne) [redacted]; Low S (Stuart) [redacted]; Chief Medical Officer [redacted]; House D (Dan) [redacted]; Bateman C (Catriona) [redacted]; Smith G (Gregor) [redacted]
Subject: RE: Update to First Minister
Importance: High

Carmel,

Just to check, are you updating this note so it is in the same format as Alan's yesterday?

Thanks,
Craig

From: Hutchison D (David) [redacted]
Sent: 05 July 2019 18:05
To: Sheriff C (Carmel) [redacted]; Cabinet Secretary for Health and Sport [redacted]
Cc: DG Health & Social Care [redacted]; Wright M (Malcolm) [redacted]; Rogers S (Shirley) [redacted]; Connaghan J (John) (Health) [redacted]; Murray D (Diane) [redacted]; Hart S (Suzanne) [redacted]; Low S (Stuart) [redacted]; Chief Medical Officer [redacted]; House D (Dan) [redacted]; Bateman C (Catriona) [redacted]; Smith G (Gregor) [redacted]
Subject: RE: Update to First Minister

I think the Cab Sec asked earlier for this to be reformatted so the briefing was **not** in a Q&A style.

From: Sheriff C (Carmel) [redacted]
Sent: 05 July 2019 17:50
To: Cabinet Secretary for Health and Sport [redacted]
Cc: DG Health & Social Care [redacted]; Wright M (Malcolm) [redacted]; Rogers S (Shirley) [redacted]; Connaghan J (John) (Health) [redacted]; Murray D (Diane) [redacted]; Hart S (Suzanne) [redacted]; Low S (Stuart) [redacted]; Chief Medical Officer [redacted]; House D (Dan) [redacted]; Bateman C (Catriona) [redacted]; Smith G (Gregor) [redacted]; Hutchison D (David) [redacted]
Subject: RE: Update to First Minister

Jack

Attached is the letter from Paul Gray and the HFS summary setting out Boards' responses.

I have now received a reply from the Board to the 2 questions you raised – on 28 June who in the Board was told and when was the Chair told. I have **updated Q 11 in the Annex** to reflect that the Board Medical Director, Nurse director and

Finance Director attended a meeting on 28 June but it was not until 1 July that the issue relating to paediatric critical care ventilation was raised; this was then escalated via email by the Medical Director to the CE for his return from leave on 2 July; CE then informed the Chair and the DGHSC on the same day (2 July). A revised Q&A is attached.

To keep everything in one email I attach the cover note again.

Carmel
[redacted]

From: Sheriff C (Carmel)
Sent: 05 July 2019 16:52
To: Cabinet Secretary for Health and Sport [redacted]
Cc: DG Health & Social Care [redacted]; Wright M (Malcolm) [redacted]; Rogers S (Shirley) [redacted]; Connaghan J (John) (Health) [redacted]; Murray D (Diane) [redacted]; Hart S (Suzanne) [redacted]; Low S (Stuart) [redacted]; Chief Medical Officer [redacted]; House D (Dan) [redacted]; Bateman C (Catriona) [redacted]; Smith G (Gregor) [redacted]; Hutchison D (David) [redacted]
Subject: RE: Update to First Minister

Jack

I just noticed an error in the cover note so I attach an amended so please substitute for the one sent at 16.41

C

From: Sheriff C (Carmel)
Sent: 05 July 2019 16:41
To: Cabinet Secretary for Health and Sport [redacted]
Cc: DG Health & Social Care [redacted]; Wright M (Malcolm) [redacted]; Rogers S (Shirley) [redacted]; Connaghan J (John) (Health) [redacted]; Murray D (Diane) [redacted]; Hart S (Suzanne) [redacted]; Low S (Stuart) [redacted]; Chief Medical Officer [redacted]; House D (Dan) [redacted]; Bateman C (Catriona) [redacted]; Smith G (Gregor) [redacted]; Hutchison D (David) [redacted]
Subject: RE: Update to First Minister

Jack

I attach a short cover note and the Q&A should be attached as an Annex. I have a call out to Lothian on the 2 questions you raise and will chase again.

Carmel

From: Downie J (Jack) [redacted] **On Behalf Of** Cabinet Secretary for Health and Sport
Sent: 05 July 2019 15:54
To: Sheriff C (Carmel) [redacted]; Cabinet Secretary for Health and Sport [redacted]
Cc: DG Health & Social Care [redacted]; Wright M (Malcolm) [redacted]; Rogers S (Shirley) [redacted]; Connaghan J (John) (Health) [redacted]; Murray D (Diane) [redacted]; Hart S (Suzanne) [redacted]; Low S (Stuart) [redacted]; Chief Medical Officer [redacted]; House D (Dan) [redacted]; Bateman C (Catriona) [redacted]; Smith G (Gregor) [redacted]; Hutchison D (David) [redacted]
Subject: RE: Update to First Minister

Carmel,

As discussed, I think it would be helpful if the note was set out as an update to the FM in the same format as Alan's note yesterday. Also re paragraph 11, the Cabinet Secretary will ask 1. Who in the Board was told on 28 June? and 2. When was the Chair informed? I would be grateful if this information could be sought and included in a revised note.

Many thanks,
Jack

From: Sheriff C (Carmel) [redacted]
Sent: 05 July 2019 15:36
To: Cabinet Secretary for Health and Sport [redacted]
Cc: DG Health & Social Care [redacted]; Wright M (Malcolm) [redacted]; Rogers S (Shirley) [redacted]; Connaghan J (John) (Health) [redacted]; Murray D (Diane) [redacted]; Hart S (Suzanne) [redacted]; Low S (Stuart) [redacted]; Chief Medical Officer [redacted]; Hutchison David [redacted]; House D (Dan) [redacted]; Bateman C (Catriona) [redacted]; Smith G (Gregor) [redacted]
Subject: Update to First Minister

Jack

I attach a Q&A style briefing for the Cabinet Secretary to consider and if she is content to forward to the First Minister.

DGH&SC is content with it.

Carmel

EDINBURGH CHILDREN'S HOSPITAL - UPDATE

Purpose

1. Please accept my apologies for the lateness of this note which has arisen as we sought to clarify some important details. Following our discussion on 3 July and my note of 4 July, this provides a further update on the current situation regarding the opening of the new Edinburgh Children's Hospital.

Priority

2. High.

Background

3. My note to you of 4 July set out the background and in that note I set out a number of actions to be taken forward and these are set out below for ease of reference:

- In order to ensure that patients are being treated in a safe, clean and clinically appropriate environment, I have instructed NHS Lothian to delay the transfer of patients to the new Edinburgh Children's Hospital. We expect that it will take at least six months for the problem to be resolved, but further work is required to test and validate the proposed solution and estimated timeline.

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

- Given that it is unclear today what services can be safely moved to the new site, I have instructed that a halt is place on the move in full, pending the outcome of the action set out above which will then trigger a phased move of services.

- I will lead on media communications and I will review and approve NHS Lothian's handling plan covering communications to staff, public and patients, before it is released. I have also been clear with NHS Lothian that assurances on critical patient safety areas must be given to SG before any patient moves in.

- Follow up work has been commissioned by me to audit the full decision and build process to identify how and where this ventilation problem initiated and why it has not been identified until this week. I will continue to keep you updated as this situation develops.

- I have held a teleconference with officials this morning to understand the updated position from the Board.

Boards Timeline for Escalation to Scottish Government

- NHS Lothian Chief Executive has advised: the actual test took place last week and we are chasing Lothian for actual date; On June 28 the Board Medical Director, Nurse Director and Finance Director attended a meeting at the new hospital to discuss progress and process around theatre ventilation as part of the pre-hospital opening sign-off. On Monday afternoon (4.30) 1 July, a further teleconference took place regarding the theatre progress and at this point the issue relating to paediatric critical care ventilation was raised. The Medical Director who was in attendance escalated this to the CE, by email for his return from leave on 2 July. The CE picked the escalation up on Tuesday 2 July and on the same day informed the Board Chairman and the Director General for Health & Social Care.

Boards Communication Plans and Support provided to Patients

- The Board has a detailed Comms plan for this weekend: key messages are: (i) A&E will not move and patients should attend to the existing building; (ii) the Health Board are in the process of contacting affected patients/families directly by telephone to confirm the revised site, date and time of their appointment. Contact is being made in date order, with soonest appointments first. No outpatient appointments were scheduled for the next 2 weeks so gives them a buffer to be able to reschedule.

- These are the 2 key messages from today until 8 July. These are also the key messages used with callers to the NHS 24 helpline. Comms approach following this weekend will reviewed and updated in the w/c 8 July.

- In terms of staff comms, the Health Board issued electronic communications and held staff briefings late yesterday afternoon/evening; they are also developing an ongoing, regular staff communications plan to keep staff informed as plans develop.

- NHS 24 has set up a dedicated helpline for this issue on (0800) 028 2816. This was operational from noon today and will run until 10pm. Thereafter, the line will be operational from 8am until 10pm during the week and from 9am to 5pm on Saturdays and Sundays.

- NHS 24 will provide us with regular updates on activity levels for the helpline.

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- NHS Lothian has assured us that they have identified all the patients booked to attend the new hospital from now until the end of July. The Health Board are in the process of contacting these patients/families directly by telephone to confirm the revised site, date and time of their appointment.

- Contact is being made in date order, with soonest appointments first. The service are maintaining a log of patients contacted on a daily basis. Contact will continue over the weekend.

- Volumes of patients affected are as follows: Paediatrics: 1800 outpatients, 169 inpatient/day cases; DCN: 666 outpatients, 11 inpatient/day cases; Radiology – 692 cases.

- The Board will have a vehicle based at the new site 24/7 from Monday (note: patients were not proposed to move until next Tuesday). NHS Lothian will have a staffed presence at the car parks to assist patients and visitors to ensure they are appropriately directed to clinical/medical services.

- There will be a minimum of two vehicles available to ensure easy access should transfer across town be necessary. The Board are preparing to have clinical support to ensure assistance for patients if required. As a further precaution, NHS Lothian will have access to a disabled capability taxi and this would be used in the event of any difficulties with access. Should any patient attend the new site for an appointment they will still be seen at the existing site even if later than the scheduled time.

Update on the work required

- My officials received a proposal from NSS which is being reviewed by officials. There is an initial estimate that a comprehensive review of the new site could take as long as four months to complete. Malcolm Wright has spoken to the Chief executive of NSS on Friday afternoon with a view to setting a speedier timeframe. If this involves additional resources we will ensure this is made available.

- The revised migration plan needs to be reviewed by HFS/HPS to ensure it can be actioned safely. RCPH also keen to avoid any two-site working in new migration plans as they feel that this may lead to confusion for staff and public.

- However, there is probably a good clinical case to prioritise migration of the Department of Clinical Neurosciences (DCN) in advance of other services. Delay to the migration of DCN services is not felt to be risk free; the fabric of the unit is poor and there have been increased pseudomonas infections; angiography equipment is aged too. The reduced occupancy associated with transfer of DCN would have allowed remedial work in the ITU normally used by DCN where a recent pseudomonas HAI was diagnosed, but this can no longer take place. There would be some short term need for augmentation of anaesthetic rotas should DCN move in advance of Children's Hospital services but this would not be insurmountable.

- I am keen that we along with NHS Lothian carry out a prioritisation exercise on which services should move as part of a phased approach and over what timeframe. HFS/HPS as part of their review would focus on these services in the first instance. We would also look to Scottish Government clinical experts including CMO and CNO to provide me with professional advice when it comes to signing off any decisions. Malcolm Wright has spoken with the Chief Executive of NHS Lothian on Friday afternoon where they discussed the beginning of a migration plan for the hospital which continues to prioritise on Patient safety

- Work is underway with regards to the ventilation issues I have asked that an update on the detail and timescale for early next week.

- The audit of the governance arrangements would be best undertaken by one of the accountancy firms with a good internal audit team, with HFS/HPS alongside. We will ensure where possible that the external company is not one used by NHSL as internal or external auditors.

- All Health Board Chief Executives were sent a letter by then DG Health & Social Care (Paul Gray) on 25 January (copied to and Directors of Estates) as a result of the initial QEUH investigations. The letter sought assurance that a number of specific controls were in place and working effectively, including: "All critical ventilation systems inspected and maintained in line with *Scottish Health Technical Memorandum 03-01: Ventilation for healthcare premises*."

- HFS co-ordinated the Board responses and a summary paper from 1 February indicates NHS Lothian responded that they were compliant (This response is attached for information).

Media

I have undertaken a number of media bids today with BBC and STV and overall today's media appears to be taking our lines and key messages. However the critical next steps are to ensure consistency of message and we will be mindful of that.

Role of HFS in all future builds for NHS Facilities

- My officials have today received a proposal from NSS which is currently being reviewed. There will be resource/capacity implications to consider for this and the other Sick Kids' reviews, given existing commitments to QEUH review, etc.

Response from Clinical professionals

- NHS Lothian MD Tracey Gillies briefed her AMDs this morning. Staff reported to be disappointed to hear news from sources other than NHS Lothian but want what's best for patients. It's felt to be unlikely that there will be any significant reaction to the news of delay.On RCPH, Gregor Smith spoke to College last night; appreciative of the heads up and able to let office bearers know in advance of news release. Good follow-up conversation with their CEO this morning; their position is that safety must always come first. As noted above, keen to avoid any two-site working in new migration plans as they feel that this will lead to confusion for staff and public alike.

- Diane Murray will closely engage with the RCN to understand their position.

Next Steps

- The Scottish Government has John Connaghan, Chief Performance Officer as on call Director who will chair a resilience call of relevant officials on Saturday the 6th July. NHS Lothian have ensured senior Director cover is provided for the weekend Jacquie Campbell, Chief Officer Acute and Alex McMahon, Nurse Director will be on call to support my officials.

- The Director General and I will discuss the position on Sunday the 7th of July.

- Malcolm Wright will meet with Tim Davison on Monday 8 July to receive an update on the boards submission of proposals to implement the move to the new hospital.

- Tim Davison has confirmed to Malcolm Wright on the afternoon of the 5th of July in a phone call that Lothian will introduce an Incident Management Team chaired by Susan Goldsmith, that will act in conduit with the Incident Management Team held within The Scottish Government chaired by Christine McLaughlin, Chief Finance Officer of NHS Scotland.

In the coming week I am considering visiting the existing site to speak with staff directly. However I am mindful of the need to provide them with more information than they currently have and so will consider timing when I have a clearer picture on the HFS/HPS work in relation to safety and standard compliance across the new hospital site and the link with a migration plan.

I hope this is helpful and will continue to provide you with updates as we make progress.

Cabinet Secretary for Health and Sport
5 July 2019

From:	Bowman D (David) on behalf of Cabinet Secretary for Health and Sport
To:	First Minister
Cc:	Cabinet Secretary for Health and Sport; Roche R (Rowena); Connaghan J (John) (Health); Healy M (Michael); Low S (Stuart); McPherson G (Grant); McLaughlin C (Christine); DG Health & Social Care; Chief Medical Officer; Calderwood C (Catherine); Murray D (Diane); Hart S (Suzanne); Klein G (Gerard); Rogers S (Shirley); Hutchison D (David)
Subject:	Health Finance and Infrastructure - Edinburgh Children"s Hospital - First Minister - 19 July 2019
Date:	19 July 2019 16:15:57
Attachments:	2019-20 - Health Finance and Infrastructure - Edinburgh Children"s Hospital - First Minister - 19 July 2019.docx

PS/First Minister

Please find attached a note from the Cabinet Secretary for Health and Sport, Jeane Freeman MSP.

Regards

David Bowman
Deputy Private Secretary
Ministerial Private Office (Health)
St Andrew’s House
Edinburgh

EDINBURGH CHILDREN'S HOSPITAL - UPDATE

Purpose
1. Following my note of 12 July, please find an update on the current situation in respect of the Royal Hospital for Children and Young People (RHCYP) and Department of Clinical Neurosciences (DCN).

Priority
2. High.

Background
3. In earlier briefings, I had provided a summary of the issues currently facing the opening of the new hospital and this note provides a further update on the operational impact and support provided to patients along with current actions being taken to resolve the technical issues at the new hospital.

Operational Impact and Support
4. The dedicated helpline set up by NHS 24 has received 73 patient calls as at 17th July. All of these calls were appointment related. The helpline will remain in place and NHS 24 are providing daily updates on activity levels.

5. NHS Lothian have been contacting patients by telephone for those who have appointments in July and issuing letters to patients who have scheduled appointments from August onwards. NHS Lothian are providing daily update reports on patient contact position for patients with appointments in July. As at 16 July, all 158 paediatric inpatients have been contacted by phone. Of the 1,586 paediatric outpatient appointments, all have received a letter and 1,248 have received a phone call. NHS Lothian continue to try to make contact by phone for the remaining 338 patients.

6. For Department of Clinical Neurosciences patients, all 11 inpatients have received a phone call and all 669 outpatients have received a letter; 448 outpatients have also received a phone call and work continues on contacting the remaining 221 outpatients by phone.

7. NHS Lothian have also been asked to monitor any complaints received about the situation, but no complaints have been reported. There are also no reports of any significant staffing issues as part of the operational impact. The support staff to re-direct any patients who turn up at the new site was in place until today (18/7). The Board have not reported any activity and this support has been stood down, though it will be re-instated if it is needed.

Site Visit
8. On Thursday, I visited both the existing Children's Hospital and the DCN at the Western General Hospital. Both visits were extremely helpful as they allowed me to see first-hand the level of disappointment and inconvenience for staff that the delay has caused and also the impact and disruption on patients.

9. However, staff did appreciate the visit and it allowed them the opportunity to feedback their experiences direct to myself, DG Health and Social Care and the Chief Medical Officer. I gave staff my personal assurance that they would receive the necessary support to enable them to continue to provide high quality healthcare in the existing sites while NHS Lothian work through the technical issues causing the delay.

10. Staff at DCN informed me that they had already been working on a migration plan that would allow them to move as quickly as possible once I have received the necessary assurance that the new facility is safe.

11. Prior to the visit, I met with the Chair and Chief Executive of NHS Lothian and asked that they focus on the following issues as a matter of priority:

- Identify what works need to be done to allow children's services and DCN to operate safely in existing premises until they move to the new hospital;

- A full written migration plan for all services moving into the new hospital. This should include timeline, interdependencies, constraints and a full description of the judgements the board have made whilst making the recommendations, including the level of clinical input into these recommendations;
- Details on when all snagging issues will be resolved.

Technical Fix – Critical Care Ventilation

12. The technical fix for the ventilation in critical care is being worked through, but timelines still suggest 4 weeks design, 10-12 weeks procurement and 10-12 week installation; we are establishing what elements of the programme can be undertaken concurrently.

External Checks – NHS National Services Scotland (NSS)

13. I have 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 has already started and 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 on the first phase anticipated in September.

14. Running in parallel, NSS will also provide assurance that current and recently completed major NHS capital projects comply with national standards. This work will take a risk-based approach and will inform development of the potential expansion of the current function and services provided by Health Facilities Scotland; including providing assurance going forward that NHS buildings meet extant standards.

Phased Migration – Options working to develop it

15. Migration of DCN and non-critical care paediatric services will follow assuming a positive conclusion from the report ie nothing will move before September. Due to rota considerations, migration will not happen immediately though we are exploring options to minimise any further delay.

KPMG Audit of Governance

16. It is also important that we understand the factors, including information flow and timeframes, that led to the decision, announced on 4 July, to delay the move to the new hospital. KPMG have been engaged to conduct an independent audit of the governance arrangements for RHCYP, to provide an external and impartial assessment of the factors leading to the delay. This work began on 15 July and in the first instance will focus on collecting and reviewing all pertinent documentation. This will inform next steps, including interviews with key personnel and timeline for reporting; I will receive weekly updates prior to receiving the final report in mid-August.

NHS Lothian – Escalation Level 3

17. I recognise that the cumulative impact of the significant work required to complete the move to the new RHCYP, together with the requirement for improved performance across a number of other areas, including scheduled and unscheduled care, cancer, delayed discharge and mental health, will place significant pressure on the leadership capacity of the Board. Reflecting the significance of this challenge, NHS Lothian have been placed at Level 3 of the NHS Board Performance Escalation Framework which is defined as: ‘Significant variation from plan; risks materialising; tailored support required’.

18. A formal Recovery Plan has been requested from the Board, setting out clear milestones to address each of the areas I have highlighted. A package of tailored support will be made available to the Board, in order to develop and implement the Recovery Plan. We have already received a positive, constructive response from the Board on what will be required to develop a credible Recovery Plan.

Oversight Group

19. In order to provide me with necessary assurance to confirm the compliance with standards across the new hospital, I will establish a Project Oversight Group. Membership will potentially consist of Scottish

Government, NHS Lothian, Scottish Futures Trust, Health Facilities Scotland and Health Protection Scotland, with a focus on ensuring that we have sufficient clinical and technical expertise as part of the Group.

20. Recognising that Scottish Futures Trust have experience and involvement across the public sector on construction quality issues, I have arranged through their Chief Executive that in addition to them being represented on the Oversight Group, they will also provide advice and support on the management of the NPD contract, commercial advice on remedial works and they will fully cooperate with any internal or external investigation or review of the events leading to the current circumstances.

Parliamentary Issues

21. I answered a GIQ on Thursday 18 July, which outlines what action we are taking to remedy the issues that have delayed the opening of the hospital. I also wrote to the convenors of the Health and Sport Committee and the Public Audit and Post-legislative Scrutiny Committee, local MSPs/MPs, Shadow Health Spokespersons and the Auditor General for Scotland.

22. I am also aware that Miles Briggs has suggested to the convenor of the Health and Sport Committee that the committee '*look to include and take forward an inquiry into the ongoing problems at the new Sick Kids'*. I will provide an update when the committee decides what they are going to do.

Media and Communications

23. Following publication of the GIQ, I issued a press statement summarising the current position and I sent a letter to all NHS Lothian staff; the Chief Executive of NHS Lothian also sent a separate communication to his staff, which was cleared by me.

Conclusion

24. I remain focussed on ensuring that we address all these issues as quickly as possible and I will continue to provide updates as progress is made.

Cabinet Secretary for Health and Sport
19 July 2019

Scottish Government
Riaghaltas na h-Alba
gov.scot

PROTECTING SCOTLAND'S FUTURE

The Government's Programme for Scotland 2019-20

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[redacted]

Rt Hon Nicola Sturgeon MSP
First Minister of Scotland

INTRODUCTION FROM THE FIRST MINISTER

We are currently living through unprecedented and deeply troubling times for Scotland and the UK. At a time when we are wrestling with global challenges such as the climate emergency, we also face a constitutional emergency as the current UK Government undermines democracy by suspending the UK Parliament and taking Scotland out of the European Union (EU) against our will and possibly without a deal.

The people of Scotland voted to remain in the EU and this Government has consistently opposed Brexit. A 'no deal' Brexit would create unprecedented challenges for the government and for the wider country – it would put jobs, livelihoods and communities at risk.

As a Government our opposition to a 'no deal' Brexit is clear, but we are obliged to prepare for one. That means that if the UK Government does not step back from the brink, some elements of this Programme may have to be postponed while we deal with a mess that is not of Scotland's making.

We will seek to minimise any impact on the day-to-day activity of government but compromises may be required. However, this will not in any way diminish our ambitions for Scotland and this Programme sets those out.

The current political and constitutional crisis also raises the importance of securing the right for Scotland to have a say over our own future. As the decisions of the UK Government increasingly go against the interests and democratic wishes of the people of Scotland, it is more important than ever that we complete the necessary steps to hold a referendum on independence.

In April this year, I acknowledged that we faced a climate emergency. Over this summer, the evidence of that has been clear – we have seen the kind of extreme weather events across Europe that will become more and more common if we fail to rise to this global challenge. The consequences of global climate change will be severe. While in some parts of the world its effects are existential, we will also feel the impact here at home. We must act.

This Programme for Government sets out some of the next steps on Scotland's journey to net zero emissions and raises our ambition in light of the emergency we face. We are leading the world in setting challenging targets, but we must also redouble our efforts to meet them.

Tackling climate change also creates opportunities. We can lead the way in showing how our society and economy can transition to net zero in a way that creates economic opportunity and provides the assurance of rewarding work for all.

If we are able to proceed as planned, the coming parliamentary year will see several key milestones on the path to setting out Scotland's comprehensive response to the climate emergency. The Infrastructure Commission will publish its recommendations in advance of the Capital Spending Review. This will give us the opportunity to bring a low or zero carbon focus to all of our future infrastructure investments. Along with the renewal of the National Planning Framework, our future public infrastructure programme will lay the foundations on which we will build low and zero carbon homes, communities and industries. The National Transport Strategy, to be published later this year, will redefine investment priorities, putting sustainable transport at the heart of decision-making. In the year ahead, we will also publish an updated Climate Change Plan to take full account of the advice of the UK Committee on Climate Change.

The coming together of these fundamental reviews of government activity will mean changes in the way that we travel, live and grow our economy. By embracing these changes, we can reduce our emissions, become a driver of innovation and provide support to our communities to navigate these changes.

Of course, climate change is happening as we speak and it is something that we must all contribute to tackling now. In advance of the outcome of these reviews, this Programme for Government contains the first package of additional measures that we will take in response to the climate emergency. These measures cut across all parts of government but they are by no means the final word – instead they should be seen as a down-payment on our commitment to ensure that Scotland ends its contribution to global climate change by 2045 at the latest.

Amongst other elements this embryonic Scottish Green Deal includes commitments to:

- invest over £500 million in improved bus priority infrastructure to tackle the impacts of congestion on bus services and raise bus usage
- put the Highlands and Islands on a path to becoming the world's first net zero aviation region by 2040, including a commitment to zero emissions from Highland and Islands Airports Limited's operations. We will begin trials of low or zero emission flights in 2021
- reduce emissions from Scotland's railways to zero by 2035 through the continued electrification of the network, the procurement of battery-powered trains and exploration of the potential of hydrogen-powered trains in Scotland
- provide an additional £17 million to support the demand for ultra-low emission vehicles (ULEVs) through our Low Carbon Transport Loan scheme, while expanding the scheme to include used electric vehicles

- ensure that from 2024, all new homes must use renewable or low carbon heat. This will be achieved through a fundamental overhaul in building regulations that will increase energy efficiency and the efficiency of construction from 2021, and will be accompanied by a £30 million investment in renewable heat projects
- put the transition to net zero at the heart of the Scottish National Investment Bank's work
- unlock additional resource for emissions-reducing investment through a Green Growth Accelerator – referred to by the Climate Emergency Response Group (CERG) as a 'Green City Deal' – combining public and private investment to transform cities and regions
- bring to market a £3 billion portfolio of projects, including renewables, waste and construction, ready for green finance investment
- support Scotland's people to gain the skills they need to share the rewards of these new approaches to investment through a Climate Emergency Skills Action Plan

Protecting the environment and ensuring a just transition to a net zero future is part of our commitment to put wellbeing at the heart of all we do as a Government.

Improving economic growth is important but we must generate it in a way that reduces inequality, improves quality of life and supports and benefits everyone in society.

Doing so against the backdrop of Brexit increases the challenge we face but it does not reduce our determination to deliver.

Scotland has long faced a problem of persistent and often multi-generational poverty. Child poverty, while lower than in other parts of the UK, is a particular challenge. The UK Government's austerity programme, including severe welfare cuts, is making this problem worse.

The Scottish Government has put tough targets to reduce child poverty in law and this year we will take bold steps to meet them.

We will bring forward regulations so that we can introduce our new Scottish Child Payment of £10 per week.

This Programme for Government commits to commencing payments to eligible families with children under the age of six by Christmas 2020 – ahead of the schedule we set out before the Summer Recess. The Scottish Child Payment will be paid to all eligible families with children up to 16 years of age by 2022. This game-changing investment will put over £500 a year, for each child, in the pockets of families who need it the most and has the potential to lift 30,000 children out of poverty.

The year ahead will also see the full expansion of early learning and childcare to 30 hours per week (1140 hours a year) for all 3 and 4 year olds, and for 2 year olds from disadvantaged backgrounds. Alongside this expansion, we will also intensify our work to raise attainment in schools with more support for young people with additional support needs and the extension of the Scottish Attainment Challenge.

We also continue our work to widen access to our world class universities and work with both them and colleges to further improve their collaboration with business and for us all to benefit from their ground-breaking and often world-leading research.

Later this month, we will also confirm the first wave of new schools that will be constructed through our £1 billion school investment programme. This will see more schools that are low emission, digitally-enabled and better connected to their local communities. Recognising the impact of the recent fire at Woodmill High School in Dunfermline, we will work in partnership with Fife Council to ensure Woodmill is re-built as quickly as possible.

Together with the introduction of the Best Start Grant over the last year and continued delivery of Scotland's Baby Box, these new commitments will make a valuable contribution to ensuring that Scotland is the best place to grow up.

We will also build on the commitments in last year's Programme for Government which set out a comprehensive package of measures to improve mental health services for children, young people and adults. We have published recommendations to drive up standards of perinatal and infant mental healthcare, supported by £50 million of funding. This academic year sees the first tranche of new school counsellors starting work to support our children and young people in their communities, with all in place by next September. Going forward we will see further progress as we develop community-based mental health services for children and young people. This will use an open access model, allowing referrals to be made by those who work with and support children and young people. Crucially, children and young people will be able to self-refer to the service. We will also scope out how this service can be made available in the future to people of all ages across Scotland.

Our services are changing but the rise in suicides this year shows that there is more to be done. Last year, we established a National Suicide Prevention Leadership Group to help drive change. In the coming year, we will support local suicide prevention planning and help more staff to work with those in crisis and those who have been bereaved by suicide.

The recent statistics showing a rise in the numbers of drugs deaths in Scotland means that we must act urgently. Accordingly, this Programme for Government commits us to invest a further £20 million over two years to support local services and provide targeted support. We will also continue to press the UK Government to act on medically-supervised overdose prevention facilities or to devolve the powers to enable the Scottish Government to do so.

This Programme also continues record investment in our NHS and includes over £100 million to support implementation of the Waiting Times Improvement Plan to eliminate unacceptable waits.

Social Security Scotland is already providing £190 million of vital support to over 91,000 people including carers and young families. Over the coming year, it will deliver a new Job Start Payment, the Young Carer Grant, Disability Assistance for Children and Young People and, this month, the Funeral Support Payment.

These investments are not possible without a strong economy that generates the jobs and wealth for us all to benefit from. We will continue our work to transform Scotland's infrastructure, support our innovators and expand our exports.

This will include a £130 million investment this year as part of the establishment of the Scottish National Investment Bank. The Bank will work with partners from across our economy to deliver investment, with the transition to net zero its primary mission.

We will also put in place a Foreign Direct Investment Growth Plan to confirm Scotland's place as one of the most attractive places to do business, particularly for low carbon industries. We are also investing a further £37 million in business research and development (R&D) to support innovation and make progress towards our target of doubling business R&D investment by 2025.

The Programme also builds on our reforms to the justice system and our commitment to human rights. A new Hate Crime Bill will bring criminal law up-to-date in this important area. We will also continue our improvements to forensic services for victims of sexual offences. And we will deliver changes recommended by the Victims Taskforce which has already supported improvements in how victims experience prison and parole processes.

The National Taskforce for Human Rights Leadership will continue its work to establish a legislative framework for a Scottish Bill of Rights. This will be preceded, by the end of this Parliament, by legislation to incorporate the United Nations Convention on the Rights of the Child. We will also consult on the detail of draft legislation to bring Scotland's process of Gender Recognition in line with international best practice.

It is worth noting that this is our fourth Programme for Government since the referendum on EU membership. Even in June 2016, no one would have predicted that we would begin this parliamentary year facing a 'no deal' Brexit, with the Westminster Parliament suspended.

The Scottish Government not only has a duty to prepare for a 'no deal' Brexit, but we also have an obligation to speak up loudly and clearly against the actions that are being taken in our name.

The Scottish Government will continue to work with others in Scotland, the Welsh Government and people and parties across the UK to do all we can to prevent a damaging Brexit of any kind.

As long as a 'no deal' Brexit remains a risk, we will do everything we can to ensure that we are as prepared as we can be, while being honest that we cannot prevent all the damage that it will cause, nor avoid some impact on the other business of government.

While much of the responsibility for mitigating the impact of a 'no deal' Brexit lies with the UK Government, we and our public sector partners have undertaken significant work and contingency planning for the effects of a hard Brexit right across our economy and public services and we will continue to do so.

However, regardless of what happens over the next few months, the last three years have shown us that Scotland's interests are not best served by Westminster government.

The Scottish Government is therefore preparing to allow the people of Scotland to choose the future that is best for our country.

We have a clear democratic mandate, won in the 2016 Holyrood election, to offer the choice of independence in this Parliament – and we intend to do so. A majority of MSPs support an independence referendum within this Parliament. Accordingly, we have introduced the Referendums Bill which sets out the way future referendums will be run. We will seek agreement to a transfer of power during the passage of the Bill to enable an independence referendum that is beyond challenge to be held. It would be contrary to basic democratic principles for the UK Government to attempt to block such a referendum.

As part of enabling people to debate what kind of future they want and to ensure they have all the information they need, we have established an independent Citizens' Assembly to create a non-partisan space for such discussions to take place. We have also invited all parties to engage in discussions about what further powers they believe the Scottish Parliament needs to address the challenges that have emerged as a result of the Brexit debate.

This Programme for Government shows the ambition we have for Scotland. It sets out the progressive actions we can take to make our country the best place in the world to grow up, learn, work and live in. Our vision is of a place where a parent's income does not dictate a child's life chances; a country where our economy can flourish while we also respect our obligations to the environment; and where diversity and difference is celebrated as an asset.

This is a Scotland I hope we can all strive for.

The plans I am setting out in this Programme for Government include:

- a 'Green New Deal', harnessing the power of the Scottish National Investment Bank, a £3 billion Green Investment Portfolio and a Green Growth Accelerator – what the Climate Change Emergency Response Group (CERG) has termed a 'Green City Deal' – to attract green finance to Scotland
- investing over £500 million in improved bus priority infrastructure to tackle the impacts of congestion on bus services and raise bus usage
- decarbonising Scotland's railways by 2035 and making the Highlands and Islands the world's first net zero aviation region by 2040
- developing regulations so that new homes from 2024 must use renewable or low carbon heat
- targeting a minimum of £30 million of support for renewable heat projects
- bringing forward the date for the first Scottish Child Payments to Christmas 2020
- making the first Job Start Payments in spring 2020
- announcing the first wave of new or refurbished schools via our £1 billion school investment programme
- providing £15 million of funding for more services and staff for additional support for learning
- putting in place a Women's Health Plan to tackle women's heath inequalities
- providing an additional £20 million of funding to help tackle the drugs emergency
- continuing to support mental health, with a 24/7 crisis support service for children and young people and their families, a community wellbeing service enabling self-referral for children and young people and a £5 million investment in a community perinatal mental health service across Scotland
- taking forward planning to mitigate the worst consequences of a 'no deal' Brexit

This Programme for Government 2019-20 sets out the Scottish Government's plans to make Scotland a more successful country, with opportunities and increased wellbeing for all.

EXECUTIVE SUMMARY

This Programme for Government has wellbeing at its heart.

Guided by *Scotland's National Performance Framework,* we will act to improve the wellbeing of the people of Scotland and secure a positive future for generations to come.

This year will see the delivery of 1140 hours of quality early learning and childcare across Scotland. The first generation to benefit from this ground-breaking commitment will also be the first to be eligible for our new Scottish Child Payment. Described as a game changer for families on lower incomes, £10 per child a week for families with children under 6 years of age will be delivered by Christmas 2020 and lift thousands of families out of poverty.

We are well on track to deliver 50,000 affordable homes and the Scottish National Investment Bank will open for business in 2020. New infrastructure investment in education, a commitment to extending the Scottish Attainment Challenge and a boost for additional support for learning show our continued focus on education and closing the attainment gap as our top priority.

This Programme for Government sets out actions we will take to end Scotland's contribution to global climate change. The actions we will take now and the foundations we will put in place in the year ahead are clear markers of how Scotland will transition to net zero emissions and how we will work in partnership to achieve it.

Our action to respond to the global climate emergency is based on the same principles of social justice and building a fairer and more prosperous country that underpin all of our work. Our approach to economic growth is centred on making sure that it is inclusive, sustainable and fair. Our work to strengthen public services focuses on providing what people need, when they need it, with dignity, kindness and respect. Our work to tackle poverty is built on the firm belief that inequality is a human rights issue that we must do everything we can to overcome.

The actions set out in this Programme for Government are only achievable with partnership and collaboration. The shared ambition of individuals, communities, businesses, local government, the public and third sectors to make Scotland a fairer, more equal and successful country is vital to realise our potential.

Ending Scotland's contribution to climate change

Scotland, like the rest of the world, is facing a climate emergency and our wellbeing, and that of future generations, is at stake. As a country, we have a strong record in cutting our emissions but our response to the global climate emergency requires us to accelerate our good work and make many fundamental changes in how we travel, live, heat our homes and in what jobs we do.

To do this, we need to work across the public, private and third sectors and across Scotland's diverse communities. The recently established Climate Emergency Response Group (CERG) already shows the sort of collaboration that we will need to see to be successful. We have noted their 12 specific asks and this Programme for Government responds to them, as well as making other major commitments to set out some of the first actions we will take to respond to the climate emergency. We will continue to work with CERG and other key stakeholders across Scottish society to deliver on our commitment to net zero greenhouse gas emissions by 2045.

Making these changes is the right thing to do, but it is also an opportunity. We can gain a foothold in the innovation, products and technology needed and use that advantage to make Scotland fairer and more equal and improve people's quality of life. We will show leadership in Government while leveraging the power of private investment and the creativity of communities.

We will use opportunities like the 2020-21 Budget and our Capital Spending Review to look across what we do and assess the extent to which our investments can accelerate emissions reductions and tackle climate change. Low carbon will also be the key theme of our next Infrastructure Investment Plan.

Scotland's 'Green New Deal'

Scotland's 'Green New Deal' will start to create the right conditions to kick-start investment and build the momentum needed for it to continue longer term, making a significant impact on emissions across different sectors and guaranteeing new, high quality jobs.

The Scottish National Investment Bank will begin investing in 2020, supported by the £150 million Building Scotland Fund and a further £340 million in investment to 2021. Securing the transition to net zero will be the Bank's primary mission. The Bank will be supported by £130 million in the coming year.

A Green Growth Accelerator – what the CERG has termed a 'Green City Deal' – extending the current Growth Accelerator model, will unlock additional investment for emissions-reducing infrastructure that supports our transition. The combination of public and private investment that this brings can transform cities and regions and builds on the existing Growth Accelerator's current work changing landscapes in Edinburgh City Centre and Dundee Waterfront.

We know that the green finance market is growing and we want Scotland to be ready to attract those investors. We will bring to market a £3 billion portfolio of projects over the next three years. These projects which will all be ready for investment will include renewables, waste and construction and will look at expanding into other sectors such as transport.

To reap the rewards of our new approaches to investment, and make sure that those rewards are shared fairly, we will take action to give Scotland's workforce the skills that it needs. Our Climate Emergency Skills Action Plan will set out how we will maximise opportunities for people to gain these skills and how we will work with colleges, universities, business and industry to equip the population with the skills of the future.

A 'Mission Zero' for transport

Transport is Scotland's largest greenhouse gas emitting sector and this Programme for Government contains actions across all modes of transport. We will publish a new National Transport Strategy later this year which will redefine investment priorities to put sustainable transport at the heart of decision-making and ensure that transport plays a key role in delivering net zero emissions by 2045.

We will bring forward a step change in investment to make bus services greener and more punctual and reliable, so that more people make the choice to take the bus. Our actions include:

- investing over £500 million in improved bus priority infrastructure to tackle the impacts of congestion on bus services and raise bus usage
- beginning plans to reallocate road space on parts of the motorway network around Glasgow to high-occupancy vehicles such as buses
- working with the Scottish National Investment Bank, the bus sector and potential investors to explore the potential for new forms of patient and innovative financing to radically accelerate the deployment of zero emission buses across Scotland

We are committed to phasing out new petrol and diesel cars by 2032. We have delivered 1,500 new electric charge points and supported business and communities to buy ultra-low emission vehicles (ULEVs). We will go further by:

- providing an additional £17 million to support the demand for ULEVs through our Low Carbon Transport Loan scheme, while expanding the scheme to include used electric vehicles
- creating the conditions to phase out the need for all new petrol and diesel vehicles in Scotland's public sector fleet by 2030, and phasing out the need for all petrol and diesel cars from the public sector fleet by 2025
- forming a new Strategic Partnership with electricity network companies to improve electric vehicle charging infrastructure and electricity networks across Scotland

While we work to ensure that Scotland's railways are serving passengers across Scotland, we will also put in place plans to decarbonise railways by 2035. We will set out detailed timescales and actions in spring 2020 that will include investment in electric trains.

We will aim to decarbonise scheduled flights within Scotland by 2040 and aim to create the world's first zero emission aviation region in partnership with Highlands and Islands Airports Limited (HIAL). This will include taking action to decarbonise airport operations in the HIAL region. We will begin trialling low or zero emission planes in 2021.

Driving down emissions from buildings and heating

We will make sure that new homes and buildings across Scotland are built to meet the challenge of the climate emergency, combining the action we need to take on climate change with our ambition to provide affordable, warm homes.

Our consultation this year on new building regulations will include measures to improve energy efficiency and the quality of construction and we will work with stakeholders to develop regulations to ensure that new homes from 2024 must use renewable or low carbon heat. Similarly, our ambition is to phase in renewable and low carbon heating systems for new non-domestic buildings consented from 2024. We will work with the construction, property and commercial development sectors to identify and support good practice to inform the development of standards on how we can achieve this.

We will show leadership in the public sector, engaging with partners on a new Net Zero Carbon Standard for new public buildings and accelerating efforts to use 100% renewable electricity on the Scottish public estate. In addition, Scottish Water will become a zero carbon user of electricity by 2040 – five years before our net zero target.

This year, we passed the most ambitious fuel poverty legislation in the UK, setting a target date of 2040 to tackle the root causes of fuel poverty. We will publish a Fuel Poverty Strategy in 2020, setting out how we will tackle all the drivers of fuel poverty in ways which work for different communities. This includes addressing the issues of low household incomes, unaffordable fuel prices, low levels of energy efficiency and inefficient use of fuel.

Biodiversity loss and the climate crisis are intimately bound together: nature plays a key role in defining and regulating our climate and climate is key in shaping the state of nature. Our Biodiversity Challenge Fund was almost entirely committed in its first year and so we will make an additional £2 million available to fund further important projects addressing biodiversity loss and climate change.

These new commitments signal important shifts in public sector investment and make clear our position on leveraging private investment. They will put Scotland at the forefront of innovation in new low emissions technologies and products, stimulating inward investment and supporting new and existing high quality jobs and sustainable supply chains. They will make a significant impact on reducing emissions across Scotland, ensuring we play our part in protecting the environment and the wellbeing of generations to come.

A successful, fair and green economy

This year, our economy faces the unprecedented threat of Brexit, possibly on a 'no deal' basis. As long as a 'no deal' Brexit remains a risk, we will do everything we can to ensure that we are as prepared as we can be, while being honest that we cannot prevent all the damage that it will cause, nor avoid an impact on the other business of government.

Despite this uncertainty, we hold strong to our vision of a society where opportunities are created for all and the dividends of increased prosperity are shared fairly. Economic growth must benefit everyone and everyone must have the opportunity to contribute to that growth. It must underpin and drive the wellbeing of our people.

Infrastructure and investment

This year alone, more than £5 billion is being invested in infrastructure projects across the country, including new homes, NHS elective care centres and infrastructure in our cities and regions.

Beginning in 2021, an additional £1 billion will be invested in new or refurbished schools, benefiting around 50,000 pupils across Scotland. This is in addition to the 60,000 who, by the end of next year, will have seen their schools renewed or refurbished since 2009 through the existing Schools for the Future programme. We will announce the first schools to benefit from this programme later this month.

Since 2014, we have committed to investing over £1.8 billion in City Region Deals, other Regional Growth Deals and linked investments over the next 15 years.

Over the next year, we will work with partners to assess the contribution that growth deals can make to tackling climate change and how our forthcoming investments can strengthen our economy, make our society fairer and protect our environment.

We will continue our work to enhance Scotland's connectivity, driving inclusive growth and jobs, as well as helping to reduce travel, open up opportunities and address isolation and remoteness.

As well as progressing towards our commitment to superfast broadband for every home and business in Scotland, we will establish the Scotland 5G Centre to make sure that we are ready to capitalise on this emergent technology.

When the Scottish National Investment Bank opens for business next year, it will be part of Scotland's new inclusive economic foundations and a driver of a new low carbon economy.

We will provide £130 million this year to set up the Bank and finance its early activities. We will continue to work with stakeholders to develop its key missions. However, its primary mission will be securing the transition to net zero.

Support for businesses and innovation

Strong innovation drives business and sector growth, creating and sustaining high quality jobs. Innovation is essential to help us achieve our ambitions for reducing emissions from travel and from sectors such as manufacturing. With the guidance of our Strategic Board, we are improving outcomes through the £2.4 billion annual investment in the enterprise and skills system.

We continue to support business investment in research and development (R&D). We will simplify and streamline our support for R&D – pulling together existing large funds and using them to help businesses transition to net zero.

We will continue to support businesses to transition to a highly-digitalised, low carbon economy. Working with partners in the private and public sectors, we will target high-employment, low-productivity sectors and support them to embed digital technologies to address their specific needs. We will ensure that this benefits workers, providing opportunities for them to reskill and upskill and access higher quality jobs.

Manufacturing has higher average wages than the service sector and tends to distribute jobs more widely across the country, making it a key contributor to our inclusive economic growth ambitions.

The year ahead will see us invest the first tranche of a £14 million investment targeted at small and medium manufacturing businesses to advance their research, develop new products, improve their productivity and upskill their workforce.

Scotland's tourism industry is an important contributor to the Scottish economy, supporting over 200,000 jobs. We will provide a package of support for the tourism sector to minimise the burden of regulation, support the growth of a skilled, professional and inclusive workforce and help the industry to deliver high quality and memorable experiences for visitors. We will work with partners to support repairs to the Waverley Paddle steamer, allowing her to sail again, and add more sites to a free open public Wi-Fi network across the North Coast 500 route. We will also extend the Rural Tourism Infrastructure Fund.

Regional and rural economies

Rural Scotland makes a vital contribution to our national economy. We know that more young people want to stay in the areas where they grew up, but we need to do more to stem rural depopulation and attract more people to live and work in rural and island communities.

We will develop an action plan to support repopulation of our rural and island communities and work with partners to test approaches using small scale pilots in rural Scotland.

We will publish the first ever National Islands Plan by the end of the year. It will set out how we and other public sector partners will work to improve outcomes for island economies and communities and, once it is published, we will report on our progress each year.

The food and drink industry is a vital part of Scotland's economy and of rural and island communities across the country. We are working towards a Scotland where people benefit from and take pride and pleasure in the food we produce, buy, cook, serve and eat every day. We will lay before Parliament a Good Food Nation Bill to provide a statutory framework to support this ambition.

Scotland in the global economy

Our enhanced export plan, *A Trading Nation*, has been published and is backed by £20 million of investment over three years. It sets out plans to grow Scotland's exports to add around £3.5 billion to Scottish GDP and create 17,500 more jobs. This year, we will continue to develop and expand our support for Scotland's exporters, including expanding our Trade Envoy Network, revamping the Global Scots Network and making up to £2 million available for the First Minister's Export Challenge.

This Programme commits to putting in place a four year Foreign Direct Investment (FDI) Growth Plan by summer 2020. Taking the same evidence-based approach as we have to exports, it will focus on attracting investment to the sectors where Scotland is currently world-class as well as building on emerging expertise and enabling technology in addressing major global challenges around ageing, climate change and wellbeing.

Skills and fair work

A strong economy needs a skilled and diverse workforce. Making strides in our Fair Work agenda is essential to increasing wellbeing for everyone in Scotland, and to tackling poverty and inequality.

We will continue to increase the number of people receiving the real Living Wage and take action to help disabled people into work. We are investing up to £5 million over three years to help up to 2,000 women return to work after a career break, particularly in sectors where women are under-represented.

Scotland's future success depends on people, and migration is vital to our economic, demographic and cultural needs. Attracting people with the skills that our employers need has never been more important.

The UK Government's approach to immigration does not work for Scotland so we will develop a distinct Scottish approach to attracting and retaining talent to address current and future skills gaps in our workforce. We would be far more likely to succeed in those efforts if the Scottish Parliament had control over our immigration laws.

We will work to attract people and families from the rest of the UK to relocate here and work with universities and local authorities to encourage people to stay in Scotland and to move within Scotland to address regional skills gaps.

Improving outcomes through our public services

Public services make a deep and lasting contribution to the wellbeing of our communities. It is our responsibility to deliver high quality, accessible and effective public services, underpinned by our values of kindness, dignity, compassion, openness and transparency.

This is central to shaping the kind of country that we want to be.

We expect high standards of our public services and we place huge importance on making sure that they demonstrate genuine partnership working with the communities that they serve.

Growing up loved, safe and respected and closing the attainment gap

In the year ahead, we will deliver 1140 hours of funded early learning and childcare for families across Scotland. 80,000 families will benefit from the quality of care, including outdoor play and a nutritious meal. This policy will also save families around £4,500 per child each year.

Over the coming year, we will invest £3 million in the Access to Childcare Fund as part of a range of measures to tackle child poverty. It will provide support to establish new projects delivering community-based childcare for low income families. This will also provide opportunities for children within those communities to benefit from a range of activities before or after school or during the holidays. It will begin in April next year and run for two years.

While the attainment gap between children and young people from the wealthiest and poorest areas is closing, there is more to do to help every child reach their potential.

We have continued to invest in the Scottish Attainment Challenge and Pupil Equity Fund with an investment of £182 million in this financial year, as part of a total of £750 million we have made available between 2016 and 2021.

This year's funding will put money into the hands of headteachers to provide additional targeted support to help children and young people overcome barriers to achievement related to poverty.

Regional Improvement Collaboratives have been set up to cover every local authority in Scotland. Over the past year, with our additional £5 million investment, the number of teachers involved has increased and regions are taking action to improve attainment, support curriculum development and help headteachers and others to improve their leadership skills.

In the coming year, we will invest an additional £15 million to improve additional support for learning across Scotland. Working in partnership with local government, this funding will secure additional staff in our classrooms, leading to better experiences for children and their families.

We will also establish a Teacher Innovation Fund, providing opportunities for innovative teachers to apply for funding to help them to access professional development, helping to enhance the attractiveness of teaching as a career.

We will continue funding for the Scottish Attainment Challenge beyond the end of this Parliamentary term – an early commitment on this Government's top priority, to allow local authorities to make plans.

We continue to take action to tackle Adverse Childhood Experiences and we are determined to improve outcomes for looked after children. It is our job, as a society, to love our most vulnerable children and give them the best start in life, doing everything we can to make sure they grow up surrounded by kindness, compassion and understanding.

The Independent Care Review is now in its third stage and will report its findings to us early next year. Care experienced young people have made clear, however, that we must not wait for the outcome of the Review's work before making changes to the care system. We will take action to provide further support to care-experienced people, including help to secure tenancies, greater access to dental care, wider eligibility for support for further and higher education and expanded entitlement to funded early learning and childcare.

Healthy and active

This year we will continue to support our NHS to deliver improved access to care, support our dedicated workforce and work across organisations and communities to tackle Scotland's health challenges.

Last year we set out how we would transform support for good mental health with long-term changes to the way people of all ages access support and treatment.

We have published recommendations to drive up standards of mental healthcare for new and expectant mothers, supported by £50 million of funding. We have put in place the plans needed to recruit additional staff, with the first of the additional school nurses entering training and new school counsellors starting work across the country. We have invested an additional £4 million in Children and Adolescent Mental Health Services to provide 80 new staff.

In the year ahead we will take forward our work to:

- develop 24/7 crisis support for children and young people and their families, creating a national service linking to police and emergency health services and introduce a text service so children and young people can text as well as phone to access help
- put into place a new community wellbeing service to support the mental health needs of children and young people, using an open access model that also allows self-referral. We will also scope out how this service can be made available in the future to people of all ages across Scotland
- increase specialist staffing levels at the two current mother and baby units in St John's Hospital in NHS Lothian and Leverndale Hospital in NHS Greater Glasgow and Clyde to create centres of expertise
- support development of a community perinatal mental health service across Scotland, backed by £5 million
- have all 350 additional school counsellors in place

The number of lives lost to drugs in Scotland is an emergency. This year, we will take further action to tackle the issues associated with use of illicit drugs, reduce harm and stop the rising number of drug deaths.

We will invest an additional £20 million over two years to increase direct support for projects to test new and innovative approaches, improve services and save lives.

We cannot address problem drug use and the harm it causes without addressing the root causes of these issues. Many people who use drugs also endure homelessness, violence and mental health problems.

We know that the reservation of drugs legislation to Westminster is holding areas of Scotland back from taking new approaches that can save lives, for example medically-supervised overdose prevention facilities. While the UK Government refuse to act, we will consult on drugs law reform so that the Scottish Parliament is ready to act when it has the power to do so.

In the coming year, we will establish a Women's Health Plan. It will underpin actions to tackle women's heath inequalities. The new plan will improve access to contraception and focus on reducing inequalities in health outcomes which only affect women such as endometriosis and improving services for women undergoing the menopause.

We will continue to build capacity and capability in our NHS with a focus on improved access to care. We have set out how we will substantially and sustainably improve waiting times across the NHS. We are making progress but there is more to do.

As part of our Waiting Times Improvement Plan, this year we are investing £102 million to carry out more procedures such as cataract removal and hip and knee replacements, as well as increase the number of outpatient and diagnostic appointments. This investment will also support work to increase capacity, including additional workforce, at the network of elective and diagnostic centres currently being created.

To ensure patient safety we will create a new national body to strengthen infection prevention and control, including in the built environment. The body will have oversight for the design, construction and maintenance of major infrastructure developments within the NHS and also play a crucial policy and guidance role regarding incidents and outbreaks across health and social care.

Communities where everyone is valued, protected and respected

We have an obligation, both legal and moral, to respect, protect, fulfil and enhance international human rights. It is a crucial part of making Scotland a safer, fairer and more equal society where everyone is valued, protected and respected.

Poverty and inequality are human rights issues. Our vision is for every person in Scotland to live with human dignity and enjoy their rights in full.

We will continue to take action to reduce child poverty, tackle food insecurity and make sure that the voices of those who experience poverty are heard.

Keeping our communities safe

We will continue to protect the police budget for the lifetime of the Parliament and are providing a further £29 million revenue this year to support Police Scotland.

The major reforms of our justice system, to put victims at its heart, will build on the improvements already made such as the changes to the operation of the victim notification scheme and support for bereaved families. We are consulting on the range of serious crimes where victims can make a statement to the court and we will bring forward legislation to enable victims to set out to the court how the offence has impacted on them physically, emotionally and financially.

We will also work with justice agencies, local government, the third sector and others to consider the whole system changes needed to address Scotland's internationally high rate of imprisonment. This work will be informed by public health responses to issues such as the misuse of drugs and the impact of adversity, trauma and multiple disadvantage. It will set out a long-term vision for our justice system and how we respond to the changing nature of offending in ways which are proportionate, just, effective and promote rehabilitation, as well as keeping our communities safe and responding to the needs of victims.

Protecting rights

We are taking action across society to make it a fairer place for everyone, and ensure that people's rights are respected and everyone is able to enjoy their rights and freedoms.

The National Taskforce for Human Rights Leadership will work to ensure that Scotland is a world leader in putting human rights into practice. It will develop a new statutory framework which will help to safeguard the human rights of everyone in Scotland. It will drive work that includes bringing protections provided by the Convention on the Elimination of all forms of Discrimination Against Women and other treaties into domestic law.

We are committed to incorporating the United Nations Convention on the Rights of the Child (UNCRC) into Scots Law. We will deliver the legislation needed to do this by the end of this Parliamentary term. Our consultation on how a new Act could incorporate the UNCRC has just closed, and we will respond to this in the coming months.

We will consult on the detail of a draft Gender Recognition Bill by the end of this year, setting out our proposals to reform the current process of obtaining a Gender Recognition Certificate and how we will bring Scotland into line with international best practice.

In the year ahead we will take forward the recommendations of the National Advisory Council on Women and Girls. We will:

- create a What Works? Institute to identify, test and promote best practice in changing public attitudes to and challenging stereotypes about women's and girls' equality and rights – we will work with partners to develop a framework for the Institute and its work by summer next year
- establish a Gender Beacon Collaborative to promote gender equality across Scottish public life – membership and ambitions for the collaborative will be announced later this year
- continue to lobby the UK Government to improve parental leave
- support work to encourage 50/50 representation at elections

As part of our work to eradicate violence against women and girls, we will introduce the Forensic Medical Services (Victims of Sexual Offences) Bill. This will improve the way in which forensic medical examinations and associated healthcare interventions are conducted, introducing a self-referral model for victims of sexual crime who wish to have a forensic medical examination without first reporting a crime to the police.

Poverty and inequality

In its first year, Social Security Scotland has supported over 91,000 people and delivered an essential public service based on fairness, dignity and respect.

The Best Start Grant, Best Start Foods and Carer's Allowance Supplement are all providing help to those that need it most and this month the first Funeral Support Payments will be made to help families on lower incomes struggling with the costs of a funeral.

This autumn, young carers will start to receive £300 per year through the Young Carer Grant. We expect that this will help 2,400 young carers across Scotland.

In spring 2020, young people will receive the first payments of the Job Start Payment, assuming we get necessary cooperation from the UK Government. We expect that around 5,000 young people will benefit from this support in the first year. The £250 payment (or £400 for those with children) will help with travel costs, clothing, lunches and other expenses on return to work. Care leavers will get this help if they are receiving a qualifying benefit, even if they have not had a period of unemployment.

We will also bring forward the date for the first payments of the Scottish Child Payment. For under 6s, the first payments will be made by Christmas 2020, giving families who need it most an additional £10 per child per week. The payment will lift an estimated 30,000 children out of relative poverty when fully rolled out and increase family incomes for thousands more.

In the year ahead, we will also deliver further actions to support children and families and tackle poverty. As part of a £22 million package of bespoke parental employment programmes, we will begin delivery of our new Parental Employability Support providing intensive support to low-income families through to 2022. This will include specific support to disabled parents to get quality jobs and stay in work.

In addition to the actions set out in our Tackling Child Poverty Delivery Plan, this year we will:

- boost parental employability programmes, facilitating better local connections between employability services and the expansion of early learning and childcare. Backed by over £4 million, this work will aim to enhance family incomes by improving access to work and in-work progression
- introduce a £500,000 Family Learning Scotland Programme to help parents gain new skills and take up learning and training – integrated with the expansion of early learning and childcare to allow parents to build on their skills and gain better work
- prevent homelessness for low-income families through supporting the work of social landlords to prevent crisis points with a new £1.5 million Homelessness Prevention Fund
- invest £1 million to improve the life chances of young parents and their children. We will build on good practice, using key workers to enable young parents to receive the support they need, including access to good quality housing, help around employment, education and training and the financial help that they are entitled to

We are on track to achieve our target of delivering 50,000 affordable homes, including 35,000 for social rent, by 2021, with over half of those already completed.

As well as providing affordable homes, we are taking action to help people to sustain their tenancies. This year, we will provide more than £63 million in Discretionary Housing Payments to help 70,000 households and protect them from the impact of the UK Government's bedroom tax and other welfare cuts.

We will deliver a £150 million national pilot scheme to provide support for first-time buyers with up to £25,000 towards their deposits. The scheme will launch in December this year and will be open to all first-time buyers, regardless of income or eligibility for other existing schemes.

Everyone needs a home – a safe, warm place to live, feel secure and have a sense of belonging. As part of the transformational programme set out in the Ending Homelessness Together Action Plan, we will launch a fund of up to £4.5 million for third sector organisations on the frontline to innovate and transform the services they provide.

We will also launch a new £10 million Credit Union Investment Fund to increase the number of people saving and borrowing from Credit Unions. The fund will provide loans to Credit Unions to strengthen their balance sheets and increase their digital and physical presence, boosting their ability to support more people.

Our commitment to protecting rights extends beyond Scotland. This year, we will support a newly-expanded programme to protect vulnerable groups in Malawi and Zambia. The programme will support leadership to tackle local issues and give support to a wider range of marginalised groups such as women, children, those with disabilities, LGBTI and people with albinism.

Scotland's future

Our ambitions set out here are in stark contrast to the UK Government's reckless commitment to a 'no deal' Brexit. We know that Brexit will do harm to our economy and our people.

We believe decisions about Scotland's future should be made by the people of Scotland.

So as well as measures to limit the damaging consequences of decisions that have been imposed upon us, it is more important than ever to set out what could be achieved if we took decisions ourselves as an independent country and to ensure people can exercise their democratic right to choose.

We have a clear democratic mandate, won in the 2016 Holyrood election to offer the choice on independence in this Parliament – and we intend to do so. A majority of MSPs support an independence referendum within this Parliament.

The Scottish Government produced a comprehensive plan for an independent Scotland in 2014. The Government will now undertake the necessary work to update that plan and ensure that people have the information they need to make informed choices over the future of the country.

We have also introduced the Referendums Bill which sets out the way future referendums will be run and will provide clarity about the process for voters, campaign participants and those administering the referendum process. We will seek agreement to a transfer of power during the passage of the Bill to enable an independence referendum that is beyond challenge to be held. It would be contrary to basic democratic principles for the UK Government to attempt to block such a referendum.

We are now more than three years on from the European Union Referendum. In that referendum, the people of Scotland voted decisively to remain within the EU.

SCOTLAND'S FUTURE AND OUR PLACE IN EUROPE

The European Union is a group of 28 independent countries which have come together on the basis of shared values to create the world's biggest single market and trading bloc.

The Scottish Government believes the best future for Scotland is to become an independent member of the EU.

Scotland is a wealthy country and is particularly well-placed to benefit from, and contribute to, Europe's future, with our extraordinary energy resources, some of the world's best universities, our leading role in many cutting-edge industries and commitment to the EU's founding values.

In 2016 people in Scotland voted overwhelmingly against Brexit. That vote, however, was ignored by the UK Government. A subsequent compromise offer that would have kept the whole of the UK in the Single Market and Customs Union was also dismissed.

The current UK Government now says it is determined to leave the EU with or without a deal on 31 October. It has said that the 'backstop' for the island of Ireland 'cannot form part of an agreed Withdrawal Agreement'. This, and other comments and actions of the Prime Minister, have dramatically increased the chances of the UK exiting the EU on a 'no deal' basis. Indeed, it appears that the UK Government is actively pursuing a 'no deal' Brexit.

The Scottish Government will continue to work with others in Scotland, the Welsh Government and people across the UK to do all we can to prevent such a disastrous outcome, including by supporting a second EU referendum with remain on the ballot paper and the revocation of the Article 50 process in the event the UK is facing a 'no deal' Brexit.

However, regardless of what happens over the next few months, it is clear that Scotland's interests are not best served by Westminster. The House of Commons has been in turmoil for much of the past three years and now faces an unprecedented democratic crisis given the Prime Minister's plans to suspend the UK Parliament for several weeks prior to the planned date of exit from the EU.

The Scottish Government is therefore preparing for all eventualities.

Preparing for a 'no deal' Brexit

Given that a 'no deal' Brexit is an increasingly likely outcome, we will do everything we can to ensure that we are as prepared as we can be, while being honest that we cannot prevent all the damage that it will cause.

A 'no deal' Brexit will mean that on 31 October, the UK's status under EU law will change from that of an EU Member State to that of a 'third country', with no trade or cooperation agreements in place with the EU. There will be no transition period and no 'managed no deal'. The UK will immediately be outside the Single Market and the Customs Union and will no longer be part of the framework of EU law.

In this scenario, it will be impossible for the UK to maintain the current seamless arrangements with the EU across the full range of sectors, from justice and security, transport connectivity, trade flows and supply chains and medicines regulation.

Leaving the EU without a deal in an October timeframe will bring with it additional challenges due to winter weather, seasonal illness, the seasonal nature of our agriculture industry and constraints placed on storage facilities due to the festive period.

The Chief Economist to the Scottish Government has set out the risk associated with a 'no deal' Brexit: a reduction of up to 7% in Scottish GDP and the loss of 100,000 jobs. This analysis is consistent with those of various third party organisations such as the Bank of England, the International Monetary Fund and the Office for Budget Responsibility.

There could be a reduction in food choice and price rises, along with disruption to the movement of other essentials, including medical supplies, and traded goods. There could be shocks to the economy and the labour market. There could be a disproportionate impact on the most vulnerable in our communities. There could be significant disruption for Scots living in the EU as a result of changes to free movement policy and concern among non-UK EU citizens living in Scotland.

Therefore, out of necessity and not choice, we are continuing to plan and prepare for a 'no deal' Brexit on 31 October.

While much of the responsibility for addressing the impact of a 'no deal' Brexit lies with the UK Government, we, and our public sector partners, have undertaken significant work and contingency planning for the effects of a hard Brexit right across our economy and public services. We are taking a range of actions including:

- taking steps to minimise disruption to supplies of food and medicines, should there be problems at key ports and our transport and logistics networks suffer disruption
- providing bespoke online information and support on areas of concern to the public, such as the rights of EU citizens after exit and how businesses can prepare themselves
- ensuring that over 150 legislative instruments are put in place to make sure that the statute book is ready if we leave without a deal
- working with Scotland's business organisations to provide appropriate information, advice and support to help them manage the business and economic implications of leaving the EU
- paying farmers and crofters 95% of their Common Agricultural Policy entitlement through a loan scheme by the start of October to support them if Brexit takes place on 31 October

We will continue to push the UK Government for action, clarity and information in the event of a 'no deal' Brexit. The UK Government must:

- share the information we need on delays and other issues at the border
- confirm whether arrangements will be in place that avoid additional tariff or non-tariff barriers on exports of food and drink produce with priority countries
- share data on the continuity of supply of medical supplies and radioisotopes and make sure that regulatory frameworks are in place for their continued supply
- take action to minimise as far as possible the worst impacts of an economic shock
- support households to manage an increase in the cost of living and prevent more people from falling into poverty, including making changes to Universal Credit, lifting the benefits freeze on working age benefits and uprating benefits in line with inflation
- allow a tailored approach for Scotland within the UK immigration system, engage with EU Member States on the rights of UK citizens living in the EU and guarantee the rights of EU citizens living in Scotland
- take account of our separate criminal justice system when planning for the loss of access to key EU security and law enforcement tools, share information with the Scottish Government and our operational partners on contingency plans, proposed mitigations and developments and make sure Scotland is fully involved in decision-making and planning for maritime security issues
- meet the costs related to EU exit, including additional costs for policing, provide full financial compensation for the consequences of EU exit and commit to fully replace EU structural funds, recognising Scotland's right to determine its own priorities

Keeping pace

Remaining aligned with EU law will be an important signal to our European partners of our ongoing commitment to co-operation in the future. It will demonstrate that we will not accept any regression of protections and it will smooth the path for Scotland to re-join the EU.

Last year the Scottish Parliament passed the UK Withdrawal from the European Union (Legal Continuity) Bill. That Bill was designed to protect our system of laws from the damaging consequences of EU exit. After the Scottish Parliament agreed to the Bill, the UK Parliament passed its own Bill – now the UK EU (Withdrawal) Act – which retrospectively constrained the power of the Scottish Parliament to prepare devolved laws for Brexit, despite an explicit refusal by Holyrood to give its consent to this legislation.

The Scottish Government has decided to introduce a Continuity Bill to allow the Scottish Parliament to 'keep pace' with EU law in devolved areas if Brexit occurs.

We are also clear that EU exit must not impede our ability to maintain high environmental standards. We will develop proposals to ensure that we maintain the role of environmental principles and effective and proportionate environmental governance and any legislative measures required will be taken forward in the Continuity Bill. In the event of 'no deal', we will put in place interim, non-legislative measures while continuing to develop longer-term solutions.

We will seek to change the way intergovernmental relations are conducted in the UK, on the basis of equality between the Governments of the UK and, where it is in Scotland's interests, we will agree UK-wide frameworks in particular policy areas previously subject to EU law.

The Continuity Bill will enable Scotland to keep pace with EU law, in devolved areas, if Brexit occurs

Citizens' Assembly

As part of our response to Brexit and the unprecedented position Scotland finds itself in, we have also established an independent Citizens' Assembly.

Citizens' Assemblies are often used to help societies discuss significant constitutional or social issues in a respectful, non-partisan manner based on evidence and reasoned debate.

The Assembly, which will comprise up to 130 members of the public and is run independently of government by two co-convenors, builds on our work to promote participatory democracy and open government.

The Citizens' Assembly of Scotland will consider three broad questions:

- What kind of country are we seeking to build?
- How can we best overcome the challenges Scotland and the world face in the 21st century, including those arising from Brexit?
- What further work should be carried out to give us the information we need to make informed choices about the future of the country?

The Assembly is expected to conclude its deliberations in April 2020 and the Scottish Government will respond to the recommendations of the Assembly within three months.

SCOTLAND'S FUTURE

The last three years of Brexit negotiations and actions, such as the passage of legislation to constrain Holyrood's powers, illustrate that Westminster often acts against Scotland's interests and wishes.

The democratic Scottish Government believes decisions about Scotland's future should be made by the people of Scotland.

So as well as measures to limit the damaging consequences of decisions that have been imposed upon us, it is more important than ever to set out what could be achieved if we took decisions ourselves as an independent country and to ensure people can exercise their democratic right to choose independence.

The government has a clear democratic mandate, won in the 2016 Holyrood election, to offer the choice on independence in this Parliament and we intend to do so. A majority of MSPs support an independence referendum within this Parliament.

The Scottish Government produced a comprehensive plan for an independent Scotland in 2014. The Government will now undertake the necessary work to update that plan and ensure that people have the information they need to make informed choices over the future of the country.

We have also introduced the Referendums Bill which sets out the way future referendums will be run and will provide clarity about the process for voters, campaign participants and those administering the referendum process. We will seek agreement to a transfer of power during the passage of the Bill to enable an independence referendum that is beyond challenge to be held. It would be contrary to basic democratic principles for the UK Government to attempt to block such a referendum.

The Legislative Programme 2019-20

This year, we will bring forward legislation to promote fairness and wellbeing in our communities, address the global climate emergency and legislate for the conduct of future referendums.

As was the case last year, it is possible that the chaotic handling of Brexit by the UK Government may require changes to this Legislative Programme but we continue to work to avoid that where we can.

We commit in this Programme for Government that the Bill to incorporate the United Nations Convention on the Rights of the Child into Scots Law will be the key Bill in the final year of this Parliament and will be passed before the next election. We will also set out the timetable for a Gender Recognition Bill following consultation on the detail of the draft provisions.

We will also continue work to bring forward a Bill on Restricting Foods Promotions for introduction in next year's Legislative Programme.

Bills for introduction in 2019-20

Animal Health and Welfare (Amendment) Bill

Budget Bill

Circular Economy Bill

Civil Partnership Bill

Continuity Bill

Defamation and Malicious Publication Bill

UEFA European Championship Bill

Forensic Medical Services (Victims of Sexual Offences) Bill

Good Food Nation Bill

Hate Crime Bill

Heat Networks Bill

Redress (Survivors of In Care Abuse) Bill

Rural Support Bill

Transient Visitor Levy Bill

Bills already announced

Children and Young People (Information Sharing) Bill

Children Bill

Climate Change (Emissions Reduction Targets) Bill

Consumer Scotland Bill

Disclosure Bill

Female Genital Mutilation (Protection and Guidance) Bill

Non-Domestic Rates Bill

Referendums Bill

Scottish Biometrics Commissioner Bill

Scottish Elections (Franchise and Representation) Bill

Scottish Elections (Reform) Bill

Scottish National Investment Bank Bill

Transport Bill

Bills passed since 2018-19 Programme for Government

Age of Criminal Responsibility Bill

Budget Bill

Census (Amendment) Bill

Damages (Investment Returns and Periodical Payments) Bill

Fuel Poverty (Targets, Definition and Strategy) Bill

Health and Care (Staffing) Bill

Human Tissue (Authorisation) Bill

Management of Offenders Bill

Planning Bill

Prescription Bill

Scottish Crown Estate Bill

South of Scotland Enterprise Bill

Vulnerable Witnesses (Criminal Evidence) Bill

Bill Summaries

Animal Health and Welfare (Amendment)

This Bill will increase the maximum penalties for the most serious animal welfare offences to five years imprisonment and/or an unlimited fine and also make changes to the maximum penalties for various wildlife offences. It will increase the protection for service animals by implementing 'Finn's Law'. The Bill will also provide powers to make regulations for fixed penalty notices in relation to animal welfare offences and provides a new process to allow animals that have been taken into possession on welfare grounds to be sold or rehomed without the need for a court order.

Budget

The annual Budget Bill provides parliamentary approval for the Scottish Government's spending plans, allocation of resources to our strategic objectives and supporting progress towards our vision of a more successful country, through increasing inclusive and sustainable economic growth and improving wellbeing.

Circular Economy

The Bill will continue to advance Scotland's ambitions for the circular economy through measures which will encourage the re-use of products and reduce waste. It will enable further action to tackle our reliance on single use products.

Civil Partnership

The Bill will make civil partnership available to mixed sex couples. This is in line with equality and human rights principles. It also reflects the UK Supreme Court judgement made last year on civil partnership in England and Wales.

Continuity

The Bill will provide for the ability to maintain alignment with EU law in devolved areas after EU exit, in particular by providing a 'keeping pace' power and will replace, where necessary, powers in connection with existing EU law lost in consequence of the repeal of the European Communities Act 1972. The Bill will also make provision to maintain the role of environmental principles and effective and proportionate environmental governance after EU exit.

Defamation and Malicious Publication

The Bill will take forward the recommendations of the Scottish Law Commission and will simplify and modernise the law of defamation. The reforms will ensure that a more appropriate balance is struck between protecting reputation and freedom of expression. Amongst other changes, the Bill will recognise a defence of publication on a matter of public interest and ensure that no proceedings can be brought where a defamatory statement is made only to the person who is the subject of it.

UEFA European Championship

The Bill will prohibit ticket touting and make provisions to protect commercial interests in connection with Glasgow's participation as one of 12 host cities of the 2020 UEFA European Football Championships.

Forensic Medical Services (Victims of Sexual Offences)

The Bill will underpin the ongoing work of the Chief Medical Officer for Scotland's Rape and Sexual Assault Taskforce. Amongst other things the Bill will establish a national self-referral model for victims of sexual crime who wish to have a forensic medical examination without first reporting to the police.

Good Food Nation
This Bill will underpin the significant work already being done – or planned – to deliver the Good Food Nation ambition in Scotland. It places responsibilities on Scottish Ministers and selected public bodies to set out statements of policy on food and to have regard to these statements in the exercise of relevant functions.

Hate Crime
Following on from Lord Bracadale's independent review of hate crime legislation in Scotland and our consultation, the Bill will take forward the consolidation and updating of hate crime legislation. It will extend the characteristics to which hate crime statutory aggravations apply and will also introduce 'stirring up' offences for all relevant characteristics.

Heat Networks
The Bill will introduce regulation of the heat network sector to support, facilitate and create controls in respect of the development of district and communal heating infrastructure in Scotland. Accelerating the deployment of heat networks will help Scotland to decarbonise its heat supply and will contribute to our climate change targets.

Redress (Survivors of In Care Abuse)
The Bill will establish a financial redress scheme for survivors of historical child abuse whilst in care in Scotland. It will provide for the detailed aspects of the scheme such as eligibility, how decisions are made and the making of payments.

Rural Support
The Bill will create regulation-making powers for the Scottish Ministers to amend or replace the EU Common Agricultural Policy elements of retained EU law and provide new powers for the collection of agricultural data. The retained EU law powers are needed if Scotland has to leave the EU, when we would seek to simplify and improve CAP legislation for its operation beyond 2020.

Transient Visitor Levy
The Bill will create a discretionary power for local authorities to apply a tax or levy on overnight visitor stays. The decision to implement any tax or levy created will be entirely at the discretion of individual local authorities and receipts will be to fund local authority expenditure on tourism.

Chapter 1

ENDING SCOTLAND'S CONTRIBUTION TO CLIMATE CHANGE

Scotland is facing a climate emergency. Like the rest of the world, we must act to mitigate the worst impacts of climate change on our people and our planet.

We have already committed to some of the toughest statutory emissions reductions in the world. Adopting a net zero emissions target by 2045 underlines our ambition that Scotland will no longer contribute to global climate change.

This will require changes in the way that we currently live, work and travel. But our world-class innovation and our natural assets leave us well placed to make those changes while seizing the opportunities of transitioning to net zero.

Scotland has a unique opportunity to be at the forefront of global action, gaining an early foothold in developing new low emissions solutions, products and processes that we can export across the world. This will create new employment opportunities and attract investment to Scotland.

In considering how we will make this transition, we must consider how the impacts and opportunities will be equitably shared, underlining the importance of our Just Transition Commission. It will provide an interim report early next year and publish its final report in 2021.

We have committed to updating our Climate Change plan in light of the latest advice from the UK Committee on Climate Change. We will use the recommendations from the Committee and draw on robust scientific evidence to help us to update the plan early next year.

But we know that there are areas where we can take action now. In particular, we will make changes to how we develop our infrastructure and grow our economy, how we travel, how we use our land and how we heat our homes – such changes will make an important contribution to emissions reduction in Scotland.

This Programme for Government commits to vital early action to accelerate our journey towards net zero.

The Climate Emergency Response Group

Scotland's answer to the climate emergency will require us to work across the public, private and third sectors and across Scotland's diverse communities.

The recently established Climate Emergency Response Group (CERG) already shows the sort of collaboration that we will need to see to be successful. We have noted their 12 specific asks and this Programme for Government responds as follows. We will continue to work with them and other key stakeholders across Scottish society to deliver on our commitment to net zero greenhouse gas emissions by 2045.

Climate Emergency Response Group asks	Scottish Government's Programme for Government 2019-20 commitments
Mobilise the £11 billion of annual public procurement to support the product and service innovation the climate emergency response needs	We will mobilise the £11 billion of annual public procurement to support our climate emergency response, including consulting on legislation to require public bodies to set out how they will meet our climate change and circular economy obligations
Produce public guidance on sustainable, climate-friendly, healthy diets	We will work with business, the public and the third sector to develop guidance so more people are encouraged to eat more locally-produced, sustainable and healthy food that supports our aims on climate change
A £100 million Agricultural Modernisation Fund	We will create a new Agricultural Transformation Programme focused on sustainability, simplicity, profitability, innovation, inclusion and productivity. We will consider any additional funding implications in the Budget
Make regional land use plans for maximising the potential of every part of Scotland's land to contribute to the fight against climate change	We will make regional land use plans for maximising the potential of every part of Scotland's land to contribute to the fight against climate change
Initiate four new Green City Region Deals	We will unlock additional resource for emissions-reducing investment through a Green Growth Accelerator – referred to by the CERG as a 'Green City Deal' – combining public and private investment to transform cities and regions
Signal that every one of Scotland's city centres will be vehicle emission-free by 2030	We will consult on Scotland's ambition to make the transformative shift to zero or ultra-low emission city centres by 2030 by engaging extensively with key sectors, in particular with the bus sector

Climate Emergency Response Group asks	Scottish Government's Programme for Government 2019-20 commitments
Establish a public-interest company to operate CCS (Carbon Capture and Storage) infrastructure	We will explore with partners their proposals on Carbon Capture, Usage and Storage (CCUS) and this will inform our Scottish public sector response to the UK consultation on CCUS business models. We will also work with the Scottish National Investment Bank to explore how to support the full-scale commercial deployment of CCUS in Scotland. Alongside this, we will take forward a number of actions to support and promote CCUS – including support for the Acorn project at St Fergus and the emerging Scottish industry-led CCUS alliance
Enhance building standards to deliver zero-carbon homes and buildings	We will set new standards to reduce energy demand, and associated carbon emissions, within new buildings by 2021. In addition, we will require new homes consented from 2024 to use renewable or low carbon heat. For non-domestic buildings, our ambition is to phase in this approach from this date
Accelerate Scotland's energy retrofit scheme – to reach Energy Performance Certificate (EPC) Band C by 2030 and zero-carbon by 2045	We will publish an updated position in our Energy Efficiency Route Map in December 2019 to accelerate the improvements of Energy Performance Certificate (EPC) ratings in our homes
Create a Scottish Heat Pump Sector Deal	We will go wider than this with the Scottish Low Carbon Heat Funding Invitation targeting a minimum of £30 million of support for projects, including heat pumps, that demonstrate innovative and low carbon ways of heating buildings
Complete plans for how we generate the renewable electricity needed to reach net-zero	Our next Energy Statement will set out the extent to which renewable and low carbon energy generation will need to combine in order to meet net zero, and we will monitor progress on an annual basis
Dedicate the Scottish National Investment Bank to delivering on the Climate Emergency	The primary mission of the Scottish National Investment Bank will be to ensure transition to net zero

The Scottish Government is also making a number of other major commitments in response to the climate emergency.

Finance	We will bring to market a £3 billion Green Investment Portfolio for projects supporting our response to the climate emergency
Transport	We will invest over £500 million to improve our bus services across Scotland
Transport	We will work to decarbonise flights within Scotland by 2040
Transport	We will decarbonise Scotland's passenger rail services by 2035, ahead of the UK's target of 2040
Scottish Water	Scottish Water will become a zero-carbon user of electricity by 2040 – five years before our net zero target
Electric vehicles	We will make a further £17 million available for zero interest loans to support the purchase of ultra-low emission vehicles
Planning	The fourth National Planning Framework will help to radically accelerate reduction of emissions
Buildings	We will establish Net Zero-Carbon Standards for all new public sector buildings
Public sector fleet	We will work to decarbonise our public sector fleet by 2025
National Forum on Climate Change	We will establish a National Forum on Climate Change so that everyone can be involved in the decisions we have to take
Woodland and forestry creation	In the coming year, we will raise our ambition and commit to planting 12,000 hectares. This will be supported by an additional £5 million investment
Biodiversity	We will make an additional £2 million available to the Biodiversity Challenge Fund, funding further important projects which address biodiversity and climate change

These commitments are set out in more detail below.

OUR APPROACH TO POLICY AND SECURING INVESTMENT

The next parliamentary year offers the opportunity to lay down clear markers to citizens, the public sector, businesses and investors about Scotland's transition to net zero and how we will work in partnership to achieve it.

We recognise our responsibility as Government to provide clear statements of our medium- and long-term ambitions and how we intend to use the levers we have to progress them. This Programme for Government is a key first step in doing that.

The first part of this chapter sets out the medium- to long-term policy platforms that will provide the vital foundations for investment and allow organisations, both public and private, to plan their activity.

Public finance

Later this year we will publish our Budget for 2020-21 and consider longer-term spending priorities.

This gives us the opportunity to look across our activity and assess where government investments are focused and the extent to which these can accelerate emissions reductions and tackle climate change.

The Infrastructure Commission for Scotland will publish its advice on priorities by the end of this year. We will use that advice to produce our next Infrastructure Plan early next year. Low carbon will be the key theme of the Plan. The Infrastructure Commission's advice will also be considered in our Capital Spending Review. Taken together with the establishment of the Scottish National Investment Bank this will make clear to citizens and businesses our priorities for investment in low emissions infrastructure.

Planning

The global climate emergency means that the time is right for wide-ranging debate on more radical planning policy options.

Innovation, infrastructure and investment will be needed to transform our cities, towns and rural areas into places that support lower emissions lifestyles and businesses. Planning is a vital tool in leveraging the changes we need to make to achieve our goals.

We will begin engagement on the fourth National Planning Framework in autumn this year. Through it, we will explore planning options that radically accelerate reduction of emissions.

By summer next year, we will publish a draft National Planning Framework which sets out how and where development should take place across Scotland for the period up to 2050.

This will be part of a wider package to deliver the reform envisaged by the Planning Act 2019. As part of that wider programme, we will introduce legislation on permitted development rights. This would support, for example, developments such as micro-renewable technologies. We will also launch a programme of digital transformation to make better use of digital technologies and data, including a digital mapping prototype to support co-ordinated and sustainable development.

Procurement

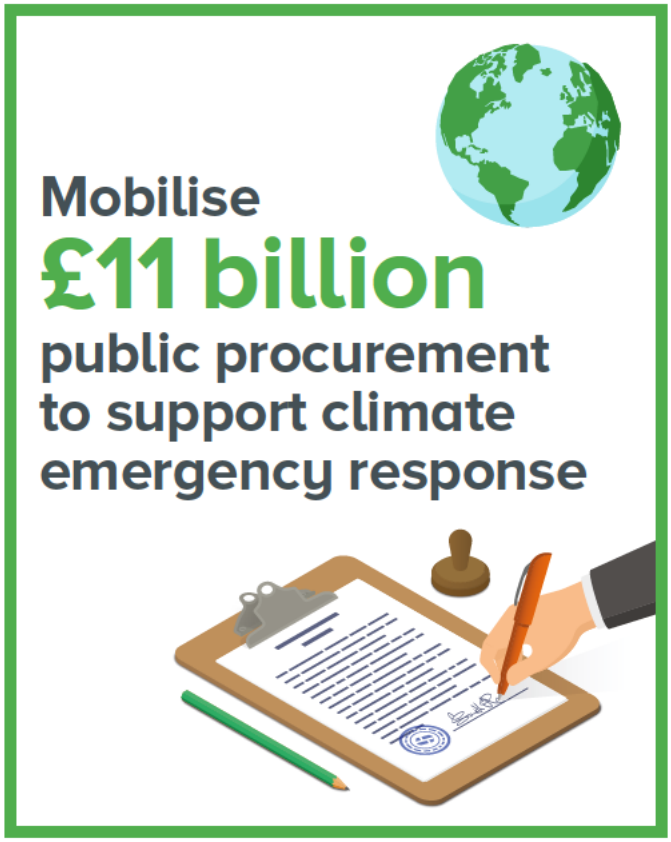
Public procurement in Scotland has a value of over £11 billion per year.

It therefore plays a vital role in shaping markets and investment. We will use that influence to drive change and build responsible supply chains, taking a collaborative approach to tackling the climate emergency just as we have done with Fair Work.

To do that, we will consult on legislation to require public bodies to set out how they will meet our climate change and circular economy obligations in their procurement strategies.

The Scottish Government will take the lead by buying goods and services that reduce emissions, minimise waste and allow for re-use or recycling wherever appropriate.

Together, the public sector will make sure that what we buy and how we buy it helps to meet these obligations.



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SCOTLAND'S 'GREEN NEW DEAL'

We will rethink not only what investments we make, but also how we make those investments. We need to leverage the power of public and private sector investment, target investment in the right projects and use those to create and sustain quality jobs.

Green finance

The UK Committee on Climate Change has said that the capital investment needed to achieve net zero is significant but, with collaboration between the public and private sectors, it is achievable.

The public sector will use its significant spending capacity. But we know that the market for green finance is burgeoning. Scotland's natural assets, skills and reputation for innovation make it a highly attractive place for that investment.

Next year, the new Scottish National Investment Bank will be established and, with its budget of £130 million in the first year, it will work across the public and private sectors to provide patient finance to drive investment in Scotland. We confirm in this Programme that its primary mission will be to secure the transition to net zero.

Another key element of public investment will be extending the current Growth Accelerator to become a Green Growth Accelerator – what the CERG has termed a 'Green City Deal'. This will allow our local authorities to invest in emissions-reducing infrastructure for their area.

We will start discussions with councils and the Convention of Scottish Local Authorities (COSLA) to discuss the model, identify local projects and agree the levels of finance available through the upcoming Budget.

We will also provide a strong message to private investors. Green finance is growing and we want the market to know that Scotland is a great place to invest it.

Green Growth Accelerator to transform cities and regions

We will identify and bring to market a Green Investment Portfolio of £3 billion of investable projects over the next three years. This will include projects involving renewables, waste, the circular economy and property, and will actively look to expand the investment market into other sectors such as transport, housing and hydrogen.

We will work with partners including Scottish Enterprise, the Scottish National Investment Bank, Scottish Futures Trust and the Scottish Environment Protection Agency to make a public call for projects in November this year. We will also leverage private sector skills and expertise to originate and structure a pipeline of projects and promote it globally.

The Clyde Gateway in the east of Glasgow will become Scotland's first Green Regeneration Innovation District, working to decarbonise travel and energy for homes and businesses, and addressing the priorities of local people. It provides a model for place-based green regeneration which can be adopted elsewhere.

£3 billion green investment portfolio

We are supporting the establishment of the Global Ethical Finance Initiative (GEFI) to position Scotland at the centre of international discourse on ethical and sustainable finance, with a major conference to be held in Edinburgh in October 2019. We are working in partnership with GEFI and the United Nations Development Programme to develop models and tools to drive investment in nature-based solutions to tackle the challenge of the *UN Sustainable Development Goals* embedded in Scotland's *National Performance Framework*.

These actions will put Scotland on the map, showing that we are a place to build green projects and develop technologies to address climate change. Our actions will create the conditions needed to kick-start investment and build the momentum needed for us to deliver on our targets and improve the quality of life of our people.

A 'Mission Zero' for transport

An area where we can and must act immediately is in transport.

Transport is Scotland's largest greenhouse gas emitting sector. Reducing our emissions means that we not only need to decarbonise our existing models of transport but also change the ways in which we travel. Our forthcoming National Transport Strategy has climate action as a top priority. It will enable people to make greener and cleaner transport choices to help deliver our net zero target.

This Programme for Government commits us to make key changes across all modes of transport.

Aviation

Aviation emissions remain high and we recognised the need to address this when we confirmed that we would not be progressing with the cut in Air Departure Tax.

Air travel continues to be, however, one of the quickest and most convenient ways to travel, not least to and from our island communities. As a result, we will work to decarbonise scheduled flights within Scotland by 2040. This will position Scotland at the forefront of innovation in advanced aerospace technologies, and is a visible global signal of our commitment to green tourism.

We will support the trialling and introduction of low or zero emission planes operating between airports across the Scottish Highlands and Islands, with the first such trials taking place in 2021. In collaboration with Highlands and Islands Airports Limited, we will also aim to create the world's first zero emission aviation region through a new programme of activity to decarbonise airport operations, infrastructure and flights across the Scottish Highlands and Islands.

Rail

We will decarbonise Scotland's passenger rail services by 2035, ahead of the UK's target of 2040.

Around 75% of Scottish passenger journeys are currently undertaken on electrified lines. Electric rail travel improves journey times and electric trains are more reliable than diesel trains, requiring less maintenance. They make less noise and result in better air quality, bringing benefits to cities and communities across the network.

Work has commenced on the design and development of a number of electrification schemes, with the East Kilbride and Barrhead line prioritised as part of our rolling programme of efficient electrification.

Where we cannot electrify or it is inappropriate to do so, we will invest in battery-powered trains and work with developers of hydrogen fuel cell trains to accelerate their development and deployment through practical trials in Scotland.

Our investment will result in greener, faster, more reliable and more resilient rail services. This will encourage more people to use public transport and result in better connected places within Scotland and beyond.

We will set out detailed timescales and actions for how we will decarbonise rail services in the spring.

Buses

The majority of public transport journeys in Scotland are by bus and people and families on low incomes are more likely to use buses as their main form of transport.

We will bring forward a step change in investment with over £500 million to improve bus priority infrastructure to tackle the impacts of congestion on bus services and raise bus usage.

In addition, we will begin to design a scheme next year to reallocate road space to high occupancy vehicles, such as buses, on parts of the motorway around Glasgow.

Our Green Bus Fund has supported the purchase of 475 low emission buses since 2011, with an investment of over £17 million. In April 2019, we introduced a revised green incentive of the Bus Service Operators Grant. This additional subsidy is weighted to the lowest emitting buses, to further support the uptake of ultra-low and zero emission buses.

We recognise that the transformation to a world-leading zero emission fleet will require bold and creative action. With the Scottish National Investment Bank, the bus sector and potential investors we will work to explore the potential for new forms of patient and innovative financing to radically accelerate the pace of deployment of zero emission buses across Scotland.

Public sector fleet

Public sector bodies in Scotland have started decarbonising their fleets and 1,250 ultra-low emission vehicles (ULEVs) will soon be in use across Scotland's local authorities and public sector organisations.

Building on this, we will go further.

We will work with public bodies to phase out petrol and diesel cars from our public sector fleet and phase out the need for any new petrol and diesel light commercial vehicles by 2025.

The market for heavier zero emission vehicles, such as heavy goods vehicles, is less developed than for cars. We will work with public bodies, the automotive sector and Scotland's innovation community to create the conditions to phase out the need for all new petrol and diesel vehicles in Scotland's public sector fleet by 2030. We will apply flexibility and pragmatism for frontline and emergency service and specialist vehicles.

As part of this, we will ensure that the public sector considers whether a vehicle genuinely needs to be replaced like-for-like or whether it could consolidate its fleet, move to a shared vehicle service or switch to active travel.

We will continue to use our Switched on Fleets programme to support the public sector transition to a zero emission fleet, and to help stimulate the growth of Scottish supply chain opportunities.

Electric vehicles

According to the latest figures, there are currently over 12,000 ULEVs registered in Scotland. The rate of growth each quarter has been outpacing the rest of the UK since 2017.

To date, we have provided over £40 million of support to Scottish-based businesses and consumers to purchase ULEVs through our Low Carbon Transport Loan scheme.

We will provide an additional £17 million to support the demand for ULEVs, while expanding the scheme to include used electric vehicles so as many people as possible can experience the benefits of electric vehicles.

Over the past five years, we have funded the development of one of the most comprehensive electric charge point networks in Europe.

Building on this success, we have formed a new Strategic Partnership with our electricity network companies to improve the delivery and integration of electric vehicle charging infrastructure and electricity networks in Scotland.

An extra £17 million

to support the demand for Ultra Low Emission Vehicles

We will deliver trial projects with network companies to improve knowledge and demonstrate the critical role they will play in accelerating universal access to key public infrastructure at the lowest overall cost to consumers. This will include a £7.5 million joint demonstration project to trial new and innovative ways to deliver and invest in electric vehicle charging at scale and will support our commitment to create 20 electric towns and cities by 2025.

We will intensify our engagement with industry and key stakeholders to consider and develop new financing and delivery models for electric vehicle charging infrastructure in Scotland.

We will also continue to support the ongoing development of charging infrastructure, and will provide in excess of £20 million to support investment by local authorities, homes and business.

Active travel

We continue to take forward our Active Travel work to make our towns and cities friendlier and safer places for pedestrians and cyclists, supporting more people to make sustainable travel choices, as well as contributing to better health for people across Scotland.

Last year, we doubled our investment in Active Travel to £80 million.

This is enabling walking and cycling infrastructure to be developed across the country. For example, 11 large-scale infrastructure projects are now underway across Scotland, of which the first will be completed in 2020. This is the South City Way which will connect Queens Park in Glasgow's Southside to the heart of the Merchant City. The funding also supports infrastructure such as cycle storage, cycle racks and bicycles and enables urban design projects, behaviour change programmes, education projects and e-bike trials and grants.

We have appointed an Active Nation Commissioner for Scotland who will act as a national advocate for Active Travel and promote its benefits to everyone who lives, works in or visits Scotland.

Low emission zones

We are taking action to tackle air pollution caused by transport.

Although everyone is impacted by poor air quality, it is the most vulnerable people who suffer the greatest impact, namely the very young, the elderly and people with pre-existing health conditions.

We are introducing Low Emission Zones in Scotland. These zones set an environmental limit on certain road spaces, allowing access to only the cleanest vehicles. They will help to transform towns and cities into cleaner and healthier places to live, work and visit.

The first phase of Scotland's first Low Emission Zone (LEZ) was launched in Glasgow last year, with a further phase to commence next year. Plans are progressing to put LEZs in place for Edinburgh, Aberdeen and Dundee by next year and we will consult on LEZ emission standards, including the extent to which future stricter emissions standards can contribute towards encouraging the transition towards lower and zero-carbon forms of transport.

This year, we will continue to help areas to introduce LEZs through our Support Fund. We will make up to £2.5 million available to help commercial and private vehicle owners who face the greatest difficulties in preparing for LEZs to make the change needed, beginning with taxis. We have also begun to install remote sensors on our trunk road network to monitor real-world emissions from vehicles.

We will consult on Scotland's ambition to make the transformative shift to zero or ultra-low emission city centres by 2030 by engaging extensively with key sectors, in particular the bus sector. This work will be undertaken alongside our engagement with industry, our partners and key stakeholders on matters such as investment in electric vehicle charging and innovative financing of zero emission buses.

Supporting transport innovation

We want to make sure that Scotland can realise the full economic benefits of our mission zero commitments. To do that, we will:

- invest £2 million to take ideas for sustainable and zero carbon mobility to fully-formed propositions suitable for large-scale investments
- develop proposals for new centres of expertise for emerging technologies and business models in sustainable mobility
- establish an Expert Advisory Group to advise on how Scotland's automotive sector can benefit from the transition to zero emission vehicles
- establish a new supply chain accelerator programme to help public bodies and commercial partners develop innovative solutions to the challenge of decarbonising public sector vehicle fleets
- work with industry partners to assess the skills the Scottish motor trade will need to support the transition to zero emission mobility
- launch a new Hydrogen Accelerator Programme to attract technical experts to help scale up and quicken the deployment of hydrogen technologies across Scotland, with an emphasis on sustainable mobility

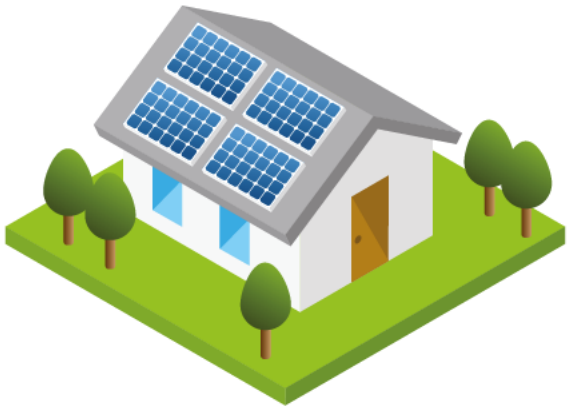
Driving down emissions from buildings and heating

Another key area for immediate action is in how we power and heat our buildings. Emissions from buildings account for around 20% of Scotland's greenhouse gas emissions. We therefore need to build on, accelerate and scale up our action to reduce emissions from our homes and buildings.

We will publish a Heat Decarbonisation Policy Statement next summer setting out the steps we will need to take to reduce the emissions associated with heating our homes and buildings.

We have already set out an ambitious route map to transform energy efficiency though Energy Efficient Scotland – the £12 billion programme of improvements will make our homes and buildings warmer, greener and more energy efficient.

New homes must use renewable or low carbon heat from 2024



Over the lifetime of this Parliament, we are investing £500 million in energy efficiency.

This Programme for Government commits us to scale up and accelerate existing work so that we reduce emissions from heating our homes and buildings to near-zero by 2045, in line with advice from the Committee on Climate Change.

Decarbonising heat in new buildings

New homes and buildings are already built with high standards of energy efficiency but we need to take further action.

We will consult this year on setting new building standards to be introduced in 2021, updating the regulatory system by improving energy standards for all new buildings. These new standards will set challenging targets to reduce energy demand, and associated carbon emissions, in new buildings.

Over the next year, we will also begin working with the construction sector to develop regulations so that new homes consented from 2024 are required to use renewable or low carbon heat. This is one year earlier than is planned in the rest of the UK.

Similarly, our ambition is to phase in renewable and low carbon heating systems for new non-domestic buildings consented from 2024. We will work with the construction, property and commercial development sectors to identify and support good practice to inform the development of standards on how we can achieve this.

We will set an example with new public sector buildings. We will work with public authorities to establish Net Zero Carbon Standards for new public buildings and make heating them more efficient.

Decarbonising our heat sources and reducing emissions from our buildings

A growing proportion of the heat used in our homes and buildings comes from renewable or low carbon sources. However, there is potential for much greater use of renewable heat sources in Scotland. We can also do more to reduce the demand for heating in the first place by making homes and buildings more energy efficient.

We will launch a new Scottish Low Carbon Heat Funding Invitation through our Low Carbon Innovation Fund, targeting a minimum £30 million of support for renewable heat projects. The invitation will encourage capital projects that demonstrate innovative and low carbon ways of heating our buildings across Scotland, including heat pumps, as well as supporting industrial projects focused on reducing emissions.

The Heat Networks Bill will introduce regulation for district and communal heating to support its growth in Scotland

This work will be supported by the introduction of the Heat Networks Bill in the coming year.

The Bill will introduce regulation of the heat network sector to support, facilitate and create controls in respect of the development of district and communal heating infrastructure in Scotland.

We recently consulted on whether Energy Efficient Scotland could be accelerated and how this could be achieved in line with a Just Transition. We will respond by the end of the year as part of an updated Energy Efficient Scotland Route Map. In addition, we will set out, and consult on, proposals for accelerating improved energy efficiency in owner-occupied housing. From 1 April 2020 private rented sector landlords will have to meet minimum energy efficiency standards for new tenancies. We will publish an updated position in our Energy Efficient Route Map in December 2019 to accelerate improvements of EPC ratings in our homes.

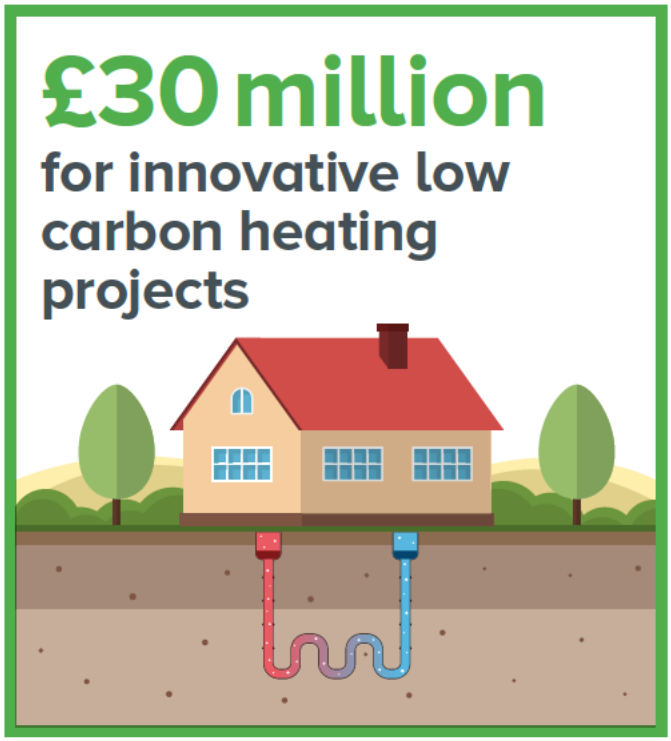
Local heat and energy efficiency strategies

Communities and local authorities have a critical role to play in ensuring a co-ordinated, place-based approach to decarbonising heat and improving energy efficiency.

To make sure that communities are empowered and play an active role in planning for low carbon energy systems in ways which work for them, we will publish a Local Energy Policy Statement by the end of this year.

The majority of Scotland's local authorities have piloted the development of Local Heat and Energy Efficiency Strategies. These set out long-term approaches to reducing emissions from buildings and tackling fuel poverty by identifying a solution tailored to the local area, as well as identifying zones suitable for the development of heat networks.

This year, we will launch a third round of pilots for those local authorities which have not yet piloted the development of these strategies. The strategies have a vital role in planning our long-term approach to decarbonising the heat supply to our homes and buildings and respond directly to recommendations made by the Committee on Climate Change. We will work with local government to put the strategies on a statutory footing and bring forward the timescale for implementation.



Tackling fuel poverty

While the latest figures for 2017 show that the number of households in fuel poverty is at its lowest level since 2005-06, there is still more to do.

This year, we passed the most ambitious fuel poverty legislation in the UK, setting a target date of 2040 to tackle the root causes of fuel poverty.

To ensure we take the action needed to meet these targets, we will publish a Fuel Poverty Strategy in 2020. We will work with stakeholders and people with lived experience to set out how we will tackle all the drivers of fuel poverty in ways which work for different communities. This includes addressing the issues of low household incomes, unaffordable fuel prices, low levels of energy efficiency and inefficient use of fuel.

We remain on track to deliver on our ambition of creating a new public energy company by summer 2021. It is a long-term and ambitious project which will help us tackle fuel poverty, promote inclusive economic growth and tackle climate change.

We are working with stakeholders to develop detailed proposals for the new company and will say more on our plans in the coming year.

Energy

Renewable energy sources play a key role in decarbonising transport and reducing emissions from heat.

We are building on our work to boost Scotland's energy supply chain. That means continuing to explore every possible option to help put Scottish businesses in a stronger position to secure contracts, and pressing the UK Government to work with us in securing this outcome.

To lead by example and take action to further strengthen the case for investment in renewable energy sources, we will accelerate efforts to use 100% renewable electricity on the Scottish public estate, working with public authorities.

Our next Energy Statement will set out the extent to which renewable and low carbon energy generation will need to combine in order to meet our net zero ambitions and we will monitor progress on an annual basis. We are also developing

plans to consider the contributions which may be necessary across the electricity and wider energy system to help deliver our net zero future. This will form part of a wider review of targets and policies across each of the key sectors of the economy to inform our updated Climate Change Plan.

Hydrogen

Hydrogen technologies are key to our ambitions for decarbonising transport and offer us the opportunity to be at the forefront of global innovation.

Scotland has a favourable reputation as an early adopter and innovation leader in hydrogen initiatives, hosting some of Europe's major demonstration fleets.

To accelerate this, we will undertake a hydrogen assessment project. Working with stakeholders, we will assess the use of hydrogen across various applications and the resources, capability and skills needed to implement them. We will also explore the regulatory levers and barriers to hydrogen production. Informed by that, in the coming year we will publish an action plan for the development of a hydrogen economy.

Offshore wind energy

Scotland has huge offshore wind potential, and we expect the technology to make a significant contribution to our energy and climate change ambitions, while supporting economic development and creating jobs.

We continue to work hard to make Scotland an attractive place to invest in offshore wind energy developments, and will take further steps this year to provide clarity and certainty across the sector. These will include the development of an Offshore Wind Policy Statement, making clear our ambitions for offshore wind, and the steps that we will take to secure as much development and economic benefit as possible.

We will produce our Offshore Renewable Energy Decommissioning Policy Guidance by the end of this year and consult on our draft Sectoral Marine Plan for Offshore Wind in the autumn, with the aim of publishing a final version in 2020.

We have already invested £2 million in innovation and skills to drive down costs and make sure Scotland has the necessary skills in place to take advantage of the opportunities offshore wind has to offer.

We are making a similar sum available again this year to support the offshore wind sector in Scotland. This will include funds to launch a competition with the Carbon Trust inviting bids to address floating offshore wind technology challenges. This will help to de-risk technological solutions, support the Scottish supply chain and help to make floating offshore wind energy generation cost-effective.

Wave and tidal energy

In February, we launched the £10 million Saltire Tidal Energy Challenge Fund, with £3.4 million from the Fund already awarded to help build the world's most powerful floating tidal turbine.

This year, we have also provided a further £10 million to the Wave Energy Scotland programme, taking the total level of support to the wave energy sector to nearly £40 million since 2014. With this support, Wave Energy Scotland will launch two new Scottish wave energy prototypes at the European Marine Energy Centre in Orkney in summer 2020.

Through this funding, and collaboration with the sector through the Scottish Marine Energy Industry Working Group, we will continue to champion marine energy and support the research, development, innovation and demonstration that will maintain Scotland's competitive advantage.

Bioenergy

Bioenergy has the potential to play a significant role in the decarbonisation of our energy system and in supporting certain industries to decarbonise their processes.

We will consult on a draft bioenergy action plan later this year and publish a final version in May 2020. The plan will set out how we will take advantage of the opportunities bioenergy has to offer while making sure that it is implemented sustainably and in line with our other priorities.

Reducing emissions from oil and gas

Our continued support for oil and gas exploration and production in the North Sea will now be conditional upon a sustainable, secure and inclusive energy transition. This will include an increased net zero investment by industry and government.

Reducing emissions from the extraction of offshore oil and gas will make a significant contribution to tackling global climate change, particularly if technologies applied in the North Sea can be exported and deployed in other countries.

To drive this change, we will support in principle the Oil and Gas Technology Centre's plans to establish a new Net Zero Solution Centre, enabling the North Sea to become the first net zero hydrocarbon basin in the world.

This centre will support the development and deployment of carbon capture, utilisation and storage, hydrogen and renewables technologies that can be integrated with existing offshore oil and gas infrastructure. On completion of a business case analysis, we will confirm our funding contribution and call on the UK Government to co-invest.

Carbon capture, utilisation and storage (CCUS)

CCUS is an industrial-scale decarbonisation system which has the potential to make a big impact on our emissions targets. Scotland's key CCUS resource is the vast potential for CO_2 storage in the North Sea. With the existing oil and gas infrastructure, it is the most cost-effective place to begin CCUS in the UK.

We will explore with partners their proposals on CCUS and this will inform our Scottish public sector response to the UK consultation on CCUS business models. We will also work with the Scottish National Investment Bank to explore how to support the full-scale commercial deployment of CCUS in Scotland. Alongside this, we will take forward a number of actions to support and promote CCUS, including support for the Acorn project at St Fergus and the emerging Scottish industry-led CCUS alliance.

The UK Government has committed to deliver UK-wide policy frameworks and deployment pathways for CCUS. This clarity is needed by industry and we will continue to press the UK Government to publish these by the end of 2019.

Reducing emissions from business and industry

The UK Committee on Climate Change recognises that eliminating emissions from industry is a particularly challenging task. However, it is confident that such emissions can be reduced to much lower levels by switching to low carbon fuels, using carbon capture, utilisation and storage and making industry more efficient, reducing material and energy input levels.

Reducing emissions from industry requires efforts to reduce energy inefficiency in industrial processes and a rethink of how materials are consumed and reused. Much of this requires radical new approaches, supported by innovation and technological advancement.

Our first step is to lead by example.

Scottish Water

Scottish Water, our publicly-owned water company and the biggest electricity purchaser in Scotland, will commit to being a zero carbon user of electricity by 2040 – five years before our net zero target.

Scottish Water currently produces or hosts renewable energy schemes that generate twice as much energy as it uses. As part of its contribution to the climate emergency, it will commit to produce or host three times as much as its usage – i.e. over 1,300 GWh, by 2030.

It will also take a number of actions to consider how its operations can support lower emissions for both Scottish Water and its partners by:

- being a leader in bio-gas generation and recovery of heat from sewers, building on projects such as the Stirling District Heat Network
- exploring how to maximise the role its land and catchments can play in capturing and storing carbon whilst supporting biodiversity through, for example, tree planting and protecting peatland
- accelerating further the search for and testing of new technology to eliminate greenhouse gas emissions from its processes, fleet and buildings
- investing in reducing its non-recyclable waste, reducing its chemical usage and increasing biodiversity on its assets

The Scottish Government has asked Scottish Water to take the lead in setting out and pursing action towards a vision that will ensure Scotland's water sector will help secure a sustainable future and inspire a Hydro Nation.

Scottish Water will share and demonstrate the approaches it has taken to reduce energy use and generate renewable energy with the public sector in Scotland and in particular seek partnerships around heat from sewers and bio-gas production. It will also take action in climate adaptation and pursue further partnerships with local authorities and others to adapt to increased intensity rainfall events by creating natural, blue/green infrastructure to manage surface water away from homes and businesses and help create great places to live.

Supporting businesses to reduce emissions

We will take action to optimise our existing support so that Scotland's industrial sites are better positioned to access funding opportunities that will help them to deliver emissions savings, whilst remaining internationally competitive and avoiding carbon leakage.

Industrial projects will be able to bid into the Low Carbon Innovation Fund and we are working with partners to encourage a pipeline of industry projects focused on reducing emissions.

The Scottish Environment Protection Agency has developed a range of sector plans to drive industry compliance with environmental regulations. The plans encourage sectors and businesses to go 'beyond compliance' and work collaboratively on a voluntary basis to reduce energy efficiency and the use of material and water resources.

Our new online single entry point for business will include specific information and tools to help businesses respond to net zero and we will host a Mission Zero Business Summit at the start of October this year. In addition, a new partnership between Scottish Enterprise, Highlands and Islands Enterprise, the Scottish Environment Protection Agency and Scottish Natural Heritage will bring together business support and environmental and regulatory services around the needs of businesses and the opportunities of net zero.

Help for businesses to respond to net zero

It will start by working with around 20 businesses who have identified rapid growth opportunities from transitioning to net zero. This work will also identify the best ways to help other businesses on their journeys including how they:

- address waste and material flows
- improve the efficiency of transport and energy use
- identify new market opportunities
- reinvent business models and processes to become more circular

Construction and net zero

The construction sector uses considerable natural resources and is the largest contributor to waste in Scotland.

Given this, and our ambitions around infrastructure, the built environment, heat and associated public sector investment, we will prioritise work with the Scottish construction sector to ensure it is ready to realise the opportunities of our wider ambition and make its own contribution to net zero.

Working through the Scottish Government Construction Scotland Leadership Group, with the Construction Scotland Innovation Centre and the wider sector, we will set out a phased and collaborative approach to reducing the sector's direct and indirect output of greenhouse gases. This will include benefits to be realised from design, products and materials used, waste reduction and elimination, whole life costing and maintenance. We will use all of our levers to support this phased approach and support the sector and those who buy from it with evidence, case studies and learning and development opportunities to help them make the necessary transition.

Innovating for net zero

We will also intensify support and funding from our enterprise agencies for research and development and innovation in low carbon technologies, processes, products and services.

The additional funding of £15 million per year for research and development grants announced in our 2017 Programme for Government will be increasingly focused on low and zero carbon. We will also use programmes like the Can Do Challenge Fund and Civtech to drive low carbon innovation in the public sector, creating new opportunities and new markets for businesses across Scotland.

Building on the success of our Unlocking Ambition programme, which has supported 40 of Scotland's most promising and ambitious entrepreneurs, Unlocking Ambition 2 will seek to prioritise applications which will create businesses which support a low carbon economy.

We will continue to prioritise the Michelin Scotland Innovation Parc, a joint venture between Michelin, Dundee City Council and Scottish Enterprise to deliver Scotland's centre for driving innovation and investment in sustainable mobility and low carbon energy, giving a significant boost to Scotland's journey to net zero.

It will provide business and industry with support packages containing a mix of grants, loans and incentives as well as competitive rates, space and expertise for innovation and prototypes. To make sure that this support is at the cutting edge of technological and industrial expertise, it will be backed up by partnerships with colleges, universities and industry experts.

The Parc will also include an Advanced Skills Academy to help to develop the workforce of the future, delivering bespoke packages covering data, digital, creativity and innovation, as well as core technical skills.

Delivering the skills needed for net zero

To make sure that we reap the rewards of our new approaches to investment, we need to build the right skills in Scotland's workforce. It is also essential to make sure that our workers now and in the future have the skills they need to secure high quality and sustainable jobs so that they can share in the benefits of the transition to a net zero economy.

Scotland already has many of the skills we will need as our economy transitions, including in finance and investment, energy, engineering, construction and chemical science.

However, many of these roles are becoming more complex and, as technology changes rapidly and investment flows into Scotland, we will need a comprehensive approach to what education, skills development and training our system provides.

Working with Skills Development Scotland and the Scottish Funding Council, we will develop and publish a Climate Emergency Skills Action Plan. First, we will gather the evidence we need to make the right investments in our skills system, such as where there are current skills shortages and where there might be shortages in the future.

Based on this evidence, we will set out a framework for skills investment, including how we will:

- maximise the opportunities for people to upskill and reskill within the energy system, moving into areas such as oil and gas decommissioning, offshore wind energy and energy systems management
- give people the skills needed to support the changes in the construction and energy efficiencies of our buildings and manufacturing and the decarbonisation of our transport system
- create a supportive and collaborative business environment for research and innovation in new low carbon industries so that we can be ahead of the game and able to prepare for the new skills that will be needed

The framework will set out clearly how government and other public bodies will work with further and higher education, as well as businesses and industry.

In the meantime, we will refocus existing work and take forward new actions to build the skills base we need for the transition.

The National Manufacturing Institute (NMIS) Skills Academy will provide a comprehensive service for business, industry and the public sector. This will include a drive to embed circular economy skills and thinking in future workforce training.

Working alongside the new Advanced Skills Academy at the Michelin Scotland Innovation Parc, the two academies will develop and meet future skills needs in advanced and digital manufacturing, creativity and innovation as well as services for sustainable mobility.

Our support for manufacturing will help businesses take advantage of the new supply chain opportunities created as, for example, we and other countries seek to decarbonise our heat and transport systems. This will be a key area of focus as we work with businesses, our enterprise and skills agencies and with universities and colleges to develop and deliver a single and integrated programme of support and development for manufacturing in Scotland. Supporting manufacturing businesses to make the transition to net zero and realise the opportunities of a low carbon economy will be at the heart of this programme.

We will support a new 'Climate Solutions' course and qualification for public and private sector leaders. It will give them the further skills and knowledge they need to drive climate change action. We will support at least 100 training places on the course, which has been developed by the Royal Scottish Geographical Society.

Circular economy and tackling throw-away culture

For Scotland to become a net zero society, we need to think about how we use and reuse materials and how we handle waste.

We will shortly consult on the draft proposals for inclusion in the new Circular Economy Bill, bringing forward this legislation in the coming year. It will embed an innovative approach to reducing, reusing and recycling materials and help to deal with items that we know cause environmental harm.

The provisions in the Bill will enable charges to be applied in relation to the provision of items such as single-use drinks cups, helping to tackle the 4,000 tonnes of waste beverage cups create in Scotland each year, and create a new penalty for littering from vehicles.

The Circular Economy Bill will encourage the re-use of products and reduce waste

Reuse and recycle

Our new Deposit Return scheme is the first national scheme of its type in the UK. It will reduce the £46 million spent each year on litter removal. The carbon savings of the scheme are expected to be equivalent to taking 85,000 cars off our roads.

Over the next few months, we will develop and refine the regulations needed for implementation. We aim to deliver the scheme by 2021.

We have already taken action on single use plastics in Scotland and will continue to do so.

We are aiming to meet or exceed the standards set out in the European Union's Single Use Plastic Directive. We will shortly consult on raising the minimum amount for the single-use carrier bag charge from 5p to 10p with the intention of bringing forward the required legislation in the coming year. We have taken action to reduce the use of plastic cotton buds and microbeads and will take further action by banning more problematic single use plastic items, such as cutlery, plates and food and drink containers, by 2021. We will take equality interests into account and apply exemptions where appropriate.

Across Scotland in 2017, we recycled more than we sent to landfill and the overall volume of recycling in Scotland has increased. We are meeting our European Union targets to reduce waste sent to landfill and our target on the percentage of construction and demolition waste being recycled or prepared for reuse. Eighty per cent of households now have access to food recycling collections and take-up of household food waste recycling has increased from 26% in 2012 to 55% in 2017.

However, there is more to do. Scottish waste legislation is underpinned by the waste hierarchy, with waste prevention ranked as the most favourable option. We will consider possible measures which will stop certain materials, such as textiles and food, from entering the waste stream at source.

By the end of this year, we will:

- host a recycling summit to bring together senior leaders across the public and private sectors to identify opportunities to accelerate the pace of progress towards Scotland's ambitious recycling targets and ensure a more consistent, efficient and easier to understand approach to recycling
- in partnership with COSLA, establish a strategic steering group between Scottish and local government to identify opportunities to support delivery and further enhance or transform strategic approaches to waste and household recycling
- begin evaluation of the Scottish Household Recycling Charter

Over the course of next year, we will also:

- consult on new legislation required to meet recent amendments to European waste directives including the addition of textiles to the list of recyclable waste materials which require separate collection
- review the Scottish Household Recycling Charter's supporting Code of Practice
- explore opportunities to place requirements on businesses to publicly report on their waste and surplus, specifically in regard to food and textiles
- launch a second phase of our food waste marketing campaign
- consult on the current rural exemption for food waste collections
- review the food waste separation requirements
- consult on an obligation for food retail sites, over a certain size, to redistribute edible products in line with the food waste hierarchy

Scotland's land

Scotland's land plays a critical role in our response to the global climate emergency. In response, we are stepping up our activity.

At a national level, we will commission independent advice on options for changing land use patterns and practices within Scotland to optimise the role that our rural land use, including agriculture and forestry, plays in achieving our national climate change targets.

We will make regional land use plans for maximising the potential of every part of Scotland's land to contribute to the fight against climate change. To do this, we will develop proposals for implementing regional partnerships and frameworks. Based on these proposals, we will work to enable regional land use partnerships to emerge locally by 2021. Each partnership will be tasked with creating a regional land use framework by 2023 that identifies where resource can have the biggest climate impact.

These national and regional efforts will help us to develop an integrated and strategic approach to sustainable land use. This will have the potential to transform the ways in which government and the public sector invest in the rural economy and support the contribution that rural land can make to a range of economic, societal, climate change and biodiversity outcomes. This work will also help us to plan for what arrangements we may need to put in place should we leave the EU.

We will also work with the Scottish Land Commission to explore ways to ensure that the Land Use Strategy and the Statement of Land Rights and Responsibilities support our efforts to tackle climate change. In addition, we will look at legislative options to give weight to the recommendations of the Scottish Land Commission.

We are committing to the development of a national nitrogen balance sheet. The establishment of this balance sheet will allow us to better understand Scotland's nitrogen cycle and allow us to take a systemic approach to improving nitrogen use efficiency and reducing nitrogen waste throughout the entire economy.

We will set out further action on Scotland's land in the update to the Climate Change Plan which will be published next year.

Farming and food production

Climate change is both a challenge and an opportunity for farming in Scotland. The climate and landscape which makes Scotland one of the world's leading producers of quality meat and livestock also generates emissions.

Already, our agricultural sector is playing its part in reducing emissions. Through a range of Common Agricultural Policy (CAP) schemes, we have been supporting farmers and crofters to modernise and transition to a sustainable low carbon future.

But we must pick up the pace of change. We will create a new Agricultural Transformation Programme for farming and food production focused on sustainability, simplicity, profitability, innovation, inclusion and productivity, while also reducing greenhouse gas emissions. While funding of this package of actions will be considered as part of future rural support, work will begin this year to:

- develop pilot schemes to reduce greenhouse gas emissions from agriculture
- encourage more tree planting across Scotland including woodland integration and agro-forestry on Scottish farms
- promote the multiple benefits of good grassland management to more livestock farmers
- encourage more farmers to invest in renewable energy, including bio-energy, to meet their energy needs
- support an evidence-based approach to crop production and selection and strategic development of organic farming
- explore the development of models to demonstrate and promote carbon neutral farms

Peatlands

Scotland's vast areas of peatland provide a significant natural sink of CO_2 when left undisturbed. Our peatlands need to be healthy to realise the benefits to climate change of reducing emissions and other benefits including to air and water quality, biodiversity and habitat creation and flood alleviation.

While almost 20,000 hectares of peatlands have been restored by our Peatland Action initiative, many of Scotland's peatlands are not in good condition.

This year we are investing a total of £14 million to fund projects to restore degraded peatlands. To address activity that impacts some of our peatlands and reduces their carbon store, we will seek to phase out the use of horticultural peat by increasing uptake of alternative growing media substrate.

Forestry

Scotland planted 84% of the new woodland created in the UK in 2018-19 and we have exceeded our annual planting target of 10,000 hectares. In the coming year, we will seek to plant 12,000 hectares. To support this, we will make an additional £5 million available for woodland and forestry creation to support its contribution to tackling climate change.

While we already have ambitious targets for tree planting which take us to 15,000 hectares by 2025, we anticipate accelerating progress towards that and setting increased targets beyond 2021. We will consult stakeholders on what is ambitious but also achievable. Key to this will be receiving clarity on future funding from the UK Government – they have failed to provide this so far and we will continue to press for it.

This year, we will plant a new woodland to recognise the contribution of foresters from the British Honduran Forestry Unit and the wider Commonwealth to Scotland's forests and to commemorate the centenary of the 1919 Forestry Act.

We will complete work responding to the review of arrangements to ensure efficiency and consistency in grant-making for new planting.

Small-scale rural and forestry businesses form the majority of beneficiaries of the Forestry Grants Scheme. However, a significant amount of publicly-funded planting is done by larger commercial and private forestry companies. This year, we will continue work to ensure that woodland creation and forest management by businesses of all sizes enhances community benefit across Scotland.

We have already begun to upgrade and modernise our forestry fleet, providing new electric vehicles to sites across Scotland. By 2021, we plan to increase the proportion of electric vehicles from 2% to 10% of the forestry fleet.

Our natural environment and biodiversity

Our natural environment is central to our response to the global climate emergency, to a successful, sustainable economy and to our national identity. Providing opportunities to enjoy the outdoors is also essential to our wellbeing and that of future generations.

We will make sure that our work helps to improve health outcomes and promote outdoor learning and volunteering, as well as inspire people to love nature in some of the world's most iconic landscapes.

We made a commitment to protect our natural environment, and the habitats and species that depend on it, when we signed up to the *UN Sustainable Development Goals* and embedded them in Scotland's *National Performance Framework*.

We will set out our new overarching approach to environmental protection through our Environment Strategy. It will be a living and evolving strategy, able to adapt to new evidence as it emerges and refocus work to take advantage of new opportunities or address new challenges. We will set out our working vision for the Environment Strategy in the coming months.

Biodiversity

We recognise the importance of biodiversity and the complexities and challenges that tackling its loss presents. Biodiversity loss and the climate emergency are intimately bound together: nature plays a key role in defining and regulating our climate and climate is key in shaping the state of nature.

We continue to deliver on our Biodiversity Strategy and work towards achieving the 'Aichi' 2020 international targets – 79 different pieces of work are underway to help us to meet these and we will publish a further report on our progress by April next year.

To boost work to achieve the targets, last year our Biodiversity Challenge Fund made up to £2 million available over a two-year period to improve habitats, safeguard species and encourage increased access to nature. The Fund was almost entirely committed in the first year and so we will make an additional £2 million available, funding further important projects which address biodiversity loss and climate change.

We are carefully considering the recent IPBES global biodiversity assessment and, by the end of this year, we will write to Parliament with our initial assessment of our current activity, what more needs to be done and what we need to do differently.

This will inform a step change in our programme of work to address biodiversity loss, which will take account of the new post-2020 international biodiversity framework and targets to be agreed at a Convention on Biological Diversity Conference of the Parties in China in late 2020.

Scotland is playing an active role in this international work and, in April, we will host an international workshop on tackling biodiversity loss and addressing its links with climate change.

We will continue to support the Central Scotland Green Network, Europe's largest greenspace development. We will work with communities this year on projects which will benefit ecosystems and waterways and open Scotland's natural environment to more people.

We will publish a blueprint for the network, providing a targeted map that identifies the best opportunities for greenspace projects that will deliver the biggest climate change and biodiversity benefits to communities across the central belt. We will also promote healthy pollinator populations in central Scotland by developing the B-Lines project to form a framework for a pollinator network.

We are working with partners to reduce the risks posed and the negative impacts caused by invasive non-native species in Scotland, one of the five biggest drivers of biodiversity loss.

We will develop a strategic approach to wildlife management that puts animal welfare at the centre while protecting public health and economic and conservation considerations. We will publish a set of principles next year. In addition, we will respond to the independent reviews on grouse moor management and deer management and publish a new Honey Bee Health Strategy in 2020.

Access to the outdoors

By the end of 2019, we will have delivered over 105 miles of new and improved paths since 2015, making it easier for walkers, wheelchair users, cyclists, horse riders and buggy users to enjoy our fantastic countryside.

Greening of the urban environment improves quality of life in our towns and cities, enhances their environmental performance and climate resilience, as well as supporting regeneration and acting as a catalyst for economic investment.

We are taking action to make sure that people in our urban areas are able to benefit from nature and nature-based solutions to climate change. The Green Infrastructure Strategic Intervention Programme, supported by the European Regional Development Fund, will continue to enhance greenspace and create more opportunities for people in some of our most disadvantaged communities to enjoy the outdoors and improve their health and wellbeing.

Clean air enhances our enjoyment of the outdoors and is essential to protecting our health as well as our natural environment. An independent steering group has reviewed our Clean Air Strategy and we have published their recommendations. We will consult on these and the outcome will inform our revised proposals for a new air quality strategy in 2020.

Protecting our marine environment and species

Scotland is home to a third of the EU's breeding seabirds of international importance and their status is an important indicator for assessing the state of our marine environment. Populations of 12 species of breeding seabirds in Scotland have declined, with climate change likely to be a contributing factor.

We are taking forward our work on the Seabird Conservation Strategy and will consult on our proposals and adopt the final strategy in 2020.

In the coming year, we will designate the site of a new national deep sea marine reserve, to the West of Scotland, taking an important step forward in the protection of vulnerable deep sea habitats and species.

We have consulted on the creation of four new Marine Protected Areas and will designate sites early next year, contributing to the protection of biodiversity and geodiversity such as Risso's dolphins, minke whales and Scotland's marine geomorphology.

We will designate two historic sites – the Queen of Sweden wreck near Shetland and the wartime history of Scapa Flow.

To further protect Scotland's marine wildlife, we will:

- consult on a UK-wide dolphin and porpoise conservation strategy later in the autumn
- undertake the second review of the seal licensing system by September 2020
- update our Marine Litter Strategy in 2020, increasing focus on litter removal alongside litter prevention
- develop a new marine mammal science strategy by spring next year
- update Scotland's Marine Atlas in 2020

As well as providing a habitat for many species, our marine environment plays an important role in helping to absorb carbon.

Next year, we will begin publishing the results from our research programme into carbon sequestration in the marine environment and establish a new virtual centre to co-ordinate marine climate change science and research in response to the global climate emergency.

We will also publish a multi-year national wild Atlantic salmon strategy by September 2020.

Many water bodies in Scotland are damaged by the legacy of historical engineering work such as embankments and weirs, preventing them from providing habitats for fish and from being enjoyed by communities.

With the support of the Scottish Environment Protection Agency, we have established a Water Environment Fund to support restoration projects. In the past year it contributed to work which will restore 543km of fish access to Scotland's water bodies.

Work on the River Almond is allowing migratory fish to swim freely in the river for the first time in generations. The investment has also supported work on improvements to the River Nith which is helping to manage flooding and creating a biodiverse and ecologically-functional river corridor.

We will publish an assessment of our progress towards achieving our ambitions for Scotland's water environment by the end of this year.

£2 million

Biodiversity Challenge Fund

A joint endeavour

Scotland's transition to net zero will affect every part of society from the types of jobs we do to the way we travel, what we eat and how we heat our homes.

The Big Climate Conversation is engaging people, businesses and the public sector across the country to let people have their say and help us to update the Climate Change Plan.

Once the update has been published next year, we will establish a National Forum on Climate Change to continue the conversation and bring together Scotland's businesses, public sector, communities and individuals to help to contribute to the decisions we will all have to take.

Later this year, we will consult on amending the statutory duties that require public sector bodies to report annually on their emissions reductions to ensure that those duties help to drive the step change in action that is needed. We will also publish the outcome of the review of our Climate Challenge Fund and our plans for evolving the Fund to support communities to tackle climate change.

We will use the information from the Big Climate Conversation to help us update our statutory Climate Change Behaviours Framework. It will provide guidance on the behaviour changes the Committee on Climate Change is clear that we will all need to make to help Scotland reach net zero. The new framework will be published in 2020.

The UK Government announced on 9 September that, if it is successful in its bid to host the international climate negotiations, UNFCCC COP26, in December 2020, the host city will be Glasgow.

Given Scotland's leadership in climate action and Glasgow's strong track record it is only natural that this should be the case. If the bid is successful, we will work with the UK Government and local and international stakeholders on how the views and contributions of sub-national governments and non-governmental organisations are represented in the negotiating process.

Climate change adaptation

We need to be prepared to manage the impacts of climate change that we are experiencing already, as well as prepare for impacts that we will feel in the longer term.

Later this month, we will publish our new, statutory, five-year Climate Change Adaptation Programme. It will set out around 170 policies and proposals centred around our communities, climate justice, the economy, Scotland's infrastructure and supporting systems, our natural, coastal and marine environments and our international partnerships. The Programme is designed to address priority risks for Scotland and a number of research projects to help us better understand the action we will need to take.

In the meantime, we will continue to invest £42 million each year for flood protection measures, in addition to funding flood warning and forecasting systems and working on the resilience of our water supply, transport, health services, natural environment, forestry, peatlands and agriculture.

Later this year, we will launch a two-year action plan to promote flood resilient repairs and property level flood protection to make sure that property owners are aware of, and take up, the support available to them.

With increased temperatures and changes to our weather, there is an increased risk of wildfire in Scotland. The Scottish Fire and Rescue Service will develop a wildfires strategy to ensure it can respond to these new and increased risks.

Chapter 2

A SUCCESSFUL, FAIR AND GREEN ECONOMY

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A 'no deal' Brexit remains the most significant challenge that our country faces. Whilst this uncertainty is a serious threat to our economy and a challenge to business, we are taking every possible measure to increase our resilience and strengthen the foundations of our economy.

As set out in our Economic Action Plan, we continue to deliver on our long-term commitment to investment – in tackling climate change, improving the wellbeing of our people, encouraging innovation, adopting new technology, creating world-class infrastructure and delivering skills for the future.

Over the coming parliamentary year, the Infrastructure Investment Plan, Capital Spending Review and Climate Change Plan will further reinforce that direction – all of these landmark publications will help us to create the conditions for a fair and green economy.

In the year ahead we will invest more than £5 billion in infrastructure projects and, beginning in 2021, we will invest £1 billion in our schools to deliver real transformation to communities around Scotland.

We will make £130 million available this year to set up the Scottish National Investment Bank, readying Scotland for a shift in how government and business work together to drive investment.

We will continue to support businesses to innovate, providing £37 million of funding per year for research and development.

We will continue to look outwards to our key international markets. As a parallel to our Export Plan, we will put in place a Foreign Direct Investment (FDI) Growth Plan setting out how we will grow FDI and secure inward investment which helps to build expertise in green and sustainable technologies and sectors, as well as address major global challenges around ageing and wellbeing. Our enhanced export plan is now focusing on the sectors, markets and businesses where we will have the greatest impact.

The Enterprise and Skills Strategic Board, along with our own engagement, has highlighted that skills are a top priority for business. That is why our Future Skills Action Plan sets out a vision for Scotland's skills system and details how we will work proactively with business to address current and future skills shortages.

We remain firmly committed to an economy in which everyone has the opportunity to contribute and benefit from growth. We will continue to make Scotland's workplaces fairer through our work to reduce the disability employment gap, tackle the gender pay gap and demonstrate leadership in tackling race inequality in employment.

There is still much to do, but our work this year will provide further investment in our economy's foundations and enable us to grasp the opportunities ahead.

Scotland's infrastructure

We have committed to the most ambitious long-term level of infrastructure spend ever in Scotland, steadily increasing annual investment so that our investment this year of £5.2 billion will reach £6.7 billion by the end of the next Parliament.

£1 billion

school investment programme

This is a long-term commitment to boosting our international competitiveness, protecting and creating jobs. It also underpins our efforts to tackle climate change and improve quality of life for people across Scotland.

This year, our investment of more than £5 billion will support provision of affordable housing, five new NHS elective care centres and contribute to City Region and Growth Deals, as well as help us to achieve our zero carbon ambitions by providing essential funding to Energy Efficient Scotland and active travel initiatives.

Beginning in 2021, we will invest a further £1 billion of capital investment in our schools, benefiting around 50,000 pupils across Scotland. This is in addition to the 60,000 who, by the end of next year, will have seen their schools renewed or refurbished since 2009 through the existing Schools for the Future programme. This significant investment will deliver digitally-enabled, low carbon schools and campuses providing benefits to pupils and the local economy.

The Infrastructure Investment Commission for Scotland will publish its advice on priorities by the end of this year. Its advice will help us to identify key strategic investments that will boost economic growth and support public services, while helping us to achieve our ambitions for a zero carbon economy.

We will set out our plans for the next five years, including the next Infrastructure Investment Plan, early in 2020. The key priority of the Plan will be low carbon infrastructure, sending a strong signal to investors that Scotland is creating the conditions for green growth.

Investment

We are readying Scotland for a shift in how government and business work together to drive investment.

Following the introduction of legislation to establish and capitalise the Scottish National Investment Bank, we will invest a minimum of £2 billion over 10 years in our businesses and communities. This year, we will provide £130 million to set up the Bank. We will continue to work with stakeholders to develop its key missions, the primary one of which will be securing the transition to net zero.

A key element of the Bank's work will be to help to shape and develop commercially-investable low carbon markets. As well as opening up significant new investment opportunities, the Bank will work with businesses to identify opportunities and break down barriers to green investment.

We are working closely with advisers on developing the other areas of focus for the Bank. They may be:

- responding to the pressures of an ageing population and supporting the health of the whole population
- place-making and local regeneration

The Bank's missions will have been finalised by the time the Bank makes its first investments next year.

The Building Scotland Fund, the precursor to the Bank, has agreed investments of £94 million so far across a range of housing, regeneration, industrial and commercial projects. It will invest a further £56 million or more by March 2021, helping to trial some approaches to investment that the Bank could take in the future.

As well as this, the Bank will build on other initiatives currently underway such as the Scottish Growth Scheme and the equity investments activities of Scottish Enterprise, helping to simplify the investment landscape for businesses and private investors.

As of the end of July this year, 201 companies have received £135 million of investment in loans and equity under the Scottish Growth Scheme.

Supporting businesses

Scotland continues to be an excellent place to do business. According to a report updating the Global Entrepreneurship Index for Scotland, our business support ecosystem is a global leader, ahead of other UK nations and we have a highly-qualified and highly-skilled workforce.

Businesses told us that they want it to be easier to get information, advice and support at the right time. By the end of 2019, businesses will be able to access products and services from our enterprise and skills agencies, as well as Business Gateway, through an online single entry point currently being developed under the leadership of the Enterprise and Skills Strategic Board and in close collaboration with businesses.

Net Zero Mission for Scottish National Investment Bank

In 2020, the single entry point will expand and connect to every source of government business support. This will make all products and services offered to businesses by public sector organisations visible and available in one place online.

Last year, the Economic Action Plan set out a number of measures specifically designed to support rural businesses and drive positive outcomes for people and communities. Between 2015 and 2018, over £119 million has been invested in nearly 1,500 community-based or micro-enterprise projects in the rural economy.

The National Council of Rural Advisers recommended that a new approach to business support be developed to ensure that the true potential of the rural economy is realised. This year, we will test a place-based approach to integrated business support for micro-enterprises operating in rural areas, recognising the different challenges they face such as access to markets, connectivity issues and employment patterns. The new approach will deliver flexible support that is tailored to the needs of the business and its geographical location.

Supporting entrepreneurship

We continue to support our entrepreneurs. We have delivered the first Unlocking Ambition programme, with some of Scotland's most promising entrepreneurs receiving a range of specialist business development training and support. In the new phase, we will seek to prioritise applications which will create businesses which support a low carbon economy.

We continue to support enterprise education in schools and colleges, offering young people the opportunity to achieve their entrepreneurial potential. We have invested in a range of measures to support female entrepreneurship and are seeing a significant rise in the proportion of women starting a business and a reduction in the gender gap in entrepreneurship.

Supporting innovation and adoption of technology

Businesses that innovate are central to achieving our economic and social ambitions as they enable growth and create high quality jobs.

We are creating flagship centres of innovation, such as the Michelin Innovation Parc, and the National Manufacturing Institute Scotland (NMIS). We are investing in the evidence base for Mobility as a Service to provide innovative solutions to reduce reliance on private cars by integrating different modes of transport and providing information and payment functions in a single mobility system.

We are encouraging advances in Connected and Autonomous Vehicles or driverless vehicles. These vehicles can communicate with their surrounding environment, enabling safe and efficient movement of people and goods. We are supporting an autonomous bus trial on trunk roads between Fife and Edinburgh starting next year. Our programme of innovation centres also includes £13.5 million support for the Data Lab. Combined with the radical action we are taking to accelerate progress to net zero emissions, these actions are creating the conditions needed for innovation in Scotland.

We are focused on hitting our target of doubling business investment in research and development (R&D) to £1.75 billion by 2025. Last year, we provided £37 million to co-fund R&D projects and, in 2019-20 and 2020-21, at least £37 million will again be available. We will now simplify and streamline our R&D support, providing a single application route for businesses, and target research calls to support the transition to a zero carbon economy.

We have signed a memorandum of understanding with Nesta, a leading innovation foundation. We will work together with them to develop strategic innovation projects across the economy and the public sector that put Scotland on the map as a global leader in applying new ideas to tackle important problems.

Driving innovation in manufacturing

We continue to take action to make Scotland world-renowned for inventing, designing, developing and manufacturing key products and technologies.

Manufacturing accounts for 54% of Scotland's international exports and employs 185,000 people. It has higher average wages than the service sector and tends to distribute jobs more widely across the country, making it a key contributor to our inclusive economic growth ambitions.

The first phase of NMIS, the Lightweight Manufacturing Centre, opened in June this year. It provides Scottish industry with the skills and services needed to put it at the forefront of lightweight manufacturing and materials and helps companies of all sizes to compete globally.

In the coming year, construction will begin on the NMIS. Our £48 million investment secures the creation of a digital factory in Renfrewshire which will work with an extended network of existing and planned facilities. These will work with business to develop new processes and technologies to help them overcome manufacturing challenges or take advantage of new opportunities. It will also include a skills academy to provide advanced manufacturing training and upskilling and support the embedding of circular economy skills in future workforce training.

Over the coming year, we will further develop that network of facilities by investing the first tranche of the £14 million Advancing Manufacturing Challenge Fund. Facilities and services will target small and medium manufacturing businesses to advance their research, develop new products, improve their productivity and upskill their workforce so that they have the right tools and resources to lead the way in this rapidly evolving marketplace.

We will also launch the First Minister's Award for Manufacturing Leadership to recognise the importance of leadership in the sector to improve efficiency and productivity and encourage collaboration and inclusivity.

Industrial biotechnology

Industrial biotechnology is an emerging sector in Scotland, with potential for major growth.

It is replacing existing pharmaceuticals, chemicals and fuels with sustainable, non-fossil-based alternatives, giving it potential to help us meet our climate change targets.

We will continue our support for the Industrial Biotechnology Innovation Centre, with further funding of up to £11.1 million agreed up to 2023. We are working with the Centre and industry to deliver on the National Plan for Industrial Biotechnology. The Plan aims to increase the number of companies active in industrial biotechnology to over 200 and achieve turnover of £900 million. Progress reported earlier this year highlighted that the number of active companies and value of sales have doubled.

Life sciences

We will continue to develop and drive close links between industry, academia and the health sector in order to support improved wellbeing and inclusive economic growth.

The life sciences sector employs 37,000 people in highly-skilled work in Scotland and it is able to inform and support our responses to emerging global trends such as the ageing population, proliferation of chronic diseases and increasing pressures on healthcare. The sector contributes to new digital technologies, advances in genomics, big data and precision medicine and is a key player in driving high-value medical manufacturing.

In partnership with the UK Government and industry, the new £56 million Medicines Manufacturing Innovation Centre will offer pharmaceutical companies, from start-ups through to multinationals, a unique opportunity to collaboratively develop and adopt novel manufacturing techniques into their own manufacturing processes and supply chains.

The space sector

Scotland already punches well above its weight in the space sector. Businesses based here employ 18% of the UK's space sector workforce and Scotland produces more small satellites than any other country in Europe.

Our ambition is for Scotland to become the first country in Europe to provide an end-to-end solution for small satellite manufacture, launch and innovation in satellite data analysis, including critical earth observation and environmental data.

We aim to develop launch capability – both vertical and horizontal – to serve small satellite producers, with plans for spaceports in Sutherland and Prestwick. This is powered by investment through Highlands & Islands Enterprise and the Ayrshire Growth Deal respectively, forming a key part of our ambition.

Scotland's ambition is to have £4 billion of the global space sector market by 2030 and we will work with the Scottish Space Leadership Council and other partners to achieve this.

Digital and Data

Digital technology is transforming the way we live. There is now a huge opportunity to ensure that people and businesses are given the tools and skills they need to harness this potential.

Digital infrastructure

We are delivering world-class digital infrastructure which will deliver huge social, economic and environmental benefits to the whole country – enabling innovation, helping to reduce travel, opening up opportunities and addressing isolation and remoteness.

Our plan to provide access to superfast broadband to every home and business in Scotland is the most ambitious of any government in the UK.

We will award the contracts to deliver the R100 programme by the end of the year and begin deployment as soon as possible thereafter. We will continue to press the UK Government to ensure that Scotland does not lose out on its share of funding for UK digital connectivity activity.

5G can help to take our digital connectivity to the next level, and could add £17 billion to our economy by 2034 and create 160,000 new jobs. Our 5G strategy will help to forge our digital future and make sure that we are ready to capitalise on this emergent technology.

In the coming year, we will establish the Scotland 5G Centre, to drive forward the strategy and create a Scotland-wide approach to 5G Rural First, building on the success of the Orkney project. The public sector has a key role to play in enabling 4G, 5G and other telecoms. We will develop rental guidance for public sector land and buildings to site infrastructure, focusing first on those owned by the Scottish Government. We will pilot a sustainable 5G transport corridor along an existing trunk road.

The involvement of commercial operators is also vital.

We will host a roundtable with mobile and digital providers and businesses to secure their commitment to delivery of the 5G strategy and maximise full fibre coverage throughout Scotland. We will continue to support them to invest here, particularly through the 10-year rates relief on new fibre infrastructure. We will launch a Full Fibre Charter for Scotland for mobile and digital providers benefiting from these measures to help us deliver inclusive growth and a fairer Scotland.

Last year, we awarded a contract for the delivery of new masts to boost the coverage of 4G in remote areas – work has begun to secure agreement with mobile operators to deliver the 45 new mast sites currently in the programme by 2022, supported by a £25 million investment.

Digital public services

As government, we need to have digital capability fit for the future.

Giving everyone a way to identify themselves online, in a secure way where their privacy and personal data is protected, will help to make sure our public services are easy to access from anywhere in the country.

We have completed nearly two years of research to understand how digital identity can improve our public services, explore the barriers people may face using it and conducted a successful proof of concept to test our technological choices. This year we will develop an early version to support Social Security Scotland benefits from 2020 as work continues on a full solution.

Digital skills

An inclusive digital nation will be one that embraces change and ensures that everybody can participate in the opportunities this brings.

This year, we launched our £1 million Digital Start Fund to help more people – particularly those from disadvantaged backgrounds and women returning to work – access the training they need to improve their digital skills and embark on a new career.

We have invested over £3.5 million in the Digital Growth Fund and Digital Boost programme, which are helping Scottish businesses invest in new technologies such as cyber security, data analytics, software engineering and providing improved staff training and skills.

With partners, we will develop a programme to help rural businesses access all the digital support currently available to enable them to upskill and expand.

Data-driven innovation

Scotland is data-rich and our public sector holds an immense amount of information which can be transformed for social and economic good.

Making data-driven innovation work for everyone is a key aim of the Edinburgh and South East Scotland City Region Deal signed last year, as it works to create the Data Capital of Europe. It is working to bring learning materials to every school in the region, working with housing associations to tackle fuel poverty by targeting help to those in greatest need and supporting entrepreneurs with the commercial and technical know-how to enable their businesses to take off.

Our ongoing investment in the Data for Children Collaborative with UNICEF is shedding new light on how to improve children's wellbeing locally, nationally and globally. One of its first projects will be tackling childhood obesity, with further projects exploring how to effectively plan and deliver child services and looking closely at the complex causes of poverty to determine how best to intervene and improve outcomes for children. We expect the results of its first phase of research to be made available early next year.

We are developing new sources of environmental data to enable us to meet our ambition to be a world leader on tackling climate change, making the most up-to-date environmental data on Scotland's natural and built environment available openly to support our businesses, public sector and communities.

The second phase of our Data Science Accelerator programme launches this month, open to a wider group of public sector bodies than ever before, and we will shortly issue a call for artificial intelligence projects to help us tackle complex issues, such as climate change, awarding grants of up to £100,000 to foster new ideas and develop practical solutions.

Supporting businesses to adopt digital technology is key to boosting productivity, unlocking wage growth for workers.

Harnessing the support of partners in the public and private sectors, we will look to develop new ways to help businesses transition to highly-digitalised, low carbon business models. This work will target high employment, low productivity sectors, piloting new approaches to support companies to embed digital technologies that help them to grow, deliver greater economic impact and provide more and better employment opportunities. A key part of this testing will be to ensure that the transition can benefit everyone, providing opportunities for people to reskill and upskill and access higher quality jobs.

Fintech

Fintech brings together Scotland's historic strengths in finance and the exciting new world of digital technology. We will Support FinTech Scotland in its role in developing Scotland's fintech sector, working with partners in industry and academia to drive collaboration across Scotland.

To ensure that Scotland's ecosystem supports future innovation in fintech, we will examine the treatment of crypto assets and related technologies in Scottish legislation.

Cyber resilience

The importance of cyber resilience has never been greater. Digital technologies bring enormous opportunities – but they also bring with them new threats and vulnerabilities that we must take decisive action to manage and address.

We are investing over £1 million to drive growth in the cyber security industry, working with ScotlandIS in their role as a cluster management organisation to formalise and develop Scotland's cyber cluster. This year, we will fund an innovation challenge alongside CENSIS to examine cyber resilience in the Internet of Things.

We are continuing to support the public sector, businesses and the third sector to build their cyber defences, aided by £500,000 investment in a Cyber Essentials voucher scheme for small businesses and charities. The significant majority of public bodies in Scotland now have in place Cyber Essentials or Cyber Essentials Plus certification for their core networks and we will refresh our Public Sector Action Plan on Cyber Resilience this year to build on progress.

We will continue work to improve access to key resources and advice and host a second Cyber Scotland Week in February 2020.

Demand for cyber skills in Scotland is high and rising. This year will see the consolidation of a coherent framework of qualifications in cyber security in schools, colleges and universities. We will support the roll out of Young Scot's Digiknow? initiative — a cyber-resilience engagement programme for young people who live in disadvantaged areas or who are at risk of offending.

We will also set up a programme of industry and school/college partnerships to raise awareness and inspire students to study cyber security and consider a career in this area. Working with universities, we have helped to fund pilots aiming to promote inclusive cyber skills growth and, over the coming year, we will make available supported training for neurodivergent people to get into cyber security.

Digital and data ethics

Advances in digital technologies and the use of data and artificial intelligence (AI) are happening at pace, presenting economic and social opportunities.

However, we also recognise the challenges and concerns which must be addressed if we are all to benefit from these opportunities. In the coming year, we will develop principles and frameworks setting out how we will become an ethical digital nation. These will be clear statements of how Scotland will use digital, data and artificial intelligence to improve public services, boost productivity and drive inclusive growth in ways which protect privacy, enhance security and promote accessibility, inclusion and diversity.

We will develop an AI strategy which will help to ensure that Scotland maximises the potential economic and social benefits of AI and sends a strong signal to the world about our ambition. Our new Research Data Scotland service will launch in spring next year. It will provide support for researchers to access and use data about people, places and businesses in a secure setting for public benefit and help to attract investment to Scotland.

These actions will create the conditions which enable industry and public services to innovate with confidence, encourage inward investment to Scotland and give our people the reassurance that technological advancement will benefit Scotland socially and economically through the principled and ethical exploitation of digital technologies.

Protecting consumers

Consumers are a vital part of our economy, accounting for around 60% of spending.

The choices consumers make can help us tackle some of our most difficult challenges, such as responding to the global climate emergency, improving public health outcomes and encouraging businesses to prioritise Fair Work.

But there is evidence that consumers have low trust in some of our most essential services, such as finance, telecoms and energy. Vulnerable consumers – those on low incomes or people with disabilities – are more likely to suffer harm as a consumer and pay relatively more for goods and services, making inequality worse.

To address this, we have introduced the Consumer Scotland Bill. It will establish Consumer Scotland as a new advocacy and advice body by 2021.

Consumer Scotland will work to:

- reduce consumer harm in Scotland
- increase Scottish consumers' confidence in dealing with businesses that supply goods and services to them
- increase the extent to which consumer matters are taken into account by Scottish public authorities

As well as setting up this new body, we have taken other action to improve consumer fairness. We replaced the UK-wide consumer helpline with a Scottish service. This is now a free service and allows more bespoke support to be provided to those who need it. In the coming year we will:

- launch an awareness campaign to make it easier for consumers to find qualified electricians and publish a consultation on the regulation of electricians
- publish a scams prevention strategy to protect our most vulnerable people
- continue our work to tackle unfair delivery charges. The harm caused by these are felt most by our rural, island and remote communities and we will take action by launching the Scottish Parcel Delivery Map. We will introduce a new postcode tool to reduce the instances of unfair delivery charges resulting from postcode misclassification
- continue our work on the Energy Consumers Action Plan to protect consumers from excessive or avoidable costs, prevent new forms of social exclusion and promote the benefits of smarter domestic energy systems

Tourism

Scotland's tourism industry is an important contributor to the Scottish economy, employing over 200,000 people. There were 15.3 million overnight visits to Scotland in 2018, including over 3.5 million international visitors, showing that the rest of the world wants to experience our unique culture, beautiful natural environment and world-renowned hospitality.

However, in these uncertain times, we know that we cannot take this important industry for granted. We have asked the sector to tell us exactly what its challenges are and we are listening carefully to what they have to say. We are now working with our industry partners to co-design solutions.

We will provide a package of support for the tourism sector to:

- minimise the burden of regulation and associated cost
- recognise the essential role of marketing Scotland at UK and international levels
- provide sustainable support to enable industry to deliver high quality, value-for-money and memorable experiences
- support the growth of a skilled, professional and inclusive tourism workforce
- continue investment in Scotland's digital infrastructure to accelerate growth
- consider how we ensure that transport policies, practice, taxation and the industry's tourism strategy work best together for the benefit of the Scottish economy

In the coming months, the new Tourism Strategy for Scotland will be launched, developed in partnership with the sector, followed by an action plan in spring next year. These will help to ensure that our tourism industry drives inclusive economic growth, enhances the wellbeing of those who work in it, benefits communities and strengthens our international reputation. It will also set out the actions we will take to continue to support the tourism industry.

Extend
the Rural Tourism Infrastructure Fund

We must make sure that tourism respects the environmental, social and economic foundations of tourism destinations, contributes to local communities and builds a resilient industry that is fit for the future. We will make sure that the benefits tourism brings reach all parts of the country, particularly those areas that depend on the jobs and income that it creates.

We have established an agri-tourism monitor farm programme to help farms, estates and crofts use food tourism as a sustainable contribution to their businesses. The first four agri-tourism projects started this year in Shetland, Uist, East Lothian and West Dunbartonshire.

We will build on the £500,000 marketing campaign that highlighted the hidden gems of the south of Scotland, continuing our investment again this year. The campaign will focus on promoting the area's fantastic mountain biking facilities, underpinned by our additional investment at Glentress to improve visitors' experiences.

We will invest a further £1 million in forest tourism in the south of Scotland by 2021, supporting our work to establish Scotland as an adventure tourism destination and to encourage sustainable tourism.

Given the unique circumstances and critical impact on tourism in Lossiemouth of the loss of the town's East Beach Footbridge, and to celebrate next year being the Year of Coasts and Waters, the Scottish Government will fund its replacement, restoring the only safe access to the beautiful sands, protecting jobs and businesses in the town into the bargain.

In 2017, we announced a two-year £6 million package of funding through the Rural Tourism Infrastructure Fund to enhance the experience of visitors to our iconic rural and island tourist sites. Since its launch, the funding has been used to help the tourism industry keep pace with the growing number of visitors these sites attract by developing and maintaining key infrastructure and facilities, as well as helping to protect the natural environment.

Due to the success of the Fund, we will make another £3 million available to invest in new projects in 2020-21.

We will use technology to improve visitors' experience of Scotland's tourist sites by:

- creating a free open public Wi-Fi system at 10 sites on the North Coast 500 Route. It will add to the existing Highland Council Wi-Fi project, providing tourists and residents with increased internet connectivity all year round
- launching a Scottish UNESCO digital trail, providing an online experience featuring all of Scotland's UNESCO sites

People are vital to the success of our tourism industry and ensuring workers are protected and treated fairly is essential. We have been working to encourage more Fair Work practices across the sector and increase the number of businesses paying the real Living Wage. An additional 50 hospitality businesses were accredited this year as real Living Wage employers.

But there is more to do. This year, we will work with the Poverty Alliance to further increase the number of Living Wage employers and work with the Scottish Trades Union Congress to make sure that workers' voices are heard. We will also invest in a campaign to promote tourism as a career of choice, to help address skills challenges across the sector.

The Transient Visitor Levy Bill will create a discretionary power for local authorities to apply a levy on overnight visitor stays

2020: Year of Coasts and Waters

2020 will be designated as the Year of Coasts and Waters, which will promote opportunities to experience and enjoy Scotland's beautiful coastal landscape and waters.

The Waverley Paddle Steamer is currently out-of-service and urgently requires new boilers in order to sail again. As part of the Year of Coasts and Waters, we will work with partners to support the repairs, helping to make sure that locals and visitors are able to enjoy the journeys the Waverley makes to over 60 ports and piers in the UK.

We will make £50,000 available for one-off grants for community groups, charities and social enterprises to hold themed events, co-designed with young people.

We will provide an additional £400,000 this year for North Ayrshire's Coig project. This will result in a total investment of £700,000 since 2018 for routes giving visitors the chance to enjoy the area's islands, coastal landscapes, harbours and beaches.

To further encourage visitors to more of Scotland's inhabited islands, we will launch the new Islands Passport early in 2020.

Scotland in the global economy

Exports are a key driver of Scotland's economic growth, driving business innovation and productivity, creating jobs and helping to raise living standards as well as generating tax receipts to support essential public services.

In 2018-19, export of goods increased by 12.9%, faster than the other UK nations and the UK as a whole. We want our performance to be even better over the next year, increasing the value of Scottish exports and increasing the number of businesses in Scotland that export. This will ensure that our export base is diversified and more resilient.

Our enhanced export plan, *A Trading Nation,* has been published and is backed by £20 million of investment over three years. It sets out plans to grow Scotland's exports to add around £3.5 billion to Scottish GDP and create 17,500 more jobs. We have developed new data tools to improve our export intelligence and support the exporting community to grow.

This year, we will:

- recruit 15 new in-market specialists for priority markets, to help Scotland's exporters take advantage of new overseas potential. These will be in place by August 2020
- build on our partnership with the Scottish Chambers of Commerce to run more international trade missions, supported by up to £2 million
- begin work to expand our Trade Envoy network from four to 12
- backed by £1.5 million, develop a new digital portal which supports exporters, as well as providing them with mentoring and skills development
- support trade activities around the Dubai Expo, Rugby World Cup and the Royal Edinburgh Military Tattoo shows in China
- continue the roll out of the First Minister's Export Challenge, where experienced exporters mentor new exporters, supported by £2 million over three years
- begin work to revamp the GlobalScot network with a new digital platform and promotional material, which will see it expand from 600 members to over 2,000
- launch a campaign of awareness raising to make sure that Scottish companies know about, and can access, export finance support

This year, we will expand this evidence-based approach to drive stronger performance in Foreign Direct Investment (FDI). By summer 2020, we will put in place an FDI Growth Plan for Scotland. It will set out how we will target FDI attraction to grow the sectors where Scotland is currently world-class as well as building on emerging expertise and enabling technology to address major global challenges around ageing, climate change and wellbeing.

This approach will integrate Scotland's vision of an economy that supports wellbeing and equality into how we promote ourselves abroad and direct the opportunities we seek to attract to Scotland.

We will:

- target investment attraction in markets and sectors where we have a comparative or emerging advantage, such as energy, personalised healthcare and data science, focusing on the best market opportunities for Scotland
- attract start-ups specialising in technology and low carbon to relocate to Scotland, helping to build an entrepreneurial culture around Scotland's future strengths
- attract investors for the long term, creating a buddy system for incoming investors to help them to increase their business opportunities in Scotland and embed them into supply chains
- identify and promote strategic place-making sites and assets to targeted investors who will use and benefit from those assets, for example on former industrial and energy sites
- support the effort to attract green investment in capital and infrastructure projects by attracting the companies that can provide the skills and technology to deliver those projects

- increase the skills match and support for those sectors and companies which make Scotland globally competitive

Focusing on our best opportunities in attracting inward investment that supports our economic vision will also support further growth in exports by strengthening supply chains in many of the same sectors that provide our biggest trading opportunities.

A diverse, skilled and empowered workforce

We understand that certain sectors are going through periods of rapid change, which is why it is important that we ensure that our skills system continues to match the needs of industry, workers and learners now and in the future.

Our Future Skills Action Plan sets out our vision and ambition to help workers and businesses strengthen existing skills and help people to transfer their skills and experience more easily between workplaces and sectors. It includes a commitment to increase our investment in workforce development by a further £10 million per year from 2020-21, adding to the current £10 million Flexible Workforce Development Fund.

In partnership with Skills Development Scotland and the Scottish Funding Council, we will make sure that our skills system is world class and that it becomes increasingly agile, responsive and flexible. We will ensure more opportunities to upskill and retrain and that the specific barriers faced by particular groups, such as women, older people and minority ethic people, are addressed.

This reorientation of the skills system will put Scotland in a strong position to respond to global challenges and opportunities such as changes in our demography, the impact of technological change, higher levels of international uncertainty and the global climate emergency.

We will:

- through the Scottish National Retraining Partnership, work with the Confederation of British Industry and the Scottish Trade Union Congress to identify opportunities to enhance access to upskilling and reskilling opportunities
- work with employers to develop and introduce new, innovative funding mechanisms to support learners and workers at every stage of their career
- make sure that there are greater opportunities for adult learning, in-work training and re-training so that everyone can benefit from fulfilling and fair work
- build employer confidence in the skills system, with clear opportunities for them to influence it and contribute to what it provides
- expand the range of Graduate Apprenticeships available in critical areas such as civil engineering, digital, cyber security and data science, while also continuing to encourage women to apply. As part of this, we will engage with business on how the Scottish Government's response to the Apprenticeship Levy can continue to address the needs of businesses
- increase investment in workforce development and explore flexible incentives for all relevant stakeholders, including colleges, universities and training providers, to develop new approaches to upskilling and lifelong learning. This will include, for example, more flexible and online delivery models and developing 'micro-credentials' that can be stand-alone skills driven modules or part of a postgraduate qualification

Over the next year, we will work with stakeholders across our education and skills system and those who engage with it to design and develop specific proposals to turn our vision into a reality.

Recognising the particular challenges faced in our rural communities, this year we launched the Skills Action Plan for Rural Scotland to address skills shortages, help attract and retain talent and manage the demographic challenges faced by rural areas.

Apprenticeships

The number of people benefiting from work-based learning has risen for the eighth year in a row. In 2018-19, over 37,000 apprentices were in training, including Graduate Apprenticeships which offer an alternative route for people to develop the higher level skills that our economy needs. We are progressing towards a record number of 30,000 new apprenticeship starts in 2020-21.

To support our work to double entitlement to early learning and childcare to 1,140 hours a year, we have increased the number of childcare-related apprenticeships from 1,691 in 2017-18 to 2,102 last year. We will continue to increase the number of childcare-related Modern and Foundation Apprenticeships, in line with demand, and pilot a Graduate Apprenticeship for the sector.

To help to secure the future forestry workforce, we have put in place a new Forest Machine Operators Modern Apprenticeship scheme. The first apprentices are starting this year and helping the sector to harvest more sustainable timber and contribute to carbon storage efforts.

No one left behind

In December 2018, we published *No One Left Behind,* a review of employability services which set out our intention to create an employability system that is more flexible, joined-up and responsive to the needs of people using services.

Our work so far through programmes like the Employability Fund and Community Jobs Scotland have made an important contribution, but labour market challenges remain for many equality groups and it is right that our system continues to evolve.

This reform will take time to deliver. We will work closely with local authorities and a range of partners, including Skills Development Scotland, the third sector and private training providers, to plan and deliver services that are shaped by those that use them and the people that deliver them.

This transition is being managed carefully to make sure that the sector stays stable and that support remains available to those who need it. We will continue to support the Employability Fund and Community Jobs Scotland, while making preparations for these and other existing sources of support form part of the new employability system. We will also continue to support young people who are struggling to engage in education or find work through Inspiring Scotland's new Our Future Now Fund and through Discovering Your Potential, which provides flexible and intensive support for young care leavers.

These wider ambitions will build on the early success of our new, devolved employment support service, Fair Start Scotland.

Backed by £96 million, it helps those who face the greatest barriers towards and into work – free from the risk of sanctions on their benefits. It is already making an impact: in the first year of the programme, over 2,000 people have started jobs.

Careers advice

Good careers advice is essential to help people at any age find the right job. We will publish a new Careers Information Advice and Guidance Strategy later this year to make sure that our careers services are flexible and accessible to the needs of Scotland's workforce, as well as helping people be responsive to changes in the labour market and economy.

Supporting more disabled people into work

Last winter, we published *A Fairer Scotland for Disabled People: Employment Action Plan* which set out how we intend to reduce the disability employment gap by at least half by 2038. The plan focuses on working with employers, helping disabled people into sustained work and supporting young people. In the coming year, we will:

- invest up to £1 million in a new Public Social Partnership to address the barriers that employers face in recruiting and retaining disabled people
- run a campaign to promote the positive case for employing a diverse workforce
- invest up to £500,000 to help disabled people undertake work experience
- ensure disabled people have access to information and guidance about their statutory employment rights and how to take action if those are denied
- improve approaches to supported employment
- evaluate the employment support we provide to those who suffer mental ill-health and make improvements to Fair Start Scotland

As well as supporting disabled people in the workplace, we remain committed to ensuring equality for disabled people across society and we will continue to ensure their voices are heard to make sure we better understand what work we need to do.

Fair Work first

We want Scotland to be a world-leading Fair Work nation by 2025, which is why in February this year we published the *Fair Work Action Plan*.

For workers, Fair Work means increased flexibility to manage family and caring responsibility, greater financial security, better physical health and improved wellbeing. For employers and businesses, it can reduce staff turnover, help with recruitment and drive productivity and innovation.

We are asking employers to work with us to put Fair Work at the core of inclusive economic growth.

Support through Regional Selective Assistance and other large grants is now conditional on employers paying the real Living Wage, not using exploitative zero-hour contracts and taking actions to address the gender pay gap.

Over 80% of all workers in Scotland now earn at least the real Living Wage and we have proportionately more than five times as many accredited real Living Wage employers in Scotland than in the rest of the UK. In addition, we are continuing to provide funding for councils to commission care services that pay adult social care workers the real Living Wage.

In August, we launched an extended Workplace Equality Fund. This £800,000 Fund will support employers to address long-standing barriers faced by disadvantaged groups in the labour market and enable businesses with innovative ideas to embed Fair Work within their workplaces.

Our work with businesses is paying off – over 650 businesses in Scotland have signed up to the voluntary Scottish Business Pledge, resulting in practices across our workplaces that are good for businesses and good for Scotland, as well as contributing to our efforts to meet the *UN Sustainable Development Goals* and realise the outcomes in Scotland's *National Performance Framework.*

However, we know that we need to go further.

This year, we are:

- launching the refreshed Scottish Business Pledge, aligning it more closely with our Fair Work principles and including environmental impact for the first time
- launching a new online Fair Work service for small and micro employers so that they can access more easily the support and guidance that they need to help them to adopt Fair Work practices
- making funding available so that the real Living Wage can be paid to all workers, the majority of whom are women, delivering funded early learning and childcare hours from August 2020
- providing a further £380,000 to the Poverty Alliance to continue their work with employers across the country to make sure more people in Scotland are paid the real Living Wage
- continuing to fund the Fair Work and Trade Union Modernisation Fund to support trade unions to embed Fair Work in workplaces
- working with the Scottish Trade Union Congress to increase the number of workers covered by collective bargaining

All of us benefit when everyone can participate equally in our economy. We are taking specific action through our Gender Pay Gap Action Plan, Disability Employment Action Plan and the Race Equality Action Plan.

The gender pay gap for full-time employees in Scotland is the lowest on record and lower than the UK as a whole. Earlier this year, we published our *Gender Pay Gap Action Plan* – a first in the UK. It will tackle the causes of workplace inequality, particularly focusing on disabled women, minority ethnic women, older women, women from poorer socio-economic backgrounds and women with caring responsibilities.

Key actions we are taking include:

- investing up to £5 million over three years to help up to 2,000 women to return to work after a career break, particularly in sectors where women are under-represented
- refreshing the gender and diversity element of the Scottish Business Pledge to encourage action to address the gender pay gap
- continuing to fund Close the Gap to challenge and change employment practices and workplace cultures
- continuing to fund Family Friendly Working Scotland to promote flexible workplaces to employers

We recognise that progress in improving the minority ethnic employment and pay gaps has been too slow and it is time to be much more proactive. We have committed to build on the work we have done so far and we will:

- demonstrate renewed public sector leadership on race equality in relation to recruitment and supporting the development of talented people in our workforce
- review what more our devolved employment service – Fair Start Scotland – can do to support more people from minority ethnic communities into work
- consider options for rolling out the Recognition of Prior Learning pilot to other parts of Scotland

Population and migration

Migration to Scotland is vital to our economic, demographic and cultural needs and attracting people with the skills that our employers need has never been more important.

Our position is clear: we welcome EU citizens, we value them and we want them to stay. In the past year, we have successfully worked with other organisations to lobby the UK Government to drop its plans to charge EU citizens a fee to retain rights they already had.

Our advice and support service for EU citizens is now being delivered by Citizen's Advice Scotland and numbers using the service continue to increase. We launched the 'Stay in Scotland' campaign this spring and, over the coming year, we will build on it and also invest £250,000 in community-based support across the country.

Scotland faces a population challenge. While our population grew in the last year, 14 of our local authorities experienced depopulation and projections are that all of our population growth over the next 25 years will be driven by migration. We need to grow our population to make sure we can support sustainable, vibrant and resilient communities and drive inclusive growth.

We continue to argue for powers over migration for Scotland to be devolved to the Scottish Parliament, reflecting that our needs are different from that of the UK as a whole. Current UK Government immigration policy does not meet Scotland's needs and the proposals in the recent Immigration White Paper will be harmful to us.

We have established a new Ministerial Task Force to address our population concerns by intensifying good work where it is already happening and harnessing more opportunities for change.

Following extensive consultation with employers and stakeholders, we will publish a further paper on Scotland's unique population needs and a tailored migration policy later this year.

Addressing skills gaps – a Scottish approach

We will develop a distinct Scottish approach to attracting and retaining talent to address skills gaps in our workforce and we will take action to prepare our labour market to respond to the global climate emergency. We will:

- attract people and families from the rest of the UK to relocate to Scotland by supporting local authorities to develop plans to address skills gaps
- work with partners, including businesses, to highlight the benefits of working and living in Scotland
- work with universities, colleges and local authorities to encourage people to stay in Scotland and to move within Scotland to address regional skills gaps
- make it easier for working families, women, carers and older people to remain in or return to work
- provide a new web-based 'Working in Scotland' advice service for people relocating to Scotland for work, giving advice on current recruitment campaigns, skills and training opportunities. It will include information on skills gaps and shortages, including in areas we will need to tackle the global climate emergency

Scotland's regions and towns

Our £1.8 billion commitment to City Region Deals, Regional Growth Deals and associated investments is delivering on infrastructure, skills and innovation right across Scotland, with almost £300 million of spend on this programme already and up to £1.5 billion to be invested over the next 15 years.

Thanks to persistent calls from the Scottish Government, the UK Government has committed to achieving 100% coverage of Scotland with a Growth Deal. This means that, as well as existing Deals, communities in Argyll and Bute, Falkirk, Shetland, Orkney and the Western Isles will benefit from fresh investment from both governments to stimulate inclusive and sustainable economic growth.

We will continue to support the strategic Regional Economic Partnerships developing from City Region and Growth Deals, using Deal investment as a catalyst to drive their long-term inclusive growth plans. We will work with, and provide support to, local authorities and other Deal partners to ensure this investment supports our climate change ambition – and we will encourage the UK Government, which matches our Deal funding, to do likewise.

We want our towns and town centres to be vibrant, creative, enterprising and accessible – to make them places where people meet, socialise and do business.

Three new Business Improvement Districts have been created in the past year in Nairn, Selkirk and Lanark, resulting in a total of 37 across the country. We have funded and launched the first Digital Improvement District in Cupar, which is piloting a model of delivering digital infrastructure and WiFi for Scotland's towns.

We have partnered with COSLA to make available a £50 million Town Centre Fund which will stimulate and support a wide range of investments in local buildings, access and infrastructure, encouraging town centres to diversify and flourish.

Strengthening our rural and island economies and communities

Traditional rural sectors like farming, food production and forestry are essential to our success. Scotland's rural and island assets also provide natural and business resources for other key economic sectors, especially food and drink, but also energy, tourism, creative industries and life sciences. We must also work to improve the wellbeing of our rural, coastal and island communities and provide a positive future for them.

Achieving our climate change ambitions will involve harnessing the power and capital of all our natural assets. This is a challenge but also an opportunity to help people stay on the land, and create sustainable, productive businesses and communities in even our most remote and isolated rural areas. Our land and our rural population are key allies in the fight to tackle climate change.

We know that more young people want to stay, and now consider staying, in the areas they grew up, but we need to do more to stem rural depopulation and to attract more people to live and work in rural and island communities.

We will develop an action plan to support repopulation of our rural and island communities and work with partners to test approaches using small scale pilots in rural Scotland. Our 'Stay in Scotland' campaign will work with rural businesses and industries to promote it to employees and we will showcase Scotland as a desirable place to work and live to recruitment agencies at home and overseas.

The soft fruit and seasonal vegetable sector is important to Scotland's rural economy and we understand the reliance it has on migrant labour provision. We will work with this sector during the course of the next year to better understand the challenge it faces in the medium to longer term and how best to support businesses to meet their workforce needs.

As part of our work on the fourth National Planning Framework, we will explore new, proactive policy options for planning to enable development that supports dynamic rural economies and helps to sustain and support rural communities in the future. We will also review permitted development to examine what additional measures can be introduced to further support the delivery of affordable homes in rural areas.

To do that, we will build on recent research to develop a better understanding of the challenges and lived experiences of people across rural Scotland and the impact of changes in our economy on key rural sectors. In this Parliament, we will explore how the rural and island housing fund might be adapted in the future to expand the range of options to support housing development in remote and island communities.

We will review the services on the West Highland rail corridor to find opportunities to integrate rail services with other transport modes as well as active travel. These will boost the local and regional economy, help to develop sustainable tourism and improve connectivity for local communities and the Islands. In addition, we will identify opportunities across the rural rail network in the south west of the country, drawing on the successful approach adopted in the recent study of the line north of Inverness, to exploit the value of those lines for the benefit of local communities and the wider economy.

The third Rural Parliament was held in Stranraer in November last year, with over 370 people from rural communities across Scotland gathering to discuss the issues which are important to them and to put forward potential solutions. We will work with Scottish Rural Action and others to support the development of a rural movement that will engage with communities between rural parliaments to include a more diverse range of voices, including those in disadvantaged communities.

Work is underway to establish the new South of Scotland Enterprise Agency by April next year. It will be the first ever enterprise agency to embed Fair Work at the core of its operations and a key priority will be to identify action to address gender pay inequality and low pay in the region. We will invest £13.3 million this year to set up the organisation and to support a number of crucial projects across the area, including work to address skills shortages and support regeneration.

To further drive collaboration in inclusive and sustainable development, we will establish the Convention of the South of Scotland. It will bring together public bodies with responsibility for growth and provide a forum for the exchange of ideas on priorities and how to tackle key regional issues.

This year, we have consulted with island communities to inform the development of the first ever National Islands Plan. We will publish it by the end of the year. It will set out how we and other public sector partners will work to improve outcomes for island economies and communities and, once it is published, we will report on our progress each year. We will also create a Young Islanders Network for young people from all Scottish islands to ensure their interests and priorities are reflected in our work.

Maximising the value and sustainability of our land and marine assets

Scotland's land and marine assets are at the heart of thriving rural and island economies.

The marine economy

The marine economy supports high quality jobs in some of our most remote communities, boosts our exports and plays an important role in our efforts to tackle climate change.

Our natural marine assets and our expertise in the sector help to support our work to develop and deploy offshore wind, wave and tidal energy technologies and to explore the potential of carbon capture, usage and storage.

We have consulted this year on our Scottish Maritime strategy. It will be launched later this autumn and will set out how the marine economy supports our economic ambitions and helps to sustain communities, as well as identifying areas where we can take further action to make it a world-class industry.

Fisheries and aquaculture

We have held extensive discussions with a wide range of stakeholders on our proposals for the future of fisheries management. We are now developing that framework and will consult further on firm proposals which will help to protect our environment, support and grow local businesses and protect and strengthen the interests of rural communities.

We have invested £2 million to carry out emergency work at fishing harbours to keep them operational, securing vital jobs in coastal communities. We have worked with Fisheries Local Action Groups to support traditional fishing activity and help the industry to diversify and communities to thrive and boost incomes. We will invest an additional £1 million in these activities this year.

We have invested £1.5 million to modernise the management of inshore fisheries, including supporting the Scottish Inshore Fisheries Integrated Database programme being led by the University of St Andrews.

In the coming year, we will commence work to modernise the Scottish inshore fisheries fleet, investing a further £1.5 million in inshore technologies such as the deployment of remote electronic monitoring for scallop fishing vessels. This year, we will continue our work to introduce vessel tracking systems across the inshore fleet and, to enable sustainable growth of Scotland's shellfish growing sector, we will set up a shellfish working group with members from both the private and public sectors.

Aquaculture supports the sustainable growth of Scotland's most important food sector, farmed salmon. The aquaculture sector brings new products, facilities and equipment which can be applied to our industry and exported internationally, creating significant economic benefit, often in remote rural areas. We will continue to support Scotland's Aquaculture Innovation Centre to drive investment in innovation and research and development in new technologies and equipment.

Last year, we published a 10-year Farmed Fish Health Framework to address the health and wellbeing of farmed fish, promote innovation in fish health management and reduce fish farm mortality. We have introduced tighter thresholds for sea lice reporting and intervention and, in 2020, will introduce legislation requiring all marine farms to report a weekly sea lice number. We will also provide improved spatial planning advice on fish farming developments to support local authorities to make sound decisions.

We will continue to work with partners to promote the aquaculture sector as an attractive career choice, including supporting the development of the Women in Scottish Aquaculture Initiative to encourage women to take up careers in the sector and remove barriers to their participation.

Farming and food production

Farmers and agriculture businesses in Scotland are at the heart of our rural communities. They manage and protect our countryside, produce high quality food and are a key part of any solution to climate change.

We will deliver agricultural support payment entitlements through the Common Agricultural Policy as it will apply in Scotland should the UK leave the EU, and will maintain the CAP over a period of stability until around 2024. We will continue to press for Scotland to get a fair allocation of funds for farming and food production in the future. We will resist any attempts by the UK Government to apply any conditions or rules on how any monies repatriated from the £160 million due to Scotland should be spent.

Leaving the EU without a deal is likely to have significant adverse impacts on all of Scotland's rural economy but especially on farming and food production. We will continue to work with stakeholders to explore all possible options to mitigate those impacts where we can.

Even though the sector is under unprecedented stress, we must continue to encourage more people into farming. To future-proof the industry, we will release more public sector land in Scotland for new entrants. Since 2016, more than 6,400 hectares of land have been released to help 61 new entrants take their first step onto the farming ladder. Investment of around £24 million has helped 250 new agricultural businesses to launch and supported hundreds of development projects.

The Rural Support Bill will enable the amendment of retained EU law relating to the EU Common Agricultural Policy

In the coming year, we will analyse how our starter farms are growing as businesses. Farms which participate will be provided with detailed specialist advice for their business to help inform future plans.

We will support the establishment of a land matching service to link potential new entrants with current farmers and crofters who wish to retire.

This year, we will seek further opportunities to make land available and will roll out the Ringlink apprenticeship project to new locations, helping to develop a stronger pathway into apprenticeships in farming.

We want more women in agriculture to have opportunities to develop their skills and talents. As well as supporting our Fair Work agenda, ensuring the sector is accessible to women will help to ensure the long-term sustainability and resilience of Scotland's rural economy. Our Women in Agriculture Taskforce will publish its report in the autumn, identifying next steps. We have already committed to fund and support delivery and expansion of the three women-only pilot training programmes. And we will appoint a dedicated co-ordinator to take forward work in this area.

We established a taskforce to help prioritise our proposals to provide stability and simplify Common Agricultural Policy (CAP) measures between 2021 and 2024. We will publish the taskforce's report this autumn and develop substantive measures ready for implementation in 2021, including the level at which the largest direct payments made to individual recipients will be capped in order to redistribute the funds elsewhere within the CAP support. That includes introducing the Rural Support Bill to Parliament this year which will allow Scotland to amend EU retained law.

We have set up a group to advise on future policy for farming and food production. Its work is underway and will be enhanced by advice from the recently-appointed panel of academic advisors. It will provide update reports on its considerations to Scottish Ministers every six months to allow more detailed work and activity to be commissioned where appropriate.

Crofting

Crofting is part of Scotland's cultural heritage and helps to enhance our landscapes and habitats. It contributes to the local economies of remoter rural and island areas and, crucially, helps to sustain people on the land. We want to ensure that crofting continues long into the 21st century and beyond.

We will publish the Crofting National Development Plan to set the long-term strategic direction for crofting and continue to support new entrants to crofting, including for woodland crofts. We will also work with the Crofting Commission and Highlands and Islands Enterprise to enhance the sustainability of crofting communities.

The Crofting Commission will take forward key development priorities such as improving croft occupancy levels, supporting township development and creating opportunities for new entrants.

Animal and plant health and welfare

We are continuing our work to protect the welfare of animals in Scotland. We are now recruiting members to our interim Scottish Animal Welfare Commission, which will provide advice on the welfare of sentient animals.

We have published new *Farm Animal Welfare Guidance* for the keeping of chickens, improving our reputation for high quality meat production. Similar work for egg-laying hens and other species of livestock will be introduced in the next year as we engage with industry and stakeholders.

We consulted on introducing compulsory video recording of slaughter in abattoirs to make sure it is carried out safely and humanely and will bring forward secondary legislation next year. We will support the industry to introduce CCTV in abattoirs before it becomes compulsory and we will explore the potential for new systems of calf rearing in the dairy sector.

We will continue to work with other administrations in the UK to educate the public and key audiences of disease risks and also to promote the importance of biosecurity to protect Scotland's livestock and wildlife.

Lucy's law

to prevent third party sale of puppies and kittens under 6 months old

We are taking forward our work to ensure a modern licensing system for dog, cat and rabbit breeders, pet sellers and animal sanctuaries and rehoming services, taking the most robust approach in the UK. We intend to use the new licensing system to prevent the sale of puppies and kittens under six months old in the course of business by anyone other than the breeder – known as 'Lucy's Law'.

We will bring forward new legislation to Parliament regarding a range of animal welfare measures including increases to the maximum available penalties for the most serious animal welfare offences. We will also launch a media campaign on puppy farming to improve the wellbeing of animals.

We will begin a review of animal health legislation for livestock to ensure it remains fit for purpose. We will provide funding for Livestock Health Scotland to support activity to trial new animal disease controls and farm practice.

We have funded the Plant Health Centre as a dedicated virtual centre of expertise to tackle plant health challenges in Scotland. Since its launch last year, it has developed resilience and emergency response plans and advised on a range of harmful plant pests.

The Animal Health and Welfare (Amendment) Bill will increase penalties for the most serious animal welfare offences

It will continue its activity this year, including educating the public and industry about plant threats. This will include encouraging more of the nation's gardeners to buy locally-produced plans and shrubs.

A key focus will be on protecting local crop production, forestry, natural environment and the nation's gardens from the threat of new devastating pests and diseases by strengthening Scottish contingency plans. We will also update Scotland's Plant Health Strategy.

The Scottish Government will support the United Nation's International Year of Plant Health in 2020 through a programme of events and actions, with a particular focus on activities for children and young people.

We will work with land managers to reduce reliance on pesticides and adopt an integrated management approach. This activity will be supported by the Plant Health Centre and their work to quantify the impact of pesticide withdrawals.

Food and drink

Our food and drink sector is the second largest contributor to Scotland's economy, with turnover reaching a record £14.8 billion in 2018. Exports in whisky and farmed salmon, our two most significant products economically, continue to grow in 2019. To acknowledge the ongoing importance of food to our economy and society, we will establish a Ministerial working group to co-ordinate action across government.

We supported Phase 1 of Ambition 2030, the national food and drink strategy, to grow the industry. We will independently assess Phase 1 to inform development of the next phase and to identify priorities for action in the next three years.

Over the past year, we have invested £7 million in our Food Processing, Manufacturing and Cooperation grant scheme, supporting 19 projects.

Export of food and drink is particularly important to our economy, with turnover reaching a record £6.3 billion in 2018. This year, we launched Phase 2 of our Food and Drink Export Plan, backed by £4.5 million of funding of which £2.7 million comes directly from Scottish Government. This funding will help the Scottish companies take their products into new and existing markets, supported by expert advice, to build relationships with buyers and offer encouragement to develop new products. In the coming year, we will also maximise opportunities to showcase and promote Scottish food and drink internationally and to the UK market.

Scotland already produces sustainable, climate-friendly and healthy food, but there is more that we can do to reduce food miles and waste, enable innovation and ensure that more people have the opportunity to benefit from the food we produce. Through our funding of the Food for Life programme we will continue to promote and encourage more local sourcing through public sector contracts. We will also build on the good work already underway to enable more Scottish produce to be served in our schools, colleges and universities, hospitals, care settings and prisons; including organic food.

We will also:

- create a Food and Drink Academy to support around 20 businesses with high growth potential, providing targeted support and advice and offering a range of cross-sector products to fast-track growth
- launch a new food and drink ecommerce platform for Scottish suppliers to showcase and sell their products in international markets
- work with local government to develop local food and drink action plans, aligning work at a national level to local circumstances

We will continue to roll out our Regional Food Fund which has supported 78 projects over the last year. We will also enhance our Food to Go scheme to allow more small and independent food retail businesses to invest in equipment and activity that allows them to provide fresh, healthy food products, locally produced and sourced food. This also contributes to reduced food waste and improved environmental efficiency.

Our Sector Plans continue to deliver, with the Craft Beer Sector Plan launched last year and the Seafood Sector Plan launched in May this year. This year, we will launch a Beef Sector Plan and work with industry to develop a Poultry Sector Plan, with a Scottish quality mark for poultry to drive growth.

We will also launch a Dairy Sector Plan which will focus on industry proposals to drive efficiency, productivity and growth. We will support this plan with a whole sector approach to industry development. This will include examining the potential for new systems of calf rearing in dairy systems and operating a pilot project to record usage of veterinary medicines to inform whether and how to encourage more efficient usage in all livestock sectors.

We will also continue our work with the industry to strengthen the position of primary producers in the supply chain. We will consult on the option of introducing mandatory written contracts for the dairy sector and will consider measures to tackle unfair trading practices. We will share data with participants in the beef efficiency scheme and publish an interim general report outlining findings to date.

The Good Food Nation Bill will support our ambition for Scotland to be a Good Food Nation

We have worked this year to protect Scotland's food and drink Protected Geographical Indications (PGIs) and to encourage new applications. Ayrshire Earlies potatoes gained PGI status in July and new applications have been prepared for Hebridean Native Salmon, Forfar Bridies and Wild Venison. We will continue to support marketing and promotion of Scottish red meat, including Scotch Lamb PGI and Scotch Beef PGI and we will seek opportunities to showcase all our PGI producers and products to wider audiences.

We have made sure that Scotland will be able to opt-out of cultivating GM crops in the future and we will do all we can to resist this status being threatened by the terms of future UK Government trade deals.

Our landscape and climate mean Scotland has an unrivalled natural larder and we will seek to strengthen our reputation as a producer of high quality food. The provenance of Scotland's food and drink products generates a unique premium for producers which we must work collectively to protect. That means everyone playing their part to protect the environment which creates that provenance.

We will work with stakeholders to develop a Food and Drink Environmental Action Plan to strengthen the industry's contribution to tackling climate change. As a first step, we will host a sustainability summit by the end of the year to identify priorities for action. This will create impetus for businesses and producers to play their part in responding to our climate emergency and give them the opportunity to share current good practice.

Good Food Nation

We are already delivering on our ambition to become a Good Food Nation, working towards a Scotland where everyone takes pride and pleasure in, as well as benefits from, the food we produce, buy, cook, serve and eat every day. We will lay before Parliament a Good Food Nation Bill to provide a statutory framework to support this ambition.

We will publish a progress report on our work later this year as well as explore how to maximise the global impact of our brand by working with the Scotland is Now campaign.

We have created opportunities for young people to learn more about where their food comes from and the role farms play in that. Our £1 million Good Food Futures programme will give more school children from more communities the opportunity to visit and learn about farms, as well as providing an end-to-end approach to food education, including healthy cooking lessons, putting more locally-produced healthy food on school menus and encouraging young people to consider a career in the food and drink sector. We will expand the programme further and work with business, the public and the third sector to develop guidance so that more people are encouraged to eat more locally-produced, sustainable and healthy food that supports our aims to tackle climate change.

Since he was appointed, our National Chef has played a significant role in supporting government to showcase Scotland as a Good Food Nation internationally and at home. In particular, he has increased awareness of the benefits of healthy, sustainable food and the importance of using locally-sourced products to minimise food miles and reduce carbon footprints. We will work with him to develop a fresh programme of activity over the coming year.

We will continue to support the Andrew Fairlie scholarship for two young chefs, one female and male, and we will also support Scotland's chefs to take part in the World Culinary Championships.

Water

The water sector in Scotland is, according to a recent report commissioned by Scottish Enterprise, the fastest growing sector in our economy. Scottish Water, our publicly-owned utility, has recently recorded its highest ever customer satisfaction levels and is among Scotland's most trusted companies.

This year it is investing around £600 million to maintain and improve the provision of high quality drinking water and waste water management. In 2020, we will run a competition across Scotland's universities to establish a Hydro Nation Chair to help our water industry manage the challenges of climate change, including innovative approaches to surface water management and managing changes to organic matter levels in raw water. We are also reviewing our approach to Blue-Green cities and will bring forward proposals by the end of this year.

Last year, we piloted water refill points in a small number of locations across the country. Hundreds of people are topping up each day, reducing plastic waste and keeping healthy and hydrated. This year we will make more refill points available and will run events across the country to encourage people to use refillable bottles and use water wisely in their homes.

Transport

Our commitments on climate change include radical steps to decarbonise transport and put us on a path to net zero by 2045. We will publish a new National Transport strategy later this year which will redefine investment priorities to put sustainable transport at the heart of decision-making and ensure that transport plays a key role in delivering net zero emissions by 2045.

Work is underway on the second Strategic Transport Projects Review which will identify and prioritise the strategic transport interventions across all of Scotland to deliver the vision set out in the National Transport Strategy for the next 20 years. It will shape our ambitious plans for strategic transport investment that will deliver real benefits for communities and businesses all over Scotland. It will embed sustainable travel principles and review investment priorities in light of the climate change emergency.

We welcome the Glasgow Connectivity Commission report and the ambitious vision it sets out for the Glasgow City Region for creating an inclusive, thriving and liveable city. We are committed to working with partners to consider the Commission's recommendations, and as part of the second Strategic Transport Projects Review, we will consider the potential for a Glasgow Metro, which builds on the planned City Region Deal investment to link Glasgow Airport and the new National Manufacturing Institute for Scotland to Paisley Gilmour Street.

Ferries

Ferries play a crucial role in the socio-economic development of Scotland's remote and island communities. We invest over £10 million each year to make sure that inter-island ferries serve the needs of these communities.

To safeguard ferry services for the future, we have invested £3.5 million in the past year in upgrades and replacements of key systems and equipment on board ferries, making vessels less likely to break down.

We will provide an additional £4 million this year to continue this important work, as well as progress upgrades to major port infrastructure, making sure that ferries continue to be available for those who need them. We will set out the second Scottish Ferries Plan by the end of 2022. Where evidenced, we will continue to enhance both the Northern Isles and the Clyde and Hebrides ferry services in response to the challenges ahead. We will continue to work with local authorities in the Northern Isles on improving intra-island services and we will shortly confirm the outcome of the tender for Northern Isles ferry services.

The Scottish Government is committed to securing a future for the Ferguson Marine shipyard in Port Glasgow. That is why we have agreed with administrators to take the yard into public control. This is providing continued employment for the yard's skilled workforce and ensuring the completion of two ferries which will provide vital support for our island communities.

Rail

Our work on the rail network is delivering more seats, more services and faster journey times. Passengers are already benefiting from an additional 25,000 seats every day across 2,400 services, reducing overcrowding and meeting our aim to increase seating capacity across the network by 23% by the end of 2019.

We will decarbonise Scotland's rail services by 2035, ahead of the UK's target of 2040. The Stirling, Dunblane and Alloa and Shotts routes are now served by electric trains, and the new electrified route between Glasgow and Edinburgh is reducing journey times on this busy line.

Reduce emissions from Scotland's railways to zero by 2035

We are also developing proposals to introduce greener, faster, more comfortable and more reliable services for communities on the East Kilbride to Glasgow line, including options for electrification.

We are moving to the design and development phase for re-opening the Levenmouth rail link. We will promote an integrated plan including bus and active travel, as well as working with partners to maximise the benefits of our investment.

We are investing £4.85 billion between this year and 2024 to support a high performing, more resilient rail infrastructure, as well as a range of improvements identified in and through the Rail Investment strategy. These include completion of the Glasgow Queen Street station redevelopment by spring 2020, the new station at Robroyston by December this year and the new station at Kintore in May next year, as well as the introduction of a new and improved service between Aberdeen and Inverness by the end of the year.

We will continue to work with the UK Government on its review of the structure of the rail industry and the way passenger rail services are delivered, pushing for further devolution of rail powers to ensure our railway and its integrated operation is accountable to the Scottish Parliament.

Buses

The Transport Bill will provide tools for local authorities to improve bus services in their area. It includes the power for councils to franchise or even run bus services, but ownership is not the key issue. At its heart, the Bill provides a new model for partnership between local authorities and bus operators.

We will bring forward a step change in investment with over £500 million for improved bus infrastructure to tackle the impacts of congestion on bus services and raise bus usage. This work will make bus travel a more attractive and reliable option and reduce emissions.

This year we are also working to extend the National Concessionary Travel Scheme, providing free bus travel for people accompanying eligible disabled children under the age of 5.

We will work with stakeholders to review the option of extending public transport concessions to people under 26, reporting on progress in the coming year.

Safe roads

Safe and efficient transport links are essential to sustaining economic growth by improving access to markets and increasing productivity, as well as making sure that our country is accessible to tourists. Our road infrastructure also needs to be compatible with our ambitions to tackle climate change.

In the past year, we have continued to maintain our trunk road network, fully opened the Aberdeen Western Peripheral Route and begun work on the A77 Maybole Bypass.

We will continue to maintain the trunk road network in line with international best practice. In addition, we will make further improvements in key transport infrastructure this year, focusing on securing the investment needed to complete the dualling of the A9 between Perth and Inverness – as we do that, we will continue to invest in facilities for walkers, cyclists and equestrians on this route.

Transport of the future

Transport is undergoing a period of rapid technological transformation which is an enormous opportunity for innovation.

We want Scotland to be at the forefront of developments in Connected and Autonomous Vehicles and are well positioned to offer high quality test and demonstrator opportunities to developers and industry. We will publish a roadmap for adoption of these technologies later this year and support an autonomous bus trial on trunk roads between Fife and Edinburgh starting in summer 2020.

We have also been driving innovation on payment and journey planning. Building on our ongoing work to introduce smart ticketing across Scotland's bus, rail, ferry, subway and tram networks, we will procure the digital technology needed for users to plan their journey across all public transport types and active travel, see different cost options and find out journey duration.

In the coming year, we will carry out a study on 'tap in tap out' fares services and begin feasibility work for concessionary ticketing on mobile technology.

Our £2 million Mobility as a Service Investment Fund launched in summer this year and funding will be awarded to successful projects in November. The Fund will help develop innovative solutions to reduce reliance on private cars by:

- supporting our rural and island communities' future transport needs
- tackling inequalities and improve accessibility and mobility on the public transport network
- providing tourists with smarter ways to access public transport

Chapter 3

IMPROVING OUTCOMES THROUGH OUR PUBLIC SERVICES

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Improving outcomes and the wellbeing of the people of Scotland is central to Scotland's *National Performance Framework* and part of our commitment to achieving the *UN Sustainable Development Goals*.

Public services make a deep and lasting contribution to the wellbeing of our communities. It is our responsibility to deliver high quality, accessible and effective public services, underpinned by values of kindness, dignity, compassion, openness and transparency. This is central to shaping the kind of country that we want to be.

HEALTHY AND ACTIVE

Improvements in health, both physical and mental, are central to our wellbeing and success as a nation. This Government will continue to up the pace of improvement and change within Scotland's health and social care services and improve access to services.

We have established a clear set of priorities and key actions for government and for local health and care services. These focus on the delivery of better patient care, better health and better value for the people of Scotland, so that we live longer, healthier lives at home or in a homely setting.

To support this work, we continue to invest record levels in our NHS and community health services, spending £120 per person more on frontline health services than the UK average. We are attracting record numbers of staff to work in those services, helping us to build a strong health and social care workforce, who are supported and valued for what they do.

Mental health

In last year's Programme for Government, we set out comprehensive actions on mental health, with a particular focus on the needs of our children and young people. We recognised the need to support and treat people in the right place and at the right times, valuing both community and specialist mental health services.

There is no doubt that mental health is taken more seriously now than in the past but there is still much more to do. This year we continue to build on this foundation, as we develop services and support that can be accessed across all ages.

Investing in early years mental health

Although it is common to have periods of worry during pregnancy, for a significant number of women additional mental health support is needed. We know that the earlier that support is provided, the better for both mother and baby.

In February, we published recommendations to drive up standards of perinatal and infant mental healthcare, supported by a £50 million funding commitment. During 2019 and 2020, we will:

- support the third sector to deliver counselling and befriending services for women who might benefit from additional support in their community
- invest £825,000 to increase specialist staffing levels at the two current Mother and Baby Units at St John's Hospital in NHS Lothian and Leverndale Hospital in NHS Greater Glasgow and Clyde, enabling them to become centres of expertise

- support the development of a community perinatal mental health service across Scotland. Backed by £5 million of investment, this will focus on women with mild to moderate symptoms, allowing them to quickly access support from, for example, cognitive behavioural therapists and psychological therapists
- make £3 million available to support the establishment of integrated infant mental health hubs across Scotland. These will create a multi-agency model of infant mental health provision to meet the needs of families experiencing significant adversity, including infant developmental difficulties, parental substance misuse, domestic abuse and trauma

24/7 crisis support
for children, young people and their families

Improving support for children and young people

Last year we established the Children and Young People's Mental Health Taskforce to provide recommendations for improvements in provision for children and young people's mental health in Scotland.

In response to its initial recommendations, we invested an additional £4 million in Children and Adolescent Mental Health Services (CAMHS) to provide 80 new staff.

This year, working jointly with COSLA, we will take forward the Taskforce's concluding recommendations. We are establishing community wellbeing services across Scotland, focusing initially on children and young people from ages 5-24. This will be an open-access model and referrals can be made by those who work with and support children and young people. Crucially, children and young people will also be able to self-refer to the service. We will also scope out how this service can be made available in the future to people of all ages across Scotland.

We will continue to progress the actions we set out last year. The first tranche of the 350 additional counsellors across Scotland's secondary schools are in place this academic year – all will be in place by next September. Fifty additional school nurses will start training this year, with further tranches to follow until 250 are in training by 2022. We will implement the recommendations of the Personal and Social Education Review and embed whole-school approaches to supporting wellbeing by March 2021.

We have been supporting testing of the Distress Brief Intervention programme in Aberdeen, Inverness, Borders and Lanarkshire. Supported by funding of £7.9 million, the pilot projects are providing help to people aged 16 and over. Interim findings tell us that the programme is preventing suicidal behaviour and, as a consequence, is saving lives. By April 2020, we will review how the programme could be extended to those aged 15 and younger.

In addition, we will:

- develop our new 24/7 crisis support specifically for children and young people and their families. We will create a national service which links with police and emergency health services and introduce a text service so children and young people can text as well as phone to access help
- set out and embed clear national expectations on standards and specifications for CAMHS and other specialist services across Scotland to reduce rejected referrals
- work with NHS Boards to deliver the ambitious trajectories for waiting times improvements for CAMHS (and Psychological Therapies) set out in their Annual Operational Plans, supported by £15.5 million of funding this year
- take forward the recommendations of Her Majesty's Chief Inspector of Prisons for Scotland's independent review into the mental health services for young people in custody

Lifelong support for good mental health

To better support adult mental health services we will establish a new Adult Mental Health Collaborative so public services, the third sector and communities can work together to improve support to people suffering from mental ill health.

We have already committed to providing 800 additional mental health professionals in key settings such as Accident and Emergency, GP practices, custody and prisons by 2021-22. This will help to ensure that people have better access to mental health support at a time and place where they may need it the most. To date, over 260 staff have already been recruited and we are on track for recruitment to reach our target and deliver these vitally important roles.

Recognising the importance of working together across services, we will take forward the work of the National Distress Intervention Group to ensure that services from across our health, justice and social care system are brought together to focus on the needs of any person experiencing distress, particularly those with multiple, complex needs.

We will also:

- establish the Scottish Mental Health Policy and Research Forum to promote excellence in and improve the quality and quantity of mental health clinical research in Scotland
- enable the work of the independent reviews of the Mental Health Act and forensic mental health services so that the rights of individuals are protected

Last year saw the full national rollout of the Computerised Cognitive Behavioural Therapy service across all 14 territorial Health Boards and referral rates continue to rise. To further improve this service, we will develop self-referral access to online Cognitive Behavioural Therapy for anyone with mild to moderate depression and explore specifically how it can be used to support young people.

We will also:

- establish a Personality Disorder Managed Network to improve services, supporting a national roll out of patient self-management training
- invest £400,000 to develop improvements to early intervention psychosis services, ensuring that people suffering from psychosis anywhere in Scotland get timely access to effective care and treatment

We continue to take action to prevent suicide in Scotland. New mental health and suicide prevention workforce development resources have been produced for a range of settings, and we have asked all NHS Boards to include mental health and suicide prevention training as an essential element of local Workforce Development Plans. Last year, we established a National Suicide Prevention Leadership Group to help drive implementation of our Suicide Prevention Action Plan.

In the coming year, we will work with partners to:

- develop and promote best practice in local suicide prevention planning and learning reviews of suicides
- extend suicide prevention workforce development
- support implementation of measures to support those in crisis and for those who have been bereaved by suicide

Learning disabilities, neurodiversity and dementia

The vast majority of people with learning disabilities live in the community and play their full part in it. But they are faced with a range of barriers which we must address.

Through the *Keys to Life Strategy* – published in 2013 and recently refreshed – we have helped to change the lives of people with learning disabilities.

To support autistic people and their families, we have:

- developed a national anti-stigma campaign to improve how autistic people and their families are understood within their communities and launched a fund to remove barriers to employment for autistic people
- commissioned a National Autism Implementation Team to develop evidence-based improvements to reduce waits for diagnosis, improve autistic children's education experiences and increase access to employment
- worked in partnership with Education Scotland to update the online Autism Education Toolbox to improve teachers' knowledge of autism

Working with primary care teams and other partners in a number of areas, we will pilot health screening services specifically tailored to the needs of people with learning disabilities. We will also develop an online autism support service to help people live positively with autism while reducing demand for services through CAMHS, Psychological Therapies and other public services.

National Brain Health Centre

to reduce the risk of dementia

Scotland's Third National Dementia Strategy aims to deliver high quality, person-centred support for people with dementia, their families and carers from the point of diagnosis to the end of life. This year we have:

- supported local delivery of the national dementia post-diagnostic service
- piloted work to increase the accessibility of diagnosis and support in primary care settings
- funded two national dementia workforce programmes
- co-funded Alzheimer Scotland Dementia Nurse Consultants across NHS Boards
- supported a new reform agenda to modernise specialist NHS dementia care

In the coming year, we will:

- fund a new large-scale project to test integrated, intensive dementia home care
- establish Scotland's first national Brain Health Centre. This body will promote positive brain health as a way of reducing the risk of developing some dementias, linking with wider work to help encourage clinical research trial recruitment in Scotland as well as clinical research investment
- engage widely, including with service users and carers and statutory third sector and independent sector partners, to develop our fourth National Dementia Strategy, building on our internationally recognised action in areas such as rights-based care and post-diagnostic support

By the end of this year, we will publish Scotland's first ever National Action Plan on Neurological Conditions. It will set out how people with neurological conditions and their carers are involved in decisions about care and support, how we will improve the provision of coordinated health and social care and how we will build a sustainable neurological workforce for the future.

Helping people to live longer, healthier lives

Helping people to live healthier lives takes more than government action. The whole public sector, third sector organisations and people across Scotland have an important role to play in reducing health inequalities and improving healthy life expectancy. Health inequalities are a symptom of wider socio-economic inequalities which will inhibit our success as a country. We will continue to take action to close the gap.

As set out across this Programme for Government, tackling issues such as poverty and improving the quality of work are as important as reducing smoking rates and addressing obesity.

Work is well underway with COSLA and The Scottish branch of the Society of Local Authority Chief Executives and Senior Managers (SOLACE) to develop the new public health body, Public Health Scotland, which will launch next year. It will help to shape public health improvement across the whole of Scotland and enable us to make best use of Scotland's public health assets – data and intelligence and our public health professionals – in supporting local areas to create the right conditions for supporting health and wellbeing.

We have already started work to improve the range of weight management services for people being treated for, or who are at high risk of, type 2 diabetes. Backed by investment of £42 million, early adopters have been using this funding to redesign and deliver weight management services in line with the national guidelines. Learning from their experiences, all Health Boards have now received funding to help them develop plans for weight management services and these will begin to become available over the coming year, helping to achieve our ambition to halve childhood obesity by 2030.

We have consulted on restricting the promotion and marketing of food and drink high in fat, sugar or salt where they are sold to the public and will bring forward a Bill on Restricting Foods Promotions for introduction in next year's legislative programme.

Our Tobacco Action Plan focuses on addressing health inequalities and targeting smoking rates in the communities where people find it most difficult to quit. We have also banned tobacco in prisons. We will seek views on further restrictions on advertising of nicotine vapour products, to discourage non-smokers, children and young people from taking up vaping, and we will introduce a no-smoking perimeter around hospital buildings.

We continue to work with Scotland's Violence Reduction Unit and Medics Against Violence to expand the Navigator programme. This programme engages with people who have been affected by violence aiming to break the cycle of violence and ease the pressure that violence places on health, social care and justice services.

This year, we aim to extend the service, ensuring that people attending A&E with complex needs and chaotic lives are provided with the support they need to make positive changes in their lives. The Scottish Violence Reduction Unit is also exploring trialing this approach in community and justice settings such as custody suites, providing support to vulnerable people affected by trauma to make sure that they are able to access the services they need.

Tackling the harm associated with the use of illicit drugs and alcohol

This Government has taken radical steps to tackle alcohol misuse. Since the introduction of minimum unit pricing, alcohol sales have fallen to their lowest level since 1994.

This year, we will take further action to tackle the issues associated with use of illicit drugs and stop the rising number of drug deaths. We currently provide £53.8 million each year to Alcohol and Drug Partnerships, supplemented by £20 million annually following our 2017-18 Programme for Government. But we need to go further.

We will now make an additional £20 million of funding available over two years. This frontline funding will include:

- providing funding to allow our new Drug Deaths Taskforce to support innovative projects, test new approaches and drive forward specific work to improve the quality of services
- establishing joint working protocols between alcohol and drug services and mental health services to improve access, assessment and outcomes from January 2020
- developing a national pathway for Opiate Substitute Therapy to make sure that it is effective across the country and help to reduce stigma
- establishing an Inclusive Scotland Fund to support a number of local areas to involve people with lived experience of severe, multiple disadvantage in developing whole system approaches to improve outcomes

We are doing everything we can in Scotland to save lives but the Misuse of Drugs Act 1971 remains reserved to the UK Government. Some steps we support, such as introducing medically supervised overdose prevention facilities, are not possible under the current arrangements.

The UK Government must recognise that we are facing a public health emergency in Scotland and they need to take the necessary steps to give Scotland the additional powers we need to help save lives.

We will:

- consult on drug law reform, setting out the changes we would want to make to the 1971 Act in the event that UK Government agrees to devolve the powers in the Act
- hold a summit in Glasgow to identify further steps to tackle this tragedy and ensure that the voices of those with experience of drugs and their families are heard

Further £20 million to help reduce drugs deaths

Alongside this work, we will take other action to tackle public health issues and health inequalities.

We will put in place a Women's Health Plan. In the coming year, it will take action to:

- ensure rapid and easily-accessible postnatal contraception
- improve access to abortion and contraception services for adolescents and young women
- improve services for women undergoing the menopause, including increasing the understanding and knowledge of women, families, healthcare professionals and employers
- reduce inequalities in health outcomes which affect women, such as endometriosis and antenatal care
- reduce inequalities in health outcomes for women's general health, including work on cardiac disease

Our Active Scotland work has increased support to Community Sports Hubs in our most deprived communities. We have also collaborated with partners to increase women's and girls' participation in sports and provided £1 million of funding for the Changing Lives Through Sport and Physical Activity Fund.

This year, we will create a new Community Sport Bond worth up to £5 million. We know that, for supporter and community groups, not having access to capital funds has been the main barrier to them being able to take ownership stakes in their local clubs when the opportunity has arisen. The Bond will empower communities and groups and strengthen local decision-making by giving groups the chance to acquire a share or control of their local sports club. To be eligible to apply for the Bond, groups must show clear community focus and support and, in particular, demonstrate how involvement in the running of their club would be used to support women and girls' participation in sports.

Help for communities and groups to acquire a share of local sports clubs

In addition, we will:

- work to eliminate Hepatitis C in Scotland by 2024, by increasing the number of people treated each year. By getting the message out that anyone who has ever been at risk should get tested and, if necessary, take a short course of medication, we will aim to eliminate this fatal virus six years earlier than expected by the World Health Organization
- enhance the current vitamins scheme in Scotland, providing free vitamin D for children and to breastfeeding mothers. The scheme launched in August for breastfeeding mothers and children under a year old and will expand to become available to all children under 3
- establish Precision Medicine Alliance Scotland to accelerate the development and implementation of precision medicine, focusing on conditions of major importance in Scotland, including diseases that disproportionately impact on those at risk of socio-economic disadvantage

Women's Health Plan

to tackle health inequalities

We have passed legislation to introduce an opt-out system of organ and tissue donation – it will come into force in autumn next year and aims to increase the number of successful donations in Scotland, while ensuring that there are safeguards in place to respect a person's wishes. We will run a high profile awareness-raising campaign before the new system is introduced and on a regular basis thereafter so people know about the changes and understand what choices they have.

Integrated health and social care services

Improving our nation's health and wellbeing needs high quality and joined-up health and social care services – no matter whether those services are provided by the NHS, local government or the third and independent sectors.

Our work to integrate health and social care has changed the way key services are delivered, putting greater emphasis on supporting people in their own homes and communities and reducing the inappropriate use of hospitals and care homes.

There is evidence that our efforts are working. For example, there has been a reduction in unplanned overnight stays in hospital and many of our health and social care partnerships are making good progress in reducing their delays in hospital discharge, meaning many people are being cared for effectively at home, or in a homely setting, for longer.

We are also working with local partnerships to improve the planning of children's services and the positive impacts of this will be incorporated into our review of children's services guidance later this year.

But we want to go further. This year, the Scottish Government and COSLA are taking forward a series of actions to increase the pace and effectiveness of integration, based on the *Review of Progress with Integration,* published in February. This includes:

- developing new statutory guidance for community engagement and participation in the design and delivery of health and social care services
- developing a framework for community-based health and social care integrated services to help ensure that what works to improve outcomes in local community settings is shared and promoted across the whole system
- carrying out an audit of existing national leadership programmes and improving collaborative working with all health and social care partners, including the third and independent sectors
- empowering Integration Authorities to use all of the resources allocated to them in ways which work best for the people and communities they serve and to improve the understanding of accountabilities and responsibilities across the system
- improving strategic inspection by making sure it better reflects how different bodies need to work together to improve outcomes

Reforming social care

Social care support is an investment in Scotland's people, society and economy. One in 24 people of all ages in Scotland received social care support and services during 2017-18.

Social care is about helping people to participate in, and contribute to, society by supporting independent living and ensuring that their dignity and human rights are protected. We are committed to supporting people to stay at home or in a homely setting with maximum independence for as long as possible, with their support guided by their needs, priorities and choices.

We recognise the challenges in meeting the need for social care support in Scotland. We also know that self-directed support is not yet fully embedded as Scotland's approach to social care support. Together with partners, and guided by people who use social care support, we are taking actions to accelerate change.

A reform of the adult social care support programme launched this year, led by the expertise and experience of people who use social care support and those who work in the sector. Its priorities include:

- a shared agreement on the purpose of adult social care support, with a focus on human rights
- ensuring social care support is centred on a person, how they want to live their life and what is important to them
- valuing and supporting social workers and social care workers and unpaid carers
- investment in social care support, and considering how it is paid for in the future

This year, we will:

- develop a future vision for a sustainable care home sector as part of the wider health and social care landscape
- work with health and social care partnerships, local authorities, providers and improvement organisations to make it easier to design and implement models of care which support the workforce to provide flexible, consistent care and support for people across care at home, care homes and other types of support
- continue to support the sector to develop a national framework agreement for both purchased and commissioned care and support services. This will increase consistency in the way in which support is commissioned, purchased and delivered across the country, and will strengthen the focus on person-centred and outcomes-focused practice
- support Social Work Scotland to work with local authorities and others to design and test a framework of practice for self-directed support across Scotland, including approaches to assessment and resource allocation. This will result in more consistent experiences, making it easier for supported people to move from one area of Scotland to another. Local flexibility will ensure authorities can work with their communities to develop systems that suit local strengths and needs, particularly in remote and rural areas

We will create a blueprint for the development of hospital at home services across Scotland, based on existing good practice in areas such as Lanarkshire and Fife. The blueprint will form part of the Framework for Community Health and Social Care Integrated Services, which is currently under development.

We implemented Frank's Law in April this year, supported by a £30 million investment. It means that anyone of any age who has been assessed as needing personal care has access to it, free of charge.

To make sure that the rights of Scotland's unpaid carers are secured, we have developed the Carers Act Implementation Plan, backed by an extra £10.5 million for local authorities this year.

We are investing a further £1 million this year to help carers centres build capacity and to fund local projects to develop and spread best practice for involving carers in decisions about hospital discharge. We will also launch a national marketing campaign to improve awareness of carers and their rights to support.

We are committed to ensuring our work always recognises the impacts on carers across different aspects of their lives such as employment, benefits and education. We will soon be consulting on our plans for a Carers Strategic Policy Statement and will announce final plans early next year.

We have consulted on proposals to reform the law on adults with incapacity. We want to make sure that people receive more support to make their own decisions and have better access to the care that they need. There are a number of sensitive areas that we continue to work on with stakeholders and, in the meantime, we will make improvements in training and support for those who work with adults with incapacity.

We will also provide updated guidance on power of attorney to help to make the law in this area more accessible and empower people to plan for the future.

Health and social care in prisons

We are working to improve how health and social care services are provided to people in prison and how these services can tackle health-related causes of offending such as drug and alcohol misuse.

We have established a new Scottish Prison Care Network and published a *Prison Health Information Dashboard*. This month, we will begin to test new approaches to delivering integrated social care which will improve the services provided to people in custody, helping them to rehabilitate and return to their communities when they are released. We will also publish a new Health and Social Care Strategy for Prisons over the coming year.

Providing the right healthcare and support when it is needed and at whatever stage of life

We are investing in a range of initiatives to improve primary care services, including increasing the number of GPs entering training, enhancing primary care teams with link workers, paramedics and pharmacists, investing in General Practice Nursing, providing support to retain GPs and setting a target to recruit 800 more GPs over 10 years. This investment will reach an additional £500 million a year by 2021-22 in primary care, of which £250 million will directly support General Practice.

Based on our new Scottish GP contract, all Integration Authorities now have locally-agreed Primary Care Improvement Plans. Plans for this year include local workforce planning, infrastructure development and patient engagement – work which will improve the primary care people receive in their communities. We are supporting GP practices via the GP Premises Sustainability Fund which we will increase from £30 million to £50 million this year.

Our £2.5 million Community Challenge Fund, encouraging people to take positive action to improve oral health, launched this summer. Work is underway to accredit General Dental Practitioners with the skills and equipment to see patients in care homes and early adopters began to operate this summer.

We continue to implement the recommendations from the Community Eyecare Services Review. A new Once-for-Scotland shared ophthalmology patient record will launch in the coming year, making sure patients are safely directed towards accredited community optometrists. This high quality community-based care will increase service capacity across Scotland which is particularly important as our population ages and demand on eyecare services increase.

We have strengthened the Chronic Medication Service, with over 750,000 patients now registered at their local pharmacy and community pharmacists providing care for people with stable long-term conditions. This year, the service, now called the 'Medicines: Care and Review Service', will continue to improve how pharmacists can provide personalised care.

NHS 24 is improving its services by introducing a new clinical supervision model which will increase the number of patients who receive the advice they need at the first point of contact, without needing to wait for a call back.

This year, we will test how to widen NHS 24's support to GP practices in-hours. Patients contacting their GP for a same-day appointment will have their symptoms triaged by NHS 24 to help make sure that they are directed to the most appropriate healthcare professional for their needs.

Out-of-hours services are under pressure. The National Out of Hours Oversight Group will continue to drive forward improvements and sustainability in out-of-hours care in the short, medium and longer term. An early action will be to provide grants to GP practices to deliver training in out-of-hours services.

We will provide new online learning modules for the health and social care workforce to help people who have lost their voice or have difficulty speaking. This will help staff to better identify people who may need or benefit from communication equipment and provide help to use that equipment.

Stroke: prevention, treatment and care

Over the past 10 years, the number of people in Scotland dying from stroke has decreased by 42%. This is significant progress but we want to strive for even better outcomes. In the coming year, we will develop a programme to improve stroke pathways and services, including prevention, treatment and care. We will:

- appoint a Specialty Adviser to the Chief Medical Officer on Stroke Care
- review and improve the current stroke care bundle to improve outcomes for patients
- collaborate across government on stroke prevention and raising awareness of the signs of stroke
- begin work to scope out and define what a progressive stroke unit looks like
- ensure that a national planning framework is in place for a high quality and clinically safe thrombectomy service

Of ultimate importance is making sure that primary care meets the needs of the communities it serves. We know that some groups of people face challenges accessing healthcare. To help, we have published new guidance on GP Practice registration which will make it easier for marginalised people to access healthcare and make that access more consistent across the country.

We know that there is no one-size-fits-all approach to primary healthcare. Our next phase of primary care reform will promote innovation and co-produced local solutions, with a focus on rural and deprived communities. But we want to know more about what communities need. We are considering the latest findings of the Health and Care Experience Survey and we will outline our plans in the coming months.

Access to services

Access to care at the right time is an essential part of improving Scotland's health and wellbeing. As well as making sure people have access to the services they need, all Health Boards will have plans in place by the end of this year to implement flexible visiting making it easier for patients to see their loved ones while in hospital.

Our Accident and Emergency services are the highest performing in the UK and have been for more than four years. We have opened new Major Trauma Centres in Aberdeen and Dundee and work is progressing towards the opening of Centres in Edinburgh and Glasgow. Our work to coordinate performance in how trauma is dealt with is also supported by the appointment of Trauma Co-ordinators in each region and the newly updated plan for managing Major Incidents with Mass Casualties. The new Trauma app will go live in the west of Scotland next August.

ScotSTAR (North) opened in April, helping patients involved in serious accidents and those in remote locations. Scotland now has full coverage by pre-hospital critical care teams – meaning patients across the country will be equally cared for in life-threatening situations.

We have been working to reduce unintentional harm which is estimated to cause around 500,000 A&E visits and one million GP appointments every year, including providing advice to families and supporting Child Safety Week.

Following the decision that the Royal Hospital for Children and Young People in Edinburgh was unable to open on time due to problems with ventilation systems, we have commissioned a review to identify the factors that led to the delay.

We have also instructed NHS National Services Scotland to review all current and recently completed major NHS capital projects to provide assurances that the required high standards have been met in their construction and renovation.

Patient safety is paramount – we will establish a national body with responsibility for the oversight of the design, construction and maintenance of major infrastructure developments within NHS Scotland. It is likely to involve a compliance function to ensure that construction and future maintenance is in line with statutory and other guidance.

We will set out specific plans for the Royal Hospital for Children and Young People following the reviews.

Tackling cancer

We continue our work to prevent cancer, detect it early and treat it effectively. Through our current cancer strategy, we have invested over £54 million to-date, including more than £4.5 million in key treatments and £500,000 in supporting work with children and young people with cancer. We have increased uptake in the new bowel cancer test and reduced the risk of cervical cancer due to the HPV vaccine.

In the coming year, we will:

- work in close collaboration with NHS Boards to ensure cancer waiting times standards are met by spring 2021. We are supporting this with the Effective Cancer Management Framework and education sessions for staff to improve monitoring of patients with suspicion of cancer and make sure that cases are escalated cases effectively when required
- target our Detect Cancer Early social marketing campaigns to people who are most likely to present with later stage disease and less likely to participate in screening
- change national screening programmes where it is appropriate to ensure those in greatest need benefit fully
- begin work to pilot self-sampling for cervical screening at a national level
- further develop our approach to bowel and breast screening to enable us to better target areas of low uptake, particularly in our most deprived communities
- support the dissemination of clinically-refreshed Scottish Referral Guidelines for Suspected Cancer to support primary care clinicians to ensure those with symptoms suspicious of cancer are put on the right pathway at the right time
- invest an initial £2 million in technology to improve the detection of advanced prostate cancer

We are also committed to making sure our plans take account of the latest developments in cancer research, treatment and technology. This year, learning from our experiences to date, we will refresh our cancer strategy, making sure that we invest in the best services possible and deliver the best outcomes for people with cancer. We will develop defined and consistent diagnostic and treatment pathways for different types of cancer, including those which occur in small numbers.

As well as providing the best clinical care, we will invest £18 million in a partnership with Macmillan Cancer Support to make sure everyone at the point of a cancer diagnosis has contact with a link officer to talk about their specific needs and receive information and support tailored to them. Macmillan will also help people find financial, emotional and practical support that is right for them, meaning that patients and their families are looked after from diagnosis, through treatment and beyond.

Reducing waiting times

As part of our £850 million Waiting Times Improvement Plan, we are making £102 million available to Health Boards in 2019-20 to drive down the length of time patients wait for appointments and procedures, prioritising those who are waiting the longest. We will increase capacity in our health service, increase clinical effectiveness and efficiency and implement new models of care. By spring 2021:

- 95% of outpatients will wait less than 12 weeks to be seen
- 100% of inpatients/daycases will wait less than 12 weeks to be treated
- 95% of cancer patients will receive their first treatment within 62 days of an urgent suspicion of cancer referral

This year's investment will support more procedures such as cataract removal and hip and knee replacements, as well as increasing the number of outpatient and diagnostic appointments. It will also support work to increase capacity, including additional workforce, at the network of elective and diagnostic centres currently being created.

To provide longer-term capacity for elective procedures, construction has begun on the expansion of the Golden Jubilee Hospital. While that is underway, we have increased capacity in endoscopy, cardiology and ophthalmology by installing an interim mobile Cath Lab, increased general surgery activity, increased the number of additional cataract procedures and installed a second CT scanner.

We have brought forward the opening of an additional theatre in NHS Forth Valley, allowing more joint replacement operations to be undertaken. We have strengthened the management of patients with treatable pre-operative anaemia and trialed Active Clinical Referral Triage. In the coming year, construction work will also begin on elective centres in Grampian, Highland and Lothian.

This year, we will continue to deliver the Waiting Times Improvement Plan, working with partners to apply quality improvement expertise to help us to deliver sustainable improvements in waiting times whilst maintaining or improving the quality of care.

The power to drive improvement in performance often lies at hospital level. We want to empower hospital managers to make the kinds of changes we need to see to meet our ambition. We will develop a strategic plan setting out how we will strengthen responsibilities and capacity in hospital-level management to drive better performance and make sure that clinical judgement is better mainstreamed into hospital management decisions.

Digital technology can help to transform health services, making sure that they meet the needs of people across Scotland and are more accessible. Ensuring that people are involved in their design helps to overcome barriers to using online services as they arise.

The Attend Anywhere service is a web-based platform that gives patients the opportunity to video call their healthcare provider. In the past year, the Attend Anywhere Scale-up Challenge has seen increased usage and reports of significant savings in both patient and clinician travel and reducing travel-related emissions. It will now roll out to primary care and social care services so more services can be delivered closer to people's homes. We will also scale up the Blood Pressure service for remote diagnosis and management of hypertension.

This year, we will work with partners to trial new approaches to digital services, focusing on frailty, breathlessness and survivors of abuse, opening up services to those who may struggle to travel due to their condition using technology such as video consultations, telecare or home health monitoring.

Our workforce

All of us who have engaged with our health and social care services know that all those who work in these services make a huge difference to the lives of people and communities across Scotland.

We and our partners are taking forward a range of actions to strengthen the sector through the National Health and Social Care Workforce Plan.

Earlier this year, we launched a platform to improve the data, tools and methodologies available to help plan for the future. It will bring together, for the first time, a common evidence base that can be used by workforce planners and is already being used to identify workforce gaps and develop new staffing models.

This autumn, we will publish the results of an analysis undertaken to support recruitment and retention of staff.

To encourage more people to choose the sector for a career and encourage a diverse workforce, we will launch a national campaign early next year and we will launch an online careers resource this autumn to help improve career pathways. We will also work with national and local partners to take forward the recommendations set out in the Fair Work in Scotland's Social Care Sector 2019 report to improve fair work practices across the social care workforce.

We will continue to develop a positive working culture. This will include actively strengthening our policies and governance in relation to whistleblowing, bullying and harassment to make sure those who work in our NHS feel safe, protected at work and able to speak out. We will invest £138,000 to fund tailored mental health resources for our emergency responders.

We will improve consistency in employee experience and workforce practices with the aim of ensuring that NHS Scotland is a modern, consistent and exemplar employer.

We will launch a national recruitment campaign for nursing, midwifery, allied health professionals and healthcare scientists later this year and a campaign for social work and social care professionals in 2020.

We are on track to create around 2,600 new nursing and midwifery training places over this Parliament, with a student intake of over 4,000 this year – a 7.6% increase on last year – and the bursary for nursing and midwifery students will rise to £10,000 per year from 2020. In conjunction with local authorities, we will explore the potential to create new Modern Apprenticeship frameworks.

We have already announced an increase in medical undergraduate numbers. By 2021 medical school places will have increased by 190 over 2016 levels. To help ensure that Scotland has a world-class and sustainable medical workforce, we will fund an additional 105 foundation places for medical graduates by 2022. These will accommodate the first of the additional graduates and enable them to proceed to the next stage of their training in order to become qualified doctors. The new places will create a greater range of placements for trainee doctors, particularly in general practice and psychiatry and in remote or rural parts of Scotland. We will also develop proposals for a new medical school.

We have established the Scottish Global Health Co-ordination Unit which has a facilitating role in the co-ordination of health partnership work in NHS Scotland. Our unique approach to global citizenship builds on best practice and includes developing ethical and sustainable ways to donate surplus NHS equipment where it is needed most at home and overseas.

To make sure that our social workers are equipped to deliver for the people they work with, we will improve how newly-qualified social workers are supported. Based on the results of pilots due to conclude in summer next year, we will roll out a national approach to a supported year for newly qualified social workers to make sure that the training they receive during that first year of employment reflects the latest developments in policy and practice.

GROWING UP LOVED, SAFE AND RESPECTED

As well as making sure our health service provides specialist support for those who need it, we must ensure all our children and young people have the opportunity to develop good health and wellbeing and get the best start in life. We are investing at every stage to ensure our children and young people grow up loved, safe and respected.

Getting it Right for Every Child is the approach we take to supporting families by making sure children and young people receive the right help, at the right time, from the right people. It is internationally renowned. By the end of this year, we will refresh our policy and guidance documents, updating our practice based on what we know works best for children.

Adverse Childhood Experiences (ACEs)

We continue work to address adverse childhood experiences (ACEs), including abuse, neglect and a range of difficult household and other experiences which negatively impact healthy development. We recognise the role that inequalities play and we are focused on tackling child poverty, addressing gender inequality and ensuring all children and young people can fulfil their rights.

We are committed to preventing ACEs and supporting children, young people and adults affected by childhood adversity and trauma. The evidence is clear that it is never too late to provide people with the help, kindness and compassion to address early life adversity.

In line with our four areas for action set out in last year's Programme for Government we are driving progress.

We have provided an additional 509 health visitors in Scotland, who are identifying and addressing needs early and improving outcomes for children and families.

We will continue to support our Family Nurse Partnership Programme this year. It provides intensive support to young mothers during pregnancy and for the first two years of a child's life. It has reached over 7,000 families since its inception and helped mothers to build the confidence and skills they need to provide the right support for their baby, and support their own mental health and confidence as well as housing, education and employment.

This year, we will develop Scottish standards for the Barnahus concept, forming a framework for a child-centred approach to delivering justice, care and recovery for children who have experienced trauma. We will publish draft standards for consultation at the end of this year and finalised standards in 2020.

We are helping children affected by parental imprisonment by continuing to support prison visitor centres, and the Scottish Prison Service has set out a five-year strategy to help those in prison and their families.

We have invested £1.35 million in the National Trauma Training Programme, enabling workers to recognise and respond to psychological trauma. Over 3,000 people across our public services, including police officers, nurses and social workers, have been trained to date, with training for a further 2,000 workers planned. We will expand the programme over the next two years, providing the opportunity for more frontline staff to receive training, such as those supporting Looked After Children and women receiving maternity care who have experienced sexual violence and abuse.

People working in our schools have been supported with resources to increase their understanding of ACEs and how to take a trauma-informed approach in the classroom. This year, we will support the development of trauma training packages for all organisations who come into contact with victims of crime.

We are supporting community action to prevent and respond to childhood adversity and trauma, including the Families and Communities Fund for third sector organisations and investment from the Cashback for Communities programme.

Creating lasting change in our care system

It is our job, as a society, to love our most vulnerable children and give them the best start in life, doing everything we can to make sure they grow up surrounded by kindness, compassion and understanding. Listening to young people with care experience is essential to make sure that we continue to improve our care system and help young people achieve their full potential.

We have made the Permanence and Care Excellence programme available to every local authority in Scotland, helping to make sure more children find permanent placements sooner and are able to grow up in stable, loving homes.

Our Children Bill will strengthen duties to promote contact between siblings and our Family Justice Modernisation Strategy will include provisions in relation to placing siblings together.

From spring next year, new standards to improve experiences and outcomes for vulnerable young people in secure care will come into force. We also continue to invest in our looked-after children's education, providing £8 million of funding from the Scottish Attainment Challenge Fund again this year.

We will continue to work with COSLA to agree how best to take forward the recommendations of the National Review of Foster, Kinship and Adoption Care Allowances, with a view to implementation from April next year. This will improve consistency and transparency for looked-after children, their families and their carers across Scotland.

Our Advance Payment Scheme, set up to provide recognition and acknowledgement of historical child abuse in care in Scotland opened in April this year. A payment of £10,000 is available for eligible survivors who are terminally ill or over 70 years old, avoiding the need for these survivors to wait until legislation can be passed.

So far, over 75 payments have been made. We will continue to do everything possible to help survivors and their families by ensuring a simple application process and providing support to find sources of care records to make sure that no one is refused their application because of a lack of documentary evidence of having been in care.

We will take this important work forward, setting up a statutory redress scheme for anyone who has been a victim of historical child abuse whilst in care in Scotland beginning with introducing legislation in the coming year.

The Redress (Survivors of In Care Abuse) Bill will set up a financial redress scheme for survivors of historical child abuse whilst in care in Scotland

The Independent Care Review

The Independent Care Review is now in its third stage and will report its findings to us early next year. Care experienced young people have made clear, however, that we must not wait for the outcome of the Review's work before making changes to the care system.

We will:

- extend eligibility for free NHS dental care to care-experienced people between the ages of 18 and 26 to reduce the negative impacts that poor dental health can have on physical health, mental wellbeing and self-confidence
- work with local government to make sure that care-experienced young people receiving a qualifying benefit are supported with discretionary housing payments from April next year, giving them greater choice in the housing options they have and more security in their tenancies
- launch our new Job Start Payment, ensuring that care leavers will get this help if they are receiving a qualifying benefit, without having had a period of unemployment
- remove the age 26 cap on the care-experienced student bursary in time for the start of the 2020-21 academic year. People with experience of care often do not feel ready to start further or higher education immediately after leaving school – we want to support them into either further or higher education at whatever point in life they feel they are ready, no matter what age they are
- extend entitlement to funded early learning and childcare provision to 2 year olds whose parents are care-experienced. For care-experienced people, becoming a parent can be more challenging than for others because they are less likely to have reliable family support around them. We will make sure that this entitlement is in place from August next year, the same time that we begin to deliver 1140 hours of funded provision for families across Scotland
- create a new statutory provision in favour of brothers and sisters who are taken into care being placed together where it is in their best interests

Protecting our children and vulnerable people

All children in Scotland have the right to be protected from abuse or neglect. We are ensuring that effective child protection procedures are in place wherever a child is experiencing or at risk of harm.

By summer next year, we will publish revised National Guidance for Child Protection in Scotland. Working with stakeholders, we will develop a new approach to reviewing significant protection cases and take forward a range of actions to prevent sexual offending involving children and young people.

We will publish a national dataset to support the planning and delivery of child protection services and work with our local authorities, health, education and justice sectors to make sure risk and harm are recognised and handled quickly and effectively.

We have introduced legislation to strengthen the protection of children and vulnerable people, while making the system of applying for criminal record checks more straightforward.

The Disclosure Bill makes the Protecting Vulnerable Groups scheme mandatory for anyone working with children or vulnerable people, such as sports coaches, and applying a renewable five-year membership rather than a lifetime membership. It will also end the automatic disclosure of all criminal offences committed as a young person, with decisions to be taken on a case-by-case basis.

The Bill will deliver a fairer regime which will provide the best possible protection for our most vulnerable people, and be simpler for employers and less invasive for the majority of users.

We will take action to improve the support and protection given to vulnerable adults at risk of harm. We will publish a three-year plan of improvement by spring next year, aiming to improve how assurance and inspection activities are undertaken, how legislation and policy make sure care is provided consistently and effectively and how data is best used to improve outcomes for adults at risk of harm.

Children's care and justice

We will invest a further £800,000 this year to strengthen Scotland's youth justice system, expanding our successful preventative partnership approach to youth crime.

We will implement the Age of Criminal Responsibility (Scotland) Act 2019 as quickly and as safely as possible. That means that, as of autumn this year, no child under the age of 12 at the time of an incident will be treated as an offender in the children's hearings system, or subsequently.

We have committed to better experiences and results for all by modernising the children's hearings system. We are supporting partners to introduce new digital technology approaches to transform children's participation in their hearings, making sure discussions and decisions are accessible to all children, and we are investing £700,000 in professionalising the support to unpaid children's panel volunteers.

In spring next year, we will introduce a national children's hearings advocacy scheme, backed by £1.5 million, to further reinforce children's rights and make sure the interests of each child is at the very heart of their hearing. We will also consult on enabling joint reporting to the Crown Office and the Scottish Children's Reporter Administration of all 16 and 17 year olds' offence cases.

The early years

Our work to make sure every child in Scotland gets the best start in life begins at the earliest stages. Our support to mothers during pregnancy is followed by the Baby Box containing the essentials newborns and their families need for the first few months.

Over 100,000 Baby Boxes have been received by families across the country, and they are helping to tackle inequality and improve health outcomes from the first few days of children's lives.

Early learning and childcare

Quality and nurturing early learning and childcare is the foundation from which every child can develop socially, emotionally and educationally, enabling them to reach their full potential.

From August next year our transformative expansion of early learning and childcare will begin. It will mean that all 3 and 4 year olds, and 2 year olds from disadvantaged communities, will receive 30 hours a week of funded childcare during the school year. They will also have the option to access a smaller number of hours per week all year round. This means that our children get the best possible start in life and will allow families the opportunity to explore more work and learning opportunities. It will save families up to £4,500 per child each year. Local authorities are working hard to deliver the new entitlement and we are providing them with the support that they need.

The expansion will benefit around 80,000 families across Scotland, with an additional annual investment of £567 million by 2021-22, bringing our total investment in early learning and childcare to almost £1 billion. It aims to support children's development and narrow the attainment gap; increase family resilience through improved health and wellbeing outcomes for parents and children; and allow more parents to be in work, training or education.

Parents and carers will have greater choice of high quality early learning and childcare providers, being able to access their child's entitlement from any provider across the public, private and third sectors (including childminders) which meets the National Standard, has a place available and is willing to enter a contract with their local authority.

The full expansion will be available from August next year but we have asked local authorities to prioritise more economically disadvantaged communities for any early provision, to ensure that those who will benefit the most will also benefit first.

The new National Standard includes daily access to outdoor play and learning, support from well-qualified and supported professionals and a free nutritious meal. To ensure that our workforce is treated fairly we are also providing the funding to enable all childcare workers delivering the funded hours to be paid at least the real Living Wage.

30 hours

per week early learning and childcare

Over the next year, we will continue to support local authorities and other employers to recruit the workforce needed to deliver the expansion. Our national recruitment campaign is ongoing and we will continue to work with partners to make sure it reaches minority ethnic communities so that the new workforce is diverse and represents Scotland's communities.

We will continue to work with the Scottish Funding Council and Skills Development Scotland to create more capacity in our colleges and work-based learning sectors to train staff and increase the number of Modern Apprentices following an early learning and childcare pathway.

To ensure children access their early learning and childcare in suitable premises, we are on track to meet our target of 750 new, refurbished or extended nurseries as a result of the expansion programme.

To support outdoor learning, we will accelerate our forest kindergarten training programme to make it available in all regions of Scotland by summer 2020.

Out-of-school care

High quality out-of-school care gives children opportunities to play and socialise which benefits their attainment, learning and wellbeing. It also offers a way to tackle issues like food insecurity and gives parents and carers the chance to take up employment or study, or increase their working hours.

Our draft framework for Out of School Care considers what more needs to be done to address the barriers many parents and carers face in accessing out of school care, as well as making sure children's voices are heard too. We will establish a public panel of parents, children and young people to provide ideas and feedback as we develop our plans further.

We already know that out-of-school care needs to be affordable, flexible and accessible and that there are barriers to low income families, so we are taking action now.

Over the coming year, we will invest £3 million in the Access to Childcare Fund as part of a range of measures to tackle child poverty. It will provide support to establish new projects delivering community-based childcare for low-income families. This will also provide opportunities for children within those communities to benefit from a range of activities before or after school or during the holidays. It will begin in April next year and run for two years.

Education – school and beyond

Our investment in education continues – in the last two years, there have been real terms increases in the amount of money spent on education by local authorities.

Over the last three years, teacher numbers have increased and we have ensured a fair pay deal for our teachers. Young people are achieving more qualifications and a record number are securing positive destinations after leaving full-time school education. Our universities are becoming more accessible – a greater proportion of students from the most deprived areas entered this year than ever before.

Extending the Scottish Attainment Challenge

Closing the attainment gap

In the past year, we have continued our efforts to close the educational attainment gap, to make sure every child is able to achieve their potential no matter where they grow up.

We have continued to invest in the Scottish Attainment Challenge and Pupil Equity Fund with an investment of £182 million in 2019-20. This is part of a total of £750 million being made available between 2016 and 2021.

This year's funding will put money into the hands of headteachers to provide additional targeted support to help children and young people overcome barriers to achievement related to poverty.

We will extend funding for the Scottish Attainment Challenge at current levels for a further year into 2021-22. This gives vital clarity to schools and local authorities that this support will continue.

Regional Improvement Collaboratives have been set up to cover every local authority in Scotland. Over the past year, with our additional £5 million investment, the number of teachers involved has increased and a number of regional interventions have been designed which are improving attainment, supporting curriculum development and helping headteachers and others improve their leadership skills.

This year, we will take steps to identify the support required for a wider range of education practitioners such as school librarians and college lecturers.

Attainment improves when parents are involved in their children's learning. This year, the Scottish Attainment Challenge and Pupil Equity Funding have allowed schools and local authorities to increase the number of home-school link workers, resulting in improved attendance and behaviour, earlier resolution of issues, improved contact and engagement of parents and communities. This gives parents greater confidence and ability to get involved in their child's education. We will continue this work, providing schools and local authorities with an additional package of guidance and support by the end of this year.

Attainment at all levels has increased since 2009-10 and the vast majority of headteachers report improvement in closing the poverty related gap in attainment or wellbeing. A further evaluation report on the impact of the funding will be published in spring 2020.

Additional support for learning

We need to make sure that our school system is tailored to every child, providing them with the support they need to reach their full potential.

This year, we have published guidance for local authorities on how to collect data about additional support for learning, helping us and local government to know what support is needed and where. Guidance on a presumption in favour of mainstream education was published to ensure the inclusion of children and young people who need additional support.

Based on research from Queen Margaret University, we have increased the capacity of professionals to provide additional support in the classroom through an online module for school staff and held an event to improve teachers' career pathways.

We will invest an additional £15 million in the coming year to improve the experiences of children who need additional support and their families. Working in partnership with local government, we will use this funding to secure additional frontline staff in this academic year.

Empowering schools

We have worked closely with leaders from across the education sector to empower schools, teachers and parents to make decisions about how best to run their schools for their pupils, removing the need for, and avoiding the delays associated with, taking a legislative route.

The Headteachers' Charter was published this year and we have provided draft guidance for school leaders on how headteachers can best use resources to make their own decisions about staffing, budgets, improvements and the curriculum in their schools.

Further support for headteachers will be made available this year, including a range of new and existing opportunities to enhance professional development and leadership skills.

To ensure teaching continues to be seen as a valuable career for young people and career changers, this year we will begin to deliver the recommendations of the Independent Panel on Career Pathways for Teachers.

We will also establish a Teacher Innovation Fund, providing opportunities for innovative teachers to apply for funding to help them access professional development. This will help to enhance the attractiveness of teaching as a career. Over the coming year, we will work with professional associations, local government and teaching unions to develop detailed criteria for the Fund.

Schools are further empowered when parents are involved and we have worked this year to improve the information available to parents. Information on the expansion of early learning and childcare has been made available so parents know what they are entitled to, and how to access the provision, and we have launched a parental involvement and engagement census so we can know which approaches to involving parents work best.

We will consult on amended statutory guidance for local authorities on how to ensure parents are involved in the lives of schools this autumn, publishing a final version by summer next year.

We have listened to the views of young people, setting up the Scottish Learner Panel last year. The Panel has already provided us with advice on inclusion and wellbeing, curriculum and learning and young people's participation in school life. The Panel will continue its work this year, making sure young people are a key part of shaping the future of our schools.

£15 million
for additional support for learning

Healthier school meals

We are making changes that will improve our school food, help tackle childhood obesity and give our children the best start in life. We will be the first part of the UK to set maximum limits for consumption of red processed meat over the course of the school week, part of our new initiative to make school food healthier. By autumn next year, we will:

- increase the amount of fruit and vegetables served
- reduce the amount of sugar available throughout the school day
- encourage the use of fresh, local and sustainable produce

More than 360,000 school meals are served each day and, with these changes, we can make a significant impact on children's health, reduce inequality and help to protect our environment.

STEM (Science, Technology, Engineering and Maths)

Scotland is the only part of the UK where annual funding of up to £3 million helps science centres and festivals to support STEM learning, inspiring our next generation of scientists and making science accessible for around one million people every year.

Our work on the STEM education and training strategy continues, making sure that we have the skills to take advantage of the economic opportunities offered in this sector.

We have delivered 107 bursaries, with investment of over £2 million, to help people change careers and begin to teach STEM subjects. Colleges are leading the development of 13 regional STEM hubs to join up schools and colleges with universities, science centres and employers. Intakes for STEM secondary teacher training courses has increased.

Education Scotland is working with schools to tackle unconscious bias and gender stereotyping which leads to a gender imbalance in STEM. The Scottish Funding Council, in collaboration with colleges and other partners, is also working to tackle gender imbalances and reduce gender gaps in college courses. Skills Development Scotland is working with employers and training providers to address under representation in the workplace.

This year, we will:

- provide more bursaries for career changers to train as STEM teachers and provide £2 million of grants to support ongoing STEM professional learning in schools, early learning and community learning settings
- introduce new STEM Awards for early learning and childcare providers and schools to inspire and reward excellence in STEM and work with 80 early learning and community learning centres and schools to trial a new Young STEM leaders award to support young people to inspire each other to get involved in STEM
- launch our 2019 Women Returners Programme that will support women to re-enter the workplace following a career break across a variety of industrial sectors where women are under-represented, including the STEM sector

Learning for Sustainability

Learning for Sustainability is a cross-curricular approach to learning which allows young people to explore sustainability across a number of subjects.

It helps to develop a love of the natural world and a sense of environmental stewardship. It can provide the skills to tackle climate change by learning about greenhouse gases in the sciences, assessing impact on the natural landscape in geography, calculating carbon emissions in maths and monitoring climate change over time in history.

Learning for Sustainability can also influence changes in schools, prompting sustainable approaches to waste management, catering, travel, energy usage, design and build.

Our newly-published *Action Plan* strengthens references to Learning for Sustainability within curriculum guidance and the General Teaching Council for Scotland's Professional Standards.

Education Scotland will continue to develop a repository of advice, guidance and practice examples, helping to ensure that educators are confident in covering Learning for Sustainability and all learners receive their entitlement to this vital area of education.

We also continue to fund the Eco-Schools Scotland Programme which, in 25 years, has engaged with over 64,000 teachers and 843,000 young people and seen over 4,800 Green Flags awarded.

We will fund an expansion to Keep Scotland Beautiful' s Climate Ready Classrooms Programme which will see over 4,800 14-17 year olds accredited as carbon literate between 2019 and 2021. This work will not only reaffirm the importance of Learning for Sustainability but crucially help to ensure efforts to address the global climate emergency continue for generations to come.

Learning in the community

Youth work has a significant impact on the life chances of Scotland's young people. In the coming year, we will develop and launch a new National Youth Work Strategy with young people and youth workers.

We will work with the newly-formed Adult Learning Strategic Forum for Scotland to develop an Adult Learning Strategy. The involvement of learners themselves and a range of community partners, such as universities, colleges, third sector organisations and local government, will help us develop the new strategy and it will launch in the coming year.

Supporting pupils' next steps

We are committed to ensuring young people have the right advice and support to choose the career path that is right for them. To do that, we will continue to implement the recommendations of the Learner Journey Review. This year, our work includes:

- publishing a vision for our post-15 education system, rooted in the experience of learners, which shows the diversity of pathways through post-15 education and encourages all parts of the system to consider how best to support those different journeys
- delivering a national communications strategy to explain and promote the breadth of choices in the 15-24 learner journey

We will also build on the progress of the Developing the Young Workforce (DYW) programme, having delivered its headline target to reduce youth unemployment by 40% by 2021 – four years early. We will continue our work to establish effective partnerships between employers and education and maintain our commitment to the DYW employer-led regional groups.

Scotland's colleges enrolled over 300,000 students and employed nearly 11,000 full-time equivalent staff in 2017-18. Since 2007, we have invested over £810 million in new campuses and buildings, such as City of Glasgow College and Ayrshire College.

Work is ongoing across our colleges to improve the quality of the education offered to communities. This is guided by new quality improvement arrangements and refreshed professional standards. This is allowing colleges to target improvements for learners where they are most needed and work will continue this year to embed the approach across the college estate.

In response to Audit Scotland's report, we will work with the Scottish Funding Council to develop a medium-term estate strategy for the college sector. The strategy will help set priorities for investment, improve the student experience and support better outcomes, as well as setting out how the college estate will contribute to efforts to tackle climate change. We will publish our plans in summer next year.

It is our ambition that a child born today in one of Scotland's most deprived communities will, by the time he or she leaves school, have the same chance of entering university as a child born in one of our least deprived communities.

Our work on widening access has been ongoing since 2016. We introduced the bursary for care-experienced students in 2017 and made it equivalent to the real Living Wage in 2018.

The latest figures show our universities are becoming more accessible to students from deprived areas, with a greater number of these students entering higher education. By 2030, students from the 20% most deprived backgrounds should represent 20% of entrants to higher education.

Part of helping people to enter and remain in further and higher education is the support provided to them. The bursary for care-experienced students is now £8,100 per year, as recommended by the independent Review of Student Support, and Scottish universities will offer guaranteed places to students who, at any point in their lives, have been in care and meet the minimum access requirements for the course.

This academic year will see increased bursary support for eligible students in both further and higher education and the higher education bursary threshold has increased from £19,000 to £21,000, meaning more students are able to access the highest level of support. The maximum repayment period for student loans has been reduced from 35 years to 30 years and, from April 2021, the repayment threshold will rise to £25,000.

The support we provide is not only financial. We are working with key partners to develop an integrated approach to student wellbeing in higher and further education, from day one of a student's studies to the day they graduate or receive their qualification. Alongside the actions colleges and universities themselves can take, we are working to support improved local partnerships between colleges and universities, NHS Scotland, Health and Social Care Partnerships, local authorities and the third sector, to support student's mental health needs.

This complements our work to provide more than 80 counsellors in further and higher education over the next four years. Funding for this will be available in this academic year, allowing the recruitment of appropriately qualified and registered counsellors to begin.

Scotland's universities and research institutes conduct world-leading research, making science and research one of Scotland's key strengths. This year we are investing £285 million in supporting university research and knowledge exchange.

We want Scottish businesses and public services to reap the benefits of this investment, so we are continuing to support the translation of research into inclusive economic growth in our national and regional economies. We also want colleges to continue to engage closely with businesses to make sure that the skills they need are available.

Over the coming year, we will respond to the recommendations of two independent reports on how our universities and colleges could further improve their engagement with businesses – from supporting collaboration between universities, colleges and businesses, to improving business performance through innovation and upskilling and reskilling the workforce.

Scottish colleges and universities have strong international links and a growing network of alumni all over the world. We will develop an Alumni Action Plan to harness the power of alumni to promote Scotland as a destination of choice for study and business and strengthen our global economic connections.

CULTURE, HERITAGE AND CREATIVITY

Culture is central to our wellbeing and our social, economic and environmental prosperity and we are working hard to make sure that everyone now and in the future is able to benefit from the cultural and creative experiences Scotland has to offer. We will continue our commitment to ensure free access to Scotland's national museums and galleries.

Our strong investment in Scotland's culture and heritage infrastructure supports new and enriching experiences. Last year, the new V&A Museum of Design opened, heralding an exciting new chapter for Dundee and for the future of design and innovation in Scotland.

Culture should be central to regeneration and this year we will proudly support the Paisley Museum project and its aims to develop a world-class museum at the heart of Paisley's town centre. The museum will continue to build on the momentum from the V&A Museum in Dundee by profiling Paisley's own unique design story, central to Scotland's society, culture and economy.

The UEFA European Championship Bill will prohibit ticket touting and protect commercial interests at the Euro 2020 football matches in Glasgow

This year, we continue to fund the redevelopment of the David Livingston Centre in Blantyre, the Burrell Collection in Glasgow and the new Great Tapestry of Scotland Visitor Centre in Galashiels, making art, history and heritage available across the country.

We will shortly publish a Culture Strategy for Scotland, following our national culture conversation and consultation, which received over 200 thoughtful responses. The strategy will highlight the intrinsic value and reach of culture and its transformational potential to contribute to individual, community and national wellbeing and prosperity.

Our libraries

Libraries do not just provide access to books – they play an essential role in our communities, improving attainment, supporting children and families in the early years, supporting digital inclusion and helping to tackle social isolation and loneliness.

Working with local authorities and the Scottish Library and Information Council, we will continue to support libraries through the Public Library Improvement Fund and working to make sure every child in Scotland is an active library member.

Major events and festivals

Sports, festivals and other events offer a chance for everyone in Scotland to participate in cultural activities, as well as giving us a chance to showcase ourselves to the world.

We will hold more world-class sporting events this year, welcoming the Solheim Cup, the biggest event in women's golf and one of the most prestigious in women's sport, to Gleneagles later this month.

In December, the European Short Course Swimming Championships will come to Glasgow and in June 2020 we will host a number of UEFA European Football Championship matches.

Hosting these events will enhance Scotland's reputation as a destination for major international events, promote Hampden as a leading venue and provide more opportunity for people in Scotland to experience world-class sport. We will introduce legislation to support the successful running of the Euro 2020 matches in Glasgow by prohibiting ticket touting and protecting commercial interests.

In the past year, we have won bids to host future editions of the Sprint World Orienteering Championships and the European Indoor Climbing Championships. The Island Games will be held in Orkney in 2023.

In 2023, we will host the inaugural Cycling World Championships, combining the world championships of 13 cycling disciplines and holding them concurrently in venues across Scotland. Welcoming another innovative event to Scotland confirms our position as a world leader in hosting bold new events. The World Championships will also be used as a catalyst to drive behavioural change in Scotland. It will provide a platform for wider benefits, such as those associated with active travel, healthier lifestyles and activity-based tourism. Our longer-term vision is that Scotland will truly become a Cycling Nation.

Scotland's festivals enhance our reputation as a welcoming, inclusive and creative country and contribute greatly to our culture, tourism and economy.

Since 2008 we have invested £25 million in the Scottish Government EXPO Fund to support our renowned Edinburgh festivals and we have expanded it to include Celtic Connections and Glasgow International. EXPO will continue to support leading projects which promote Scotland's creativity.

We will continue to fund Scotland's Winter Festivals. This includes our National Events programme which aims to engage up to 275,000 people at around 15 events across the country to celebrate St Andrew's Day, Hogmanay and Burns' Night.

In particular, we will build upon the success of the multi-cultural celebration of Scotland's Winter Festivals and the first edition of St Andrew's Fair Saturday in 2018, drawing upon our unique and diverse cultural heritage to showcase Scotland's values of fairness, kindness, inclusivity and internationalism on the world stage.

Last year's celebrations involved 26 cities and towns across 17 local authorities in Scotland, generating £38,682 to support 56 social causes. People from all over Scotland and the world experienced our vibrant culture.

This year's ambitious programme, to be held on 30 November, will show the value of cultural events beyond economic impact, boosting social inclusion, fairness and community engagement and showcase our collective values of fairness, inclusion and diversity.

Our national events strategy, Scotland: The Perfect Stage, launched in 2015 and runs until 2025. Now at the mid-point, this year we will review the strategy to ensure it continues to reflect our ambitions and priorities for Scotland's position on the global events stage.

This year, we will invest £150,000 as part of the International Creative Ambition Programme to strengthen Scotland's cultural links around the world. Supporting young artists to perform at major cultural gatherings will help them to build international connections, sharing cultural experiences, knowledge, skills and experiences to shape our understanding of the world.

Our National Performing Companies are the pride of Scotland and we will continue to support their significant contribution both at home and internationally as they showcase their talents on the world stage.

The Youth Music Initiative will continue its excellent work in supporting young musicians and ensure that our young people have the opportunity to experience music tuition by the time they leave primary school.

The creative economy

As well as being critical to wellbeing, culture plays an important part in our economy with creative industries employing around 77,000 people in Scotland.

Our screen sector is particularly vibrant. Public service broadcasters are increasing their presence in Scotland, with the new BBC Scotland channel and Channel 4's plans to open a creative hub in Glasgow by the end of this year.

Screen Scotland leads the growth of the screen sector through funding and support for film and television production, specialist staff and investment in skills, festivals, audiences and education.

Since Screen Scotland launched last summer, £4.9 million has been allocated to projects through the new Broadcast Content Fund, helping Scottish companies to grow and reach their ambitions in this sector. Over the past year, Screen Scotland has increased funding to a total of £2 million a year to attract inward investment to bring major productions to Scotland and we continue to work together to stimulate conditions for studio and infrastructure growth across Scotland. We will continue our work to support the creative industries.

Celebrating our heritage

We will continue to support and invest in the Gaelic and Scots languages, recognising them as an important part of our heritage and promoting the learning, speaking and use of these languages.

MG ALBA continues to produce high quality Gaelic programmes, working with a range of independent producers, making important contributions in media, arts, training, international co-productions, Gaelic learning and strengthening the economy in areas of low population.

Increased attendance at Fèisean, Royal National Mòd and Ceòlas show our work to increase the profile of Gaelic at home and abroad is successful.

As part of our support for the Scots language, the Scottish Government will ensure its Scots language policy and Action Plan is revised and relaunched this year. We have also worked with Creative Scotland on the forthcoming Scots Awards and Scots Language conference to mark the UNESCO year of indigenous languages in 2019.

We want to see more young people speaking and using Gaelic and our support for Gaelic extends to promoting the growth of Gaelic education at all levels. Funding will be maintained this year to continue our support to local authorities to provide delivery of Gaelic medium education from nursery provision to adult learning.

We are working with Bòrd na Gàidhlig to update their early years strategy to make sure that our expansion of early learning and childcare provision also supports parents who would like their children to learn in the medium of Gaelic.

There is growing demand from parents for Gaelic medium education and we are working with local authorities across Scotland on new Gaelic schools or units. The Govan Annex in Glasgow opened last month and work begins shortly on the Darroch Annex in Edinburgh, due to open in August next year.

As well as investing in physical Gaelic medium education infrastructure, we are also developing and expanding e-Sgoil which is now operating in 21 local authorities and supporting schools with the delivery of 25 subjects including Gaelic subjects.

Our historic environment

2020 marks the 700th anniversary of the 'signing' of the 1320 Declaration of Arbroath, considered by many as the first steps towards democracy as we know it today. With the support of the Scottish Government, National Records of Scotland and National Museum of Scotland are partnering to enable this rarely seen but iconic document to be on public display in Edinburgh from 27 March to 26 April 2020. Historic Environment Scotland (HES) are also planning activities to mark the anniversary alongside the Arbroath 2020 festival, a six month long programme of related cultural and creative activity, launching in April 2020.

Our historic environment tells the story of our past and helps to shape our future. Last year, heritage tourism at HES sites contributed £620 million to Scotland's economy – HES welcomed over 5 million visitors to historic sites and supported more than 128,000 free education visits.

As well as helping more people to access sites, HES has now made more than half-a-million archival items available online, widening access to our history and heritage.

In 2018-19, HES invested £14.5 million in grants and launched the Historic Skills Investment Plan in partnership with Skills Development Scotland to address skills challenges and opportunities in the sector.

Its traditional skills programme is encouraging a greater understanding of traditional building materials and skills and it has increased the number of apprentices developing the skills needed to conserve and manage the historic environment into the future.

This year, HES will:

- implement an updated Climate Change and Environmental Action Plan to protect our historic properties
- work with Community Planning Partnerships to promote the role of the historic environment in place-making activities
- increase the contribution historic properties make to their local economies
- use the historic environment to support education and learning, ensuring that it is accessible to a diverse audience

Cultural and historical environment bodies, including HES, National Records of Scotland and National Library of Scotland, are also increasingly making archival material available on line and widening access to our history and heritage, with millions of items now accessible from anywhere around the world.

Funding our public services

These investments in our public services would not be possible without our approach to taxation. We have taken an approach to make tax fairer and more progressive to raise the additional revenue we need to protect our public services, tackle the effects of UK Government austerity and safeguard those on lower incomes.

Our approach to income tax means that the majority of people in Scotland pay less tax than elsewhere in the UK and those who can afford it pay proportionately more. Our reforms to residential Land and Building Transaction Tax (LBTT) mean that more than 80% of taxpayers have paid less tax compared to Stamp Duty Land Tax or no tax at all and our LBTT first-time buyer relief has helped over 10,000 buyers in the past year.

Our non-residential LBTT has the most competitive rates and bands in the UK for all commercial transactions, ensuring that Scotland is an attractive location for those wishing to buy or lease business premises.

We have introduced legislation to improve our non-domestic rates system to help businesses grow, encourage long-term investment and reflect changing marketplaces.

Our Non-Domestic Rates Bill sets out the move to a three-year valuation cycle as well as how we will ensure a level playing field by reforming a number of reliefs and tackling known avoidance measures. We will also devolve empty property relief to local authorities in time for the next revaluation in April 2022.

We supported amendments to the Transport Bill at stage two which will provide local authorities with the discretionary power to apply a workplace parking levy. As well as helping local authorities to address local transport needs, it is a tool that could be used to help achieve our ambitions to tackle climate change.

We will shortly begin a consultation on the principles of a locally-determined transient visitor levy, prior to introducing legislation next year. This will give local authorities the power to choose to apply a levy if appropriate for their local circumstances, providing a means of responding to some of the local pressures tourism may bring whilst also allowing local tourism offers to be enhanced.

We will also continue to hold talks with other parties to identify a replacement for Council Tax that could be supported by the Scottish Parliament. Should cross-party agreement be reached, we will prepare the necessary legislation to implement the reforms agreed before the end of the next Parliament.

We are taking a path for tax that works for Scotland. Had we followed UK Government's approach to income tax, analysis shows we would have £500 million less to spend this year on improving the quality of life of people across Scotland.

Investing in our workforce

Essential to making sure our public services are fit-for-purpose and deliver for the people of Scotland is a strong workforce.

This year, we continued our commitment to implement a progressive pay policy across public bodies where Scottish Ministers' pay policy applies. Multi-year pay awards have also been agreed, providing added certainty for many of the 470,000 people in our wider public sector workforces, including police officers, those working in our NHS, local government and those teaching in our schools and colleges.

This continuing recognition of the important contribution of our hard-working public sector employees also maintains our commitment to the real Living Wage, helps to reduce overall income inequality and provides a direct boost to household incomes.

This year we will continue to focus on ensuring our public sector pay policy strengthens public services, supports our public sector workforce and is affordable. We will announce our detailed plans later this year in the context of the Scottish Budget.

Working across the public sector

Our commitment to improving the lives of people across Scotland is rooted in the quality and strength of our partnerships and relationships with all those who shape and deliver, high quality public services.

Over the coming year, we will build on our collective achievements and reinforce the critical partnerships between national and local government, the third sector and the many public sector bodies that all have a part to play in improving the wellbeing of our people and communities.

These partnerships are crucial as we continue our work to:

- improve health and deliver better social care
- build inclusive, empowered and resilient communities
- improve skills and educational outcomes
- deliver Fair Work
- tackle poverty
- transform local democracy and accountability
- continue to prepare for the risks of EU Exit
- take action to respond to the global climate emergency

Open government

Scotland works with over 90 other governments across the world to improve the openness and transparency of what we do and improve citizen participation in our work.

Our second Open Government action plan, co-created with third-sector organisations and people across Scotland, was published this year. It will run to 2020 and has a broader scope than before, including local government, scrutiny bodies and regulators.

This work will make sure that those driving reform of our public services and those delivering them have the skills, tools and ways of working with people across Scotland so that they can see, understand and influence the decisions that affect them.

We have brought forward legislation to extend coverage of freedom of information to registered social landlords and their subsidiaries from November this year and we are consulting on further extension in autumn 2019.

We have made significant improvements in how we respond to Freedom of Information Requests. Our performance is holding steady, but we are just short of the 95% target and aim to make further improvements this year.

Wellbeing governments

We hosted the Wellbeing Governments Group in Edinburgh this year. Working with Iceland and New Zealand, the other founding members, we will share expertise and transferable policy practice to help us drive improvements in wellbeing through our economic approach.

We will hold further events in the coming year, including hosting an international business-led summit to promote best practice on how business can help us work towards a wellbeing economy through sustainable growth, inclusion and protecting our environment.

Chapter 4

COMMUNITIES WHERE EVERYONE IS VALUED, PROTECTED AND RESPECTED

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Services that treat people with dignity and respect are at the core of our ambition for Scotland and tackling inequality across our communities is essential to improving everyone's wellbeing.

Scotland's *National Performance Framework* explicitly recognises the obligation to respect, protect and fulfil international human rights – doing so is a crucial part of making Scotland a fairer and more equal society where everyone is valued, protected and respected.

KEEPING OUR COMMUNITIES SAFE

Being safe and protected in our communities is essential to everyone's wellbeing and to ensuring that their rights are respected.

Police

We have committed to protect the police revenue budget for the lifetime of the Parliament. We are providing a further £29 million this year, supporting Police Scotland in the implementation of its 10-year policing strategy.

This is supporting a technology-enabled transformation of the service, making sure that it is fit for the 21st century. Police officers are receiving new mobile devices, allowing them to spend more time in the communities they serve, rather than being tied to police stations, and a single national computer network will improve performance across the country. Police Scotland is trialing a new Contact Assessment Model which will improve the response to those calling the service.

This year, we are consulting on the future strategic priorities which Ministers set for Police Scotland and the Scottish Police Authority. As part of that, we will be considering the sustainability of policing in Scotland.

We introduced the Scottish Biometrics Commissioner Bill to Parliament this year, which will help to ensure effective, ethical and proportionate practices in the use of biometric data for policing purposes, keeping communities safe whilst respecting the rights of the individual and improving the accountability of the police. We expect the Bill to complete its passage in Parliament next year, after which Parliament will appoint a Biometrics Commissioner.

Extending this work, we will establish an independently-chaired group to ensure that police powers allow for the use of technology to make policing more effective and efficient, as well as ensuring that these powers are used proportionately and ethically.

Making sure that police complaints and misconduct investigation processes are the best they can be is an essential part of a modern and transparent justice system. An independent review led by Rt Hon. Dame Elish Angiolini DBE QC has published its preliminary report and we will be considering, with partners, options to take forward the recommendations. We have also appointed the new Police Investigations and Review Commissioner.

Putting victims at the centre

We will continue our major reforms of our justice system, making sure it is accessible to those who need it and focusing on improving support for victims of crime. Our goal is to put victims at the heart of our justice system, making sure that their voices are heard and their journey through the system is as streamlined as it can be.

In the past year, we have established the Victims Taskforce and, with the support of Victim Support Scotland in partnership with criminal justice agencies and third sector support agencies, we are working to make sure our justice system is more victim-centred.

The Taskforce will be directly informed by a Victims Sounding Board and victim reference groups. These are made up of victims and their families, allowing them to voice their experiences and influence the work of the Taskforce.

This will build on the new Service for Families Bereaved by Crime, which provides dedicated and continuous support to families bereaved by murder and culpable homicide.

Improvements to how victims experience prison and parole processes are already in train too. Under the Victim Notification Scheme, victims of life sentenced offenders are now given the opportunity to make representations in person ahead of decisions about temporary release and we have consulted on further opportunities for victims to describe their experience in the way which works best for them within the parole process.

We are consulting on expanding the range of serious crimes where victims can make a statement to the court and we will introduce legislation so victims can set out to the court how an offence has impacted on them physically, emotionally and financially.

Our work over the coming year includes:

- carrying out work to better understand where the gaps are in how we support victims or witnesses involved in the criminal justice system
- making sure that wherever victims come into contact with the justice system, from early engagements with police to attendance at court and beyond, a trauma-informed approach is taken
- considering the outcome of Lady Dorrian's review of the management of sexual offences and how these can be better conducted through the courts
- developing a sexual offences and gender-based violence work stream under the Victims Taskforce, taking into account the remit of Lady Dorrian's review
- rolling out a statutory appropriate adults service, backed by £1 million of new investment, to provide communication support to vulnerable adults during police procedures
- investing in the upgrade of facilities for child witnesses to give pre-recorded evidence, including a new facility in Glasgow launching in the autumn
- beginning the first phase of implementation of the pre-recorded reforms in the Vulnerable Witnesses (Criminal Evidence) (Scotland) Act, starting with child witnesses in certain High Court proceedings
- developing Scottish standards for the Barnahus concept, publishing draft standards for consultation at the end of this year and finalised standards in 2020
- progressing our Restorative Justice Action Plan, providing voluntary, safe communication between victims and those who have harmed them, helping victims to move on while seeing perpetrators face the consequences of their actions. This work, backed by £300,000 of new investment, will help to reduce victims' fear of further victimisation and have a positive impact on reducing reoffending. We will map existing provision of restorative justice services, provide training and increase both public awareness and the availability and consistency of services across Scotland by 2023

Overseen by the Victims Taskforce, we will:

- carry out a systematic review of all publications, whether hard copy, online or in official correspondence, to make sure that they are victim-centred, consistent, up-to-date and use clear and compassionate language
- review the process used to develop and publish the criminal justice bodies' annual standards of service for victims and witnesses so that victim support organisations are more directly involved
- improve the information available, reviewing how data is shared between different organisations victims come into contact with and exploring the use of digital tools to support victims

Access to justice

Mediation is an often underused means of resolving disputes within our civil justice system. It has potential benefits such as providing a low cost or free service to the majority of litigants, creating opportunities for cases to move faster and more efficiently to a resolution and reducing the inequality of access to the civil justice system due to the high costs of litigation. We will respond to the report of the Expert Group on Mediation by the end of this year.

Legal aid is a fundamental part of our justice system and we must make sure it can be accessed by those who need it. We have uplifted all legal aid fees by 3% since the independent review *Rethinking Legal Aid,* making Scotland's legal aid spend per head among the highest in the European Union and with the widest scope and eligibility.

We want to make sure the legal aid system is user-focused, flexible and valued as a public service and so we are consulting on further improvements, including how we might use targeted interventions to remove the barriers some people face in accessing legal aid, including in cases of domestic abuse. This work has been informed by the recommendations of the National Advisory Council on Women and Girls.

We will set out our plans by the end of this year and launch a consultation on reforming our legal services early in 2020.

We are developing new technology to transform how the justice system operates – from police mobile devices to improved facilities for pre-recording evidence – making our justice system as efficient as possible and improving the experience of those involved in it.

This year, we will develop new procedures and policies for the collection and sharing of digital evidence across the justice system and will pilot this new technology next year.

We will publish the independent Jury Research report and carry out engagement on what these findings may mean for future criminal justice reforms.

Transforming custody, rehabilitation and community interventions

We will continue our work to modernise our prison service.

Recognising the Scottish Prison Service's role in our justice system, we are continuing to invest in our prison estate. This includes progressing work to replace HMP Barlinnie, Scotland's largest prison, and continuing to progress a new model for the female custodial estate, with intensive support services to help women to overcome issues such as alcohol, drugs, mental health issues and domestic abuse trauma.

The first two community custody units will open by the end of 2021, providing levels of security which are proportionate with the level of risk posed by the majority of female offenders and will allow women in custody to be closer to their communities. Construction of the new Women's National Facility is scheduled to begin early in 2020.

We continue to support the 12 Prison Visitor Centres, providing support to families with relatives in prison – particularly for children affected by parental imprisonment as part of our work to tackle ACEs. Services run by our third sector partners help families deal with the issues they face as a result of imprisonment and give them an important source of advice, information and support.

Our focus on prevention, early intervention and effective community interventions has helped achieve a 20-year low in reconviction rates.

We are progressing action to tackle Scotland's internationally high rate of imprisonment – the highest in Western Europe. The evidence tells us that community sentences are more effective than short-term custodial sentences – people released from prison after a sentence of 12 months or less are twice as likely to be convicted again than those who have served a Community Payback Order.

While sentencing decisions are a matter for the independent judiciary, we have extended the presumption against short sentences to 12 months or less. Our aim is to reduce disruptive and counter-productive short-term prison sentences which often lead to homelessness, unemployment and family breakdown.

The extension to the presumption came into force this summer but first we made sure that additional safeguards were put in place for victims of domestic abuse.

We will protect £100 million of funding this year for Justice Social Work, investing £9.5 million a year more than in 2015-16 on community justice services such as community sentences and electronic monitoring. We will monitor the impact of the presumption and other factors closely, including the availability of community sentences relative to demand.

We recognise that remand can be as disruptive to employment, housing and family relationships as short-term prison sentences.

We have issued updated guidance on Bail Supervision and made additional funding available. We will look more widely at how bail law operates and at access to support and mentoring schemes in the community to make sure that it is only used when it is needed to protect the public.

We will commence parts of the Management of Offenders (Scotland) Act 2019 that strengthen the Home Detention Curfew regime in Scotland. It will introduce a new offence of remaining unlawfully at large, create new powers of recall for the prison service and give the police greater powers to apprehend anyone who absconds.

The Management of Offenders (Scotland) Act 2019 also modernises the Rehabilitation of Offenders Act 1974 allowing people to move on from their offending and improve their opportunities for gaining employment and training, reducing their likelihood of reoffending and enabling people to contribute positively to society.

Our work to increase access to and improve confidence in alternatives to short-term prison sentences is an important part of the solution. But there are long-term drivers within our justice and penal system, such as online offending, impacts of trauma and severe and multiple disadvantage in our communities, which need to be addressed too.

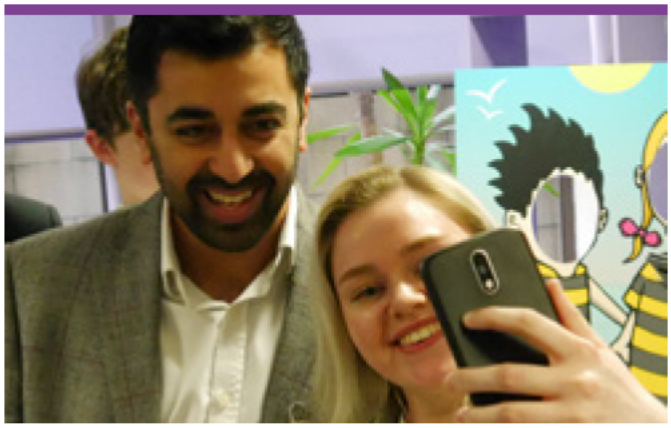
This year, we will work with justice agencies, local government, the third sector and others to identify and further progress the whole system changes we need to make to respond to Scotland's internationally high rate of imprisonment.

Our approach will be informed by public health responses to issues such as the misuse of drugs and the impact of adversity, trauma and multiple disadvantage. We will set out a long-term vision for our justice system and how we respond to the changing nature of offending in ways which are proportionate, just, effective and promote rehabilitation, as well as keeping our communities safe and responding to the needs of victims.

The Defamation and Malicious Publication Bill will ensure that a more appropriate balance is struck between protecting reputation and freedom of expression

Cashback for communities

Since 2008, nearly £110 million has been committed for investment back into communities as a result of seizing proceeds of crime. This autumn, we will announce the projects and partners for phase 5 of the Cashback for Communities programme which will launch next spring. It will make up to £18 million available over three years to expand young people's horizons and increase the opportunities they have to develop their interests and skills and support them into positive destinations.



Modernising our laws and learning from the past

New legislation for drug-driving limits will come into force in October this year. The new law covers 17 different drug types and means that Scotland is leading the way in creating safer roads with drug-driving limits in place, as well as having a lower drink-drive limit than the rest of the UK.

A number of our other laws need to be updated to reflect life in modern day Scotland.

We will introduce the Defamation and Malicious Publication Bill to Parliament this year, which will simplify and modernise the law and provide a clear framework which balances freedom of expression and protection of individuals' reputations.

We have consulted on the laws of succession and are currently consulting on the rules for judicial factors. We will respond to the results of both consultations by spring next year.

We will also carry out some focused consultation on aspects of the Scottish Law Commission's Report on Moveable Transactions, the recommendations of which we are currently considering.

As well as looking to the future, there are important events from the past which we need to learn lessons from. The independent review of the impact of policing during the Miners' Strike will publish its final report in the autumn and we will consider its findings and any appropriate actions.

A justice system which better reflects our communities

This year marks 100 years of women in the legal profession in Scotland. Whilst progress has been made, there is broad agreement that more needs to be done to ensure that the legal profession reflects the society that it serves and to tackle gender disparity and the gender pay gap. We will work with the legal profession to encourage further improvements, including, for example, emphasising zero tolerance of bullying and harassment and expanding family-friendly policies.

There are also too few women and people from minority ethnic communities in senior positions in the legal profession. We will work with key stakeholders to understand what further action can be taken to remove real or perceived barriers that might be preventing talented legal professionals from reaching senior positions, including applying for judicial office.

Fire and rescue

The Scottish Fire and Rescue Service continues to deliver emergency and prevention services across our communities as well as taking important steps to modernise and transform.

Thirty-eight new rapid response vehicles and 18 new whole-time staff are now available in rural areas of Scotland, with a further 42 staff to be appointed over the next two years. The Youth Engagement Scheme will launch this year, preparing young people with important opportunities such as first aid training to develop their skills and confidence.

The Scottish Fire and Rescue Service conducted 69,000 home fire safety visits last year. The Safe and Well project will help to reduce injuries from unintentional harm by incorporating wider health and social care considerations and improving referral pathways with other services. It will increase the number of vulnerable people across Scotland getting support to maintain their personal resilience, independence and quality of life.

As well as contributing to the wellbeing of our communities, the Scottish Fire and Rescue Service is taking action to tackle climate change.

To ensure the Service plays its part in reducing emissions, it will increase its charging network to include a further 23 locations, receive delivery of 45 ultra-low emission cars later this month and introduce a replacement van fleet of 20 small- and medium-sized vans.

Across the UK, lessons have been learned as a result of the terrible tragedy at Grenfell Tower.

In Scotland, we have reviewed fire safety regimes in high-rise domestic buildings. While no major gaps in our legislation were identified, we will take action in a number of key areas to protect our communities living in these buildings. We will:

- develop specific fire safety guidance aimed at all residents of high-rise domestic buildings
- introduce Scottish guidance on fire safety in purpose-built blocks of flats, guidance on fire safety in specialised housing and guidance on fire risk assessments
- put in place more stringent fire safety provisions for external wall cladding systems
- take a consistent position on the storage, removal and enforced prohibition of combustible materials in common areas
- publish new regulations for automatic fire suppression systems in all new flats and some houses in multiple occupancy by October next year
- launch a fire safety campaign for common areas

Making sure our buildings are safe from fire and are of the highest standards is essential. In the past year, we have implemented the recommendations of two Scottish Building Standards system reviews, developing new guidance and establishing the Future Boards Programme to take forward a package of measures, including making sure we have a high quality workforce and taking steps to improve compliance with standards.

Following a national consultation earlier this year that attracted over 16,300 responses, we will take forward work with partners including the emergency services, local authorities, animal welfare organisations, the firework industry and communities to explore ways to reduce the negative impact fireworks can have.

Security

We continue our work with partners to ensure Scotland is a safe place to live and work. We continuously improve our national security based on Chilcot principles and work with UK Government to make sure that delivery of the UK Counter-Terrorism Strategy, CONTEST, continues to fit the Scottish approach and environment. As part of this approach, we will continue to take a balanced, proportionate and preventative approach to tacking radicalisation.

Over the past year, we have worked with authorities across Scotland to raise awareness and improve knowledge of this issue, as well as providing resources and self-assessment tools for local government, further education colleges and universities.

We will continue that work this coming year, including making a new resource about online radicalism available to schools, and introducing consistency to the Prevent Professional Concerns multi-agency process.

The Hate Crime Bill will make hate crime legislation fit for 21st-century Scotland

PROTECTING RIGHTS

Hate crime has no place in Scottish society. We have been taking forward work to consolidate and update laws on hate crime, consulting widely with key stakeholders and with the public. We have published our analysis of that consultation and will introduce a Bill, making hate crime legislation fit for 21st-century Scotland.

As well as introducing legislation, we will encourage reporting by launching a hate crime campaign to challenge the prejudice and attitudes that fuel intolerance. Having already adopted a definition for anti-Semitism, we will consult on adopting a definition of Islamophobia. We will also explore what more can be done to ensure the safety and security of places of worship.

Human rights

The First Minister's Advisory Group on Human Rights Leadership presented its recommendations at the end of 2018. We have now established a National Taskforce for Human Rights Leadership which will work to ensure Scotland is a world leader in putting human rights into practice.

It will focus on the development of a new statutory framework which will help to safeguard the human rights of everyone in Scotland. It will drive work to give practical effect to the protections provided by other treaties and obligations, including the Convention on the Elimination of all forms of Discrimination Against Women, and bringing them into domestic law. The Taskforce will report on its work in 2021.

Human trafficking and exploitation

Human trafficking is a hidden crime and its true scale is unknown. Victims may be frightened or unable to ask for help due to fear of their traffickers, distrust in the authorities and a lack of awareness that there are agencies that can support them to safety and recovery.

We are consulting this year on creating a statutory 'duty to notify' – a legal duty on specified Scottish public authorities to notify Police Scotland about suspected human trafficking and exploitation victims.

This duty will give a more accurate picture of the scale and extent of this crime in Scotland and help agencies and services to target their enforcement activity and support services.

We will also review the Trafficking and Exploitation Strategy and, together, this work will help to improve how we identify and support victims, identify perpetrators and disrupt their activity and address conditions in our communities that foster trafficking and exploitation.

Democratic rights

We want to increase democratic participation in Scotland and encourage more people to use their vote and stand for election.

We have led the way internationally by lowering the voting age in local and Scottish Parliament elections to age 16.

We have introduced legislation to strengthen democratic engagement.

The Scottish Elections (Franchise and Representation) Bill proposes that everyone who has a legal right to live here, including foreign nationals, should have the right to vote in Scottish Parliament and local government elections. Giving fair access to voting rights shows that we value equally all those who choose to make Scotland their home. It is also proposed that prisoners serving 12 months or less will be allowed to register and vote, ensuring that we are compliant with the European Convention on Human Rights.

The Scottish Elections (Reform) Bill will also deliver improvements for voters. We have introduced a provision to enable the Scottish Parliament to debate and decide on whether we should move to five-year terms for the Scottish Parliament and for local government. Among other improvements to electoral administration, it is proposed to give greater scope to take into account community ties and local geography when ward boundaries are reviewed.

These changes to modernise our electoral system and widen who takes part in it will be ready in time for the new Scottish Parliament election in 2021 and local government elections in 2022.

Children and young people's rights

We have taken the decision to incorporate the United Nations Convention on the Rights of the Child into Scots Law, the only country in the UK to do so. We are consulting on the best method to use to do this and will report on our findings in the coming months, delivering legislation by the end of this parliamentary session.

While that process is ongoing, our commitment to ensuring children's rights continues.

We have supported the removal of the existing defence which allows parents to physically punish their children and, to make sure children's voices are heard clearly in family law cases, we are bringing forward a new Children Bill.

We have raised the age of criminal responsibility to 12 years old, leading the way in the UK to make sure that no child under 12 will accrue a criminal record.

This year, as we celebrate the 30th anniversary of the UN Convention on the Rights of the Child, we will step up our awareness-raising programme for children's rights. We will:

- work in partnership with children, young people and wider stakeholders to co-produce materials that highlight how children's rights benefit us all
- refresh the 'Introduction to children's rights' e-learning tool
- promote the use of Child Rights and Wellbeing Impact Assessments by public bodies and third sector organisations

Making sure young people's voices are heard and providing space for young people to challenge how we think about different generations is essential to making Scotland a place where everyone grows up respected.

Our 2018 Year of Young People saw young people engage in how we make policy, ensuring that government decisions take into account what matters for them – over 750,000 young people attended a related event last year.

We will continue to listen to young people's views, making sure they can contribute to our society and help us to build inclusive and strong communities.

Making Scotland an equal and connected place

Many people in Scotland are living longer, healthier lives, which is a huge achievement.

However, older people can be marginalised and our *Older People's Framework*, published this year, sets out how we will remove barriers, tackle inequalities and ensure older people can flourish, as well as making sure that our communities benefit from the contributions older people can make. This year, we will:

- develop a strategy to combat negative perceptions of older people and work with others, including the media, to tackle ageism
- review guidance on housing adaptations
- improve provision of and access to mental health services, including psychological therapy for people over the age of 65
- increase digital inclusion of older people

Social isolation and loneliness can affect people of all ages and stages of life. It can have a significant impact on a person's physical and mental wellbeing and is a major public health issue.

Last year, we published our first strategy to tackle social isolation and loneliness, and build stronger social connections across our communities. We have established a National Implementation Group to help us take action and will publish a delivery plan setting out how we will deliver better outcomes across our communities.

This year we will invest £80,000 to support the befriending sector, ensuring more people can benefit from this vital lifeline.

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The Civil Partnership Bill will make civil partnerships available to mixed sex couples

Civil partnerships

Last year, the UK Supreme Court ruled in a case brought in England and Wales that preventing mixed sex couples from entering into civil partnerships is not compatible with the European Convention on Human Rights (ECHR) on equality grounds.

We consulted on the future of civil partnership in Scotland and, following careful consideration of responses, we will introduce legislation to make civil partnerships available to mixed sex couples.

Equality for women and girls

We are proud of the progress we have made on equality in Scotland, but there is still work to do.

We were the first government in the world to fund access to free sanitary products across our schools, colleges and universities and across wider communities, increasingly to those on low incomes.

We are providing up to £8.8 million to continue to make sanitary products available in a wide range of places. Our partnership approach has given organisations the chance to shape delivery in line with local need. It is already embedding into society and making a difference to people's lives. We need to go further and will launch a media campaign to challenge the stigma around menstruation and sanitary products.

We also continue to tackle the causes of inequality women face in the workplace, including with our work on addressing the gender pay gap.

Last year, our Gender Representation on Public Boards (Scotland) Act 2018 set a statutory objective for equal representation of women on public sector non-executive boards by 2022.

This year, we reached a milestone with women accounting for half of all board members appointed to public bodies across Scotland. This is a significant step and this year we will continue our work to make sure there is equal representation on every individual board.

We want to make sure that we do everything we can to tackle the root causes of inequality for women and girls.

The National Advisory Council on Women and Girls published its first report at the beginning of this year and we will be taking forward action based on their recommendations, learning from best practice in Scotland and around the world to make sure everyone is treated fairly and can achieve their full potential.

Over the coming year, we will:

- create a What Works? Institute to identify, test and promote best practice in changing public attitudes to and challenging stereotypes about women and girls' equality and rights – we will work with partners to develop a framework for the Institute and its work by summer next year
- establish a Gender Beacon Collaborative to promote gender equality across Scottish public life – membership and ambitions for the collaborative will be announced later this year
- fund a post in Gender Equal Media Scotland to increase its impact, engagement and visibility amongst industry and other stakeholders
- establish a short-life taskforce to look at gender inequality in education and how we can take additional, better connected and bolder action to embed gender equality within early years and school education
- hold an international event with the Open Government Partnership, academics, civil society groups, public servants and representation from the National Advisory Council on Women and Girls to look at how to address inequality and co-design gender equity measures
- continue to lobby the UK Government to improve parental leave
- support work to encourage 50/50 representation at elections

Violence against women and girls

Violence against women and girls is a breach of human rights. It is unacceptable in any society – everyone has the right to live free from the threat of violence and abuse.

We have committed to ending it for good and our actions are focused on properly securing the rights of women and girls.

We are guided by our commitment to the *UN Sustainable Development Goals* and *The Convention on the Elimination of all Forms of Discrimination Against Women.*

We will continue our work to prevent gender-based violence, tackling the societal conditions that allow it to happen. We will make sure that our justice, health and education systems are set up to address it and we will continue to provide the right support at the earliest point to women and children who are experiencing abuse.

Importantly, too, we will hold the perpetrators of gender-based violence to account.

Working with COSLA and other partners, we have made significant progress already and we will redouble our efforts over the coming year.

Equally Safe Priority 1 – Scottish society embraces equality and mutual respect and rejects all forms of violence against women and girls

Working with schools, colleges and universities, we have supported work to promote respectful, responsible and confident relationships amongst young people as well as providing a safe environment for students and staff.

This includes providing over £590,000 of additional funding to Rape Crisis Scotland to extend their schools education programme, with 26,000 young people benefiting. We have supported universities and colleges to adopt the Equally Safe Tool Kit.

We will develop national guidance for schools which will set out the range of support and practical prevention and intervention measures available which can be used to ensure the safety, health and wellbeing of children and young people.

We are also taking action across society. We are committed to a major national campaign on sexual harassment and sexism and this is now in an advanced planning stage while our employer accreditation programme is being piloted in seven council areas across the country.

Equally Safe Priority 2 – women and girls thrive as equal citizens: socially, culturally, economically and politically

Violence against women and girls is a result of women's and girl's status in society, and so we need to eliminate the gender inequality that lies at its root. We are taking broad action to advance women and girls' equality, including:

- promoting gender equal pay, supported by the real Living Wage
- improving women's health outcomes, including providing mental health support for all women during pregnancy and after giving birth
- increasing access to period products
- expanding entitlement to funded early learning and childcare and piloting approaches to flexible and affordable community-based out-of-school care

Our work to respond to the recommendations of the National Advisory Council on Women and Girls is an important part of our efforts to make sure women and girls grow up and live in a country which allows them to achieve their full potential.

Equally Safe Priority 3 – interventions are early and effective, preventing violence and maximising the safety and wellbeing of women, children and young people

Following the introduction of the Female Genital Mutilation (Protection and Guidance) Bill earlier this year, we held a national summit to explore what further action is needed to tackle female genital mutilation. We will take this work forward this year, as well as refresh our guidance on forced marriage.

This year we will continue to improve the experience of rape and sexual assault victims in our health and justice systems by:

- introducing the Forensic Medical Services (Victims of Sexual Offences) Bill. This will improve the way in which forensic medical examinations and associated healthcare are conducted, taking a trauma-informed approach and introducing a self-referral model for victims of sexual crime who wish to have a forensic medical examination without first reporting a crime to the police
- supporting the development of the Equally Safe Multi-Agency Centre in Edinburgh which will bring experts from child and adult protection, healthcare, police and social work together under one roof to provide age-appropriate, wrap-around care for children, young people and adults who have been victims of sexual assault and other forms of abuse and neglect

- supporting a pilot to visually record rape complainers' initial statements to police to be used as evidence later in a trial, with the aim of reducing the need for them to recount their ordeal again in court
- considering the outcome of Lady Dorrian's review of the management of sexual offences and how they can be better conducted through the courts
- supporting the development of trauma training packages for justice organisations who come into contact with victims
- engaging with Rape Crisis Scotland's Survivors Reference Group to make sure our work continues to be informed by the experience of survivors

Equally Safe Priority 4 – men desist from all forms of violence against women and girls and perpetrators of such violence receive a robust and effective response

The Domestic Abuse (Scotland) Act 2018 came into effect in April this year, creating a specific offence of domestic abuse covering not only physical abuse but other forms of psychological abuse and coercive and controlling behaviour.

Its introduction has been supported by a national public awareness campaign and training for police officers, members of the judiciary and prosecutors.

We will continue to work with those in housing, social work, health and schools to ensure that professionals have resources available to them to support a shared understanding of domestic abuse.

We will promote the principles of the Safe and Together model™ which seeks to keep children who have experienced domestic violence safe and together with their non-abusive parent, while supporting and acknowledging non-abusive parents' protective efforts and ensuring perpetrators are held accountable for their abuse.

We have supported the roll out of the Caledonian Programme to an additional six local authorities with an additional £2.8 million, meaning more male perpetrators will receive the right rehabilitation services to address the issues giving rise to their offending behaviour.

This year we will explore policy options to increase access to positive behaviour change programmes for domestically abusive men.

We are committed to exploring what more can be done to address prostitution in Scotland, recognising it as a form of violence against women.

We will consult on approaches to challenge men's demand for prostitution, continue to support work to reduce the harms associated with commercial sexual exploitation and help women to exit prostitution.

This year, we will consult on a statutory 'duty to notify' when public authorities suspect human trafficking or exploitation is happening.

The Forensic Medical Services (Victims of Sexual Offences) Bill will improve the way in which forensic medical examinations and associated healthcare are conducted

LGBTI equality

We continue to advance Scotland's reputation as one of the most progressive countries in Europe for LGBTI equality.

Were Scotland able to be rated as a single entry in the ILGA Europe Rainbow Index, we would be the third most progressive country in Europe and we are working hard to make even more progress.

The Historical Sexual Offences (Pardons and Disregards) Act 2018 was passed by Parliament last year, righting years of injustices suffered by people across Scotland. Next month, when the legislation is implemented, all men convicted of historical same sex sexual offences will receive an automatic pardon under the new law and be able to apply to have the offence disregarded so it will never show up on any form of disclosure or criminal records check.

We will continue to invest significant funding in crucial LGBTI work, with over £1 million in the next year supporting work on raising awareness, supporting LGBTI adults and young people and tackling the inequalities they experience.

But there is more to do to create a society where no one suffers hate, fear or discrimination simply because of their gender identity or sexual orientation.

Bold recommendations to embed LGBTI inclusive education within our school curriculum are being implemented and changes will be made to our Census processes, where optional questions on transgender status and history, as well as sexual orientation, will be asked on a voluntary basis for the first time.

The Census (Amendment) (Scotland) Act 2019 makes clear that there will be no penalty for not answering these questions but we hope that this change will improve our understanding of communities across Scotland and ensure our work is designed in ways which works best for our diverse population.

We will publish a draft Gender Recognition Bill by the end of this year, setting out our proposals to reform the current process of obtaining a Gender Recognition Certificate and how we will bring Scotland in line with international best practice. An Equality Impact Assessment will be published alongside the Bill and seek to address concerns which have been raised. We will hold a full public consultation on the detail of the Bill.

This year, we will:

- continue to challenge transphobia
- develop guidance for Scottish Government and the wider public sector on balancing trans rights and the rights of women, within the overall context of our clear commitment to promoting trans inclusion
- establish a working group to consider steps to improve the lives of non-binary people
- establish a working group to make recommendations on the collection and disaggregation of data in relation to sex, gender and gender identity
- consider how best to improve the health and wellbeing of trans people, and ensure that children and young people exploring their gender identity have access to the right support
- produce updated guidance for schools to help them to support transgender pupils, within the current legal framework, by the end of this year

All of this work is grounded in the firm belief that we will continue to protect and promote the rights of women and of trans men and women.

Race equality

Supported by our commitment to the *International Convention on the Elimination of all forms of Racial Discrimination,* our Race Equality Action Plan sets out our work to remove barriers and create equal opportunities for everyone in Scotland, regardless of their race.

We held our first Race Equality Conference in December, which focused on how we can take action to improve employment outcomes for people from minority ethnic communities and we will hold the second conference in early 2020.

We have taken action to improve the wellbeing and protect the human rights of Gypsy/Traveller families in Scotland. Across our work, the voice of this community is being heard and having a say in the issues that affect them. We have funded a new Gypsy/Traveller Women's Voices Project, provided practical and financial support to enable young people to work with us and have provided significant additional funding to improve the delivery of education to Gypsy/Traveller communities.

We are taking this important work forward this year, publishing our joint Action Plan with COSLA this autumn. It will set out how we will tackle racism and discrimination towards Gypsy/Travellers, increase representation in public life and decision-making in communities and improve the wellbeing and outcomes for Gypsy/Travellers. The Plan will also set out how we will deliver more culturally-appropriate and better accommodation, including a £2 million additional investment in public sector Gypsy/Traveller sites, designed to improve quality of life.

Caring for our veterans

Scotland recognises the value that members of the armed forces, veterans and their families bring to our communities and society.

We are working to ensure that ex-servicemen and women receive the support and advice they need to transition from military to civilian life. We will continue our work to take forward the recommendations of the Veterans Commissioner and we will publish an implementation plan for the Strategy for our Veterans by the end of this year.

Since 2008, we have invested over £1.4 million in over 150 projects to support veterans and will continue that support this year with projects across Scotland aiming to combat loneliness and social isolation, support improved employment outcomes and provide wider support.

POVERTY AND INEQUALITY

We are taking action to build a fairer and more equal country, tackling poverty and inequality to make sure everyone in Scotland has equal opportunities, all children and young people can realise their aspirations and all those who need support can get it.

We are making sure that the voices of those who experience poverty are heard and we will speak up for those who are not being listened to or who are disempowered.

We have set ourselves ambitious targets to reduce child poverty and are working hard to boost incomes and reduce household costs for those who need it most.

Next year we will continue to invest £100 million to protect people from the worst of UK Government welfare cuts. This is part of our wider investment in support for low-income households. An initial assessment, published in the *Tackling Child Poverty Progress Report*, suggests that the Scottish Government invested over £1.4 billion in these households in 2018-19.

Our Council Tax Reduction Scheme, backed by £351 million in 2019-20, benefits almost half-a-million households and saves recipients an average of £701 per year.

Our Money Talk Team service, supported by £3.3 million to 2020, provides older people and low-income families with help to maximise their incomes by claiming the benefits and other support they are entitled to. We will continue to fund these essential services in the coming year.

The majority of families living in poverty include an adult in work. Our Fair Work agenda and our efforts to increase the number of people receiving the real Living Wage is helping to lift these families out of poverty and improve the life chances of their children.

Food insecurity

We know that too many people struggle with the cost of food and our commitment to the *UN Sustainable Development Goals* means that our goal is for zero hunger in Scotland.

This year we have delivered the new Best Start Food scheme to support families on low incomes to access healthy and nutritious food. The introduction of the Best Start Foods payment card could enable a family on low-income benefits to receive up to £1,054 over the course of Best Start Foods entitlement for children up to 3 years of age.

Our £3.5 million Fair Food Fund is in place and has already helped community organisations to provide more dignified responses to food insecurity. We also recognise the extra pressure on family finances during school holidays, when support like Free School Meals is not available. The Fair Food Fund has ensured that over 60,000 young people were able to access fun activities and nutritious food in the holidays this year, through a range of third sector and local authority projects such as the innovative Highland Holiday Hub. We will continue to support holiday projects and use the learning from the investment in our developing policy for out-of-school care.

Social security

UK Government welfare cuts have increased the risk of deprivation and hardship for low-income families across Scotland.

Our new agency Social Security Scotland has now been up and running for a year, providing over 91,000 people with £190 million in vital support for 2018-19, increasing to over £350 million for 2019-20.

This essential public service is guided by our core values of fairness, dignity and respect. These are embodied in the Social Security Charter which was co-developed with people with lived experience of social security systems and was unanimously approved by Parliament this year. It sets out how the agency will deliver for the people of Scotland and how it will protect and realise people's rights.

Now that the Charter is in place, we will work with people who have experience of the benefits system to co-develop a new framework for how we measure people's experiences of Social Security Scotland and will publish it next month.

In the past year, we have also established the Scottish Commission on Social Security, which provides independent scrutiny of our social security system and holds us to account. We have worked with the Scottish Courts and Tribunal Service to establish the Social Security Chamber of the First-tier Tribunal for Scotland – a body independent from Scottish Government which hears appeals against decisions made by our agency.

We are now delivering five payments to people in Scotland – the three Best Start Grant payments, Best Start Foods and the Carer's Allowance Supplement.

Carer's Allowance Supplement is a new benefit which addresses the injustice that Carer's Allowance is the lowest of all working age benefits. Our supplement means that the support received by carers is now higher than that provided by Jobseeker's Allowance recognising the contribution carers make to society and showing that we greatly value the role that they play. This year's recipients of Carer's Allowance will receive £452.40 more than equivalent carers in the rest of the UK. In total, our investment through Carer's Allowance and the Supplement is over £320 million in 2019-20.

Our Best Start Grant payments provide parents and carers on certain benefits and tax credits with financial support during the early years of a child's life. This is £600 during pregnancy or after birth for a first child and £300 for any siblings thereafter, with £250 at around the time a child starts nursery and another £250 when they reach school age. In the first seven months, we have made more than 42,000 Best Start Grant payments, putting £12.9 million in the pockets of low-income families.

Best Start Foods, providing low-income pregnant women and families with help to buy healthy food, launched this summer and we will provide £6 million of funding for it in 2020-21.

Best Start Foods replaces the UK Healthy Start Voucher scheme, providing more money and introducing a new payment card to remove the stigma associated with the current paper vouchers. Families will also have access to a wider range of foods and more retailers will be taking part. This payment is part of Best Start Grant, meaning families can apply for all payments on one form, in order to receive everything they are entitled to.

These first payments are already making differences to families across Scotland, helping to lift them out of poverty and secure a better future.

This month, we will launch our sixth payment – Funeral Support Payment. This will help people on low incomes who are struggling with the costs of a funeral.

The new benefit will be backed by an additional investment of around £2 million. This has allowed us to widen eligibility to 40% more people than the current UK Government benefit, helping far more people in these very difficult circumstances.

Over the past year, we have also supported local authorities to remove burial and cremation charges for people aged 18 and under.

Assuming the necessary cooperation from the UK Government, our Job Start Payment will be delivered in spring 2020. The Job Start Payment is a new payment to help young people with the cost of moving into the workplace after a period of unemployment. In its first year, around 5,000 young people could benefit from this support.

The £250 payment (or £400 if a person has children) will help with things like travel costs, clothing, lunches and other expenses on return to work. Care leavers will get this help if they are receiving a qualifying benefit, even if they have not had a period of unemployment.

Further social security benefits will be introduced in the coming year:

- this autumn, our new Young Carer Grant will become available. £300 a year will be given to young carers aged 16, 17 and 18 with caring responsibilities, to help them to do the things that are the norm for other young people. We expect that this payment will help 2,400 young carers across Scotland
- in summer next year, we will launch our new claims service for the first of our three Disability Assistance benefits – Disability Assistance for Children and Young People. This replaces the UK Government's Child Disability Living Allowance and we will give any child in receipt of the UK Government benefit prior to their 16th birthday an automatic award of our payment up to age 18, to remove the cliff edge many young people experience currently when they turn 16.
- also in summer next year, we will deliver on our commitment to provide independent advocacy to disabled people who need help and support to access and engage with our social security system.
- from next winter, families of severely disabled children will receive Winter Heating Assistance – an annual payment of £200 to help with the costs of keeping their homes warm, benefiting 16,000 children.

We know that the experience of applying and qualifying for disability assistance in the current benefits system can be degrading, humiliating and highly frustrating. This is unacceptable in any case, but is particularly harrowing for people with terminal illnesses.

To make sure that the introduction of our disability assistance embodies our values of treating people with dignity and respect, we have removed the arbitrary timescale that is currently used to assess terminal illness. Instead, the Chief Medical Officer will publish guidance for medical practitioners that will allow them to use their clinical judgement, allowing people to be fast-tracked for their benefit and paid at the highest rate.

Delivering Scotland's social security system with compassion is our focus. We also want to make sure that people are able to receive all the assistance from us that they are entitled to.

We are committed to addressing barriers to access. We will publish our first benefit take-up strategy in October this year, outlining a suite of activities and interventions to promote Scottish benefits and support eligible individuals to take them up.

Shifting the curve on child poverty

The most recent statistics show almost a quarter of children live in relative poverty in Scotland and independent projections suggest that this could rise in the coming years as a result of welfare cuts imposed by the UK Government.

We will not stand by and let this happen. We will again this year spend around £100 million on mitigating measures to protect people in Scotland from the worst damage caused by these cuts.

Last year, our direct support to low-income families with children was £527 million – above and beyond core universal services such as education and health. We are committed to doing everything we can to lift children out of poverty and prevent others from falling into it.

The Child Poverty (Scotland) Act 2017, unanimously passed by the Scottish Parliament, introduced new statutory targets to eradicate child poverty by 2030. We are the only part of the UK to have set our ambition to eradicate child poverty in statute.

Our first Tackling Child Poverty Delivery Plan sets out concrete actions to make progress on this ambition. We are clear that the only way to deliver the fairer and more prosperous Scotland we all wish to see is through joined-up action across the country – with a key focus on tackling child poverty.

Across government we are taking action to increase incomes and reduce household costs. Alongside this, we are also taking steps to mitigate the impact of poverty on children and young people today – to help them achieve the best outcomes.

We are working closely with partners to maximise impact and are taking steps to more closely link programmes together to ensure that families receive the complete support package they need.

Backed by a multimillion pound package of investment, including the £50 million Tackling Child Poverty Fund, we are supporting work across Scotland to help lift parents, families and children out of poverty.

The first year progress report set out that 48 of the 58 actions were in progress or already delivered. These include:

- our devolved employability service, Fair Start Scotland, which launched in April last year. Taking a different approach to the UK Government, our service doesn't penalise people through sanctioning benefits
- increasing the minimum level of School Clothing Grants to £100 for every eligible child. This is a significant boost to previous levels and benefits 120,000 children each year
- delivering all three Best Start Grant payments, backed by £21 million in 2019-20

We will continue other work to support children and families and tackle poverty. Over the coming year, we will:

- begin to deliver our new Parental Employability Support. It will provide intensive support to low income parents through to 2022, backed by an investment of £12 million
- pilot ways to identify and address the barriers faced by disabled parents to enter and sustain employment. The pilots will begin next year, supported by a £6 million investment
- collaborate with Timewise on a feasibility study for a new approach to flexible work
- launch our new Access to Childcare Fund to support the development of innovative and flexible childcare provision for low-income families
- expand our Children's Neighbourhoods Scotland programme to further sites in urban areas, a small town and a rural community

Our work so far is providing a package of support to families – from birth to school and through to employment – all to boost incomes and reduce costs.

However, we know it will take considerable further investment and bold action, such as the Scottish Child Payment, to achieve the required reduction in child poverty we want to see.

The Scottish Child Payment

The Scottish Child Payment is an ambitious and direct measure that will tackle child poverty head on by putting more money into parents' and carers' pockets and helping them to make ends meet. It will help to raise children out of poverty as well as helping to prevent those just above the poverty threshold from sliding under.

It is progressive, backed by significant investment and makes Scotland the only part of the UK that is making such a serious commitment to reduce and ultimately eradicate child poverty.

It will be an entirely new benefit delivered by Social Security Scotland and will provide eligible families with £10 a week for every child under 16. It will be paid monthly and increased annually in line with inflation. Eligibility will be based on qualifying benefits including Universal Credit and legacy benefits.

When delivered in full, 410,000 children will be eligible – over a third of all children in Scotland – and it will be backed by £180 million of investment each year.

It is estimated that the payment will lift 30,000 children out of relative poverty when fully rolled out (a 3 percentage point reduction) and increase family incomes for thousands more. For eligible families with two children under the age of 16, the Scottish Child Payment will boost their income by over £1,000 each year.

To make sure those in need benefit from the new payment as soon as possible, we are making it available earlier than planned to children under 6 years old. Around 60% of all children in poverty live in a family where a child is under 6 years old and making a difference in the early years of a child's life has the biggest impact on long-term outcomes.

Assuming the cooperation of the UK Government, we will begin taking applications from eligible families with children under the age of 6 in the autumn of next year, with the first payments being made by Christmas 2020 – ahead of the schedule set out previously.

It will be available to all remaining eligible families with children under 16 by the end of 2022. There will be no cap on the number of children eligible per family.

Our experience with the new Best Start Grant payments shows that when barriers are removed, stigma is eliminated and people are encouraged to apply, people will take up the benefits on offer.

The Scottish Child Payment will be transformative – it will invest in families to shift the curve of child poverty and will make a positive difference to the lives of thousands of children in Scotland.

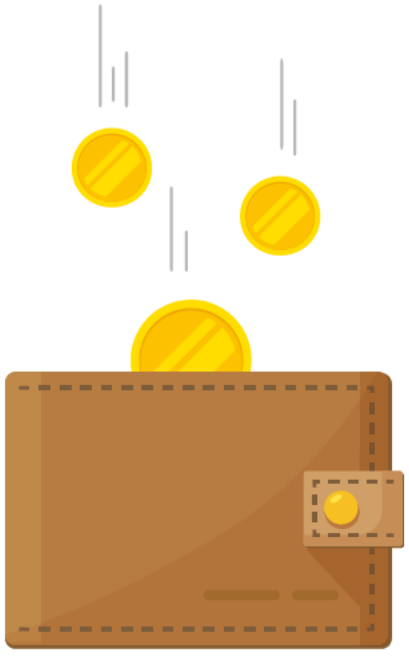
Doing even more for families

Alongside the new Scottish Child Payment, we will take further new action to support children and families and tackle poverty, backed by our Tackling Child Poverty Fund.

We will look across the work we do to see how best to align programmes and integrate support. This will provide a more cohesive package of support, focused on improving outcomes for individuals and families in ways which meet their complex sets of needs.

An extra £500 per child per year

for families who need it most



Using the opportunities presented by our expansion of early learning and childcare provision, we will provide £500,000 to establish the Family Learning Scotland Programme. Family learning will be offered in or near early learning and childcare settings and will be targeted at priority families. It will help parents to learn about early childhood development and how to support their children's learning. It will also build parents' confidence in their own capacity to learn, acting as a catalyst to help them take up adult learning, training opportunities and gain employment.

We will provide an additional boost of over £4 million to parental employability programmes, facilitating better local connections between employability services and the expansion of early learning and childcare. This will involve supporting parents to start a career and progress in work, including within the early learning and childcare sector, and enhance families' incomes through work or earnings. This means that our total investment in parental employment support will increase to £22 million between 2018 and 2022.

We know that there are links between homelessness and child poverty. We will take action to prevent low income families from becoming homeless by improving access to advice and providing direct support on housing options, income maximisation, financial inclusion, employment and wellbeing.

We will:

- launch a new £1.5 million Homelessness Prevention Fund to increase and spread the work of social landlords in supporting low-income families in social housing in ways that help to prevent crisis points and avoid homelessness
- work with local authorities to align Rapid Rehousing Transition Plans and Child Poverty Delivery Plans providing new opportunities to join up resources and better support low-income families
- explore with Job Centre Plus how they can better support families on low incomes when they access services, in light of the challenges they may face

We will build on good practice around support for young parents, learning from the success of projects such as the Clackmannanshire Young Parents Project. Supported by an initial £1 million, we will work to test this model in other parts of Scotland to help improve the life chances of young parents and their children.

Key workers will enable young parents to receive the support they need, including access to good quality housing, help around employment education and training and the financial help that they are entitled to.

Suitable homes for everyone

Tackling homelessness

Everyone needs a home – a safe, warm place to live, feel secure and have a sense of belonging. Home is part of physical and emotional health and wellbeing but, for some people in Scotland, homelessness is their current reality. We are determined to eradicate homelessness in our country.

Last year, in response to the recommendations of the Homelessness and Rough Sleeping Action Group, we published an action plan to set the direction for real and lasting change, working with the wider public sector and backed by investment of £50 million.

Over three years and beginning this financial year, we are investing £32.5 million in our Rapid Rehousing and Housing First programmes. As a result of our long-term approach to homelessness prevention, we have seen a 40% reduction in the number of homelessness applications and assessments since the peak in 2005-06.

Every local authority is now implementing their rapid rehousing transition plan, which will ensure that people who become homeless move to a settled home as soon as possible.

Our Housing First programme will ensure that rapid rehousing is possible for all, by providing support to those with multiple and complex needs, helping them to find and stay in suitable housing and tackle mental health challenges and addictions. In the past year, around 100 people have been supported in this way and we will support hundreds more this year, recognising that a safe and secure home is the best base for recovery.

As part of the transformational programme set out in the Ending Homelessness Together Action Plan, we will launch a fund of up to £4.5 million for third sector organisations on the frontline to innovate and transform the services they provide.

In addition, this year, we will:

- provide up to £2 million to support our partnership with Social Bite, who are working with a range of partners to deliver Housing First Pathfinders in Glasgow, Edinburgh, Dundee, Stirling, Aberdeen and Aberdeenshire. These pathfinders will support over 800 people with multiple and complex needs experiencing homelessness into a permanent home with support by spring 2021
- provide £8 million to support implementation of rapid rehousing transition plans in every area
- implement changes to the law, removing the duty on local authorities to assess whether a homeless applicant became homeless intentionally, making receiving support easier for people who have difficulties in their lives, such as financial or mental health issues
- develop plans to remove the requirement for people facing homelessness to have a connection to a council area before they can receive support from that local authority
- work with third sector partners to change attitudes to homelessness
- introduce legislation in the coming year to extend the Unsuitable Accommodation Order, with a view to it coming into force by the end of this Parliament. This will reduce the amount of time all people experiencing homelessness can spend in unsuitable accommodation
- publish information about how homelessness affects different groups within our communities by the end of this year, making sure, in particular, that our work takes proper account of the different reasons for women becoming homeless and addressing those
- create a domestic abuse homelessness prevention pathway to support women who have experienced domestic abuse to find safe accommodation
- develop a care leavers homelessness prevention pathway, building on our work this year to better understand what support people with care experience need to reduce their risk of becoming homeless and what specific support care leavers need if they do become homeless

Housing

Since 2007, more than 86,000 affordable homes have been delivered, including over 59,000 for social rent. We are on track to achieve our target of delivering 50,000 affordable homes, 35,000 for social rent, within this term of Parliament, with over half of those already completed.

Our ambitious target is backed by more than £3.3 billion, the single biggest investment in, and delivery of, affordable housing since devolution.

We are working to increase the number of affordable homes of all tenures in communities across Scotland. Working closely with local authorities to make sure we provide the right homes in the right places, we are making up to £25 million available between 2016 and 2021 to the Rural Housing Fund and a further £5 million to meet the specific housing needs of our island communities.

We want to make sure that new affordable homes are accessible to everyone in our communities. In 2017-18, 99% of all new build council and housing association homes met the Housing for Varying Needs Standards and 744 homes were purpose built for older people or disabled people.

We will publish refreshed guidance for local authorities to support them to develop their local housing strategies. These set out the strategic vision and priorities for the future of housing and housing-related services in their areas.

The refreshed guidance will include strengthened requirements relating to Gypsy/Travellers to make sure that their accommodation needs are identified and better understood. It will also include requirements relating to the supply of wheelchair accessible housing across Scotland to provide more choice and flexibility for disabled people and their families.

This work is not only providing affordable homes for people across Scotland, it is also contributing to our economy and helping us to achieve our other priorities.

It is estimated that the Affordable Housing Supply Programme benefits our economy by £1.4 billion each year and supports between 10,000 and 12,000 jobs. Ensuring that new homes are energy efficient is key to tackling the global climate emergency and, by keeping heating costs low, contributes to our efforts to tackle poverty.

We will also continue to support people in Scotland to sustain their tenancies through Discretionary Housing Payments. This year, we will provide more than £63 million to help 70,000 households sustain their tenancies and protect them from the impact of the UK Government's bedroom tax and other welfare cuts.

We also want to ensure we have a healthy home ownership and new build sector. We welcomed publication of the short-life working group's report *New Housing & Future Construction Skills: Adapting and Modernising for Growth* in May. We will respond to the recommendations by the end of the year.

We will deliver a £150 million national pilot scheme to provide support for first-time buyers with up to £25,000 towards their deposits. The scheme will launch in December this year and will be open to all first-time buyers, regardless of income or eligibility for other existing schemes.

The new scheme adds to existing programmes, Help to Buy (Scotland) and the Low Cost Initiative for First-Time Buyers, through which investment of £1.2 billion since 2007 has already helped more than 32,000 households buy a home.

We are taking action to tackle issues with short term lets in some areas. To help councils balance the needs and concerns of their communities with wider economic and tourism concerns, we have consulted on the regulatory powers they need and will announce our plans later this year.

We continue to support the growth of the Build to Rent sector in Scotland to boost the supply of good quality homes for private rent through a range of measures covering planning advice, taxation, tenancy reform and a rental income guarantee scheme.

The Building Scotland Fund provides a source of loans for eligible schemes, as well as investing £94 million to-date in supporting the wider development of 5,500 new homes for rent and sale across all tenures, together with other regeneration, industrial and commercial property investments.

Looking ahead, the Building Scotland Fund will continue to support housebuilding growth in Scotland, including through the SME housebuilding sector.

We need to plan for the future of our housing stock to make sure that everyone in Scotland has a high quality and sustainable home that they can afford and which meets their needs.

We want to build this vision together with the people of Scotland and so have engaged widely with stakeholders over the past year, including local government, businesses, the third sector, home owners, tenants and others.

We published our draft vision and principles in July and will consult widely on these and how we make them a reality over the next few months. We will then publish our Housing to 2040 vision and route map in spring next year.

Scotland's third sector

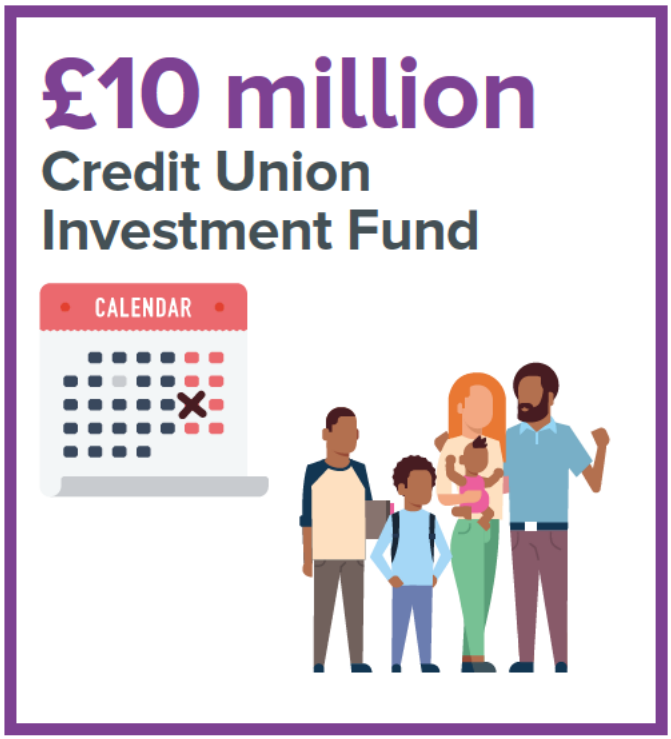
There are over 24,500 registered charities, 6,000 social enterprises and an estimated 20,000 community groups working across Scotland.

This year, we will provide £24.9 million to strengthen this diverse sector. We will work to identify more opportunities for multi-year grant programmes, as well as test new innovative models of commissioning and social investment.

Building on the results of a national consultation on charity law, we will work collaboratively with partners to continue to develop and refine proposals to promote transparency and accountability.

Scotland's eco-system of support for social enterprise is world-leading. Since the launch of Scotland's Social Enterprise Strategy, we have invested more than £25 million in the sector and social enterprises now contribute £2.3 billion annually to our economy.

Last year, we hosted the Social Enterprise World Forum, welcoming more than 1,400 social entrepreneurs from 47 countries and earlier this year we launched the new £17 million 'Scottish Social Growth Fund'. By next spring, we will publish the second social enterprise action plan, co-produced with the sector, to continue to drive forward this inclusive way of doing business.



This spring, we published a new *National Volunteering Outcomes Framework*.

Volunteers contribute over £2 billion to our economy each year and there are 1.2 million volunteers in Scotland giving up their time to help their communities.

Volunteering can improve people's wellbeing and physical and mental health, as well as improve confidence, strengthen social networks and build bonds in and between communities. This year, we will launch a delivery plan for the Framework, including clear and measurable indicators to track progress.

The credit union movement in Scotland has more than 410,000 members. We will develop a national strategy to further grow and strengthen this important sector so that it can continue to provide ethical savings and loans to people from all walks of life – safeguarding them against exploitative rates and a cycle of debt.

In spring 2020, we will introduce a £10 million Credit Union Investment Fund which will provide loans to support credit unions to grow memberships and improve their systems.

Scotland on the global stage

Scotland's place in the world is uncertain as a result of the UK's departure from the EU. Rising tensions on global trade and the increasingly evident impact of the global climate emergency means the way we interact with the rest of the world has never been more important.

Scotland is committed to being a good global citizen – we want to be open, connected and make a positive contribution internationally, playing our part in tackling global challenges such as poverty, injustice, inequality and climate change.

Our expanded international network stretches across a number of European countries, as well as the USA, Canada and China. These innovation and investment hubs play a key role in maintaining Scotland's strong reputation worldwide. We will continue to invest in our overseas networks, creating a single, unified platform to foster long-term connections that will support the growth of our exports and attract investors, students and visitors to Scotland.

Since the EU referendum, there have been more than 400 Ministerial engagements with other European countries. We present ourselves as a positive and open European country, keen to collaborate to address global challenges and share our experience and knowledge.

We have participated in multilateral work too, taking part in the Arctic Circle Assembly and hosting the Nordic Council Forum. We will publish our first Arctic Policy Framework this month.

These international connections give us support and new perspectives as well as the opportunity to contribute to tackling some of the world's biggest challenges and play our part in pursuing the *UN Sustainable Development Goals*.

As well as taking steps to address the global climate emergency in Scotland, our international standing enables us to work with other nations to tackle it.

The poor and vulnerable are the first to be affected by climate change, and will suffer the worst, yet have done little or nothing to cause the problem.

That is why we established a Climate Justice Fund in 2012 and will provide up to £21 million by 2021 for climate justice-related activities around the world. This will support work to secure access to food, water and energy as well as help to boost levels of climate literacy and supporting advocacy.

We continue to implement our International Development Strategy in our Sub-Saharan Africa partner countries, furthering our partnerships with Malawi, Rwanda and Zambia.

This year, we will support a newly-expanded programme to protect vulnerable groups in Malawi and Zambia. Following the success of Police Scotland's work with police forces in these countries to help them tackle gender-based violence and improve child protection, the programme will support leadership to tackle local issues and give support to a wider range of marginalised groups such as women, children, those with disabilities, LGBTI and people with albinism.

We will review our Small Grants Programme, and whilst that review takes place, offer the chance for small organisations to apply for grants to strengthen their safeguarding and governance processes.

We will continue to fund scholarships for women and girls in Pakistan to allow them to pursue their education. This support will continue through women and girls' secondary education, into an undergraduate degree and onwards to cover a Masters degree.

Scotland is a place of safety for those fleeing conflict and persecution.

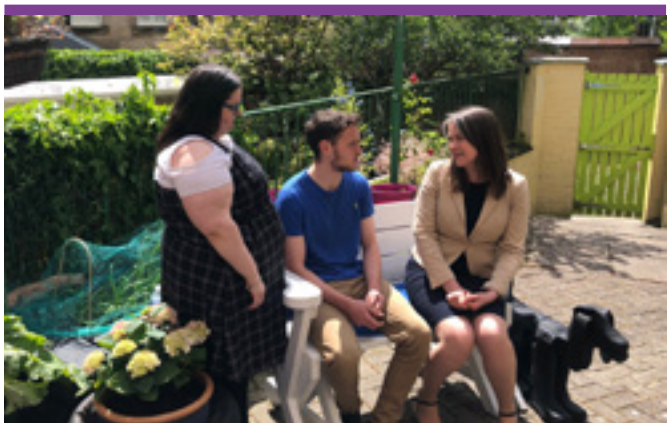
Since 2015, every local authority has contributed to helping more than 3000 people find safety in Scotland. We are working with COSLA and the Scottish Refugee Council to support refugees and people seeking asylum to integrate into our communities through the New Scots refugee integration strategy. We will publish a progress report on our work in the spring and, in the next year, we will publish an Anti-Destitution Strategy focused on people who have no recourse to public funds.

We provide Crisis Grants to families joining refugees in Scotland under family reunion rules, giving them the financial support they need to meet their basic needs before they are able to access welfare benefits.

Current refugee resettlement programmes, including the Syrian Resettlement Programme, are due to end early next year. The UK Government has said that this important work will continue as one global scheme. We are working with our local government partners to develop our approach to the future of refugee resettlement.

Strengthening places

We and COSLA have adopted the Place Principle – this is an approach to encourage better collaboration and community involvement. It will help to make best use of resources and assets, improving the way that services within a place are joined up to increase their impact.



Putting the principle into action will allow local areas to respond to issues and circumstances in the ways which work best for them, driving inclusive growth, improving wellbeing and achieving better outcomes for people and communities.

This year, we will:

- work with local partners and communities to develop local place plans and pilot collaborative approaches across different sectors such as housing, transport and town centres
- promote equality and engage diverse groups to create joined-up solutions that make the most of the assets areas already have and make sure that the right extra support and investment is provided to make a difference
- provide around £11 million from the Investing in Communities Fund, awarding multi-year funding to help local areas plan over the longer term and develop holistic responses to the priority issues for people in their communities
- create a new website by the end of this year to act as a central resource for promoting and implementing the Place Principle

Local governance

Our main goal is to ensure Scotland is a country where everyone is valued, treated with dignity and respect and has access to opportunities and a good quality of life.

To do this, we must listen to people and communities.

Last year, over 4,000 people responded to an invitation from Scottish Government and local government to help us make sure we can achieve this goal. They told us that communities work best when they have local control and influence over decisions that affect them most.

That is why we are working with local government and wider public services to further empower local communities, councils and their partners. People told us they wanted to see a transformation in how decision-making arrangements work in Scotland and this year we will explore how we can make that a reality, creating a system of inclusive local democracy based on rights which will improve outcomes for people and communities.

Regeneration

Some of our communities still suffer the effects of deprivation and disadvantage, limiting people's health, wellbeing and future potential. Transforming local areas through regeneration works best when communities are in control.

We will maintain our capital funding for regeneration for the remainder of this Parliament. That includes the Regeneration Capital Grant Fund, the evergreen Scottish Partnership for Regeneration in Urban Centres Fund and Clyde Gateway which is transforming the social, economic and environmental outlook for communities in the area.

There is still too much unused and unproductive land in Scotland, including long-term vacant and derelict land which blights some of our most disadvantaged communities. We will continue to tackle this through the Vacant and Derelict Land Fund and we are exploring ways to accelerate investment to grow industrial and commercial capacity across Scotland's most disadvantaged areas.

Land reform

We are improving Scotland's system of land ownership, use, rights and responsibilities, so that our land contributes to a fair and just society while balancing public and private interests.

We will invest £10 million this year and next to the Scottish Land Fund, supporting community ownership to boost local amenities and support local economies.

We have provided funding to Community Land Scotland to support urban communities to take ownership of land and assets. We have established the Vacant and Derelict Land Taskforce to help communities bring a new lease of life to vacant land and we will consider its recommendations.

We will introduce a new community right to buy for sustainable development by spring next year and will hold an international land reform conference in 2020 where we can demonstrate our progress.

How we use our land is part of our response to the global climate emergency and other challenges such as housing, social inclusion and food security. This year, we will begin work to enable further renewable energy developments on Scotland's national forests and land, ensuring that any new developments pay community benefits.

In the coming year, we will bring together experts from across the world to explore how we can tackle land reform issues and make sure land reform benefits everyone in Scotland.

Underpinning land reform is the need to know who owns land in Scotland. This year, we will continue our work on regulations for a new Register of Persons Holding a Controlled Interest in Land, aiming for these to be in force by 2021.

The Scottish Crown Estate Act received Royal Assent this year, part of which allows for local control and decision-making over Crown assets. We will ensure that communities benefit from the net revenue generated from the Scottish Crown Estate marine assets out to 12 nautical miles, making payments directly to coastal local authorities.

We will publish a Strategic Management Plan by spring next year – it will set out objectives and priorities for Scottish Crown Estate assets including seabed leasing rights out to 200 nautical miles and describe how around half of Scotland's foreshore, as well as rural and urban property, will be managed in ways that benefit communities.

#ScotPfG

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SCOTTISH HOSPITALS INQUIRY

Witness Statement
of
Alan Morrison
In response to a Rule 8 Request dated 10 February 2022

11 April 2022

Professional Background

1. My name is Alan Morrison. My date of birth is [redacted]. I am 51 years old.

2. I am a civil servant employed by the Scottish Government as the Interim Deputy Director of Health Infrastructure. I have held this role since March 2020. My background is in accountancy and I have a professional accountancy qualification from the Chartered Institute of Public Finance and Accountancy which I obtained in 1998.

3. I have been employed by the Scottish Government since April 2003. During that time I have worked in the Health Finance Directorate in a number of different roles as a qualified finance professional. Between January 2015 and March 2020 I was the Capital Accounting and Policy Manager for Health Infrastructure. While my job title changed between January 2015 and the present day the duties have remained broadly the same since January 2015, the main duties of which are:-

    - Developing and delivering the Capital Investment Strategy for the Health Portfolio, ensuring that it aligns with the infrastructure priorities of the wider Scottish Government, including delivering sustainable economic growth and delivering a lower carbon economy.

- Managing the portfolio's capital budget of ~£0.5 billion, ensuring that a breakeven position is delivered each year, that the expenditure supports the portfolio's strategic priorities and that value for money is delivered.

- Chairing (from December 2015) the Scottish Government Health and Social Care ("SGHSC") Capital Investment Group ("CIG") which oversees the review and scrutiny of all business cases submitted to SGHSC, as well as being the lead official for the national infrastructure board.

- Interpreting HM Treasury and Scottish Government capital accounting and budgeting guidance and subsequent provision of advice to NHSScotland finance professionals through working groups and written guidance.

- Leading the development of strategic advice to Ministers on the options and opportunities for prioritising, financing and delivering infrastructure investment, including how it can help enable service reform and support clinical priorities.

- Managing and developing the capital accounting and policy framework for NHSScotland that ensures compliance with HM Treasury and Scottish Government accounting, budgeting and legislative requirements. This includes effective management of the capital investment programme and of property transactions, as well as performance management.

- Managing assurance processes in respect of major capital programmes of work by health boards: as well as engagement with internal stakeholders, one of my key responsibilities in this regard is to develop and maintain links with a range of external stakeholders including other national groups, applying specialist knowledge and skills to review, analyse and manage risks.

4. In January 2021, I assumed responsibility for pandemic Personal Protective Equipment ("PPE"). Prior to the pandemic, there was no need for a PPE team, therefore this was a new area of responsibility to manage.

5. I have been involved with the Royal Hospital for Children and Young People ("RHCYP") and Department of Clinical Neurosciences ("DCN") project (together "the Project") since starting my role as Capital Accounting and Policy Manager and subsequently as Interim Deputy Director for Health Infrastructure and Investment. None of the jobs I held prior to January 2015 had any involvement with the Project.

Overview

6. In this statement I will address the undernoted themes:-

   a. The Scottish Government Health and Social Care Directorates
   b. The Scottish Public Finance Manual and The Scottish Capital Investment Manual
   c. SGHSC Capital Investment Group
   d. SGHSC Capital Investment Group – Business Case Review Process
   e. Health Facilities Scotland
   f. NHSScotland Assure
   g. Answers to Rule 8 request dated 10 February 2022

The Scottish Government Health and Social Care Directorates

7. SGHSC is a group of Scottish Government Directorates responsible for Health and Social Care in Scotland. There are 13 directorates in the group and each directorate assumes responsibility for a different function of the NHS' delivery of health and social care in Scotland. The current directorates are:-

   - Chief Medical Officer;
   - Chief Nursing Officer;
   - COVID Public Health Directorate;
   - Digital Health and Care Directorate;
   - Health Finance, Corporate Governance and Value Directorate;
   - Health Performance and Delivery Directorate;
   - Health Workforce Directorate;

- Healthcare Quality and Improvement Directorate;
- Mental Health and Social Care Directorate;
- Population Health Directorate;
- Primary Care Directorate;
- Test and Protect; and
- Vaccine Strategy and Policy.

8. I am the Interim Deputy Director for Health Infrastructure. Health Infrastructure falls within the Directorate for Health Finance, Corporate Governance and Value. The director of the Health Finance, Corporate Governance and Value Directorate is Richard McCallum.

9. Since the beginning of my tenure in my current role, my team has been responsible for Health Infrastructure and Investment. Since the beginning of the pandemic, my team has also been responsible for PPE. The division is responsible for managing the overall NHSScotland capital budget, the co-ordination and management of the NHSScotland Infrastructure Investment Programme and for policy co-ordination in relation to pandemic personal protective equipment.

10. As I explain more fully below, all relevant business cases in relation to healthcare capital projects are considered by my team and supporting staff from across SGHSC. Health boards are reliant upon funding approval from the Scottish Government. If the Scottish Government does not approve the business case then the facility under contemplation cannot proceed.

<u>The Scottish Public Finance Manual and The Scottish Capital Investment Manual</u>

11. The Scottish Public Finance Manual ("SPFM") is issued by the Scottish Ministers to provide guidance to the Scottish Government and other relevant bodies on the proper handling and reporting of public funds.

12. The Scottish Ministers have also issued related guidance that is sector specific. The Scottish Capital Investment Manual ("SCIM") (Bundle 3, volume 2, document 33, p.120)

provides guidance, in an NHS context, on the processes and techniques to be applied in the development of all infrastructure and investment programmes and projects within NHSScotland. The guidance applies to the cyclical process of project development from inception (at the service planning stage) to post project evaluation of service benefits realised. The guidance not only covers issues around investment appraisal, financial (capital and revenue) affordability and procurement, but also the project management and governance arrangements required to support the development of such programmes and projects.

13. The principles set out in SCIM are applicable to all NHSScotland Bodies in relation to the development of all infrastructure and investment schemes, regardless of their size or complexity, and are designed to provide an audit trial and assurances that appropriate steps have been followed in the investment decision making process.

14. All health infrastructure business cases submitted for consideration will be assessed against the guidance contained within the SPFM and SCIM. If a business case is non-compliant it will not be approved.

SGHSC Capital Investment Group

15. The SGHSC Capital Investment Group ("CIG") is responsible for monitoring[1] the delivery of major capital investment projects developed by health boards (regardless of the ultimate funding route adopted by the procuring organisation) and recommending whether or not approval should be given by the Director General concerned. CIG is constituted by representatives from across SGHSC – I have noted a list of the current SGHSC Directorates at paragraph 7 above.

[1] "Monitoring" via the business case review process described at paragraphs 22-42 below as well as by consideration of post project evaluation. Post project evaluation is the process of assessing the impact of a project after it has come to an end. Two stages are defined; namely Project Monitoring and Service Benefits Evaluation. Project Monitoring will cover the technical aspects of the planning, implementation and completion phases of a project (i.e. generally, the construction phase), and the Service Benefits Evaluation will cover the impact of the project on service change and benefits realisation – the project's benefits register and realisation plan will form a significant part of this latter assessment.

16. I have been the chair of CIG since December 2015 and have been a member of it since November 2015.

17. The Chair of CIG has delegated authority to approve projects with a capital cost of up to £5 million. For projects between £5 million and £10 million, CIG will, following the successful consideration of a Business Case, make a recommendation for approval to SGHSC Director of Health Finance who has delegated authority to approve. Where a scheme has a capital cost in excess of £10 million CIG will make a recommendation to the Director General for Health and Social Care (the "Director General"). The delegated authority limits of CIG are published on the Scottish Government's website at https://www.pcpd.scot.nhs.uk/Capital/Approval.htm (under tab - "Delegation within SGHSC"). (Bundle 3, volume 3, document 79, p.1,312).

18. CIG receives advice and support on planning, procurement, construction and facilities management issues from NHS National Services for Scotland ("NHS NSS") and the Scottish Futures Trust. CIG will also obtain advice from relevant clinical and policy colleagues where appropriate.

19. By approving the business cases submitted to CIG, the Director General gives health boards the assurance of SGHSC support for the strategic justification for progressing capital schemes whilst sending a clear indication to the private sector that the projects are supported by the Scottish Government.

20. CIG also plays a vital role in providing the necessary assurances to both Scottish Ministers and SGHSC Management Board that proposals are robust, affordable and deliverable.

21. CIG also acts as a forum for the development, promotion and distribution of best practice and guidance within capital planning and development whilst providing SGHSC with an overview of the strategic direction of NHSScotland.

SGHSC Capital Investment Group – Business Case Review Process

22. I understand that the Inquiry, at this time, is not focussed on the detail of the particular business case reviews undertaken for the Project, so I describe below the general process by which a project is approved by CIG in order to provide the Inquiry with a broad understanding the different roles and responsibilities applicable to the parties involved in a business case review.

23. The Inquiry will, in due course, come to consider the journey of the Project's business case and the Scottish Government will be happy to provide evidence in relation thereto at a time that is considered appropriate by the Inquiry.

24. It is for the health board to develop the project that it wishes to deliver. SCIM makes clear that under no circumstances should responsibility for the direction and lead production of the business case be outsourced to external consultants.

25. The role of the Scottish Government is to consider whether the business case meets the requirements of SPFM and SCIM and to either approve or reject the proposal. Not all projects require the approval of the Scottish Government. When a health board wants to deliver a significant capital project (usually the upgrading of an older facility or the development of a new facility) they must first consider whether that is something that can be dealt with under the health board's own delegated authority or whether it requires reference to CIG. The determinative factor is the value of the project's capital expenditure. Annex C to the Chief Executive's Letter dated 19 August 2010 contains the delegated authority limits that were applicable to the Project (Bundle 4, document 11, p.146). The current limits are contained within a director's letter (from the Director of the Health Finance, Corporate Governance and Value Directorate) dated 12 September 2019 (Bundle 3, volume3, document 79, p.1,312).

26. Having identified the project as one falling outwith the delegated authority limit it is incumbent upon the health board to seek the Scottish Government's approval (via CIG). CIG encourages the early engagement of the health board and it is common for there to be several meetings between CIG and the health board prior to and during submission of the documents I explain below, namely (as named in SCIM) the "Initial Agreement" (so named but in reality a proposal), "Outline Business Case" and "Full Business Case" (and

any addendum thereto). The procedure for submission and content of these documents is regulated by SCIM.

27. Having identified the parameters of the project the health board should submit an Initial Agreement to CIG for review and approval. I would expect the Initial Agreement to set out what the health board's proposal is about. In particular it should explain the current arrangements by which the health board is providing its services and why there is a need for change. To comply with the principles outlined in SCIM, I would expect the Initial Agreement to identify the proposed strategic/service solution designed to meet the health board's need. Finally, I would expect the Initial Agreement to consider whether the health board is ready to proceed with its proposal, taking into consideration the commercial, financial and management needs associated with the proposal.

28. Once submitted, the initial agreement will be circulated amongst the members of CIG and, thereafter, considered at a meeting of CIG. CIG will either reject the initial agreement or recommend that the Director General approves it. CIG's consideration is guided by the advice contained in SPFM and SCIM, however, it employs a subjective approach to each assessment. If the initial agreement is rejected the health board will be advised why. As with review at all stages, a rejection usually prompts the health board to revise and resubmit its proposal.

29. If the Initial Agreement is approved, the health board submits an outline business case to CIG for consideration. To comply with the principles outlined in SCIM, the Outline Business Case will identify the preferred option for implementing the strategic/service solution approved at Initial Agreement stage. It will demonstrate that the preferred option will deliver the necessary service change, optimise value for money, and be affordable. It will also set out the supporting commercial and management arrangements to be put in place to successfully implement that option. A developer can only move on to procurement (by whatever means it considers appropriate) once it has received approval of its outline business case from the Scottish Government.

30. Finally, the health board submits its Full Business Case to CIG for consideration. The full business case will set out the agreed commercial arrangements for the project whilst also confirming that it remains value for money, is affordable, and that the organisation is ready to proceed towards implementation of that option. The Full Business Case will

be developed by the health board (essentially by revising and expanding upon the Outline Business Case) within the final procurement phase of the project and record the detailed assessment and/or negotiations with potential service providers/ suppliers prior to the formal signing of contracts but does not include the actual procurement documentation (such as an environmental matrix which forms part of the invitation to tender) utilised by the health board.

31. I would expect all issues to be resolved and agreed by the health board prior to it submitting the final business case to CIG. CIG needs to know what it is recommending to the Director General for approval. A health board may also submit an addendum to its final business case where it requires further approval for matters not contained in (or which would derogate from) the full business case.

32. The business case review process is intended to be scalable and flexible to ensure that the effort required in preparing the relevant documents is appropriate. The level of detail required will be dependent upon the scale, risk and nature of the investment proposal. It should, however, meet the expectations and information needs of CIG. The health board can consult CIG for further advice on these expectations.

33. All business cases are circulated to the members of CIG to consider not only the content of the business case but also the deliverability of the project. In that respect, CIG will be interested in the health board's Management Case, to look at whether the Board have a suitably resourced and experienced project team in place to deliver the project and also whether the health board's governance arrangements are appropriate. CIG also examines the extent to which the project is aligned with national, regional and local priorities (the last as articulated in Local Delivery Plans and associated Property and Asset Management Strategies). For example, I would look for health boards to mention the Quality Strategy relevant to its area or explain how more services could be delivered at home or in a community setting (which is a long established policy objective of the Scottish Government) or, where possible, link to the National Planning Framework, which is a long term plan for Scotland that sets out where development and infrastructure is needed. Each CIG member will focus on their specialist area of the business case, for example financial or clinical aspects, and submit their comments to Capital and Facilities in advance of the meeting. The CIG member can, however, comment on other aspects of the business case if he/she considers it appropriate. My own area of focus is finance.

34. Policy Leads from the Health Finance and Infrastructure Division will collate the comments, seeking further clarification from the health board if necessary, before CIG meet to take a collective decision about the project. CIG members, acting as a group (in consensus), decide whether or not to make the recommendation for approval to the Director General (or Director of Finance if delegated or due to particular circumstances, e.g. the Director General being on leave or otherwise unavailable). CIG may also seek the appropriate clarification from the health board on issues to be resolved prior to making any recommendation for approval. If CIG concludes that it cannot recommend approval at any given point, the health board will be advised of that and it will then be for the health board to decide whether to work further on the proposal and bring a further iteration of the proposal to CIG for further consideration.

35. The Health Finance and Infrastructure team retains some oversight of the project until it is completed. This will involve discussions on timeline and affordability and any challenges the project may be experiencing. Usually that involves relevant officials from the Scottish Government meeting with members of the project team and/or sitting on project boards (set up for delivery of the project) once business plans are approved.

36. CIG carefully scrutinises all stages of the business case review process. CIG is conscious to ensure that the business case is fully compliant with the SPFM and SCIM guidance and requirements. The review is detailed but undertaken at a reasonably high level. By that, I mean that CIG is concerned to note that all relevant requirements have been met (such as technical specifications) but CIG recognises that, ultimately, it is the health board who are delivering the project. Thus, if the health board undertakes that a certain element of its design is compliant with the relevant technical memorandum then CIG does not check that the actual design is, as a matter of fact, compliant.

37. If the health board did seek to derogate from the standards and guidance contained within SPFM, SCIM or elsewhere it would be for the board to identify the derogation and seek approval from CIG. In my experience, no derogations have in fact been brought to my attention, though I am aware that a derogation was (before my involvement with CIG) sought in relation to the policy as to the proportion of single beds in hospitals (in relation to the Project).

38. Projects involving private finance require the approval and commitment of private finance partners before CIG will issue a recommendation for approval of the full business case. It is the health board's responsibility to satisfy CIG of this. The private finance partners' commitment is often not reached until "financial close". In a Public Private Partnership ("PPP") project, financial close is usually the stage at which project agreements between the health board and project co (the consortium who is delivering the project) have been concluded. Until this stage is reached, or it is clear that this stage will be reached, CIG cannot be certain that the private finance required to deliver the development has been committed to it.

39. Accordingly, in a PPP project, such as the Project, CIG generally recommends approval of the final business case in two stages. Firstly, CIG satisfies itself that the business case can be approved but for the occurrence of financial close (and other minor matters) (stage one). At this stage, CIG may make a formal recommendation and a letter may be issued to the health board authorising the health board to proceed to financial close, however, this does not happen in all cases. Thereafter, CIG monitors the project as it approaches financial close (the health board is obliged to keep CIG up to date). Once CIG is satisfied that financial close will be reached then it will make a recommendation to approve the full business case (stage two).

40. It is common for business cases (particularly at the early stages) to be rejected by CIG. I would estimate that this happens in approximately 50% of all cases. The most common reason for rejection is that the proposed improvement in services has not been effectively articulated and there are too many unanswered questions. Unanswered questions could include matters such as whether the health board had consulted with regional partners on the possibility of delivering a regional service; whether there is adequate workforce available to staff the new facility; whether the revenue costs affordable; or whether the health board has maximised the use of digital options etc.

41. It is also common for there to be an open dialogue between the health board and CIG as its business case progresses – in fact, this is encouraged. The process is designed to deliver affordable and effective solutions to health care needs across Scotland. It is in all parties' interests to see that that end goal is achieved.

42. Finally, the whole process from inception at health board level to approval of the full business case by Scottish Government takes many years – often more than a decade.

Health Facilities Scotland

43. NHS NSS provides services and advice to the NHS and public sector. NHS NSS is a non-departmental public body established under s10 of the National Health Service (Scotland) Act 1978. NHS NSS is independent of, but accountable to, the Scottish Government. NHS NSS provides a wide range of services ranging from legal support (the Central Legal Office) to the facilitation of blood transfusion services (the Scottish National Blood Transfusion Service).

44. Health Facilities Scotland ("HFS") is the division of NHS NSS which has particular responsibility for the provision of operational advice and guidance to NHSScotland bodies on a range of healthcare facilities topics. HFS is responsible for establishing professional and technical standards and best practices. In particular, HFS is responsible for the publication of the Scottish Health Technical Memoranda ("SHTM").

45. SHTM are directed at those providing healthcare services. The memoranda cover a range of technical practice areas and provide comprehensive advice and guidance on the design, installation and operation of specialised building and engineering technology used in the delivery of healthcare. SHTM apply to new and existing healthcare sites and are for use at various stages during the lifecycle of a facility.

46. The Scottish Government is not responsible for the publication of SHTM. My role requires me to be aware of the importance and general content of SHTM. However, and as I explained at paragraph 45 above, the technical application of SHTM is a matter for those providing healthcare services and I am not familiar with their technical content in any great detail.

47. CIG expects a business case presented to it to be compliant with the relevant SHTMs. It is for the health board to guarantee such compliance. If the health board seeks to derogate from SHTM it should make this clear in its business case and make the appropriate request to the relevant SGHSC, however this does not happen very often.

The content of an "appropriate request" will depend upon the standard being derogated from and the reasons therefore. Where derogation is sought from a "clinical" standard I would expect the health board to include a "clinical" justification for the derogation within its request.

NHSScotland Assure

48. In September 2019, the Scottish Government published the Programme for Government [Source: https://www.gov.scot/publications/protecting-scotlands-future-governments-programme-scotland-2019-20/] which included the following ambition '*To ensure patient safety we will create a new national body to strengthen infection prevention and control, including in the built environment. The body will have oversight for the design, construction and maintenance of major infrastructure developments within the NHS and also play a crucial policy and guidance role regarding incidents and outbreaks across health and social care'*. This addition to the Programme for Government arose from the Scottish Government's consideration of the issues and incidents identified in the built environment of the new hospitals at QEUH and RHCYP (throughout 2019).

49. Consequently, NHS NSS received a commission from the Scottish Government to support the creation of Quality in the Healthcare Built Environment – this later became known as NHSScotland Assure ("NHSSA"). The service was designed to improve the management of risk in the built environment across Scotland, providing greater confidence to stakeholders. The model was enabled by establishing robust relationships across the system, having joint accountability alongside health boards and will, in due course, provide a structured forum that will enable construction professionals and clinical colleagues to work in an integrated manner to ensure that the healthcare built environment is safe, fit for purpose, cost effective and capable of delivering sustainable services over the long term.

50. NHSSA was established in June 2021 (though an Interim Review Service had been running since early 2020). Like HFS, NHSSA is a division of NHS NSS. When NHSSA was launched, it was described by the Scottish Government as bringing together experts *"to improve quality and support the design, construction and maintenance of major healthcare developments. This world first interdisciplinary team will include*

microbiologists, infection prevention and control nurses, architects, planners, and engineers. Commissioned by the Scottish Government and established by NHS National Services Scotland, the service will work with Health Boards to ensure healthcare buildings are designed with infection prevention and control practice in mind, protecting patients and improving safety." [Source: https://www.gov.scot/news/nhs-scotland-assure/]

51. NHSSA seeks to align compliance with all relevant guidance and helps health boards demonstrate this at key review stages of a facility's build process. NHSSA focusses on new builds and major refurbishments within the healthcare estate. NHSSA will also consider projects that are identified as complex due to the needs of patients using the facilities.

52. At paragraphs 22 to 42 above I explained the business case review process undertaken by CIG. NHSSA work with the health board during the preparation and presentation of its business case. In particular, NHSSA will review business case proposals to ensure compliance with relevant technical standards and guidance. From 1 June 2021, all health board projects that require review and approval from CIG, will need to engage with NHSSA to undertake key stage assurance reviews ("KSAR"). Approval from CIG will only follow once the KSAR has been satisfactorily completed. The KSARs have been designed to provide assurance to the Scottish Government that guidance, such as SHTMs, has been followed. The Scottish Government may also commission NHSSA to undertake reviews on other healthcare built environment projects.

53. NHSSA's engagement does not change accountability for the projects: health boards remain accountable for their delivery and NHSSA will be accountable for the services it provides that support delivery of the health board's projects.

54. NHSSA will also work closely with health boards to identify where a KSAR may be required for projects under their Delegated Authority, utilising a triage system to assess risk and complexity of projects.

55. The KSAR focuses on key topics, specifically – IPC (infection control), water, ventilation, electrical, plumbing, medical gases installations and fire. The aim is to ensure

that projects are designed, installed and functioning from initial commissioning of a new facility and throughout its lifetime. Health boards are required to have appropriate governance in place at all stages of the construction procurement journey.

56. Each health board will be fully responsible for the delivery of all projects, and its own internal process and resources for carrying out internal reviews and audits of its activities. The KSAR is seen as a complementary independent review, and not as a replacement for the responsibilities of the health board.

Answers to Rule 8 request dated 10 February 2022

57. I have been asked to provide the Inquiry with certain evidence relating to my involvement in the design, planning and construction of the Project, in particular, in relation to the application of SHTM and other relevant guidance and the effect of Chief Executive Letters ("CELs"). The request for information was made by the Inquiry in a Rule 8 Request dated 10 February 2022 ("the Request"). The subheadings in bold below correspond with the subheadings contained in the Request.

58. I have carefully reviewed the section of the Request headed "Subject Matter", reproduced at the end of this statement (Appendix 1). I agree that the contents of this section of the Request, including those facts taken from the SHTMs, is accurate.

59. I have considered whether there is additional information for the Inquiry to understand about the respective roles of HFS, the Scottish Ministers and health boards in ensuring that ventilation in healthcare premises is compliant with all applicable standards. As I have explained at paragraph 53 above, health boards are responsible for ventilation (and all critical systems) across their healthcare estate. HFS provide guidance (and may provide support) to the health board but compliance with that guidance is a matter for the health board.

60. As I explained at paragraphs 43 to 47 I am familiar with HFS' guidance, including SHTMs, however, my current role does not require me to consult this guidance on a regular basis. Consequently, I am aware of their purpose and function (as I describe above) but not their technical content. I am also familiar with the class of document known as CELs. As I explain more fully below, these are letters issued by the Chief

Executive of NHSScotland to the Chief Executives of the health boards across Scotland (and other relevant persons). Since 2014, similar letters have been issued by SGHSC Directors, rather than the Chief Executive. I have been involved in drafting and issuing some of these letters, such as DL[2] 2019 (5) which updated NHS Boards' capital delegated limits (see paragraph 25 above), (Bundle 3, volume 3, document 79, p.1, 312).

SHTMs

61. As I explained at paragraph 44, HFS is responsible for preparing and publishing SHTMs. HFS approves draft SHTMs and authorise their publication. SHTMs are usually, drafted, revised and published after review by a relevant governance group (with expertise in the relevant subject matter). HFS is responsible for this process.

62. The aim of SHTMs is to ensure that everyone concerned with the management, design, procurement and use of healthcare facilities, understands the requirements of the specialist, critical building and engineering technology involved. SHTMs are one piece of guidance from a suite of technical guidance provided to healthcare providers (such as Scottish Health Facilities, Planning, Technical and Building Notes). HFS is best placed to advise the Inquiry as to the interrelationship between SHTMs and other guidance. I am not required to use Scottish Health Facilities, Planning, Technical and Building Notes in my role.

63. SHTM guidance is directed at estates and facilities professionals working to deliver healthcare services in Scotland, in particular, those that work in NHSScotland. HFS communicates SHTMs (and other guidance) via the NHS Strategic Facilities Group ("SFG") and the various technical sub-groups that report directly to it such as the Scottish Engineering Technology Advisory Group and Scottish Property Advisory Group. I have a general understanding of these groups, however, HFS would be would be best placed to provide the overview of the governance structure and various groups that report directly to SFG.

[2] "DL" is the acronym used to denote "Directors Letter" – a letter issued by a SGHSC Director.

64. HFS is a division of NHS NSS (a non-departmental public body). NHS NSS are accountable to the Scottish Ministers. NHS NSS' have a statutory mandate (per The National Health Service (Functions of the Common Services Agency) (Scotland) Order 1974) to provide national strategic support services and expert advice to Scotland's health sector whilst maximising health impacts and cost savings.

65. SHTM is guidance as to best practice. The Inquiry has asked whether compliance with SHTMs is mandatory. As I explained at paragraph 47 CIG expects business cases submitted to it for review to be compliant with SHTM and if they are not, expects health boards to seek approval for any derogations. In that regard, CIG would expect the health board to take a risk managed approach that involves relevant stakeholders, to be followed before there is any departure from SHTMs. The newly followed KSAR process (undertaken by NHSSA), examines what derogations have been requested and reviews the proposed local governance arrangements for derogations.

66. It is difficult to comment upon what will happen where a health board fails to comply with SHTM because the potential range of non-compliance is wide. Where there was egregious non-compliance (for example a disregard of fire safety standards) SGHSC are likely to intervene and take steps to remove a project board. Such a situation has never arisen and it is almost inconceivable that a health board would behave this way. SGHSC would expect less serious instances of non-compliance to be managed by health boards. HFS and the health boards would be best placed to comment on this.

67. As I explained a paragraph 47 it is possible to derogate from SHTMs. It will be for each health board to determine its own processes in so far as derogation is concerned and the Scottish Government would rarely get involved in this process. However, I would expect there to be an audit trail that explains what has been requested, why it has been requested, what decision has been taken and why. This process should be transparent and open and be flexible enough to deal proportionately with each request. For example, a relatively minor request (made during the construction phase of a project) could perhaps be dealt with by the project manager or project director; a more significant request would perhaps go to the Project Governance Board or even the Scottish Government. The only example of derogation from guidance (not an SHTM), of which I am aware, that involved the Scottish Government was the derogation from the single room policy (as contained in the

CEL dated 2 July 2010) that occurred during the business case review of the Project. (Bundle 4, document 10, p.144.

68. I understand the Inquiry is interested in what those who are required to consider and apply SHTM should do when the guidance does not cover a particular situation, is ambiguous or has been superseded by legislation or best practice. It is for health boards to consider how to apply SHTMs; the Scottish Government would not get involved in decisions concerning their application. However, the Scottish Government, and in particular CIG, is aware that during the design and build of a new hospital (which will take many years) it is inevitable that guidance and legislation will change over that time. Where it is possible to accommodate new best practice guidance with minimal disruption, CIG would expect a health board to implement these changes. If adoption of new guidance would lead to additional cost or create a delay, we would expect the project team responsible for delivery to follow the approach outlined at paragraph 47. An exception to this practice would be if there was a change in a Board's statutory duty e.g. fire safety guidance, then the Board would need to comply with the change.

69. NHS Lothian and HFS are best placed to advise on the SHTMs and other documents relevant to ventilation systems at the Project.

70. HFS would also be best placed to advise on the reason for the import of "disclaimers" to SHTM.

71. I am aware that when HFS is drafting SHTM they consult with the other administrations across the UK. I understand that HTM 03-01 is the guidance applicable in England and Wales that is equivalent to SHTM 03-01, however, HFS would be best placed to comment thereon. I am also aware that the National Heating & Ventilation Advisory Group reports to the Scottish Engineering Technology Advisory Group, which in turn reports to the SFG (as discussed at paragraph 63). However, HFS would be best placed to comment on the work of these advisory groups and the contribution made to specific reviews.

Chief Executive Letters

72. CELs are letters sent from the Chief Executive of NHSScotland and Director General of Health and Social Care ("the Director General"). As I explained at paragraph 60, since 2014 all letters issued from SGHSC have been issued by Directors rather than the Director General; these are known as Directors' Letters ("DLs"). This reflected the view of the then Director General, who thought CELs would only be used for the most important issues.

73. The Director General provides strategic direction to the NHS in Scotland and drives performance, efficiency, value for money and the delivery of sustainable safe, effective and person-centred services as well as a general responsibility for maintaining a high standard of care for the people of Scotland and for providing support to Scotland's health and social care professionals. The Director General, amongst others, discharges the Scottish Government's functions under ss1 and 1A of the NHS (Scotland) Act 1978. The statutory basis of a CEL will depend on the context of each letter. Some of the guidance issued to health boards may be considered as administrative instructions, not falling within section 2(5) of the 1978 Act. Alternatively, the wording of the guidance may be framed as imposing obligatory requirements under the statutory powers and direction of the Cabinet Secretary for Health and Social Care.

74. CELs are issued either (a) to impose mandatory requirements on NHS Boards or (b) on an advisory or "Best Practice" basis. For example, DL (2019) 23 confirms mandatory HCAI and AMR policy requirements but some elements of the guidance was given on a best practice basis (Bundle 3, volume 3, document 80, p.1,314).

75. In my experience, CELs and DLs are complied with by those to whom they are directed. If a health board refused to comply with the terms of a CEL then the Scottish Ministers may make a direction, obliging compliance, in accordance with s2(5) of NHS (Scotland) Act 1978. The consequences of non-compliance will depend on the contents of each letter and on what basis it has been issued. Guidance is not normally legally enforceable.

76. If a health board sought to derogate from the terms of a CEL when submitting a business case for review to CIG, I would expect that derogation to have been justified and approved by the relevant parties within SGHSC. My comments at paragraph 47 in relation to derogation from SHTM apply equally to CEL.

77. A failure by a health board to comply with the terms of a CEL may result in ministerial direction, however, I am unaware of this ever happening. Derogations from CELs are rare. The only derogation of which I am aware is the derogation from the CEL relating to single room policy during the business case review for the Project. I am not aware of the detail of what happened as this pre-dated my involvement with the Project. There is not a specific process for derogation, if a health board thought an issue was worthy of a derogation, then either their Chief Executive or an Executive Director of the Board would discuss the matter with a senior Scottish Government colleague (relevant to the subject matter of the derogation) – requests would be considered on a case by case basis.

78. CELs are drafted by the relevant policy leads at the Scottish Government. The letters cover a range of subjects, thus the drafting is department specific. Prior to being issued the relevant policy lead would agree the content of the CEL and obtain the support of the relevant SGHSC Director. Once drafted and approved by the relevant Director, the letter would be sent to the Director General's office for approval. All CELs are issued from the Director General's mailbox.

79. CELs are directed to relevant persons within health boards. Who is relevant depends on the subject matter of the letter. Typically, letters would be issued to NHS Board Chief Executives and NHS Board Chairs, they would also be copied to the Director at each Health Board who leads on the subject contained in the letter. For example, if the letter was about healthcare facilities, then it would go to Directors of Estates and Facilities, Finance issues would go to Directors of Finance etc.

80. I understand that the Inquiry is interested in the extent to which those responsible for the design planning, construction and operation of hospitals have discretion to depart from CELs. CELs cover a wide range of topics, however, with the exception of the single room policy, I am not aware of any CEL that covered any part of the design, planning, construction and operation of a new hospital. Accordingly, I cannot comment on whether or not it is advisable or common for such departure to take place. Likewise, I cannot comment on what the same parties are to do if a CEL does not cover a particular situation or is ambiguous.

81. As I explained at paragraph 78, the drafting of CEL and DL is department specific. My department has not drafted any CELs or DLs in relation to ventilation systems. The Scottish Government can provide the Inquiry with a list of any relevant CELs and/or DLs drafted by other SGHSC directorates if that would be of assistance to the Inquiry's ongoing investigations.

82. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

APPENDIX 1

Subject Matter

The Inquiry has identified certain guidance and Scottish Government correspondence as relevant to its terms of reference. These include Scottish Health Technical Memorandum 03-01 – Ventilation for Healthcare Premises Part A – Design and Validation ("SHTM 03-01 Part A") and so-called "Chief Executive letters" including CEL 48 (November 2008) and CEL 27 (July 2010) on single-room accommodation. The Inquiry is keen to understand the status and purpose of such documents insofar as they are relevant to its Terms of Reference.

Versions

1. The Inquiry has version 2 of SHTM 03-01 Part A dated February 2014. It does not presently have version 1. It understands that SHTM 03-01 version 1 was preceded by SHTM 2025. It is not clear to the Inquiry at present which version(s) applied to the RHCYP/DCN project or over what time periods.

2. SHTM 03-01 v.2 explains that it is part of a series of engineering-specific guidance in nine parts. The series is said to include SHTM 00: Policies and Principles, which is said to be applicable to all SHTMs in the series. SHTM 00 version 2.1, dating from February 2013, is available to the Inquiry. It has the fuller title SHTM 00: Best Practice Guidance for Healthcare Engineering: Policies and Principles. The Inquiry does not presently have earlier versions.

3. The questions which follow are based upon the versions of SHTM 00 and SHTM 03-01 which are presently available to the Inquiry, on the assumption that insofar as material to those questions those versions are substantially the same as the versions which applied to the RHCYP/DCN project. If that assumption is not correct, please notify the Inquiry team at the earliest opportunity and clearly reference which versions you refer to in your statement. We would, in any event, welcome confirmation of the version(s) of the guidance which applied to the RHCYP/DCN project, over which time periods. If they are available to you, please provide copies of all relevant versions of the guidance.

Health Facilities Scotland

1. The versions of both SHTM 03-01 and SHTM 00 presently available to the Inquiry bear to have been published by Health Facilities Scotland ("HFS").

2. The Inquiry understands that HFS is part of the Procurement, Commissioning and Facilities division of NHS National Services Scotland ("NHS NSS"); that NHS NSS is the name given to the body established in statute as the Common Services Agency; and that the statutory basis for NHS NSS is currently section 10 of the National Health Service (Scotland) Act 1978 and the National Health Service (Functions of the Common Services Agency) (Scotland) Order 2008.

3. Under section 10(7) of the 1978 Act, NHS NSS is required to act "*subject to, and in accordance with"* directions given by the Scottish Ministers. Under section 10(3), the Scottish Ministers may delegate to NHS NSS such of their functions relating to the health service as they consider appropriate. (The 1978 Act refers to the Secretary of State but, following devolution, such references are to be read as meaning the Scottish Ministers: section 53 of the Scotland Act 1998.)

4. The functions delegated to NHS NSS under the 2008 Order include the provision of "*information, advice and management services in support of the functions of Scottish Ministers, HIS, Health Boards and Special Health Boards"* (2008 Order, article 2(f)).

5. The Inquiry understands, based on information from NHS NSS, that HFS "*provides operational expertise and guidance on subjects related to healthcare facilities"* and that it "*establishes professional and technical standards and best practice procedures"* (source: NHS National Services Scotland Overview, paper to Inquiry).

6. NHS NSS has explained to the Inquiry that HFS has formed part of NHS NSS since 2006, when the Property and Environment Forum and its executive body, the Property and Environment Forum Executive ("PEFEX"), became part of NHS NSS and were renamed HFS.

7. The Prefaces to SHTM 03-01 and SHTM 00 provide an introduction to SHTMs (pages 7 and 5 respectively). These state that SHTMs give comprehensive advice and guidance on the design, installation and operation of specialised building and engineering technology used in the delivery of healthcare. They explain that the focus of SHTM guidance remains on healthcare-specific elements of standards, policies and up-to-date established best practice. They refer to healthcare providers having a duty of care to ensure that appropriate engineering governance arrangements are in place and are managed effectively. They state that the SHTM series "*provides best practice engineering standards and policy to enable management of this duty of care"*. They explain that the suite is not intended to repeat unnecessarily international or European standards, industry standards or UK Government legislation, but that where appropriate those would be referenced. They state that SHTM guidance was the main source of specific healthcare-related guidance for estates and facilities professionals. They state that the suite provided access to guidance which was more streamlined and accessible; encapsulated the latest standards and best practice in healthcare engineering; and provided a structured reference for healthcare engineering.

8. The Executive Summary to SHTM 00 states that it is provided as a comprehensive guide to all issues relating to the management of engineering and technical service provision wherever NHS patients are treated. It states that, whilst it is not intended to cover every possible scenario, its standards and principles may be appropriate to follow in all locations where healthcare is provided. It states that the aim of SHTM 00 was to ensure that everyone concerned with the management, design, procurement and use of a healthcare facility understood the requirements of the specialist, critical building and engineering technology involved. It states that, regardless of the procurement route, it is essential that, as part of the briefing process, those involved in the provision of the facility are advised that all relevant guidance published by HFS was available electronically for purchase from HFS. It states that only by having knowledge of these requirements could a healthcare organisation's board and senior managers understand their duty of care to provide safe, efficient, effective and reliable systems which were critical in supporting direct patient care. It states that it was expected that appropriate governance arrangements would be put in place to reflect these responsibilities, supported by access to suitably qualified staff to provide the informed client role. It states that by locally interpreting and following the guidance, NHS boards and individual senior managers should be able to demonstrate compliance with their responsibilities.

9. SHTM 00 recommends (page 9) that boards and chief executives, as accountable officers, use the guidance and references provided, inter alia: when planning and designing new healthcare facilities; and when developing governance systems which take account of risk. The Executive Summary concludes by stating that "*Once NHS Boards and Chief Executives have embraced their principles set out within this document and taken the necessary actions, their duty of care responsibilities are more likely to be fulfilled".*

10. Both SHTM 00 and SHTM 03-01 carry a disclaimer in the following terms:

"*The contents of this document are provided by way of general guidance only at the time of its publication. Any party making use thereof or placing any reliance thereon shall do so only upon exercise of that party's own judgment as to the adequacy of the contents in the particular circumstances of its use and application. No warranty is given as to the accuracy, relevance or completeness of the contents of this document and Health Facilities Scotland, a Division of NHS National Services Scotland, shall have no responsibility for any errors in or omissions therefrom, or any use made of, or reliance placed upon, any of the contents of this document."*

NHSScotland's National Infrastructure Board

Terms of Reference:

Purpose

The purpose of the Board is to provide strategic leadership and expertise in driving forward a National Strategy for infrastructure change, as well as providing national oversight on the continued safe and effective operation of the retained estate.

It will develop a National Infrastructure Strategy in support of emerging national clinical service plans and emerging regional plans to form a nationally prioritised programme of infrastructure change. It will also provide oversight, influence and challenge on how this is implemented across Regional Boards, NHS Boards and Integrated Joint Boards through their strategic service plans, Local Delivery Plans, Property and Asset Management Strategies, and individual business case submissions.

It will be the national authoritative body for mandating action by NHS Boards on strategic infrastructure, asset management and facilities service related statutory compliance, technical, performance, and governance matters.

Background information supporting the perceived need to form the National Infrastructure Board is included in Annex A.

Scope

This National Infrastructure Board will determine which matters of infrastructure, asset management and facilities services are of national importance and thus included within scope of this Board. This will be determined through consideration of the extent of national benefit and/or national risks and will cover all NHSScotland properties, medical equipment, fleet, IM&T infrastructure and facilities management services.

Authority

The National Infrastructure Board will have the authority to mandate action (and oversee compliance) from NHS Boards on any national information requests, and/or any remedial or improvement works it deems necessary.

It will determine national priorities for infrastructure change, investment and disinvestment. This will follow a robust process of collective engagement and review of local and regional needs and investment proposals.

It will provide influence and recommendations on how these national priorities are implemented nationally, regionally and locally.

It will indicate which capital investment projects should be supported from the available health capital budget.

It will determine which major capital investments (>£100 million) should be prioritised as requiring additional capital support from the Infrastructure Investment Unit at Scottish Government.

Membership

Chair of the National Infrastructure Board will be appointed by (or be) the Director of Health Finance and Infrastructure from the Scottish Government Health and Social Care Directorate.

Membership of the National Infrastructure Board will consist of:

- Director of Health Finance and Infrastructure at Scottish Government
- All three Regional Implementation Leads for NHS Scotland
- The National Board Implementation Lead
- The Director of Health Facilities Scotland
- Representation from NHS Directors of Finance
- Representation from the Strategic Planning Forum
- Representation from COSLA
- Chair of the NHS Capital Investment Group
- Chief Executive of Scottish Futures Trust

Membership, and specialist advisors to the Board, will be invited and/or appointed (as appropriate) by the Chair of this National Infrastructure Board.

Meeting arrangements

At the first meeting, the Board will decide how often it will meet.

Papers for discussion at the meeting will be submitted at least 10 days prior to the forthcoming meeting, with the agenda and collated papers issued to all members 7 days prior to the meeting.

Minutes of the meeting will be circulated via e-mail to the Chief Executive, Finance Director, and Estates / Facilities Director of each NHS Board; plus all members and advisors to the National Infrastructure Board.

Reporting

This National Infrastructure Board will be accountable to, and report to, the Director General Health and Social Care. Informal update meetings will be arranged, plus an annual review meeting to formally discuss the output deliverables described below.

A separate update of key outcomes from this Board will also be presented at each Capital Investment Network meeting.

Deliverables

The main output deliverables for this Board include:

- Setting out the governance arrangements necessary to confirm the Board's authority to mandate action.
- Develop a National Infrastructure Strategy, updated and published every two years.
    - The Board will lead on its development, identify national investment priorities, and provide national oversight on synergy with regional plans and priorities.

- Develop a nationally prioritised programme of infrastructure investment and disinvestment, updated every year.
  - This will describe the full scope of local / regional ambition, identify financially committed projects, and highlight the shortfall where additional funding is needed.
- Prepare a national infrastructure, asset management and facilities services risk register, updated at each meeting.
- Maintain a register of progress against mandated actions and compliance, updated at each meeting.
- Authorise publication of the annual State of NHSScotland Assets and Facilities Report.

Review

These terms of reference will be reviewed annually at the first meeting after the 1st April each year.

Annex A – The Need for a National Infrastructure Board

The following provides further information and background evidence on the need to take forward these recommendations:

The Need for a National Infrastructure Strategy

The current approach to investment planning is very much bottom up whereby Boards develop an estates response to their health delivery investment needs and then inform Scottish Government of their individual intentions. This often leads to ad hoc applications for funding support which may not necessarily match Scottish Government's immediate priorities. Without a national framework / strategy and a longer term vision for the NHS estate linked to a National Clinical Service Strategy, it is difficult to envisage the full extent of the funding support needed to enable proposed transformational change to national and regional health and care delivery models. Decisions on the future viability of the existing estate and its backlog maintenance requirements also need to be considered in this same context. With estimates of up to £6bn being necessary to transform just the acute hospital estate into a modern clinical service environment, then longer term national planning and prioritisation of funding will be essential if Scottish Government is to appropriately target and support this demand in an effective manner.

Furthermore, as a National Infrastructure Strategy is formed, there will be a need for an oversight body which provides challenge to Boards' regional and/or local plans to ensure that they fit within this strategic framework and are aligned with Scottish Government's perception of its immediate priorities. This should also halt the current practice whereby unannounced investment plans are presented for funding support, which struggle to demonstrate either a regional or national context. The first step towards this has already been implemented when, in September of this year, the Health Finance Director stated that any new submissions to the NHS Capital Investment Group (CIG) would need to have already been reviewed and agreed as part of the proposed regional health delivery planning process and be highlighted in the regional plans. The National Infrastructure Board would (as proposed) provide oversight and influence to these regional submissions to ensure that they fit with the national strategy and investment priorities, which will be in addition to the current CIG arrangements.

The Need for a National Authoritative Body for Reporting on Statutory Compliance, Technical Matters, Performance and Governance Arrangements

Recent high profile requests for estate information in response to nationally important issues such as the Edinburgh Schools' enquiry and Grenfell fire disaster have highlighted the lack of an authoritative agency to ensure that the necessary information from Boards is provided in a timely, consistent and quality manner. Information provided was often incomplete, late, or inconsistently reported which made it difficult to offer the level of assurance being requested. Also, opportunities for estate and facilities performance improvements aren't necessarily being actioned with national transparency when reports suggest below average performance.

Whilst it is proposed that the current national support, technical advice, and facilitation arrangements associated with much of this information should remain with Health Facilities Scotland (e.g. EAMS, CPS, SCART, PAMS info, and expert advice

on design, fire, engineering, and environmental management issues, etc), the effectiveness of response from Boards would be substantially improved with the introduction of a national authoritative body that is empowered to mandate that necessary information requests are responded to accordingly, that any remedial action is clearly defined, and then to oversee progress towards achievement.

Additionally, it has been suggested that the management of this information at Board level can sometimes be inconsistent and that it isn't necessarily being provided to its full advantage to identify investment needs and drive forward strategic change. A National Infrastructure Board and Strategy would provide the necessary emphasis and authority to ensure a reporting regime whereby all estate intelligence is focussed on being relevant, meaningful, consistent, and available as and when needed.

The Need for National Leadership and an Authoritative Voice on all Estates and Facilities Matters

There are several examples within the estates and facilities arena where services are delivered at a national and regional level, and other areas that would also benefit from the introduction of a national or regional approach. It can, however, be difficult to fully maximise these opportunities without national leadership driving forward the need for change and providing an authoritative voice from which all regional and local Boards can respond.

Also, in this time of transformational change, leadership, as well as capacity and capability planning, are important ingredients for future success. For example, there will be a need to ensure that local and regional plans are aligned to a national strategy which, in turn, will mean that key messages and detail are effectively articulated to all those involved so that they fully understand the implications and are capable of implementing such changes. To this end, it will be crucial that the recommendation from the NHS Board reform programme of promoting better leadership is encouraged nationally, and that the local workforce has the capacity, capability and authority to implement change locally.

Furthermore, an authoritative voice is needed on all nationally significant estate and facilities plans and decision making, which is formed from a more robust evidence base. As an example of where this is beginning to occur is through regional planning colleagues who have been looking at ways in which health and care service modelling and performance information can be better aligned to population demographics and estates data to create more meaningful and effective intelligence on health, care, and estate needs. A National Infrastructure Board would be able to provide further oversight to such work in order to maximise national benefit; particularly in the development of a national IT based planning system which could be used to inform future strategies.

News

NHS Scotland Assure

Published: **01 June 2021 00:01**
Part of: Building, planning and design, Health and social care, Coronavirus (COVID-19) in Scotland

New service for healthcare facilities.

Contact

Media enquiries

A new national service has been established to improve the quality and management of healthcare construction and refurbishment projects across NHS Scotland.

NHS Scotland Assure brings together experts to improve quality and support the design, construction and maintenance of major healthcare developments. This world first interdisciplinary team will include

microbiologists, infection prevention and control nurses, architects, planners, and engineers.

Commissioned by the Scottish Government and established by NHS National Services Scotland, the service will work with Health Boards to ensure healthcare buildings are designed with infection prevention and control practice in mind, protecting patients and improving safety.

Cabinet Secretary for Health and Social Care Humza Yousaf said:

“NHS Scotland Assure will support a culture of collaboration and transparency to provide the reassurance patients and their families deserve to feel safe in our hospitals. This service is unique to Scotland and is leading the way in risk and quality management across healthcare facilities.

“With services designed with patients in mind, we can make a real, positive difference to people’s lives.”

Gordon James, Director of Procurement, Commissioning and Facilities for National Services Scotland said:

“We co-designed NHS Scotland Assure with colleagues to improve quality and reduce risk in our healthcare buildings and facilities across Scotland.

“NHS Scotland Assure will work collaboratively with Health Boards to make sure our buildings are compliant with the best available guidance and evidence.”

Background

Benefits of NHS Scotland Assure include:

- increased patient safety
- stronger relationships with clinical teams
- increase in public and professional confidence
- cohesion between healthcare and construction teams
- reduced costs
- greater sustainability

NHS Scotland Assure consists of eight new services, supporting the management of risk in healthcare builds across Scotland. For some services, elements are already delivered across the system, and where this is the case, enhancements will be made.

Was this helpful?

- ◯ Yes
- ◯ No
- ◯ Yes, but

About NHS Scotland Assure

Published on 23 February 2022

NHS Scotland Assure exists to improve how we manage risk in the healthcare built environment across Scotland. Managing risk in the right way gives those involved in maintaining NHS buildings, facilities and equipment confidence and reassurance.

As a new service, Assure aims to be recognised across the world as a national centre for reducing risks in the healthcare built environment. The service will ensure safety, fitness for purpose, cost effectiveness and capability to deliver sustainable services.

Who is Assure for?

NHS Scotland Assure and its services will be for all NHS health and care environments where healthcare is delivered. It will cover the full lifecycle of a build, from strategic assessment, building operations and ongoing maintenance, to decommissioning.

What will Assure do?

NHS Scotland Assure will consider all types of risk as they relate to the built environment.

NHS Scotland Assure **will not**:

- address or seek to change legal responsibilities of NHS Boards or primary legislation
- create a Central Building Division as NHS Boards need to remain accountable for their projects and current estate. Doing this would mean that accountability would move from boards to a central function, and this would need legal changes
- address non NHS Healthcare environments e.g. private dental practices
- develop an inspection function. We recognise the synergy with the inspectorate and will connect and underpin inspections through the provision of intelligence and subject matter expertise.

Get in touch

Contact us to find out more about how NHS Scotland Assure can help your projects.

central legal office
your public sector partner

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Our Services

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- Employment
- > Commercial Contracts
- Commercial Property
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- Debt Recovery
- Training and Seminars
- Endowment
- Information Services
- CNORIS

Commercial Contracts

Our Commercial Contracts Team acts as the interface between the public sector and the commercial sector. The Team helps clients work successfully with business partners and suppliers ranging from local service providers to multinationals. We are the leading supplier of specialist commercial law advice to the NHS in Scotland.

Covering all aspects of commercial law, the Team provides advice and services across the following key areas:

- drafting and negotiating data protection provisions in contracts
- assisting clients with requests made by, or on behalf of, data subjects
- drafting and advising on information sharing and data processing agreements
- handling ad hoc data protection queries and issues
- advice on regulatory compliance, including choice of procurement procedure
- drafting tender documentation and negotiating contracts
- guidance during the procurement process
- advice on procurement and post-contract award issues
- advice on documentation to facilitate pre-clinical trial arrangements
- drafting and negotiating pre-clinical trial agreements
- advice on clinical trial agreements for device and drug trials in commercial and non-commercial contexts
- advice on agreements to document other research activity and exploitation
- advice on software licensing and delivery models
- reviewing contractor standard terms and conditions
- drafting, negotiating and advising on contracts
- advice on supply and maintenance contracts

We can aslo help you with general advice on itllectual property rights and all commercial and legal matters affecting the pblic sector. Solicitors and support staff in our Team combine an in-depth understanding of the specific requirements of the public sector with extensive experience of working with the commercial sector. As a result, we are ideally placed to provide legal and commercial advice and practical support on matters ranging from relatively small-scale contracts such as project consultancy, to large projects or complex policy-sensitive issues relating, for example, to the storage and handling of personal data.

The depth and scale of our expertise means we are well equipped to help clients move into new ventures. An example of this is our expertise in connection with the establishment of shared service operating models.

The Team can also provide invaluable practical and commercial assistance when conducting a procurement. We are uniquely placed to provide assistance in developing best practice in response to the challenges posted by the complex legislative and regulatory framework governing public procurement.

The negotiation process in any contractual arrangement, particularly in large complex projects, can sometimes be daunting to clients and, of course, it can often be a key stage in any procurement process. The Team can support and lead such negotiations, drawing upon our extensive collective and individual experience and intensive training in negotiation skills.

Disputes can, of course, arise even in the most considered contractual arrangements. The Team is well placed to offer appropriate assistance in connection with any dispute, offering pragmatic practical and legal advice, when necessary in conjunction with the litigation department to achieve best results for clients.

Meet the team

- Commercial Contracts Team

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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
[redacted]

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

MediumValue Change - 110 - Remedial Work (Pseudomonas Sampling (27 outlets))	-	68
Total Low Value Changes	100	333
Total Spend/ Estimated Additional Costs	**2,989**	**5,232**

Scottish Government
Riaghaltas na h-Alba
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NHS Lothian

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 23rd April 2020, 8am		

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

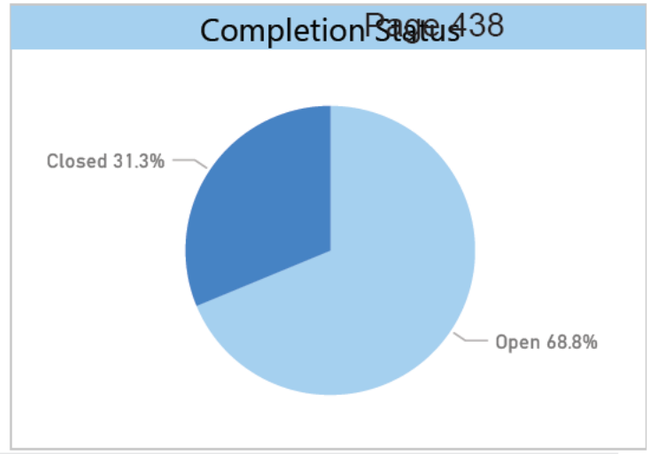
Risks (R) and Issues (I)				
R / I	Escalated Risk / Issue Recorded in register	Controls in Place	Risk Status	RAG last report
R	Potential impact of Helipad use: fumes and downdraft affecting services on campus.	Trial flights by Bristows and Babcock being planned Feb/Mar 2020. Helicopters limited to 9tn maximum weight. Helipad is 25m², 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

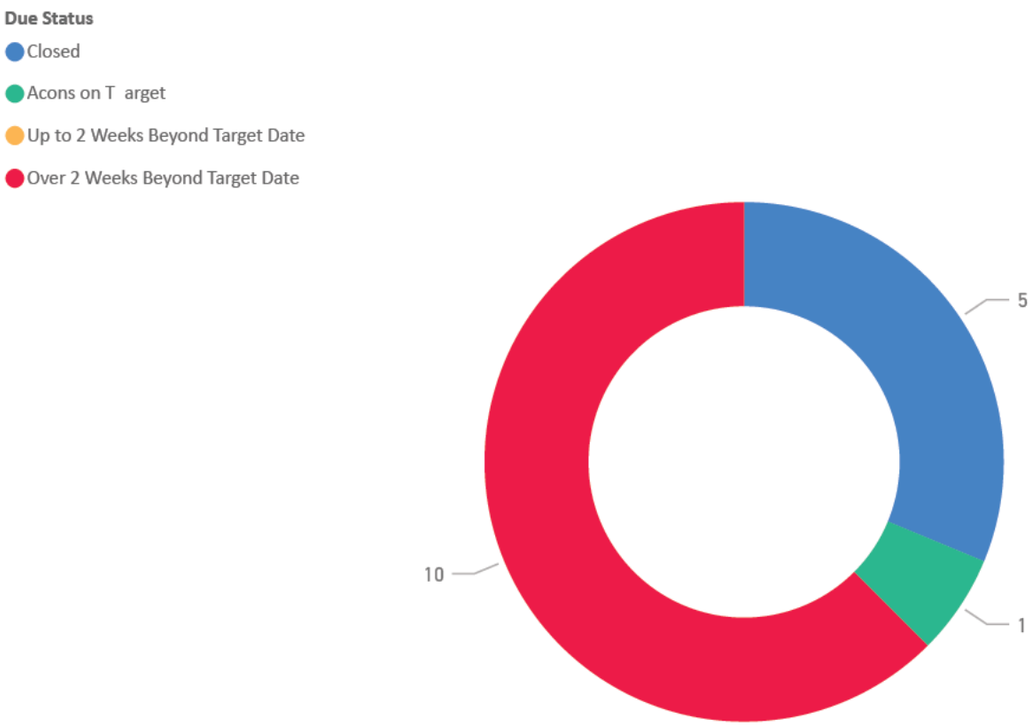
03/04/2020

OPEN	CLOSED
11	5



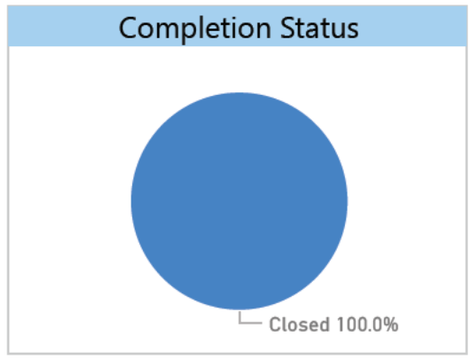
Actions closed since last dashboard : 1

Status against Target Date



Water

OPEN	CLOSED
0	1



Ventilation

OPEN	CLOSED
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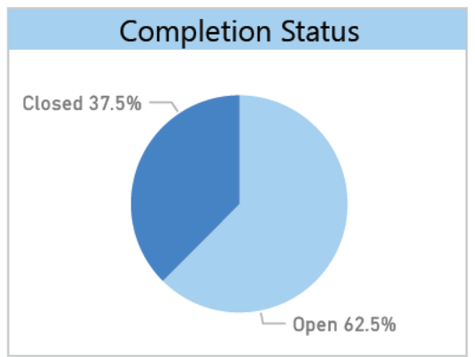

Electrical

OPEN	CLOSED
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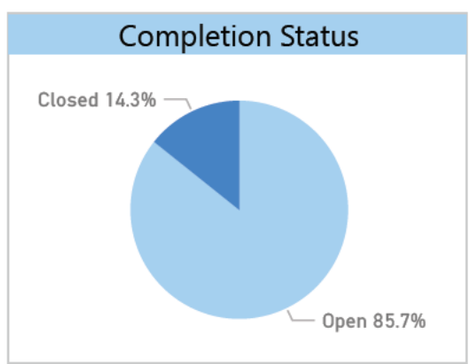


RHCYP + DCN

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	**MPX are recommissioning every system,** DCN is complete and returned to the normal set points. **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. **IOM to confirm revalidation of the ventilation in RHCYP.** BYES are awaiting commissioning and validation certification from MPX to return AHU's to full service. (Duplicate for item 41 - 74) Due to ongoing issues with AHU being switched off, IHSL to coordinate all parties and confirm when systems are available for validating. NOTE: Environmental Matrix is not the correct reference point (i.e. still refers to 4ac/h for Critical Care). Mandatory contract conditions are.	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	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.**	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	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. 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. **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.**	OPEN	YES	YES

V38	The "maintenance by-pass" associated with the AHU requires to be fully detailed and proven.	1	Details required include: - · 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	**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.** 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. 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. **- BYES to review SOP.** **- MPX to identify impact to air change rates on a per room basis.** 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.**	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	Remedial works started w/c 12/10/11. **AHU snagging review started on the 10th March with 36 passes with minor comments. The next review is planned for 31st March.** BYES will request AE for Ventilation attends to fully inspect each AHU. Manufacturers certification and updated GA's etc. Are required. **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.** THIS APPLIES TO ISSUE NO'S V41 TO V74 WITH EXCEPTION OF V64. 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).	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	MPX provided statement on 21/3/20 (MPX-GC-030728) - HFS to review. 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.	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 IHSL.

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 in 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
[redacted]

Appendix 1 – List of Issues in SA2

Appendix 1 – List of Issues in SA2

Issue	Proposed Approach, Risks and Precedents
Ensure Imtech, the Project Manager, the Supervisor and BYES perform their obligations under their respective contracts	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: • to exercise their obligations as client under the respective contracts; • to use reasonable endeavours to secure the performance of their contracting counter parties. 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.
Design (and copyright to use design) and construction standards	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). 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. 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. 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. 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.
Design Review	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.

Issue	Proposed Approach, Risks and Precedents
Right of access to the works, inspection, monitoring and 'opening up' and working with others and Site restrictions	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. 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.
Programme	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).
Extension of time and money events ('compensation events' or 'CE')	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: • 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	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. 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.
Commissioning, tests and inspections prior to and at	The following process for certification of the VW has been agreed, although this is not currently reflected in the NEC4 subcontract:

Issue	Proposed Approach, Risks and Precedents
completion, and deliverables on completion	• 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. 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).
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
	agreed), IHSL's liability is, without limiting any recovery available via insurances, capped in the following manner (any exclusions to be agreed):- • 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. 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.
Termination	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. 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. 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.
Service Provision	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: • 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
	SA2 cannot be signed until it reflects the pass down of service provision to BYES.
Indemnity	This is time limited to 5 years. 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: (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. 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). In relation to both the full indemnity and interim indemnity relief there are controls / limits on the indemnity including: (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. 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. 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.

Issue	Proposed Approach, Risks and Precedents
	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.
Insolvency	The position previously agreed in principle 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 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.

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 so 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 IHSL/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 suspicion 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

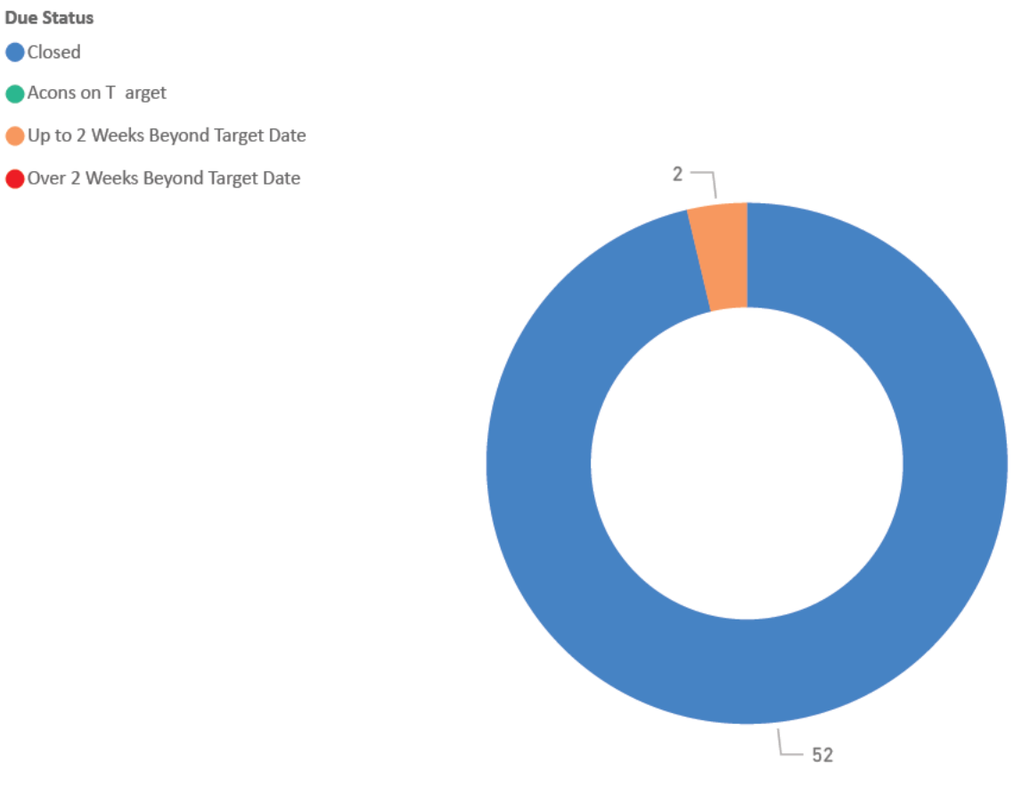
RHCYP+DCN - Continuity of Services on Existing Sites Action Log Dashboard

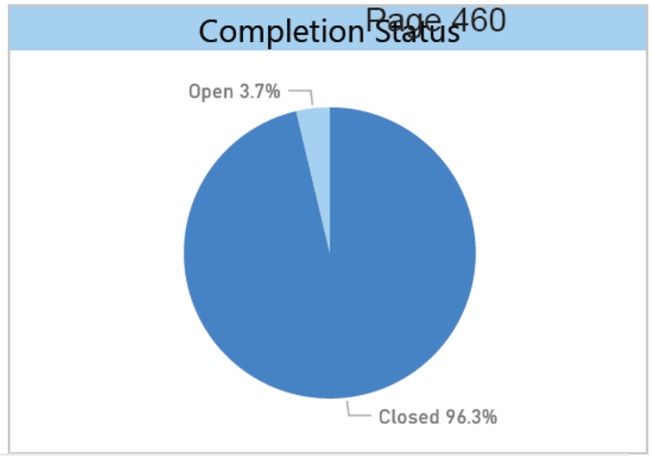
07/04/2020

OPEN	CLOSED
2	52

Actions closed since last dashboard : 3

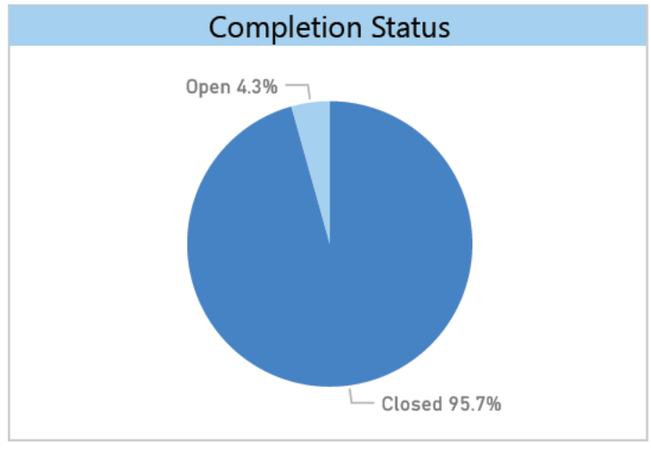
Status against Target Date





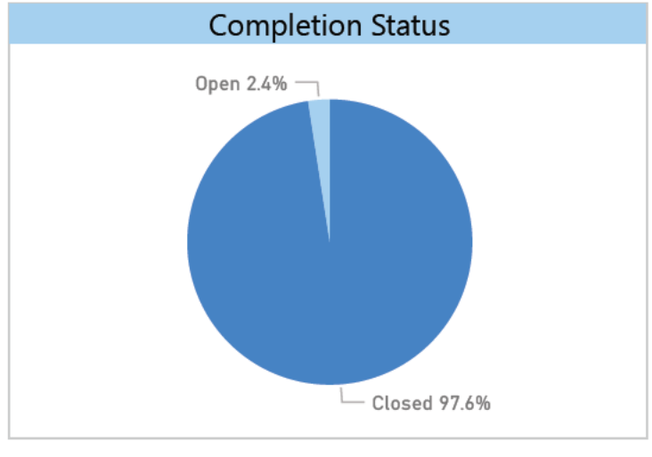
Acons f or DCN at WGH site

OPEN	CLOSED
1	22



Acons f or RHSC Sciennes site

OPEN	CLOSED
1	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 anaesthtic 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 NHSL at this stage, they have stated their intention to do so.

Background

NHSL 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 reprovision. 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 IHSL 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 NHSL 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, NHSL 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 NHSL 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

EDINBURGH CHILDREN'S HOSPITAL – STAFF SIDE MEETING, 9 OCTOBER

Purpose

1. To provide briefing on the new Edinburgh Children's Hospital in advance of a meeting with staff side representatives on 9 October.

Priority

2. Immediate.

Background

3. You wrote to Alex Joyce following the visit to the Sick Kids and DCN today to speak to staff. Following the last meeting with the Staffside on 13 August, you wanted to meet with Staffside again to update on the current situation with regards to the RHCYP.

The meeting will take place on 9 October, 09:00 – 10:00 in TG20/21 - Parliament

Attendees are:

UNISON

Alex Joyce Employee Director

Royal College of Nursing

Stuart McLauchlan
Linda Rumbles
Ros Shaw

UNITE

Gordon Archibald
Susan Perriss

Chartered Society of Physiotherapy

Helen Fitzgerald

Society of Radiographers

Holly Buchanan

Official support

Fiona McQueen, Anna Gilbert, Alan Morrison

Contents of briefing

This briefing responds provides further background information relating to RHCYP, as follows:

Annex A – Update note from the last Oversight Group – 3 October
Annex B – Timeline of Cabinet Secretary Engagement with Staff
Annex C – NSS Report
Annex D – KPMG Report
Annex E – Developer of Current Site and the settlement agreement – background and timeline
Annex F – NHS Lothian annual audit report – key points
Annex G – Public Inquiry
Annex H – Escalation to Level 4 and Mary Morgan Appointment
Annex I – HIS Inspection of Existing Sites
Annex J – Letters from Cabinet Secretary to NHS Lothian Staff 13 September

Annex A: Update note from the last Oversight Group – 3 October

Background
The Oversight Board met on 3 October and discussed and considered the current position regarding the six areas which are subject to a technical review. The main risks to project delivery are that the commercial issues relating to the ventilation fixes in critical care and haematology / oncology need to be resolved before a timeline can be established and the question around smoke and fire dampers need answered before it is clear whether further rectification work is needed.

Further work is required on the Air Handling Units and the management of the water system (eg replacement of some taps), however these are known issues and we expect them to be successfully addressed before the planned handover in Autumn/Spring next year. While we await the final reports on medical gases and electrical systems next week, we do not expect them to identify any material issues; drainage has been closed as all issues have been resolved.

All issues requiring a decision will be considered by the Oversight Board before coming to you for final approval.

Ventilation - Critical Care and Haematology / Oncology
Two high value Board Change Notices have been issued to IHSL for critical care and Lochranza Ward (Haematology / Oncology) ventilation. IHSL have not been able to provide an initial response due to commercial issues raised by BYES which will be discussed at a workshop on 4 October. Until these commercial issues are resolved, it is not possible to identify a programme timeline. While the planned handover date (Spring 2020) remains achievable, it will be contingent on these issues being addressed quickly.

Ventilation – Air Handling Units
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. Following these reports and to address the recommendations in them, Multiplex completed a benchmark Air Handling Unit (AHU) which was reviewed and assessed by HFS, HPS and NHS Lothian on 27 September. Further enhancements are required and while Multiplex have not formally responded, it is assumed that they will accept the recommendations and change the AHUs.

Four options have been identified as potential ways of dealing with this issue:

- Replace all AHUs;
- Accept the AHUs as installed ie do nothing;
- Accept the benchmark as the standard to be applied across all units, with the units in DCN being prioritised;
- Accept the AHUs as installed but require the cabling to be removed from the units and instead be fitted externally (the cabling is considered the main risk).

A better understanding of the risks is required before the Oversight Board can make a recommendation to you, but it is likely that option three will be chosen as it is assumed the remedial work will address the identified risks; a revised risk assessment, with clinical input, will be undertaken following the remedial work. We would expect the Oversight Board to take a decision at their next meeting on 10 October.

Water Safety
The Final Water Safety Review meeting on 25 September confirmed all outstanding actions and escalation routes have been identified. This means that while no new issues are expected

to be identified, they require proactive management to ensure mitigation is effective, for example the disinfection of all taps found to be with pseudomonas is an ongoing exercise.

Drainage
Early in the 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.

HFS have reviewed the situation and the mitigation measures in place and while the location of the sump is not ideal, it can be concluded that there are appropriate 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. Consequently this is considered a closed issue and will not routinely be discussed at the Oversight Board going forward.

It should be noted, that following suggestions from Staff side representation that members had concerns about drainage, the Senior Programme Director met with the Unison representative. While he provided vague, unspecified concerns about the drainage, there was no actionable intelligence that the Director could discern, therefore while his concerns were noted, no further action was proposed.

Fire, Electrical and Medical Gases
The final phase 2 report on fire, medical gases and electrical safety is expected at the end of next week (11 October).

Fire experts from Glasgow Caledonian Building School had been on site and the initial draft report had been shared for early visibility. Further information has been requested from IHSL in relation to the provision of smoke and fire dampers and their response will impact on the final report. NHS Lothian were keen to emphasise that the new building had received the appropriate building control certification and that the Scottish Fire and Rescue Service were content with the fire safety of the building.

The final report on Medical Gases is on schedule to be complete for next week, but verbal updates have been encouraging and no issues have been identified at this point.

Following receipt of the draft report on electrical safety, NHS Lothian have been discussing the initial observations with NSS, but no material issues have been identified.

Annex B: Timeline of Cabinet Secretary Engagement with Staff

- You wrote to staff on 18 July and visited the existing Sick Kids and DCN sites the same day to provide an update and to answer questions that staff may have in response to the decision to delay moving the hospital to the new site.

- Alex Joyce (Unison), Employee Director and Joint Staff Side Chair of NHS Lothian wrote to you on 23 July 2019 requesting a meeting to discuss concerns that Staff Side had been excluded from any communications regarding the decision not to open the Sick Kids hospital. These concerns were also raised within the press, including in the Scotsman.

- You subsequently met staff-side representatives from NHS Lothian on 13 August 2019 where you reassured staff-side that the unions were not being excluded from communications and that you expected the Board to engage with them and work in full partnership.

- You confirmed your position in writing to Alex Joyce on 19 August and thereafter wrote to all staff of NHS Lothian to provide them with an update. You also set out the terms of reference for the KPMG and NSS Reports

- Upon publication of the reports, you wrote again to Alex Joyce and to all affected staff in NHS Lothian (11 September) to set out the findings and confirm the new timescales for occupation of the hospital.

- On each occasion you thanked staff personally for their fortitude and forbearance.

- On 18 September 2019, you announced in parliament that following concerns from affected parents, you would instruct a public inquiry, under the terms of the Inquiries Act 2005. You announced that the findings would inform the establishment of the new oversight body for large NHS Scotland capital construction projects.

- You visited the Sick Kids hospital, alongside the DG Health on Monday 23 September 2019.

NHS Lothian engagement with staff

NHS Lothian have undertaken a range of engagement with staff, including open sessions and a Q&A published on their intranet.

Lines to take

- It is untrue that the Scottish Government has sought to exclude the trades unions or staff on the decision not to open the Sick Kid's hospital.
- This was a developing situation and the Scottish Government worked closely with the Board to ensure the right decision was made.
- On issues of joint interest, it's routine for the Scottish Government and health boards to share media responses.

- My greatest responsibility is the safety of patients, and for this reason the decision was taken to delay the move of patients, staff and services to the new hospital.
- I recognise that many staff share my frustration following the announcement of the delay. The Chief Medical Officer and I have visited staff at the Sick Kids hospital to hear any concerns they may have, and to offer our personal thanks for the exemplary way in which they have managed the delayed move.
- The Scottish Government is committed to working in partnership with NHS Employers, Trade Unions and Professional Organisations.
- This partnership working has been recognised in NHSScotland as a critical success factor in achieving the aspiration of a world-class health service designed with the patient at the centre.

Annex C – NSS Report

External Review – NHS National Services Scotland (NSS)

NSS sent 130 questions to NHS Lothian on phase 1 of the review – ventilation, water and drainage. A meeting was arranged with NHS Lothian on 7 August to discuss areas where their responses were incomplete.

The NSS report published on 11 September made it clear that significant work had to commence to ensure compliance of the site. The report highlighted a programme of work including a solution for the design of critical care ventilation, the procurement and installation of the ventilation system, as well as highlighting the significant level of testing and validation that was required.

Summary of Findings

1. It was recognised by NHSL that critical care ventilation was not designed to current guidance. As a result this report focuses on other systems, however, they have provided advice on the contractor design intent for a new CCU system.

2. Key outstanding information includes the design intent for the natural ventilation component.

3. The theatre ventilation has not been installed in accordance with current guidance (when maintenance is being undertaken, two theatres, rather than one, will be out of action).

4. Some of the water testing results, due to the time taken to process, are not yet available however it was found that there were certain fungi in the water, mainly at the taps as well as higher than anticipated total viable counts. Lessons learned across health systems strongly suggest that this should be eradicated before patients and staff move in. There would appear to be no systemic contamination of the hot and cold water systems.

5. 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. 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.

Annex D – KPMG Report

KPMG were instructed to independently establish the facts surrounding the decision to delay the move to the hospital. As part of the assessment KPMG were specifically instructed to consider the following areas:

- Establish what decisions were made by NHS Lothian, when these were made, by whom and on what basis these decisions were taken in relation to the air ventilation issues and any other material issues that led to the Delay;
- To determine the extent to which the design specification with regard to air ventilation complied with the Scottish Health Technical Memoranda (SHTM) at each stage of the project;
- To understand what professional and technical advice was given to the Board, in particular what derogations were proposed, who agreed them and what risk assessments were undertaken;
- To establish the governance arrangements in place.

Summary of Findings

- The key issue which led to the delay was the non-compliance with SHTM 03-01 for air change rates in some of the Critical Care areas of the Hospital which was identified by IOM and reported to the Project Team on 24 June and subsequently brought to the attention of the Board on 1 July 2019.

- Throughout all stages of the project, references were made to the requirement to adhere to SHTMs, including specifically SHTM 03-01 which related to ventilation. However notwithstanding any contractual obligations, the report clearly identifies a picture of confusion between the parties as to the correct application of these Standards. This appears to have stemmed from a document produced by NHS Lothian at the tender stage in 2012 which was inconsistent with SHTM 03-01 and which was referred to throughout the project.

- There is clear evidence that professional and technical advisors were involved throughout the project; specifically this includes involvement in relation to ventilation issues. However, there is no evidence that the problem was identified prior to June 2019.

- Governance processes and procedures operated in line with the structure that was put in place. There was regular dialogue between NHS Lothian and Scottish Government throughout the project, with evidence of escalation where required, albeit this was focussed on financial rather than technical matters.

- Once NHS Lothian's Board became aware of the air change issue, steps were taken to assess the impact. The Executive Team and the Project Team met to discuss the issues uncovered on 1 July 2019 and on the same day the issue was escalated to other members of the Board which resulted in an urgent internal meeting the following day at 9am. Later that day the Chief Executive and Chair briefed the Director General of Health and Social Care on the situation.

- But for the issue of non-compliance in air change rates, KPMG understands from NHS Lothian that the Hospital would have opened as planned. While this is the view of KPMG, we believe this statement needs to be explored further as we are aware of the other ventilation issues beyond the air change rate in Critical Care.

Structure of the Report
After providing a summary of findings, the report is split into the following sections:

- Background to the Project and the Delay
- Design specifications and air ventilation standards
- Professional and Technical advice given to the Board
- Governance and escalation structure with NHS Lothian

Background to the Project and the Delay
One of the more significant observations include that at the time of financial close in February 2015, the designs of the Hospital had not been fully developed, including issues relating to the design of the ventilation (pressure regime).

In early 2017, the report notes that it became clear that the Hospital would not be completed in time and there were three main issues – ventilation (pressure regime), High Voltage resilience and MRI provision which could not be resolved and it left both parties considering court action before they agreed to move to a negotiated settlement.

In order to resolve the pressure in single rooms, the air change rate was adjusted from six to four with two air change rates to be provided through natural ventilation (a 'mixed mode' solution). However an issue remained regarding the pressure in multi-bed rooms. Fourteen multi-bed rooms were adjusted to have balanced or negative pressure, four of which were in Critical Care. Reference was made in the proposed resolution of this issue to an air change rate of four.

During that period, it became apparent that while some of the issues were being addressed, there were a significant number of technical issues emerging. On 22 February 2019, the Settlement Agreement was signed which covered the 76 identified problems, where 73 had an agreed solution and three technical issues (fire void detection, drainage and Heater Batteries) did not.

Following the signing of the Settlement Agreement, on the same day the Independent Tester provided a 'Certificate of Practical Completion' which meant the project moved from the construction phase to operational phase and the payment of the Annual Services Charge began. During this operational phase a significant number of outstanding works were required to be carried out by Project Co, while at the same time NHS Lothian began commissioning the Hospital.

Professional and Technical Advice
The report concludes that advice and support was provided to the Project Team by both technical advisors and internal clinical advisors.

Governance Arrangements
The governance structure surrounding the construction and commissioning of the Hospital was operating in line with that described and issues were escalated through appropriate channels. Oversight was delegated to the Finance and Resources Committee which included four Executive Directors.

KPMG saw evidence that the governance arrangements operated in practice and that it appears that at each stage of the Project, personnel with appropriate technical and clinical skills and experience were involved and that where appropriate external advice and guidance was sought.

Annex E – Developer of Current Site and the contract settlement agreement – background and timeline

Developer of Sciennes Site

Alex Joyce has highlighted Staffside are likely to raise what arrangements have been made with the developer for the Sciennes site as we will not vacate the site as planned.

NHS Lothian are keeping the developer up to date with the current situation and their discussions indicate that there is no suggestion that they may pull out of the sale. This is mainly because:

- The site is probably worth more now than when it was originally sold;
- The developer has already spent money on planning permission;
- The developer has only paid a deposit of around 10% of the total value, so there is no real impact on the cash flow of the developer.

This is a commercial agreement, so it would not be appropriate to go into detail of the arrangements, beyond offering reassuring words that the developer is fully appraised of the situation and has no plans to change course.

Settlement Agreement

The construction of the new Edinburgh Children's Hospital was originally scheduled to be complete in July 2017, however due to a number of issues such as the ventilation system in 20 three and four bedded wards and the quench pipes in the MRI suite, the handover of the hospital was delayed.

NHS Lothian and IHSL, had been in dispute over who is responsible for the delay, but they began working on agreeing a programme of work which was intended to deliver practical completion of the new hospital by October 2018, with patients moving to the new facility in February 2019.

In order to deliver these outcomes, NHS Lothian developed a Settlement Agreement with IHSL, which confirmed all areas of dispute and costed what needed to be done in order to complete the hospital. As part of that agreement, NHS Lothian accepted that they needed to make an additional payment of £11.6 million which would resolve all areas of dispute and assist in the completion of the facility.

This proposal was endorsed by NHS Lothian's Finance and Resources Committee. Scottish Government were supportive and approved the proposed way forward because it offered more certainty in terms of costs and timescales and removed the risk of Court action being necessary.

On 22nd February 2019, the Board entered into a Settlement and Supplemental Agreement with IHSL. This agreement was to resolve various disputes between the Board and IHSL, with the ultimate aim of opening the new RHCYP & DCN hospital in July 2019. This agreement also resulted in certain provisions of the original Project Agreement (both legal and technical) being amended.

Settlement Agreement – what is it?

NHS Lothian and IHSL were in dispute over who was responsible for the delay in the opening of the new hospital and there were broadly two options available – settle the matter in Court or for the two parties to agree the necessary way forward. The Settlement Agreement is essentially the formal legal documentation of the agreed technical way forward which puts

aside who is responsible for the delay and instead focuses on what needs to be done, who needs to do it and what payment needs to be made.

The technical solution identified that additional capital works of £17.6 million was necessary and project financing and additional contractor costs of £5.8 million. It was agreed that NHS Lothian's contribution would be £10 million to the capital works and £1.6 million for the other costs.

Settlement Agreement – main issues to be resolved
The agreement identified around 80 issues which needed to be resolved. NHS Lothian challenged IHSL on all of these issues as they needed to be assured that the solution was deliverable and worked, which was why that while the principle of the Settlement Agreement was agreed in July 2018, the documentation was not finalised and signed until February 2019.

Even after the agreement was signed, we highlighted that there were three main technical issues that were identified as high risk – drainage, void fire detectors and heater batteries, but they would be addressed post-completion and at the same time the Board undertakes its commissioning. Risks of contractor and Board working at the same time were highlighted.

Timeline of briefings
14 March 2018 – Briefing to Cabinet Secretary highlighting there were problems with the ventilation; NHS Lothian considering court action at that point.

21 March 2018 – Briefing to Cabinet Secretary noting that court action would need to be approved by CS before it starts.

25 April 2018 – Email to Cabinet Secretary and First Minister informing both that court action is no longer being taken forward and that a loan of £10 million is being considered to allow the ventilation to be fixed.

27 July 2018 – Briefing to Cabinet Secretary noting that a loan would fail on state aid grounds, so instead a settlement agreement is now the agreed way forward.

July 2018 – Paper from NHS Lothian's Finance and Resources Committee on the proposed commercial agreement between NHS Lothian and IHSL. This outlines why it is needed, what it does and what the risks are. This provides the necessary assurance for Christine McLaughlin to approve the payment.

20 September 2018 – Briefing to Cabinet Secretary detailing additional technical problems, most notably with the drainage. Highlights that 31 October handover will not be achieved.

7 November 2018 – Email to Cabinet Secretary confirming that the revised handover date of 31 October was not achieved and that a new date was still not known.

13 February 2019 – Briefing to Cabinet Secretary informing her that the Settlement Agreement was signed on 6 February 2019 and it would allow project completion to be confirmed. Three significant technical matters remain (drainage, void detectors and heat sensors) but they would be addressed post-completion and at the same time the Board undertakes its commissioning. Risks of contractor and Board working at the same time were highlighted.

Annex F – NHS Lothian annual audit reports– key points

The Auditor General wrote to you on 25 September 2019 regarding Audit Scotland's decision to prepare a report under section 22(3) of the Public Finance and Accountability (Scotland) Act 2000 on NHS Lothian for the year ended 31 March 2019.

This follows your consideration of the reports by KPMG and NSS following the delay to the opening of the Royal Hospital for Children and Young People, the Department of Clinical Neurosciences and the Child and Adolescent Mental Health Service in Edinburgh.

Audit Scotland intend to send the report to Scottish Government for laying in Parliament by the end of November 2019.

NHS Lothian Report Published on 6 August
The Report was presented in draft to the Board in a private session on 26 June. Papers from the private session refer to a verbal overview and to two key issues covered: 1. the external audit progress to date, and 2. a high level review of the arrangements for agreeing and approving the settlement agreement between NHS Lothian and the contractor with respect to the Royal Hospital for Children and Young People (RHCYP), Department of Clinical Neurosciences (DCN) and Child and Adolescent Mental Health Services project. The review was carried out by Scott Moncrieff, the external auditors, at the request of Audit Scotland. The review is included as part of the Annual Audit Report and looked at the governance arrangements relating to the settlement agreement only; and not those relating to the whole project.

Scottish Labour called for publication of the 'secret report into sick kids hospital payments' in a release published on 5 August and this was picked up by various media outlets.

In light of the ongoing public interest in the new Royal Hospital for Children and Young People (RHCYP), the Auditor General took the decision to publish the Annual Audit Report on NHS Lothian on 6 August. Scottish Government officials were made aware of the publication and associated Audit Scotland press release shortly ahead of the 1pm release on 6 August.

The Annual Report that is prepared each year for Board Members and for the Auditor General for Scotland. It is usually published at the end of September/beginning of October and was therefore published approximately 2 months ahead of the usual publication date.

Key findings
The Annual Audit Report confirms that NHS Lothian's accounts received an unqualified audit opinion. In addition, the Report sets out findings from the high level review of governance arrangements of the settlement agreement, along with findings on financial sustainability, financial management, governance and transparency and value for money.

On the settlement agreement: the report notes that NHS Lothian sought professional advice and provided evidence of detailed evaluation of the available options before proceeding with the settlement agreement and that provision of a safe facility remained the board's priority at all times.

Financial sustainability: the report notes that the annual operational plan sets out financial gaps for the 3 years of the plan and that there are limited plans to close the gap. The 2019/20 financial plan outlines a financial gap of £26 million. The report shows this gap increasing to £90 million by 2020/21. The report notes that this is in line with previous years projections and that while the plan shows financial gaps in each year, at this stage, the board does not intend to request brokerage.

Waiting times performance: The report notes that performance metrics have marginally improved in the year but the overall position continues to reflect a challenging environment and there has been a deterioration in performance against waiting times standards.

Funding and reform: the Report notes that there is a clear intention to focus on improving patient outcomes and reducing future demand, but there is limited funding available to support extensive improvement initiatives. NHS Lothian continue to work to reduce waiting times, with their first quarterly performance review showing steady progress on reducing waiting times.

Lines issued in response to media enquiries:

Daily Rec/Daily Mail – Audit Scotland report - The report says NHS Lothian is facing a financial gap of up to £90 million by 2021/22. Can you respond to this?

"NHS Lothian has received additional funding this year of £43.5 million, taking their overall budget in excess of £1.4 billion, along with a share of £392 million to go towards improving patient outcomes.

"As has been demonstrated in each of the previous financial years, it is normal for NHS Boards to begin the year with a relatively high variance against budget and for this to reduce throughout the year as savings plans are developed and as expenditure patterns become clearer.

"NHS Lothian are working to deliver a breakeven position this year, and over their three year financial plan."

Daily Record; Daily Mail; PA; Herald; The Times - Annual audit report Settlement agreement review
A Scottish Government spokesperson said:

As part of this year's audit, Audit Scotland commissioned Scott-Moncrieff to carry out a high level review looking specifically at arrangements around the settlement agreement between NHS Lothian and the contractor.

The report notes that NHS Lothian sought professional advice and provided evidence of detailed evaluation of the available options before proceeding with the settlement agreement and that provision of a safe facility remained the board's priority at all times.

The results of this review will be considered as part of the independent audit of the overall governance arrangements for the new hospital that KPMG are conducting, at the Cabinet Secretary's request, to provide an external and impartial assessment of the factors leading to the delay.

Background
NHS Lothian has received additional funding this year of £43.5 million, taking their overall budget in excess of £1.4 billion, along with and a share of £392 million to go towards improving patient outcomes.

As has been demonstrated in each of the previous financial years, it is normal for NHS Boards to begin the year with a relatively high variance against budget and for this to reduce throughout the year as savings plans are developed and as expenditure patterns become clearer.

NHS Lothian are working to deliver a breakeven position this year, and over their three year financial plan.

NHS Lothian continue to work to reduce waiting times, with their first quarterly performance review showing steady progress on reducing waiting times.

In 2019/20, additional investment of £16 million has been provided to specifically to target waiting times.

Susan Goldsmith, Finance Director, NHS Lothian, said:
"We welcome the report from Audit Scotland around the decisions made on the Royal Hospital for Children and Young People, the Department of Clinical Neurosciences, and Child and Adolescent Mental Health Services at the Little France campus.

"It reviewed the Settlement Agreement between NHSL and IHSL and considered the project governance and value for money.

"The report highlights that NHS Lothian provided evidence of detailed evaluation of the qualitative and quantitative options available to it before proceeding with the settlement. It also shows that the board sought technical advice and expertise throughout the project to ensure the safety of patients, staff and visitors remained the priority throughout."

Annex G – Public Inquiry

On 17 September, you announced a public inquiry will be held to examine issues at the new Royal Hospital for Children and Young People and the Queen Elizabeth University Hospital sites following recent concerns from affected parents over safety and wellbeing.

The inquiry will determine how issues relating to ventilation and other key building systems occurred, and what steps can be taken to prevent this being repeated in future projects.

The recent KPMG and NSS reports into the new Edinburgh Children's Hospital will provide a significant amount of the underpinning evidence for the inquiry alongside the ongoing independent review into the delivery and maintenance of the QEUH.

Please find below an outline of the powers of a statutory-based inquiry, including those powers of the inquiry pertaining to evidence and the compelling of witnesses.

Overview of the powers of the inquiry

The Inquiries Act 2005 ("the 2005 Act") provides a framework for inquiries established by Ministers within the UK. While the powers of a statutory-based inquiry are located predominantly in the 2005 Act, rules on matters of evidence and procedure (as elaborated on in **part 2** below), record management, legal representation and expenses are also found in the Inquiries (Scotland) Rules 2007 ("the 2007 Rules").

The 2005 Act gives a Minister various powers, including: to establish a public inquiry into matters of public concern (section 1); to appoint the inquiry panel (including the chairman) (section 4); to set out the dates for the inquiry together with its terms of reference (section 5); to suspend the inquiry if necessary under particular circumstances (section 13); to end the inquiry (section 14); and to pay remuneration and expenses as the Minister may determine (section 39). The powers of the inquiry include restricting public attendance at the inquiry and public access to evidence or documents provided to an inquiry (section 19), as well as awarding expenses to persons who have attended the inquiry (section 40).

Powers of the inquiry in relation to evidence and the compelling of witnesses

Section 17 (evidence and procedure) of the 2005 Act states that the procedure and conduct of an inquiry are to be such as the chairman of the inquiry may direct. To that end, section 21 of the 2005 Act provides that the chairman may require the production of evidence, including requiring a person to give evidence, or to produce documents in his custody that relate to a matter in question at the inquiry. However, this power is qualified by section 28 on Scottish inquiries which applies to an inquiry for which the Scottish Ministers are responsible. Section 28 states that the power to compel a witness under section 21 is exercisable only in respect of evidence, documents or other things that are wholly or primarily concerned with a Scottish matter; or for the purposes of inquiring into something that is wholly or primarily a Scottish matter. For instance, the Penrose Inquiry (2008-15) could not compel witnesses outside of Scotland to attend, due to jurisdictional issues.

The power of the chairman to compel a witness is also restricted by section 22 on privileged information, which provides that a person may not, under section 21, be required to give evidence if he could not be required to do so in civil proceedings in a court in the relevant part of the UK; if the requirement would be incompatible with an EU obligation; or on grounds of public interest immunity.

The 2007 Rules, made under section 41 of the 2005 Act, deal with matters of evidence and procedure. In particular, Rule 8 (requests for evidence) states that the inquiry panel may send a written request to any person for a written statement of evidence or oral evidence. Rule 9 (oral evidence) sets out that where a witness is giving oral evidence at an inquiry hearing, that witness can only be examined by the inquiry panel, counsel or solicitor to the inquiry, core participants or legal representatives of core participants.

Annex H – Escalation to Level 4 and Mary Morgan Appointment

Following the publication of both the KPMG and NSS reports on 11 September, the Director-General concluded, on the basis of scale of the challenge in delivering the Royal Hospital for Children and Young People, that NHS Lothian is escalated to Level 4 of our escalation framework for this specific project. This level is defined as 'significant risks to delivery, quality, financial performance or safety; senior level external transformational support required'.

The RHCYP Oversight Board is in place and has overall responsibility for ensuring the completion of the works and the hospital opening, reporting directly to the Cabinet Secretary. The Oversight Board is chaired by Fiona McQueen and includes senior figures from Scottish Government Health and Social Care Directorates, NHS National Services Scotland, Scottish Futures Trust and NHS Lothian.

Mary Morgan was appointed Senior Programme Director, effective from Monday 16 September.

In this role, she will have responsibility for the actions to ensure the facility is fit for occupation. All other actions relating to the existing sites and to the service migration to the new facility, will remain the responsibility of NHS Lothian.

The Senior Programme Director will oversee the plan to deliver a safe and complaint site for the new Edinburgh Hospital for Children and Young people and DCN, and that is delivered in revised timescales set out by the Cabinet Secretary. This being the DCN by Spring next year and the Children's Hospital by next Autumn.

The Cabinet Secretary has requested that the Board provides a plan that gives the necessary assurances that the current sites can continue to provide and sustain the high quality services between now and the completion of migration to the new site.

Annex I – HIS Inspection of Existing Sites

Clinicians raised concerns regarding the appropriateness and timing of an urgent inspection and report from Health Improvement Scotland (HIS) following your visit to the existing sites.

You have written to Chair of HIS following understanding that HIS may have been preparing for an unannounced visit to the site given that it is still in use and therefore would be due for a re-inspection.

In line with the powers vested in Scottish Ministers in Section 10M (2) of the National Health Service (Scotland) Act 1978. You asked that any inspection to be undertaken of the Royal Hospital for Sick Children in NHS Lothian should be undertaken for the purposes of identifying what immediate steps require to be taken to ensure the safety and cleanliness of the environment for the children and the young people undergoing care within the premises.

You asked that Healthcare Improvement Scotland pay particular attention to the difficult situation that the staff find themselves in, having to change well developed plans for the delivery of care in a new environment.

You asked the inspection team to understand the sensitivities and pressures the clinicians face and to work with them to identify what is needed to maintain high levels of quality and safety until the children and young people can be moved to the new facility in autumn 2020.

Annex J – Letters from Cabinet Secretary to NHS Lothian Staff 13 September and 30 September

Letter to NHS Lothian Staff – 13 September

Letter from Jeane Freeman MSP.pdf

Letter to NHS Lothian Staff – 30 September

F20190026007.pdf

EDINBURGH CHILDREN'S HOSPITAL - UPDATE

Purpose
1. To provide an update on the current situation regarding the new Edinburgh Children's Hospital.

Priority
2. Routine.

Background
3. Following previous summaries of the issues currently facing the opening of the new hospital, this note provides a further update on the current actions being taken to resolve the various issues at the new hospital.

Operational Impact and Support
4. In the past week, the NHS Lothian Children's Hospital Helpline has received 16 calls, which is less than half the number of calls in the previous week (33 calls). No staffing issues have been escalated, no complaints have been received and no communication issues have been escalated.

Technical Fix – Critical Care Ventilation
5. Christine McLaughlin attended a Steering Group meeting between NHS Lothian and IHSL as an observer on 23 July, where critical care ventilation and ventilation in general was discussed. Work is ongoing on the technical solution and NHS Lothian are considering bringing in an outside design contractor to expedite this process. It is NSS' assessment that the 6-month timeframe for agreeing, implementing and testing the solution remains realistic and they will fully support this process. Briefing will be provided as soon as we have full details of the proposed solutions.

External Review – NHS National Services Scotland (NSS)
6. NSS have sent 130 questions to NHS Lothian on phase 1 of the review – ventilation, water and drainage. Water and ventilation specialist resources have also been commissioned to undertake an initial assessment and there are provisions in place for site visits on 25 and 26 July. The initial response from NHS Lothian has been received, but some aspects will require follow up action and due to this, delivery of the planned timetable (final report early September) is now assessed by NSS as an amber risk. However, they expect to provide an interim position in the third week of August.

7. NSS are undertaking an expert technical review of the agreed design change from 6 to 4 air changes per hour in general wards. Scottish Health Technical Memorandum 03 (SHTM03) sets out guideline of 6 changes per hour and NSS's review will consider scientific evidence on this and lower rates. This will take into account that delivered rate change is a cumulative figure, made up of multiple factors, and not solely the rate change provided by a ventilation unit (for example, trickle vents on windows would contribute to rate change). From this review they will provide an expert assessment of whether the current air change rate is sufficient. The initial literature review will be completed by 16 August and will be followed by technical discussions in order to form a view on this matter. I would propose that a meeting be arranged with you and the relevant HPS/HFS leads at that point.

Phased Migration
8. Migration of DCN and non-critical care paediatric services is unlikely to begin until the NSS review concludes, however these departments are considering how rota and clinic plans can be adapted to minimise any delay between the review being completed and the move to the new facility starting.

KPMG Audit of Governance
9. Christine McLaughlin met with KPMG today, 25 July, and weekly calls are planned going forward. KPMG have been on site at NHS Lothian collecting documentation and holding meetings with relevant officials, NSS and Scottish Futures Trust. They have also made contact with the independent tester and will approach IHSL (the special purpose vehicle) and Multiplex (the contractor)

to request their input. We expect an initial draft of their findings by 9 August and the finalised report the following week.

Oversight Group
10. Draft Terms of Reference for the Oversight Board have been shared with you and a response to your six questions were provided on 24 July. The Board will include appropriate representation from Scottish Government, NHS Lothian, NHS National Services Scotland and Scottish Futures Trust and it will provide advice in relation to five key issues - phased occupation, critical care technical solution, migration, commercial arrangements and contract management. The regularity of the meetings will be determined by the progress of the five key issues highlighted above. We expect the Board to meet in early August.

Cabinet
11. A SCANCE note will be required for the Cabinet meeting next week. The note will be based on this summary, though it will be updated to reflect further developments with the technical fix, NSS review, KPMG audit, etc.

Summary
12. You are invited to note the current position and potential risks to the initial timelines for both the design solution and NSS report. Further updates will be provided on a weekly basis going forward unless there are any significant developments which require an immediate note.

Alan Morrison
Health Finance
25 July 2019

- Home (/)
- Estates technical guidance (https://www.england.nhs.uk/estates/)
- ProCure23: A new route to market for NHS capital works

ProCure23: A new route to market for NHS capital works

ProCure23 (P23) is the fourth generation of NHS England's route to market for the provision of design and construction services to NHS capital projects.

NHS England have collaborated with Crown Commercial Service (CCS) to deliver P23 as part of the CWAS2 procurement framework to ensure that NHS capital works adopt the principles of the government's Construction Playbook, modern construction delivery and a focus on sustainability and social value. CCS supports the public sector to achieve maximum commercial value when procuring common goods and services. In 2020/21, CCS helped the public sector to achieve commercial benefits equal to £2.04 billion – supporting world-class public services that offer best value for taxpayers.

P23 has an expected cumulative spend of £9 billion during its 4-year lifespan and it builds on the successes of three previous iterations of ProCure that have delivered over £10 billion of projects for the NHS.

There are 12 national suppliers and 21 regional suppliers available via P23 and it is the primary route for NHS trusts and integrated care systems (ICSs) to undertake NHS capital works procurement. Through this route to market, NHS trusts and ICSs in England can quickly access experienced and proficient partners to support excellence in all aspects of NHS capital project delivery including business case development, sustainability, design, construction, disruption mitigation, benefit realisation and optimised occupation.

Why use P23? Benefits for the NHS

P23 offers a number of key benefits to NHS clients:

- Confidence that all suppliers are proficient with health/complex project design and construction.
- Increased supplier capacity, including access to regional suppliers.
- Use of modern methods of construction including a range of standardised, project share and repeatable rooms options to provide reliable, evidence-based designs and to reduce capital cost.
- Call-off options to suit differing project needs, values and complexities while ensuring clients' post-construction review (PCR) compliance.
- A fast track process, without the need to open tender, making the approvals process more efficient and reducing associated costs.
- The ability to set the quality/price ratio for call-offs according to project needs.
- Free of charge training for all project team members to enhance project proficiency (more than 25 hours each).
- All projects will use tried and tested NEC contract processes, enabling collaboration and collective risk sharing between partners.
- Implementation advisor support, offered in a neutral capacity, free of charge.

How to contact

Further information on how to use this framework can be accessed via the Crown Commercial Service website (https://eur01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.crowncommercial.gov.uk%2Fagreements%2FRM6267&data=04%7C01%7CMartyn.Frackelton%

To access guidance and templates, join the ProCure23 Collaboration Hub (https://future.nhs.uk/ProCure23). You may need to register first if you are accessing for the first time.

General operational enquiries should be sent to the team at nhse.procure23@nhs.net (mailto:nhse.procure23@nhs.net).

ProCure22

ProCure23 National Framework

ProCure23 is now live

Please see: NHS England » ProCure 23: A new route to market for NHS capital works

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What is ProCure23?

ProCure23 (P23) is the fourth generation of the ProCure framework for the design and construction of NHS capital projects with an expected cumulative spend of £9bn during its lifespan.

P23 enables NHS clients to quickly access experienced and proficient partners to support excellence in all aspects of NHS capital project delivery, including business case development/approval, sustainability, design, construction (including modern methods), disruption mitigation, benefit realisation and optimised occupation.

In light of developments over the past year, including the announcement of the New Hospital Programme, P23 (previously referred to by the working name ProCure2020) has been updated to better reflect the changing needs of the NHS and acknowledge other infrastructure and capital projects ongoing within the NHS.

The P23 framework builds on the successes of three previous iterations of the ProCure framework that have delivered over £10 billion of projects for the NHS. It complies with the UK Government's Outsourcing and Construction Playbooks.

NHS England and NHS Improvement are working with Crown Commercial Service (CCS) to deliver the new framework. CCS, an executive agency of the Cabinet Office, is the UK's largest public procurement organisation.

There will be 3 lots available as part of P23 covering different values ranging from under £20 million to over £70 million. For the first time as part of the ProCure structure, the lower value lot (<£20m) will be split into the seven NHS England and NHS Improvement geographical regions. This is intended to open the framework to suitable regional contractors, enhance capacity and increase local backing for projects.

P23 will provide more flexibility for contractors and bring the latest best practice in construction methods, modern methods of construction and digital infrastructure to the NHS. It has a focus on delivering greener facilities, reducing carbon emissions throughout the process and promoting social value.

The P22 framework has been extended until 30 June 2022 to enable continuity of design and construction services via P22 for the NHS until its successor framework, ProCure23 (P23), becomes available for use by NHS clients. P22 will cease the day before P23 goes live.

P23 is not intended to be the main sourcing route for the New Hospital Programme (NHP), for which separate market engagement and procurements will follow. However, NHP reserves the right to use P23 in the future. You can find out more about NHP from their PIN.

ProCure23 is now live

NHS England » ProCure 23:
A new route to market for NHS capital works

See the new website...

ProCure22 Guide

Download: ProCure22 Guide
160kb Word document

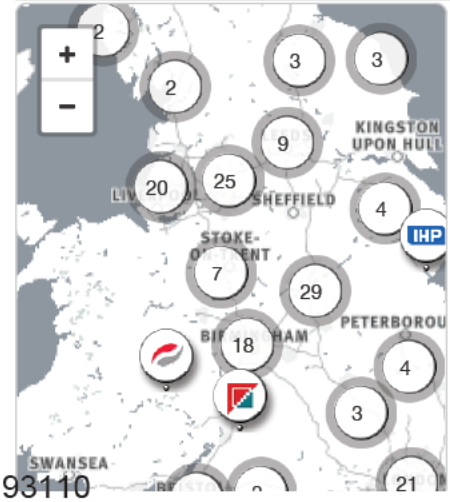
P22 TRAINING ACADEMY

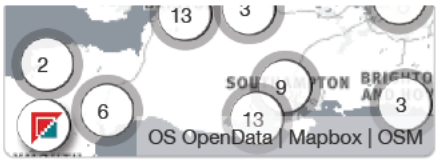
ProCure22 Club

Sign in for registered users

Request access

P22 projects





Schemes and projects

Since October 2016:
142 major works schemes and **37 small works packages**registered for **110 NHS clients**–
estimated total capital value: **£4970.8m**

VAT Recovery

Schemes that are delivered through the P22 framework are offered a free of charge VAT recovery service. Since April 2015, to the end of quarter 3 in financial year 2017-18, approximately £39m in VAT has been recovered.

PSCPs

BAM Construction

Galliford Try HPS

Graham Construction

Integrated Health Projects

Kier Health

Tilbury Douglas
(formerly Interserve)

ProCure21+

ProCure21+ website: procure21plus.nhs.uk

Contact

ProCure22
NHS Estates and Facilities Team
NHS England and NHS Improvement
Quarry House, Leeds LS2 7UE

nhsi.procureconstruction@nhs.net

Full contact list

A47193110

ProCure22
NHS Estates and Facilities Team
NHS England
Quarry House, Leeds LS2 7UE

nhsi.procureconstruction@nhs.net

Full contact list

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Foreword

This Publicly Available Specification (PAS) was sponsored by the Department for Business Energy and Industrial Strategy (BEIS). Its development was facilitated by BSI Standards Limited and it is published under licence from the British Standards Institution.

This amendment to the PAS includes changes to PAS 91: 2013 that are intended to restore its alignment with legislation extant at the time of publication. The amendment was sponsored by BEIS for that purpose and it comes into effect in November 2017.

Acknowledgement is given to the following organizations that were involved in the development of this PAS and/or its amendment, as members of the Steering Group:

- Action Sustainability
- Altius Vendor Assessment Limited
- Avetta
- AWE
- Building Engineering Services Association
- Builder's Profile (UK) Limited
- Build UK
- Cabinet Office
- Chartered Institute of Building
- Contractors Health and Safety Assessment Scheme (CHAS)
- Constructionline
- Construction Products Association
- Crown Commercial Service
- Department of Finance and Personnel Northern Ireland
- East Riding of Yorkshire Council
- Electrical Contractors' Association
- Federation of Master Builders (FMB)
- Highways England
- Health and Safety Executive (HSE)
- Kier Group
- Lafarge Aggregates Limited
- LHC
- Local Government Association
- Ministry of Defence
- National Federation of Builders Limited
- Royal Institute of British Architects (RIBA)
- Safety Schemes in Procurement (SSIP)
- Scape Group Ltd
- Specialist Engineering Contractors' Group

This PAS is not to be regarded as a British Standard.

The PAS process enables a specification to be developed rapidly in order to fulfil an immediate need in industry or in the wider community. A PAS can be considered for further development as a British Standard, or constitute part of the UK input to the development of a European or International Standard.

This PAS will be withdrawn upon publication of its content in or as, a British Standard or if an equivalent European standard is published.

Publishing information

To facilitate the use of the PAS 91 question modules in organizational prequalification processes, BSI permits the copying of the questions by those wishing to use them. For this purpose, editable copies of the question modules are available on request, from BSI. Potential users are however referred to the 'rules for use of the question modules' provided in clause 3 of this PAS.

Use of this document

It has been assumed in the preparation of this PAS that the execution of its provisions will be entrusted to a competent person or persons for whose use it has been produced.

Presentational conventions

The provisions of this PAS are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is "shall". Its recommendations are expressed in sentences in which the principal auxiliary verb is "should".

Commentary, explanation and general informative material, e.g. Notes, are presented in italic type, and do not constitute a normative element.

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. "organization" rather than "organization").

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

As the National Standards Body for the United Kingdom, BSI has facilitated the drafting of this specification with the intention that it will be applicable across the United Kingdom. Its use in relation to procurement for works contracts (including the procurement of supplies and services subject to the Construction (Design and Management) Regulations 2015 and needed in relation to the works) in the scope of the Public Contract Regulations 2015 is confirmed in a Procurement Policy Note issued by the Crown Commercial Service in November 2017. However, when working in areas under the jurisdiction of a devolved administration, users of PAS 91 are recommended to confirm the acceptability of the PAS 91 Question Modules with that devolved administration.

Attention is drawn to the principle, applicable in British Standards generally, that they do not specifically require actions that are the subject of legal requirement. Therefore, this PAS does not include, for example, requirement to observe Health and Safety or Building Regulations, with which it is assumed users of this PAS will be in compliance.

Compliance with this PAS does not in itself confer immunity from legal obligations.

Introduction

BSI PAS 91 is a publicly available specification (PAS) that sets out the content, format and use of questions that are widely applicable to prequalification for construction tendering.

To be eligible for prequalification, it is necessary that suppliers are able to demonstrate that they possess or have access to the governance, qualifications and references, expertise, competence, health and safety/environmental/financial and other essential capabilities to the extent necessary for them to be considered appropriate to undertake work and deliver services for potential buyers.

The use of this set of common criteria by those who undertake prequalification activity or provide prequalification services helps to streamline tendering processes by:

- reducing the need for the unproductive, repetitive completion of multiple prequalification processes;
- facilitating the identification of suitably qualified and experienced suppliers;
- increasing consistency between various prequalification databases;
- clarifying the distinction between criteria at the prequalification and contract award stages of the procurement process.

Throughout the construction supply chain, many suppliers seeking to demonstrate their suitability for delivering construction projects are required to submit to frequent prequalification processes involving many different questionnaire forms. This leads to considerable unnecessary effort and wastes time and money, not only for those suppliers but also for the buyers and assessment providers who have to read and evaluate the varied information provided in many different formats. This proliferation of questions and question formats is exacerbated by the many procurement officers that choose, for whatever reason, to undertake their own prequalification activity.

For suppliers seeking to establish themselves as prequalified to deliver construction projects, the sheer number and variety of the questionnaires that they are presented with can be a continual drain on resources.

The consistent use of a set of common questions in all construction related prequalification activity would not only significantly reduce the resources invested by suppliers in such activity, but would also enable assessment providers and procurement officers to more reliably source suppliers solely on the basis of the level of assurance they provide (i.e. the extent to which the answers to the questions given by the suppliers are checked and evaluated), and facilitate suppliers' access to work where the risk levels are appropriate.

This PAS therefore specifies a set of questions that enable the acquisition of the essential information required in all prequalification processes in a uniform and commonly usable manner.

The benefits to buyers of the introduction of PAS 91 to procurement prequalification processes can include considerable saving in time and money when compiling, using and comparing prequalification questionnaires, more supply chain certainty about basic prequalification requirements and that more suppliers (notably SMEs) can be encouraged to take part, giving wider choice to clients. In addition, the universal use of this PAS could also help to raise the overall standard of communication, understanding and supplier capability across the construction sector.

The benefits to suppliers can include not only reduced cost of prequalification and an increase in the possibility of participating in additional prequalification processes, but also freeing up often scarce resources to invest in potentially more profitable activity.

For assessment providers, the use of PAS 91 can reduce the time spent developing and refining the questions themselves and make available more time to focus on developing and selling added value services to a better informed procurement client base which understands the benefits of applying PAS 91.

It is important to recognise that the information obtained from applying PAS 91 does not remove a buyer's legal or other requirements to make further enquiries about the supplier's capabilities, beyond the questions in these modules, to satisfy specific requirements for projects, services or other activities. Provision is therefore made in PAS 91 for the inclusion of supplementary questions if necessary, subject to certain restrictions.

It is the intention that through the application of PAS 91 to prequalification services and processes, suppliers obtain more control over the timing and extent of their prequalification activity and that meeting widely accepted prequalification criteria can and will be recognized by all potential buyers. Inclusion on a prequalification database does not necessarily guarantee an invitation to tender or an engagement of services. It is recognized that those seeking to have work done might choose to select pre-qualified tenderers or might decide, or be required, to advertise for tenders or expressions of interest for particular projects. However, with the prevalence of prequalification activity, it is suggested that by applying for prequalification through a scheme that conforms to PAS 91, those seeking to tender for construction contracts can access the tendering processes in a resource efficient manner. For those seeking to have contracts fulfilled, the use of PAS 91 can enhance the effectiveness and efficiency of construction tendering processes, whether it is used directly or through an external prequalification assessment provider. The use of PAS 91 is therefore recommended wherever construction-related prequalification is undertaken.

PAS 91 Module C3 Tables 9 and 10, take account of the European Single Procurement Document (ESPD) as required to comply with the Public Contract Regulations 2015.

The significant benefits from uniform application of the PAS 91 question sets can only be fully realized when secure data exchange can take place between databases holding prequalification data, allowing those seeking prequalification to securely store and manage their prequalification data and those seeking to build a list of suitable suppliers to draw the information they require upon submission of appropriate qualification.

Such a development is beyond the remit of the PAS 91 development but the question sets it provides have been prepared with the intention of facilitating the exchange of data in due course. At the time of publication of this amendment, a full review and possible further revision of this PAS is under consideration.

1 Scope

This PAS provides a set of questions to be asked by buyers of potential suppliers to enable prequalification of the supply chain for construction-related projects. This PAS also specifies requirements for the consistent use of those questions across projects of varying sizes and types, including in respect of the Official Journal of the European Community (OJEU) procurement thresholds for public sector procurement. It is intended that the questions also be used by assessment providers in their intermediary role between buyers and suppliers.

It is widely recognized that excessive prequalification activity adds unacceptable cost, bureaucracy and confusion to the construction supply chain. Unnecessary bureaucracy associated with prequalification diverts both buyers' and suppliers' resources and attention away from proportionate and effective risk management. It is therefore necessary that buyers and assessment providers pay particular regard to reducing unnecessary documentation requirements for businesses, and in any event only require suppliers to provide information and evidence that is related and proportionate to the subject matter of the contracts likely to be awarded.

- This PAS provides construction sector stakeholders with prequalification questions that:
- are typical of the common questions that are relevant to construction-related procurement;
- increase the scope for cross-recognition between various types of prequalification activity;

help to significantly reduce duplication, unnecessary paperwork and cost for both buyers and suppliers.

The question modules are presented in Clause **4** as a series of tables, each containing questions relating to a particular aspect of supplier capability. These questions are already widely asked across a range of commonly applied construction-related prequalification processes. This PAS collates them and provides for their use in a uniform manner.

This PAS does not include project-specific questions to suppliers, but does make provision for buyers or assessment providers to insert additional project-specific questions into the question modules if necessary, subject to certain restrictions, and it provides a suggested format for their inclusion.

This PAS specifies what is to be asked in prequalification processes for construction-related procurement but not how the enquiry process is to be undertaken. The PAS aims to underpin widely accepted good practice in the construction sector. It is not intended to add to or 'gold plate' prequalification activity or to raise requirements or standards beyond those which are already widely accepted as good practice in the sector.

2 Terms and definitions

For the purposes of this PAS, the following definitions shall apply to the terms used in this specification.

2.1 area of capability

prequalification topic that enquires about the capability of suppliers and their supply chains – as defined by the relevant question module, e.g. health and safety

2.2 assessment provider

entity undertaking prequalification of suppliers as a service to both buyers and suppliers

2.3 buyer

client or other entity procuring the services of supplier(s) contributing to the fulfilment of a construction related contract

2.4 client

entity (individual, company or organization) seeking or accepting the services of one or more suppliers as the first tier of a construction project supply chain

2.5 construction (work)

NOTE *In the interest of uniformity, this definition and the content of the explanatory notes that follow have been extracted from the Construction (Design and Management) Regulations 2015, which interpret construction work as follows:*

"construction work" means the carrying out of any building, civil engineering or engineering construction work and includes

a) the construction, alteration, conversion, fitting out, commissioning, renovation, repair, upkeep, redecoration or other maintenance (including cleaning which involves the use of water or an abrasive at high pressure, or the use of corrosive or toxic substances), de-commissioning, demolition or dismantling of a structure;

b) the preparation for an intended structure, including site clearance, exploration, investigation (but not site survey) and excavation (but not pre-construction archaeological investigations), and the clearance or preparation of the site or structure for use or occupation at its conclusion;

c) the assembly on site of prefabricated elements to form a structure or the disassembly on site of the prefabricated elements which, immediately before such disassembly, formed a structure;

d) the removal of a structure, or of any product or waste resulting from demolition or dismantling of a structure, or from disassembly of prefabricated elements which immediately before such disassembly formed such a structure;

e) the installation, commissioning, maintenance, repair or removal of mechanical, electrical, gas, compressed air, hydraulic, telecommunications, computer or similar services which are normally fixed within or to a structure, but does not include the exploration for, or extraction of, mineral resources, or preparatory activities carried out at a place where such exploration or extraction is carried out."

2.6 construction organization

group of individuals acting together in a structured, coordinated manner to achieve a common construction objective

NOTE *In PAS 91 this term is used generically to encompass firms, companies or other entities functioning as one element of a supply chain.*

2.7 consultant

entity (including sub-consultant) providing expert advice or other services in relation to a construction project, e.g. a designer

2.8 contractor

entity (including sub-contractor) undertaking construction works and services at one or more construction sites in accordance with a formal arrangement made in advance

NOTE *A contractor is a supplier but a supplier is not necessarily a contactor.*

2.9 procurement *[construction related]*

commissioning of supplies, works and services in relation to a construction related project

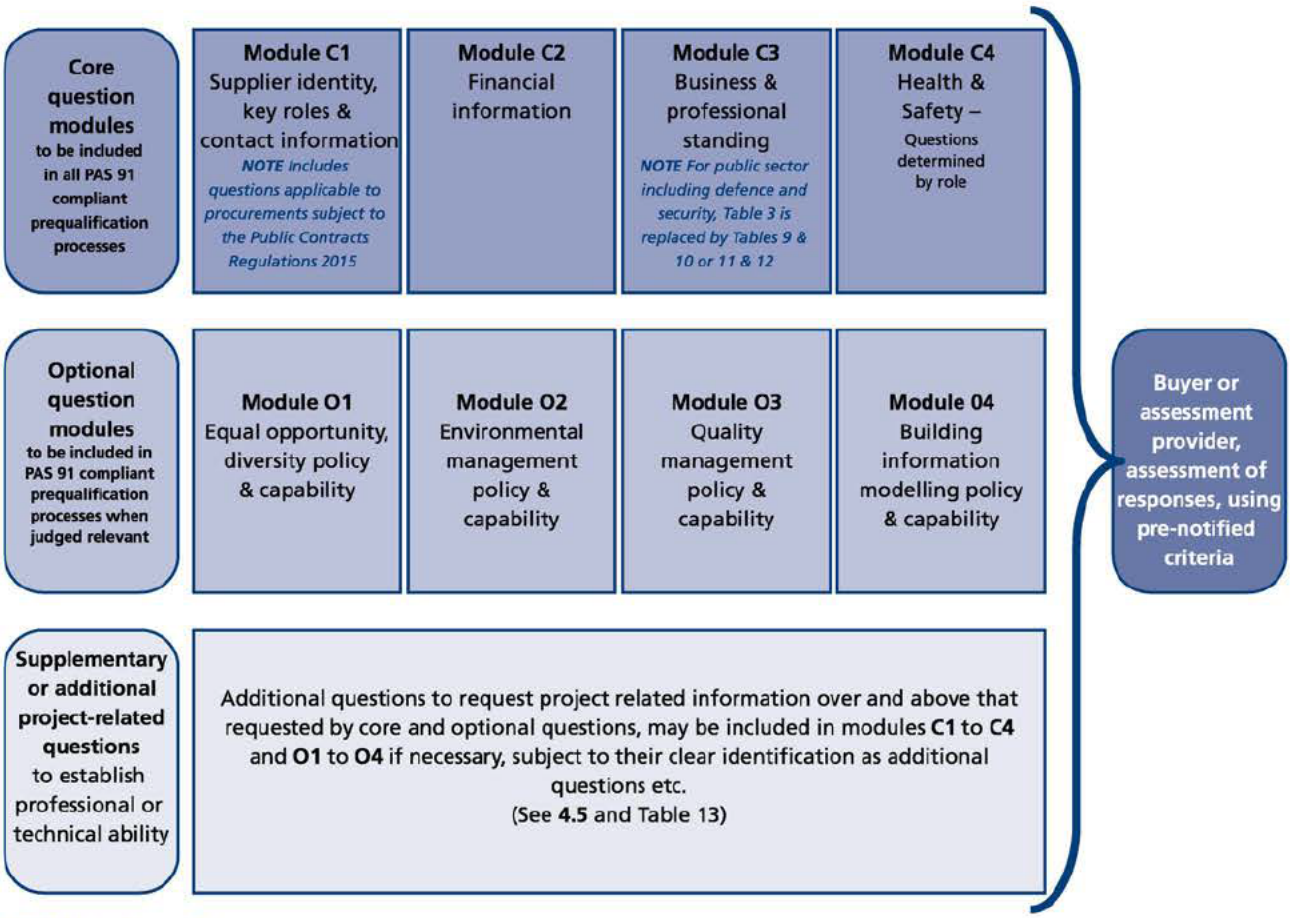
2.10 supplier

entity intending to provide supplies, works or services for all or part of a construction related project

2.11 supply chain

sequence of all entities engaged directly or indirectly, by a client to contribute supplies, works and services to a construction-related project

Figure 1 – PAS 91 compliant prequalification



NOTES to Figure 1

A PAS compliant prequalification questionnaire (see Figure 1):

- *makes the criteria to be used in assessment of responses available to question respondents prior to their completion of the questionnaire (**3.3**);*
- *asks all the core questions set out in Tables **1** to **4** of Clause **4.1** (as required in **3.1.1.1**);*
- *where the module topic is relevant use optional question modules selected from Tables **5** to **8** of Clause **4.2**, (as required in **3.1.1.2**);*
- *asks additional questions, but only if they are related and proportionate to the subject matter of the contracts likely to be awarded, in accordance with **3.2**;*
- *is designed to obtain only information that is related and proportionate to the subject matter of the contracts likely to be awarded (as required in **3.1.1.3**);*
- *provides for public sector or defence and security buyers to use questions alternative to those in **C3** in order to meet regulatory requirements (Tables **9** & **10** of **4.3** and Tables **11** & **12** of **4.4** (as required in **3.1.2**)).*

3 Rules for use of the question modules

3.1 Application of question modules

3.1.1 General application

Prequalification processes claimed to be compliant with this PAS, shall:

3.1.1.1 ask all the (core) questions set out in **Tables 1** to **4** of **Clause 4.1**, without modification of the individual questions, only permitting exemption as shown in the module Table;

3.1.1.2 at their discretion and where the module topic is relevant, use (optional) question modules selected from **Tables 5** to **8** of **Clause 4.2**, asking all the questions included in the selected module(s) without modification and only permitting exemption as shown in the module Table;

3.1.1.3 require from suppliers only documentary evidence that is related and proportionate to the subject matter of the contracts likely to be awarded (for assessing supplier compliance with any particular prequalification question) at the stage of the process at which it becomes necessary for assessment purposes and should have particular regard to reducing unnecessary documentation requirements for businesses.

***NOTE** The forms of evidence described in relation to the various questions in Question Modules **C1** to **C4** and **O1** to **O4** of this PAS, are provided for guidance only. It is for buyers and/ or assessment providers to state the precise requirements for evidence provision, at the time the questions are issued.*

3.1.2 Application for public sector or defence and security public contract procurement

Prequalification processes for projects in the public sector or in defence and security public contract procurement, claimed to be compliant with this PAS shall follow the requirements of **3.1.1** with the exception that the questions provided in **Table 3 of Clause 4.1** can be replaced by those in **Tables 9** and **10** of **Clause 4.3** or **Tables 11** and **12** of **Clause 4.4,** as necessary to meet legislative requirements. Also, for public sector procurements subject to the Public Contracts Regulations 2015 (PCR 2015) which exceed the relevant EU declared threshold, the supplementary questions to Table 1 and a declaration (see Annex C) are included to comply with the PCR 2015.

***NOTE 1** As indicated in **4.3**, buyers may opt to use an electronic-ESPD option in lieu of tables 9 and 10; also suppliers may submit an ESPD in lieu of tables 9 and 10.*

***NOTE 2** Further to the note to clause **3.1.1.3**, buyers for procurements in the scope of **3.1.2** need to include appropriate arrangements for evidence provision for each question (including any supplementary questions) sufficient to enable compliance with relevant obligations for such procurements (e.g. for self-certification and access to information available electronically for above threshold contracts under the Public Contracts Regulations 2015) this includes adjustments to table headers and to details regarding information to be provided for individual questions.*

***NOTE 3** Buyers should refer to any relevant advice by appropriate authorities regarding the use of this PAS for procurements in the scope of **3.1.2**, including relevant Procurement Policy Notes issued by Crown Commercial Service. When working in areas under the jurisdiction of a devolved administration, users of this PAS are strongly recommended to confirm the acceptability of the PAS question modules with that devolved administration.*

3.2 Supplementary questions

PAS 91 recognizes that beyond the scope of the questions included in PAS 91, a buyer may need to ask a supplier supplementary or additional questions, notably for professional or technical reasons, that relate to the type of project or other specific services likely to be undertaken. PAS 91 therefore permits the inclusion of questions in existing modules to accommodate this, subject to the requirements below.

Prequalification processes claimed to be compliant with this PAS shall only incorporate such supplementary or additional questions within the question modules provided in **4.1** and **4.2,** if those questions are:

- designed to obtain information that is related and proportionate to the subject matter of the contracts likely to be awarded, and that is clearly additional to that already addressed by the PAS 91 questions provided in the core and optional modules; and
- numbered in a sequence that does not break the number sequence of the PAS 91 question module in which they are inserted.

***NOTE** When introducing supplementary questions, buyers and assessment providers should maintain their regard for reducing unnecessary documentation requirements for businesses.*

3.3 Assessment criteria

The criteria used to assess supplier responses shall be derived solely from the information required from suppliers in their response to questions from the question modules in **4.1** and **4.2** (or in **4.3** or **4.4** where substituted) and to any supplementary questions that may be asked (**4.5**). This information shall include responses obtained from referees nominated by suppliers. Buyers or assessment providers applying this PAS to their prequalification processes shall inform suppliers of any weighting or ranking given to the assessment criteria to be applied, prior to their responding to the questions.

***NOTE** Ranking of questions should be avoided unless required by the particular circumstances of a contract. Any ranking of question modules considered necessary should be transparent, fair and equitable and not be used as a means to reserve contracts for those suppliers that may be preferred for reasons other than those provided for in this PAS.*

4 Core and optional questions

4.1 Application of core question modules

The questions provided in tables 1 to 4 are core questions and shall be included as specified in Clause 3, in every prequalification questionnaire for which compliance with this PAS is claimed, other than in the circumstances provided for in the respective tables.

Table 1 – Core Question Module C.1: Supplier identity, key roles and contact information

Q Ref	Nature of information	Description of response expected, which will be taken into account in assessment	Response
C1-Q1	Name of legal entity or sole-trader	Unique name of legal entity or name of individual	
C1-Q2	Registered office Address	C1-Q2-1 Address line 1 (Property name/number)	
		C1-Q2-2 Address line 2	
		C1-Q2-3 Address line 3	
		C1-Q2-4 Town	
		C1-Q2-5 County	
		C1-Q2-6 Postcode	
	Website address	C1-Q2-7 website (if applicable)	
C1-Q3	Contact Details for Enquiries	C1-Q3-1 Title (Mr, Mrs, Ms, etc.)	
		C1-Q3-2 Forename	
		C1-Q3-3 Family name	
		C1-Q3-4 Job title	
		C1-Q3-5 e-mail	
		C1-Q3-6 Telephone number	
		C1-Q3-7 Fax number	
		C1-Q3-8 Address line 1 (Property name/number)	
		C1-Q3-9 Address line 2	
		C1-Q3-10 Address line 3	
		C1-Q3-11 Town	
		C1-Q3-12 County	
		C1-Q3-13 Postcode	
C1-Q4	Registration number, if registered with Companies House or equivalent	C1-Q4-1 Registration number with Companies House	
		C1-Q4-2 Registration number with equivalent body	
C1-Q5	Charity registration number		

Table 1 – Core Question Module C.1: Supplier identity, key roles and contact information *(continued)*

Q Ref	Nature of information	Description of response expected, which will be taken into account in assessment	Response
C1-Q6	**VAT registration number**		
C1- Q7	**Name of immediate parent company**		
C1-Q8	**Name of ultimate parent company**		
C1-Q9	**Type of organization**	*e.g. PLC; limited company; LLP; other partnership; sole trader; other (please specify)*	
In addition to the information called for in **C1-Q1** to **C1-Q9**, the following (pale blue shaded) supplementary questions (**C1-Q10** to **C1-Q14**)) are applicable to procurements subject to the Public Contracts Regulations 2015 which exceed the relevant EU declared threshold. *Where applicable, these shall be incorporated in Table 1; a declaration regarding the responses to Table 1 and to the other Tables/questions in this document (questionnaire) is also required (see Annex C).*			
C1-Q10	**Size of business**	Are you a micro, a small, or a medium-sized enterprise [1]?	**YES** ☐ **NO** ☐
C1-Q11	**ONLY IN THE CASE THE PROCUREMENT IS RESERVED [2]** **Sheltered workshop/"social business"**	**C1-Q11-1** Is your organization a sheltered workshop, a "social business" [3] or will it provide for the performance of the contract in the context of sheltered employment programmes? IF YES Please respond to **C1-Q11-2** and **C1-Q11-3** below	**YES** ☐ **NO** ☐
		C1-Q11-2 What is the corresponding percentage of disabled or disadvantaged workers?	
		C1-Q11-3 Please specify which category or categories of disabled or disadvantaged workers the employees concerned belong to	

Table 1 – Core Question Module C.1: Supplier identity, key roles and contact information *(continued)*

Q Ref	Nature of information	Description of response expected, which will be taken into account in assessment	Response
C1-Q12	**APPLICABLE TO NON-UK BUSINESSES ONLY** **Official lists/national pre-qualification system**	**C1-Q12-1** If applicable, is your organization registered on an official list of approved economic operators or does it have an equivalent certificate (e.g. under a national (pre)qualification system)? IF YES: Please answer the remaining parts of Table 1 and complete Tables 9 and 10 and the required declaration. Complete **C1-Q12-2** to **C1-Q12-6** below.	**YES** ☐ **NO** ☐ **N/A** ☐
		C1-Q12-2 Please provide the name of the list or certificate and the relevant registration or certification number, if applicable	
		C1-Q12-3 If the certificate of registration or certification is available electronically, please state the: • web address • issuing authority or body • precise reference of the documentation	
		C1-Q12-4 Please state the references on which the registration or certification is based, and, where applicable, the classification obtained in the official list [4]	

Table 1 – Core Question Module C.1: Supplier identity, key roles and contact information *(continued)*

Q Ref	Nature of information	Description of response expected, which will be taken into account in assessment	Response
		C1-Q12-5 Does the registration or certification cover all of the required criteria in Tables *(document compiler to insert the table numbers for all of the questions included for the procurement, other than those in tables 1, 9 and 10)*? IF NO In addition, please complete the missing information in Tables *(document compiler to insert the table numbers for all of the questions included for the procurement, other than those in tables 1, 9 and 10)*	**YES** ☐ **NO** ☐
		C1-Q12-6 ONLY if this is required in the relevant notice or procurement documentation: Will your organization be able to provide a certificate with regard to the payment of social security contributions and taxes or provide information enabling the contracting authority or contracting entity to obtaining it directly by accessing a national database in any Member State that is available free of charge? If the relevant documentation is available electronically, please state the: • web address • issuing authority or body • precise reference of the documentation	**YES** ☐ **NO** ☐
C1-Q13	**Form of Participation**	**C1-Q13-1** Are you participating in the procurement procedure together with others [5]? IF YES Please respond to **C1-Q13-2, C1-Q13-3** and **C1-Q13-4** below Please ensure that the others concerned, each provide a separate questionnaire	**YES** ☐ **NO** ☐

Table 1 – Core Question Module C.1: Supplier identity, key roles and contact information *(continued)*

Q Ref	Nature of information	Description of response expected, which will be taken into account in assessment	Response
		C1-Q13-2 Please indicate your organization's role[6] *i.e. sole supplier/lead entity, group member, other entity (relied upon)* [7]*, other entity (not relied upon)*	
		C1-Q13-3 To enable the collation of the group's responses, please identify the other organizations participating in the procurement procedure together	
		C1-Q13-4 Where applicable, please provide the name of the group	
C1-Q14	**Lots**	Where applicable, please indicate the lot(s) for which you wish to tender	

NOTES to Table 1

1) *See EU definition of SME https://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_en*

2) *See contract notice point III.1.5*

3) *I.e. its main aim is the social and professional integration of disabled or disadvantaged persons*

4) *The references and classification, if any, are set out on the certification*

5) *Notably as part of a group, consortium, joint venture or similar, or a subcontractor that is being relied on to meet the selection criteria.*

6) *Where the supplier is participating in the procurement with others as referred to in question **C1-Q13-2**, the organizational roles should be understood, as follows:*

Sole supplier/ Lead entity: Sole entity or, in case of consortium, joint venture or other types of groups, the leader of the group.

Group member: Member (not leader) of the consortium, joint venture or other type of group.

Other entity (relied upon): Entity on which the main supplier, the group or other subcontractor, relies in order to meet the selection criteria.

Other entity (not relied upon): Entity on which the main supplier, the group or other subcontractor, does not rely in order to meet the selection criteria.

7) *This includes subcontractors that the supplier relies on in the application and other organizations that the group relies on in the application (see Regulation 63 of the Public Contracts Regulations 2015).*

8) *For subcontractors that are not relied on by a candidate in its application, the buyer may ask whether the candidate intends to subcontract, the details of the proposed subcontractors (in so far as this is possible) and also for those subcontractors to complete a self-declaration against the exclusion grounds (Regulation 71 (1) and (8) Public Contracts Regulations 2015)*

Table 2 – Core Question Module C2: Financial information

Q Ref	Information required	Description of information expected, which will be taken into account in assessment	Tick as applicable	Supplier's unique reference to relevant supporting information
C2-Q1	*Please select the one organization description that most closely matches your organization and provide information accordingly*			
	C2-Q1-1 Financial information for a start-up business that has not reported accounts to the Inland Revenue or Companies House	Forecast of turnover for the current year and a statement of funding provided by the owners and/or the bank, or an alternative means of demonstrating financial status *(See Note 2 to this Table)*	☐	
	C2-Q1-2 Accounts for an unincorporated business (sole traders and partnerships)	Copy of the most recent accounts that contain turnover, profit before tax, and balance sheet (if prepared) covering either the most recent two-year period of trading or, if trading for less than two years, the period that is available. If accounts are not prepared, provide the relevant pages from the latest tax returns (self-employment pages for sole traders, partnership pages for partnerships), together with the tax assessment.	☐	
	C2-Q1-3 Accounts for a small company or limited liability partnership with a turnover below the audit threshold at which the preparation of audited accounts is not required	Copy of the most recent accounts as submitted to the Inland Revenue covering either the most recent two-year period of trading or, if trading for less than two years, the period that is available. Abbreviated accounts are not acceptable	☐	
	C2-Q1-4 Accounts for a medium to large incorporated entity and all other organizations that are required to prepare audited accounts	Copy of the most recent audited accounts covering either the most recent two-year period of trading or, if trading for less than two years, the period that is available	☐	
	C2-Q1-5 Accounts for other organization types (e.g. not for profit entities, local authorities, housing associations, charities)	In most cases it is likely that audited accounts will have been prepared and the accounts required at **C2-Q1-4** above will suffice. Where this is not the case, an unaudited copy of the most recent accounts as described in **C2-Q1-2** above should be provided.	☐	

Table 2 – Core Question Module C2: Financial information *(continued)*

C2-Q2	Insurance statement and certificates	Please enter the requested information in the response column		Response
		C2-Q2-1 Employers' liability insurance	C2-Q2-1-1 Policy No.	
			C2-Q2-1-2 Limit of indemnity	
			C2-Q2-1-3 Excess	
			C2-Q2-1-4 Limit for a single event	
			C2-Q2-1-5 Expiry date	
		C2-Q2-2 Public liability insurance	C2-Q2-2-1 Policy No.	
			C2-Q2-2-2 Limit of indemnity	
			C2-Q2-2-3 Excess	
			C2-Q2-2-4 Limit for a single event	
			C2-Q2-2-5 Expiry date	
		C2-Q2-3 Professional indemnity insurance *(Where consultancy input involved)*	C2-Q2-3-1 Policy No.	
			C2-Q2-3-2 Limit of indemnity	
			C2-Q2-3-3 Excess	
			C2-Q2-3-4 Expiry date	
		C2-Q2-4 Product liability insurance *(Where product is to be supplied)*	C2-Q2-4-1 Policy No.	
			C2-Q2-4-2 Limit of indemnity	
			C2-Q2-4-3 Excess	
			C2-Q2-4-4 Expiry date	

NOTE 1 to Table 2 *Where an insurance type is claimed to be "not in scope", it is essential that an explanation supporting that claim is provided, e.g. the explanation could support the fact that a particular type of insurance was not required for the work undertaken.*

NOTE 2 to Table 2 *At the discretion of the buyer, a minimum level of turnover may be asked for. However, buyers should avoid insisting on requirements which may not be proportionate or relevant to the procurement, or which may discriminate against or be burdensome for SMEs or new providers. It is acknowledged that the nature and extent of the accounts provided will be commensurate with the business requirements and legal obligations of the supplier.*

Table 3 – Core Question Module C3: Business and professional standing

For all procurement situations other than that for the public sector, including defence and security, procurement buyers shall require that suppliers in their responses to the questions in module C3, make known all pertinent information in respect of business related, criminal or civil court judgements against them and identify any ongoing or pending cases.

For public sector procurement the process for obtaining this information is prescribed in the Public Contact Regulations 2015 (PCR 2015), and Clause **4.3** of this PAS provides alternative questions aligned to the requirements of the PCR 2015, including those for the ESPD. Alternatively, suppliers who have already completed an ESPD template can submit that completed ESPD in lieu of Table 3. For procurement in the scope of the Defence and Security Public Contract Regulations 2011, Clause **4.4** of this PAS provides the necessary alternative questions (see also **Annex B**).

Table 3 – Core Question Module C3: Business and professional standing *(continued)*

Q Ref	Core question	Information required	YES	NO	Supplier's unique reference to relevant supporting information
C3-Q1	**Has your company or any of its Directors and/ or Executive Officers been the subject of criminal or civil court action (including for bankruptcy or insolvency) in respect of the business activities currently engaged in, for which the outcome was a judgement against you or them?**	Details of any such action. *Responses will be taken into account in assessing the outcome of this prequalification application where the circumstances of the judgement are pertinent to anticipated future projects or services. They will not necessarily constitute a reason for rejection*			
C3-Q2	**If your company or any of its Directors and/ or Executive Officers are the subject of ongoing or pending criminal or civil court action (including for bankruptcy or insolvency) in respect of the business activities currently engaged in, have all claims been properly notified in accordance with relevant Insurance policy requirements and been accepted by the insurers?**	Details of any such action, insurance notification requirements where relevant, and confirmation, with references, of relevant insurance notification and insurer acceptance. *Responses will be taken into account as part of the assessment process.*			
C3-Q3	**Has your company or any of its Directors and/ or Executive Officers been in receipt of enforcement/remedial orders that are still unresolved (such as those in relation to Environment Agency or Office of Rail Regulation enforcement), in the last three years?**	Details, including the status of the required action. *Responses will be taken into account as part of the assessment process*			

Table 4 – Core Question Module C4: Health and safety: policy and capability

Q Ref	Exemptions and pertinent question selection	Exemption(s) Claimed	
		Please tick i and /or ii for C4-Q1-1a, b and /or c, as appropriate, and for i, also state the CDM duty holder role(s) for which exemption is claimed	Supplier's unique reference to certificates or other supporting information
C4-Q1	In the circumstances set out in **C4-Q1-1a)** to **C4-Q1-1c)**, if your organization meets the relevant criteria in respect of exemption categories i) and/or ii) below: i. one or more of the following CDM duty holder roles: contractor, principal contractor, designer, principal designer; ii. general health and safety: policy and capability; and you can provide the supporting information to evidence this, the following exemptions apply: • for an exemption under i) or ii) above: questions **C4-Q2** to **C4-Q11** need not be completed • for an exemption under i) above questions **C4-Q12** to **C4-Q22** also need not be completed in respect of the role(s) identified. If you are not claiming an exemption, please move to question **C4-Q2**. However, if you are claiming exemption(s), but such exemption(s) does not cover all the categories/roles relevant to your application, please: • complete questions **C4-Q12** to **C4-Q22** in respect of each relevant category/role not covered by an exemption; and • provide any additional information required for **C4-Q2** to **C4-Q11** in respect of relevant categories/ roles that are not covered by an exemption.* ***NOTE** *Additional information to that relevant to the exemption(s) claimed could be required to demonstrate satisfactory organization and arrangements appropriate to the categories/ roles not covered by such exemption(s).*		

Table 4 – Core Question Module C4: Health and safety: policy and capability *(continued)*

	Circumstances of exemption		
	C4-Q1-1a) You have, within the last twelve months, successfully completed a prequalification application undertaken by an assessment provider able to demonstrate that its information gathering process is equivalent to that of PAS 91.	For i) ☐ CDM duty holder role(s) claimed. ..... For ii) ☐	
	C4-Q1-1b) You have, within the last twelve months, successfully met the assessment requirements of a construction-related scheme in registered membership of the Safety Schemes in Procurement (SSIP) forum (see Annex D).	For i) ☐ CDM duty holder role(s) claimed. ..... For ii) ☐	
	C4-Q1-1c) You hold a certificate of compliance with BS OHSAS 18001 (or equivalent) issued by a Conformity Assessment Body accredited to provide conformity assessment services to that standard,[1] e.g. accredited by UKAS.	For i) ☐ CDM duty holder role(s) claimed. ..... For ii) ☐	

Q Ref.	Question	Example of the type of information in support of responses, which will be taken into account in assessment	YES	NO	Supplier's unique reference to relevant supporting information
C4-Q2	**Are you able to show that you have a general policy and an organization which is responsible for ensuring effective health and safety (H&S) management?**	Evidence of periodically reviewed general H&S policy, signed and dated by a senior person within the organization. The H&S policy should also contain the organization and arrangements. These should be relevant to the anticipated nature and scale of activity to be undertaken, and set out responsibilities for H&S management at all levels in the organization. *(Organizations with fewer than 5 employees, see Note 4 to this Table)*	☐	☐	

[1] In C4-Q1-1c), '. accredited means having undergone third-party attestation by an organization that is a signatory to either or both of the European Accreditation or International Accreditation Forum, multi-lateral agreements.

Table 4 – Core Question Module C4: Health and safety: policy and capability *(continued)*

Q Ref.	Question	Example of the type of information in support of responses, which will be taken into account in assessment	YES	NO	Supplier's unique reference to relevant supporting information
C4-Q3	**Are you able to show your arrangements for ensuring that your H&S measures are effective in reducing/ preventing work-related incidents, occupational ill-health and accidents?**	Details of the arrangements for H&S management that are relevant to the anticipated nature and scale of activity to be undertaken, and how these arrangements are communicated to workers. *(Organizations with fewer than 5 employees, see Note 4 to this Table)*	☐	☐	
C4-Q4	**Do you have ready access to competent H&S advice/assistance?**	Evidence of how your organization has ready access to competent H&S advice, for both general health and safety and, for CDM duty holders, construction-related health and safety. *(Access to competent in-house advice, in whole or part, is usually preferred. It is essential that H&S advisor(s) are able to provide general H&S advice and that, for CDM duty holders (from the same source or elsewhere) advice on relevant construction H&S issues is accessible as required.)*	☐	☐	
C4-Q5	**Do you have a process for providing your employees/other workforce with training and other information appropriate to the activities that your organization is likely to undertake?**	Evidence that your organization implements relevant training arrangements to ensure that employees/other workforce have sufficient skills and understanding to discharge their various duties. This should include refresher training on relevant good H&S practice and, for CDM contractors and principal contractors, Construction Phase Plans (CPP) may be used to show how information is disseminated or communicated on-site (*see note 5 to this Table*).	☐	☐	

Table 4 – Core Question Module C4: Health and safety: policy and capability *(continued)*

Q Ref.	Question	Example of the type of information in support of responses, which will be taken into account in assessment	YES	NO	Supplier's unique reference to relevant supporting information
C4-Q6	**Do your employees/other workforce have H&S and other relevant knowledge, experience and skills to carry out activities that your organization is likely to undertake?**	Evidence that your employees/other workforce have suitable knowledge, experience and skills for the activities assigned to them, unless there are specific situations where they need to work under competent control and/or supervision (e.g. apprentices and other trainees).			
C4-Q7	**Do you check, review and, where necessary, improve your H&S performance?**	Evidence that your organization has an effective, ongoing system for monitoring H&S procedures, and for periodically reviewing and updating that system as necessary.			
C4-Q8	**Do you have procedures for involving your employees/other workforce in the planning and implementation of H&S measures?**	Evidence that your organization implements a means of consulting with its employees/other workforce on H&S matters and how comments, concerns or complaints submitted by employees/other workforce are taken into account.			
C4-Q9	**Do you routinely record and review accidents/incidents and undertake follow-up action?**	Evidence that your organization maintains records of all RIDDOR-reportable (see note 6 to this Table) and other incidents for at least the last three years. Evidence that your organization has an effective system for reviewing significant incidents, and recording any resulting action taken (including your response to any H&S enforcement activity).			

Table 4 – Core Question Module C4: Health and safety: policy and capability *(continued)*

Q Ref.	Question	Example of the type of information in support of responses, which will be taken into account in assessment	YES	NO	Supplier's unique reference to relevant supporting information
C4-Q10	**Do you have arrangements for ensuring that your suppliers also apply H&S measures that are appropriate to the activities that your organization is likely to undertake?**	Evidence that your organization implements arrangements for ensuring and monitoring H&S skills, knowledge and experience, and performance, throughout your entire supply chain, appropriate to the work likely to be undertaken.			
C4-Q11	**Do you operate a process of risk assessment, capable of supporting safe systems of work?**	Evidence that your organization implements procedures for carrying out relevant risk assessments and for developing and implementing safe systems of work ("method statements"). Please provide indicative examples, which must include: the identification and control of any significant occupational health (not just safety) issues, appropriate to the work likely to be undertaken. *(Organizations with fewer than 5 employees, see Note 4 to this Table)* ***NOTE** Risk assessments should focus on, and be proportionate to, the risks arising from the type of work to be undertaken. The need to reduce documentation requirements on micro-businesses in particular should be taken into account by buyers and assessment providers. Excessive bureaucracy associated with prequalification assessment can obscure the real H&S issues to be considered, and even divert effort away from them.*			

Table 4 – Core Question Module C4: Health and safety: policy and capability *(continued)*

C4-Q12	**CDM duty holder related question selection:** The questions asked in **C4-Q13 to C4-Q22** (in conjunction with questions **C4-Q2** to **C4-Q11**) are appropriate for particular construction duties and have been colour coded accordingly to assist identification. Please indicate below which duty (or duties) best describes your organization's activity and then only provide responses to the questions colour coded to the duty (or duties) you have selected. ***NOTE** The questions refer to duty holders under the Construction (Design and Management) Regulations 2015, which defines the scope of "construction" activity. If your organization potentially fills more than one role (e.g. "Design and Build"), please provide responses to the questions applying to all relevant duty holder roles (e.g. Designer and Principal Contractor)*			
	CDM DUTY HOLDER ROLE(S) IDENTIFIED ***Please respond "yes" or "no" to each role identified below***			
	NOTE 1** If none of the duty holder roles identified below are relevant, you do not need to respond to any of questions **C4-Q13 to C4-Q22 ***NOTE 2** Principal contractors will also need to respond to questions applicable to contractors, and principal designers will also need to respond to questions applicable to designers*	**YES**	**NO**	
	C4-Q12-a) Contractor/principal contractor*(respond to grey shaded questions **C4-Q13 to C4-Q16**)*	☐	☐	*None required*
	C4-Q12-b) Principal contractor *(in addition to **C4-Q13** to **C4-Q16 also** respond to yellow shaded question **C4-Q17**)*	☐	☐	
	C4-Q12-c) Designer/principal designer *(respond to red shaded questions **C4-Q18** to **C4-Q19**)*	☐	☐	
	C4-Q12-d) Principal designer *(in addition to **C4-Q18** to **C4-Q19 also** respond to green shaded questions **C4-Q20** to **C4-Q22**)*	☐	☐	

Table 4 – Core Question Module C4: Health and safety: policy and capability *(continued)*

Q Ref	Question	Example of the type of information in support of responses, which will be taken into account in assessment.	YES	NO	Supplier's unique reference to relevant supporting information
C4-Q13 Contractor/ principal contractor	**Do you have arrangements for co-operating and co-ordinating your work with others (including other suppliers, notably contractors)?**	Describe how co-operation and co-ordination of the work is achieved in practice, and how any other organizations are involved in drawing up method statements, etc. including response to emergency situations. This should include how input from your suppliers will be taken into account, and how external comments, including any concerns or complaints, will be responded to. This may include CPPs.	☐	☐	
C4-Q14 Contractor/ principal contractor	**Do you have arrangements for ensuring on-site welfare for your employees/other workforce?**	Describe how you ensure suitable welfare facilities for your employees/other workforce are in place before starting work on site, whether provided by a site-specific arrangement with others, or your own measures. This may include CPPs.	☐	☐	
C4-Q15 Contractor/ principal contractor	**Are you able to provide evidence of the skills, knowledge and experience of H&S in construction in your organization?**	Examples of actual knowledge, skills and experience within your organization. This may include: NEBOSH Construction Certificate; membership of Association for Project Safety; membership of Institution of Construction Safety; SSSTS; SMSTS (e.g. provided in a skills matrix for key personnel)	☐	☐	

Table 4 – Core Question Module C4: Health and safety: policy and capability *(continued)*

Q Ref	Question	Example of the type of information in support of responses, which will be taken into account in assessment.	YES	NO	Supplier's unique reference to relevant supporting information
C4-Q16 Contractor/ principal contractor	**Do you review and develop your effectiveness in the contractor/ principal contractor role?**	Evidence that your organization Implements an ongoing system for monitoring performance, including post-project review.	☐	☐	
C4-Q17 Principal contractor	**Do you implement arrangements to meet the 'principal contractor' duties under the Construction (Design and Management) Regulations 2015?**	Concise, practical examples, relevant and proportionate to the type of activity likely to be carried out, of how your organization meets the requirements of principal contractor. In particular, provide evidence of how you: **C4–Q17-1** Plan, manage, monitor and coordinate H&S in the construction phase, including communication with the client, principal designer and contractors; **C4–Q17-2** Prepare, review and maintain CPPs; **C4–Q17-3** Organize co-operation between contractors and others, and coordinate the work; **C4–Q17-4** Ensure relevant and suitable site inductions; **C4–Q17-5** Provide information for the H&S file.	☐	☐	

Table 4 – Core Question Module C4: Health and safety: policy and capability *(continued)*

Q Ref	Question	Example of the type of information in support of responses, which will be taken into account in assessment.	YES	NO	Supplier's unique reference to relevant supporting information
C4-Q18 Designer/ principal designer	**Do you implement arrangements to meet the 'designer' duties under the Construction (Design and Management) Regulations 2015?**	Evidence showing how you address **C4-Q18-1** to **C4-Q18-4** below. Provide relevant examples showing how risk was reduced through design. ***NOTE** Emphasis should be on practical, proportionate measures that address significant risks arising from designs for relevant construction, not on lengthy documentation about generic risks.* **C4-Q18-1** Check that the client is aware of their duties **C4-Q18-2** Ensure that you and your workforce have the necessary skills, knowledge and experience to discharge their legal duties under CDM 2015? Provide relevant evidence of: • your CPD programme and/ or examples of training and development plans (which may include in-house training). • your relevant qualifications, e.g. membership of a professional institution such as CIAT; CIBSE; ICE or RIBA. • how you maintain your technical knowledge and understanding of construction design. **C4-Q18-3** Ensure significant risks are eliminated by design, taking account of the principles of prevention and show how construction and lifecycle risks are eliminated or controlled (with reference to buildability, maintainability and use). **C4-Q18-4** Effectively manage design changes, with regard to ensuring H&S during and post-completion.	☐	☐	

Table 4 – Core Question Module C4: Health and safety: policy and capability *(continued)*

Q Ref	Question	Example of the type of information in support of responses, which will be taken into account in assessment.	YES	NO	Supplier's unique reference to relevant supporting information
C4-Q19 Designer/ **principal designer**	**Do you review and monitor your design performance, notably in relation to H&S?**	Evidence that your organization implements an ongoing system for monitoring H&S design procedures and for reviewing and updating that system as necessary, e.g. through project design review (during and post-completion).	☐	☐	
C4-Q20 Principal Designer	**Do you implement arrangements to meet the "principal designer" duties under the Construction (Design and Management) Regulations 2015?**	Concise, practical examples, relevant and proportionate to the type of activity likely to be carried out, of how your organization meets the requirements of principal designer. In particular, evidence of how you: **C4–Q20-1** Help the client to meet its duties under CDM 2015 **C4–Q20-2** Gather, prepare, communicate and coordinate information, including design information, with other duty holders during the pre-construction phase **C4–Q20-3** Plan, manage and monitor health and safety-related information, including design information, in the pre-construction phase of a project, with the aim of identifying, eliminating or controlling foreseeable risks; **C4–Q20-4** Ensure designers carry out their duties, including oversight and co-ordination within the design team and with other designers/contractors; **C4-Q20-5** Liaise with the principal contractor; **C4–Q20-6** Prepare and provide relevant information to other duty holders, including the H&S file.	☐	☐	

Table 4 – Core Question Module C4: Health and safety: policy and capability *(continued)*

Q Ref	Question	Example of the type of information in support of responses, which will be taken into account in assessment.	YES	NO	Supplier's unique reference to relevant supporting information
C4-Q21 Principal designer	**Are you able to provide evidence of the skills, knowledge and experience of H&S in construction in your organization?**	Examples of actual skills, knowledge and experience. This may include validated CPD, and typical additional qualifications. *For example, a member of the registers administered by the Association for Project Safety or the Institution of Construction Safety (formerly known as the CDM co-ordinator's register), or the ICE construction health and safety register.*			
C4-Q22 Principal designer	**Do you review and develop your effectiveness in the principal designer role?**	Evidence that your organization implements, an ongoing system for monitoring performance, including post-project review.			

NOTES TO TABLE 4

***NOTE** 1 Assessors should not request unnecessary paperwork and may not necessarily require evidence of all the examples in column 3 of Table 4. Suppliers (including contractors, consultants and others) should only be required to produce enough evidence to show that they meet the relevant criteria, taking account of the nature of activities/projects likely to be involved, and the hazards and risks. This requires assessors to make a judgement as to whether the evidence provided meets the standard to be achieved. If that judgement is reasonable, and clearly based on the evidence requested, assessors cannot be criticised if the supplier they appoint subsequently proves not to have the necessary capability (essential knowledge, skills and experience) when carrying out the activity.*

***NOTE 2** For suppliers that will be CDM duty holders – The core questions in Table 4 align with legal requirements on the relevant duty holder under the Construction (Design and Management) Regulations (CDM 2015).*

***NOTE 3** For suppliers that will be CDM duty holders – Asking the questions in Table 4 does not remove the buyer's requirement to make further enquiries about the supplier's H&S capability, as required for specific projects, services or other activities.*

***Stage 1**: An assessment of the supplier's organization and arrangements for H&S, to determine whether these are sufficient to enable the supplier to carry out the activity safely and without risk to health. Stage 1 assessments assess the general (basic) capability of the supplier and are within the scope of PAS 91.*

***Stage 2**: Stage 2 assessments are outside the scope of PAS 91*. They involve an additional assessment of the supplier's experience, technical capability and track record, to establish that: it is capable of carrying out the actual construction activity/project required (i.e. project, activity or service-specific enquiries), and notably in relation to higher hazard activity; that the supplier recognizes any limitations and how these should be overcome; and appreciates the hazards associated with the activity and how the risk should be effectively controlled.*

**Stage 2 assessments follow Stage 1 enquiries and they should not therefore be asked in relation to PAS 91 (although in the public sector only, stage 2 questions relating to previous experience will be asked in the prequalification questionnaire – if required by law).*

NOTE 4 *If a supplier has fewer than five employees it is not legally required to write down its general policy, organization or arrangements. However, it does need to be able to show that its arrangements are adequate in relation to the type of activity likely to be undertaken.*

NOTE 5 *Relevant and proportionate CPPs are required for 'construction work' covered by CDM 2015. CPPs need only be proportionate to the nature of the activity likely to be undertaken.*

NOTE 6 *RIDDOR: The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013.*

4.2 Application of optional question modules

The questions provided in Tables 5 to 8 constitute optional modules that can be included, where relevant, but where included they shall be applied as specified in Clause 3 in every prequalification questionnaire for which compliance with this PAS is claimed.

Table 5 – Optional Question Module O1: Equal opportunity and diversity policy and capability

Q Ref.	Question	Description of information in support of response, which will be taken into account in assessment	YES	NO	Supplier's unique reference to relevant supporting information
O1-Q1	**As an employer, do you meet the requirements of the positive equality duties in relation to the Equalities Act 2010?** ***NOTE*** *This applies to both public and private procurement*	**In respect of O1-Q1, copies of:** **O1-Q1-1** relevant instructions or written statement/evidence of relevant actions **O1-Q1-2** relevant guidance or written statement/evidence of relevant actions **O1-Q1-3** relevant policies/ literature or written statement/ evidence of relevant actions **O1-Q1-4** evidence of where you believe these policies have made a difference	☐	☐	
O1-Q2	**Is it your policy as an employer to comply with anti-discrimination legislation, and to treat all people fairly and equally so that no one group of people is treated less favourably than others?**	No supporting evidence required	☐	☐	

Table 5 – Optional Question Module O1: Equal opportunity and diversity policy and capability *(continued)*

Q Ref.	Question	Description of information in support of response, which will be taken into account in assessment	YES	NO	Supplier's unique reference to relevant supporting information
O1-Q3	In the last three years has any finding of unlawful discrimination been made against your organization by any court or industrial or employment tribunal or equivalent body?	Details of any findings	☐	☐	
O1-Q4	In the last three years, has your organization been subject to a compliance action by the Equality and Human Rights Commission or an equivalent body on grounds of alleged unlawful discrimination?	Details of any investigations	☐	☐	
O1-Q5	In the last three years, has your organization been found in breach of section 15 of the Immigration, Asylum and Nationality Act 2006?	Details of any findings	☐	☐	
O1-Q6	In the last three years, has your organization been found in breach of section 21 of the Immigration, Asylum and Nationality Act 2006?	Details of any findings	☐	☐	
O1-Q7	In the last three years, has your organization been found to be in breach of the National Minimum Wage Act 1998?	Details of any findings	☐	☐	
O1-Q8	If the answer to any of questions 3 to 7 is "yes", what steps did your organization take as a result of that finding or investigation?	Details/evidence of remedial action			

Table 5 – Optional Question Module O1: Equal opportunity and diversity policy and capability *(continued)*

Q Ref.	Question	Description of information in support of response, which will be taken into account in assessment	YES	NO	Supplier's unique reference to relevant supporting information
O1-Q9	**Does your organization operate appropriate arrangements to ensure that equality and diversity is embedded within your organization?**	Provide copies of any relevant policies or written statement/ evidence of relevant actions	☐	☐	
O1-Q10	**Do you actively promote good practice in terms of eliminating discrimination in all forms through:**				
	O1-Q10-1 guidance to your employees/ suppliers concerned with recruitment, training and promotion?	In respect of **O1-Q10-1**, copies of any relevant guidance or written statement/evidence of relevant actions.	☐	☐	
	O1-Q10-2 making guidance or policy documents concerning how the organization embeds equality and diversity available to employees/ sub-contractors, recognized trade unions or other representative groups of employees?	In respect of **O1-Q10-2**, copies of any relevant guidance, policies, or written statement/ evidence of relevant actions.	☐	☐	
	O1-Q10-3 appropriate recruitment advertisements or other literature?	In respect of **O1-Q10-3**, copies of any relevant advertisement or written statement/evidence of relevant actions.	☐	☐	

Table 6 – Optional Question Module O2: Environmental management policy and capability

Q Ref	Exemption	Exemption claimed	If exemption claimed, supplier's unique reference to certificates or other supporting information
O2-Q1	The questions in this module need not be completed if your organization holds a certificate of compliance with BS EN ISO 14001 (or equivalent) issued by a Conformity Assessment Body accredited to provide conformity assessment services to that standard[2], e.g. accredited by UKAS, or you have a valid EMAS certificate, and can provide information to evidence this.	YES ☐ NO ☐	

Q Ref	Question	Description of information in support of response, which will be taken into account in assessment	YES	NO	Supplier's unique reference to relevant supporting information
O2-Q2	**Do you have a documented policy and organization for the management of construction-related environmental issues?**	Evidence that you or your organization has an environmental management policy authorized by the chief executive or equivalent that is regularly reviewed. The policy should be relevant to the nature and scale of the activity and set out the responsibilities for environmental management throughout the organization.	☐	☐	
O2-Q3	**Do you have documented arrangements for ensuring that your environmental management procedures are effective in reducing/ preventing significant impacts on the environment?**	Evidence that your organization's environmental policy implementation plan provides information as to how the company aims to discharge relevant legal responsibilities and provides clear indication of how these arrangements are communicated to employees/other workforce, in relation to environmental matters including: • sustainable materials procurement; • waste management; • energy management. This should include the arrangements for responding to, monitoring and recording environmental incidents, emergencies and complaints.	☐	☐	

[2] In O2-Q,1 accredited means having undergone third-party attestation by an organization that is a signatory to either or both of the European Accreditation or International Accreditation Forum, multi-lateral agreements.

Table 6 – Optional Question Module O2: Environmental management policy and capability *(continued)*

Q Ref	Question	Description of information in support of response, which will be taken into account in assessment	YES	NO	Supplier's unique reference to relevant supporting information
O2-Q4	**Do you have arrangements for providing employees who will engage in construction, with training and information on construction-related environmental issues?**	Evidence that your organization has in place, and implements, training arrangements to ensure that its workforce has sufficient skills and understanding to carry out their various duties. This should include a programme of refresher training that will keep employees/other workforce updated on relevant legal requirements and good environmental management practice.	☐	☐	
O2-Q5	**Do you check, review and where necessary improve your environmental management performance?**	Evidence that your organization has a system for monitoring environmental management procedures on an ongoing basis and for updating them at periodic interval.	☐	☐	
O2-Q6	**Do you have arrangements for ensuring that any suppliers you engage apply environmental protection measures that are appropriate to the activity for which they are being engaged?**	Evidence that your organization has procedures for monitoring supplier's environmental management arrangements and ensuring that environmental performance appropriate for the activity to be undertaken is delivered throughout the whole of your organizations supply chain.	☐	☐	

***NOTE** EMAS is the European Eco-management and Audit Scheme, sponsored by the European Commission (see http://eceuropaeu/environment/emas/index_ENhtm)*

Table 7 – Optional Question Module O3: Quality management policy and capability

Q Ref	Exemption	Exemption claimed	If exemption claimed, supplier's unique reference to certificates or other supporting information
O3-Q1	The questions **O3-Q2** to **O3-Q6**, need not be completed if your organization holds a certificate of compliance with BS EN ISO 9001(or equivalent) issued by a Conformity Assessment Body accredited to provide conformity assessment services to that standard[3] e.g. accredited by UKAS, and can provide information to evidence this.	YES ☐ NO ☐	

Q Ref	Question	Description of information in support of response, which will be taken into account in assessment	YES	NO	Supplier's unique reference to relevant supporting information
O3-Q2	**Do you have a policy and organization for quality management?**	Evidence that your organization has and implements a quality management policy that is authorized by the chief executive or equivalent that is periodically reviewed at a senior management level. The policy should be relevant to the nature and scale of the work to be undertaken and set out responsibilities for quality management throughout the organization.	☐	☐	
O3-Q3	**Do you have arrangements for ensuring that your quality management, including the quality of construction output and general performance, is effective in reducing/ preventing incidents of sub-standard delivery?**	Evidence that your organization keeps copies of documentation setting out quality management organization and procedures that meet currently agreed good. practice. These should include the arrangements for quality management throughout the organization. They should set out how the company will carry out its policy, with a clear indication of how the arrangements are communicated to employees/other workforce.	☐	☐	

[3] In **O3-Q1** accredited means having undergone third-party attestation by an organization that is a signatory to either or both of the European Accreditation or International Accreditation Forum, multi-lateral agreements.

Table 7 – Optional Question Module O3: Quality management policy and capability *(continued)*

Q Ref	Question	Description of information in support of response, which will be taken into account in assessment	YES	NO	Supplier's unique reference to relevant supporting information
O3-Q4	**Do you have arrangements for providing your workforce with quality-related training and information appropriate to the type of work for which your organization is likely to bid?**	Evidence that your organization has in place and implements, training arrangements to ensure that its employees/other workforce has sufficient skills and understanding to discharge their various responsibilities. These arrangements should include a programme of training that will keep employees/other workforce up to date with required knowledge about quality related issues, including copies of job profiles; training manuals and training records.	☐	☐	
O3-Q5	**Do you have procedures for periodically reviewing, correcting and improving quality performance?**	Evidence that your organization has a system for monitoring quality management procedures on an on-going basis. Your organization should be able to provide evidence of systematic, periodic review and improvement of quality in respect of construction output and general performance.	☐	☐	
O3-Q6	**Do you have arrangements for ensuring that your own suppliers apply quality management measures that are appropriate to the work for which they are being engaged?**	Evidence that your organization has arrangements for monitoring supplier's quality management arrangements and ensuring that quality performance appropriate for the work to be undertaken is delivered throughout the whole of your organizations supply chain.	☐	☐	

Table 8 – Optional Question Module O4: Building information modelling (BIM), policy and capability

***NOTE** This will be used for UK Government procured projects for Departments that have commenced implementation of the BIM Strategy and may be used by other clients adopting a similar path.*

Q Ref	Exemptions	Exemption claimed	If exemption claimed, supplier's unique reference to certificates or other supporting information
O4-Q1	The questions **O4-Q2** to **O4-Q5** need not be completed if your organization holds a third-party certificate of compliance with PAS 1192-2:2013 *(or equivalent) issued by a Conformity Assessment Body accredited to provide conformity assessment services to that standard[4] e.g. accredited by UKAS, and can provide information to evidence this. ***NOTE** Such accrediting organizations will be required to have specialized design management competences* **updated version expected November 2017.*	**YES** ☐ **NO** ☐	

Q Ref	Question	Description of information in support of response, which will be taken into account in assessment	YES	NO	Supplier's unique reference to relevant supporting information
O4-Q2	**Do you have the capability of working with a project using a "Common Data Environment" as described in PAS 1192-2:2013?**	Evidence that your organization understands the concept of a "Common Data Environment" as described in PAS 1192-2:2013 and is able to exchange information between supply chain members in an efficient and collaborative manner. If you have delivered a project in this way, you may use this to demonstrate your capability. Your explanation should be clear and concise.	☐	☐	
O4-Q3	**Do you have documented policy, systems and procedures to achieve "Level 2 BIM" maturity as defined in the government's BIM Strategy?** (see note to this Table)	Evidence that you or your organization has a policy authorized by the chief executive or equivalent that is regularly reviewed. The policy and procedures should be relevant to the nature and scale of the work to be undertaken.	☐	☐	

[4] In O3-Q1 accredited means having undergone third-party attestation by an organization that is a signatory to either or both of the European Accreditation or International Accreditation Forum, multi-lateral agreements.

Table 8 – Optional Question Module O4: Building information modelling (BIM), policy and capability *(continued)*

Q Ref	Question	Description of information in support of response, which will be taken into account in assessment	YES	NO	Supplier's unique reference to relevant supporting information
O4-Q4	**Do you have the capability of developing and delivering or working to (depending upon the role(s) that this PQQ covers) a BIM Execution Plan (BEP) as described in PAS 1192-2:2013?**	Evidence that your organization understands the requirements of PAS 1192-2:2013, in particular with respect to BEP. This will include how to create reliable information and exchange it between supply chain members in an efficient and collaborative manner, and where appropriate, to the client, in the form specified (e.g. in accordance with the COBie UK 2012 standard and other typical client's information requirements). If you have delivered a project in this way, you may present an example BEP.	☐	☐	
O4-Q5	**Do you have arrangements for training employees in BIM-related skills and do you assess their capabilities?**	Evidence that your organization has in place training arrangements to ensure that its staff/workforce have sufficient skills and understanding to implement and deliver projects in accordance with the policy and procedures established to achieve "Level 2 BIM" maturity. Completed Construction Project Information Exchange (CPIx) templates referred to in the Project Implementation Plan (PIP), part of the BEP defined in PAS 1192-2:2013 would be considered. If this PQQ is for the first such project that you have considered undertaking, a training plan and evidence of how prior training outcomes in other areas have been assessed, would be considered.	☐	☐	

***NOTE** Level 2 BIM describes a specific range of BIM capabilities (see PAS 1192-2:2013) These involve developing and sharing 3D construction project-related data, via an electronic "BIM environment", with others involved in a project. This includes an as-built "Data Drop" for use by the Client. The electronic BIM environment allows design models (digital objects and supporting information about these objects) to be shared. Each model requires platform software and a database of object information.*

4.3 Application of C3 (business and professional standing) in Public Sector procurement

The questions provided in Tables 9 and 10 shall be used in place of those in Table 3 for public sector procurement in the scope of the Public Contracts Regulations 2015.

Suppliers who have an already completed a European Single Procurement Document (ESPD) template can submit that completed ESPD in lieu of Tables 9 and10. Alternatively Contracting Authorities can request that suppliers complete the EU electronic version of the ESPD, through the Commission's E-ESPD service or the self-declaration module of the Contracting Authorities e-procurement platform.

Tables 9 and 10 need to be completed by each organization being relied on to meet the selection criteria. A completed Table 1 and self-declaration is also required from each organization.

Procurements in scope of the Defence and Security Public Contract Regulations 2011 shall substitute Tables 11 and 12 for Table 3. Clause **4.4** of this PAS provides the necessary alternative questions.

***NOTE** For further information on Public Procurement see Annex B.*

Table 9 – Core Question Module C3 for Public Sector procurement – ESPD option, Grounds for mandatory exclusion and non-payment of tax and social security contributions (mandatory and discretionary exclusion)

Q Ref.	Question	Response	
ESPD Option			
C3-QP1	Have you submitted a completed European Single Procurement Document (ESPD)? The questions in this module (Tables 9 and 10) need not be completed if you have provided a completed and signed European Single Procurement Document (ESPD).	**YES** ☐	**NO** ☐
Grounds for Mandatory Exclusion			
C3-QP2	In respect of Regulations 57(1 and 2) of the Public Contracts Regulations 2015 the detailed grounds for mandatory exclusion of an organization are set out on the *webpage* – https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/551130/List_of_Mandatory_and_Discretionary_Exclusions.pdf which should be referred to before completing these questions. Within the past five years, anywhere in the world, have you, your organization or any person who has powers of representation, decision or control in the organization been convicted of any of the offences within the summary (**C3-QP2-1** to **C3-QP2-8**) below, and listed on the above referenced webpage?		
C3-QP2-1	Participation in a criminal organization	**YES** ☐	**NO** ☐
C3-QP2-2	Corruption	**YES** ☐	**NO** ☐
C3-QP2-3	Fraud	**YES** ☐	**NO** ☐
C3-QP2-4	Terrorist offences or offences linked to terrorist activities	**YES** ☐	**NO** ☐
C3-QP2-5	Money laundering or terrorist financing	**YES** ☐	**NO** ☐
C3-QP2-6	Child labour and other forms of trafficking human beings	**YES** ☐	**NO** ☐
C3-QP2-7	Any other offence within the meaning of Article 57(1) of the Directive as defined by the law of any jurisdiction outside England, Wales or Northern Ireland	**YES** ☐	**NO** ☐
C3-QP2-8	Any other offence within the meaning of Article 57(1) of the Directive created after 26th February 2015 in England, Wales or Northern Ireland.	**YES** ☐	**NO** ☐

Table 9 – Core Question Module C3 for Public Sector procurement – ESPD option, Grounds for mandatory exclusion and non-payment of tax and social security contributions (mandatory and discretionary exclusion) *(continued)*

Q Ref.	Question	Response	
C3-QP2-9	If you have answered yes to any of questions **C3-QP2-1** to **C3-QP2-8**, provide further details for each such question, including: • date of conviction and the jurisdiction; • which of the grounds listed the conviction was for; • the reasons for conviction; • the identity of who has been convicted. If the relevant documentation is available electronically, provide: • the web address; • issuing authority; • precise reference of the documents.	Response	
C3-QP2-10	If you have answered Yes to any of the questions **C3-QP2-1** to **C3-QP2-8**, explain, for each such question, what measures have been taken to demonstrate the reliability of the organization despite the existence of relevant grounds for exclusion (self-cleaning - see Regulation 57 (13 to 17) of the Public Contracts Regulations 2015).	Response	
Non-payment of tax and social security contributions (mandatory and discretionary exclusion)			
C3-QP3	In respect of Regulation 57(3) and (4) of the Public Contracts Regulations 2015, the detailed grounds for mandatory and discretionary exclusion of an organization are set out on the webpage: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/551130/List_of_Mandatory_and_Discretionary_Exclusions.pdf which should be referred to before completing these questions.		
C3-QP3-1	Has your organization met all its obligations relating to the payment of taxes or social security contributions, both in the UK and in the country in which the organization is established (if outside the UK)?	YES ☐	NO ☐
C3-QP3-2	If you responded "No" for question **C3-QP3-1**, was this through a judicial or administrative decision having final and binding effect?	YES ☐	NO ☐
C3-QP3-3	Have any tax returns submitted on or after 1 October 2012 been found to be incorrect as a result of:		
C3-QP3-3(a)	• HMRC successfully challenging the potential supplier under the General Anti – Abuse Rule (GAAR) or the "Halifax" abuse principle;	YES ☐	NO ☐
C3-QP3-3(b)	• a tax authority in a jurisdiction in which the potential supplier is established successfully challenging it under any tax rules or legislation that have an effect equivalent or similar to the GAAR or "Halifax" abuse principle; or	YES ☐	NO ☐
C3-QP3-3(c)	• a failure to notify, or failure of an avoidance scheme which the supplier is or was involved in, under the Disclosure of Tax Avoidance Scheme rules (DOTAS), VADR (Schedule 11A to the Value Added Tax Act 1994 (as amended by Schedule 1 to the Finance (no. 2) Act 2005) or any equivalent or similar regime in a jurisdiction in which the supplier is established.	YES ☐	NO ☐

Table 9 – Core Question Module C3 for Public Sector procurement – ESPD option, Grounds for mandatory exclusion and non-payment of tax and social security contributions (mandatory and discretionary exclusion) *(continued)*

Q Ref.	Question	Response
C3-QP3-4	If you have answered No to **C3-QP3-1** and/or Yes to any of questions **C3-QP3-2** to **C3-QP3-3(c)**, provide further details for each instance, including: • whether you believe there to be any overriding reasons for non-payment; • the country or state concerned; • the amount concerned; • details of the means for a No response to question **C3-QP3-1** (if not included the response to **C3-QP3-2** or **C3-QP3-3(a) (b)** or **(c)**); • the date of the conviction or decision (if applicable); • in case of a conviction, insofar as established directly therein, the length of the period of exclusion; • whether you have paid, or have entered into a binding arrangement with a view to paying, "the taxes or social security contributions due" including where applicable any interest accrued and/or fines; and • if the relevant documentation is available electronically indicate the web address, issuing authority or body and precise reference of the document.	Response

Note to Table 9

We reserve our right to use our discretion to exclude your bid where we can demonstrate by any appropriate means that you are in breach of your obligations relating to the non-payment of taxes or social security contributions.

Table 10 – Core Question Module C3 for Public Sector procurement: grounds for discretionary exclusion

Q Ref	Question	Response	
C3-QP4	Regulation 57 (8) of the Public Contracts Regulations 2015 The detailed grounds for discretionary exclusion of an organization are set out on the webpage: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/551130/List_of_Mandatory_and_Discretionary_Exclusions.pdf which should be referred to before completing these questions. Within the past three years, anywhere in the world, have any of the situations identified in **C3- QP4-1** to **C3-QP4-8(e)** below applied, to you or your organization.		
C3-QP4-1	Breach of obligations in the field of environment, social and/or labour law.	YES ☐	NO ☐
C3-QP4-2	Bankruptcy, insolvency	YES ☐	NO ☐
C3-QP4-3	Guilty of grave professional misconduct	YES ☐	NO ☐

Table 10 – Core Question Module C3 for Public Sector procurement: grounds for discretionary exclusion *(continued)*

Q Ref	Question	Response	
C3-QP4-4	Distortion of competition	YES ☐	NO ☐
C3-QP4-5	Aware of any conflict of interest	YES ☐	NO ☐
C3-QP4-6	Been involved in the preparation of the procurement procedure	YES ☐	NO ☐
C3-QP4-7	Performance deficiencies on a previous contract leading to early termination, damages or other sanctions	YES ☐	NO ☐
C3-QP4-8	Misrepresentation and undue influence Do any of the following statements apply to your organization?		
C3-QP4-8(a)	The organization is guilty of serious misrepresentation in supplying the information required for the verification of the absence of grounds for exclusion or the fulfilment of the selection criteria.	YES ☐	NO ☐
C3-QP4-8(b)	The organization has withheld such information.	YES ☐	NO ☐
C3-QP4-8(c)	The organization is not able to submit supporting documents required under Regulation 59 of the Public Contracts Regulations 2015.	YES ☐	NO ☐
C3-QP4-8(d)	The organization has influenced the decision-making process of the contracting authority to obtain confidential information that may confer upon the organization undue advantages in the procurement procedure.	YES ☐	NO ☐
C3-QP4-8(e)	The organization has negligently provided misleading information that may have a material influence on decisions concerning exclusion, selection or award.	YES ☐	NO ☐
C3-QP4-9	If you have answered Yes to any of questions **C3- QP4-1** to **C3-QP4-8(e)**, provide • details of the circumstances; • explain what measures have been taken to demonstrate the reliability of the organization despite the existence of a relevant ground for exclusion (Self cleaning - see Regulation 57 (13 to 17) of the Public Contracts Regulations 2015); • if relevant documentation is available electronically, indicate the web address, issuing authority or body and precise reference of the document.	Reponse	

4.4 Application of C3 (business and professional standing) in Defence and Security Public Contract Procurement

Table 11 – Core Question Module C3 for Defence and Security Public Contract Regulations 2011 Part 4 Regulation 23(1) – Mandatory exclusion

Q Ref	Information required and description of information expected, which will be taken into account in assessment		Answer	
C3-QD1	Do any of the circumstances as set out in Part 4 Regulation 23(1) of the Defence and Security Public Contracts Regulations 2011 (SI 1848), including any amendments to the legislation identified*, apply to you as the Applicant or to members of any Applicant Group? If yes, supply details in **C3-QD1-1** to **C3-QD-1(l),**as applicable.		YES ☐	NO ☐
			Response	
	C3-QD1-1 If your organization or any directors or partner or any other person who has powers of representation, decision or control has been convicted of any of the following offences, provide information.			
	C3-QD1-1(a) conspiracy within the meaning of section 1 or section 1A of the Criminal Law Act 1977 or article 9 or 9A of the Criminal Attempts and Conspiracy (Northern Ireland) Order 1983, or in Scotland the Offence of conspiracy, where that conspiracy relates to participation in a criminal organization as defined in Article 2 of Council Framework Decision 2008/841/JHA.			
	C3-QD1-1(b) involvement in serious organized crime or directing serious organized crime within the meaning of section 28 or 30 of the Criminal Justice and Licensing (Scotland) Act 2010;			
	C3-QD1-1(c) corruption within the meaning of section 1 of the Public Bodies Corrupt Practices Act 1889 or section 1 of the Prevention of Corruption Act 1906*;			
	C3-QD1-1(d) the offence of bribery;			
	C3-QD1-1(e) bribery within the meaning of section 1, 2 or 6 of the Bribery Act 2010;			
	C3-Q1-1(f) bribery or corruption within the meaning of section 68 and 69 of the Criminal Justice (Scotland) Act 2003;			
	C3-QD1-1(g) fraud, where the offence relates to fraud affecting the financial interests of the European Communities as defined by Article 1 of the Convention relating to the protection of the financial interests of the European Union*, within the meaning of:			
	C3-QD1-1(g) (i) the offence of cheating the Revenue;			
	C3-QD1-1(g) (ii) the offence of conspiracy to Defraud;			

Table 11 – Core Question Module C3 for Defence and Security Public Contract Regulations 2011 Part 4 Regulation 23(1) – Mandatory exclusion *(continued)*

		Response
	C3-QD1-1(g) (iii) fraud or theft within the meaning of the Theft Act 1968* the Theft Act (Northern Ireland) 1969*, the Theft Act 1978* or the Theft (Northern Ireland) Order 1978*;	
	C3-QD1-1(g) (iv) fraud within the meaning of section 2, 3 or 4 of the Fraud Act 2006;	
	C3-QD1-1(g) (v) in Scotland, the offence of fraud;	
	C3-QD1-1(g) (vi) in Scotland, the offence of theft;	
	C3-QD1-1(g) (vii) fraudulent trading within the meaning of section 458 of the Companies Act 1985, article 451 of the Companies Act (Northern Ireland) Order 1986 or section 993 of the Companies Act 2006;	
	C3-QD1-1(g) (viii) fraudulent evasion within the meaning of section 170 of the Customs and Excise Management Act 1979 or section 72 of the Value Added Tax Act 1994*;	
	C3-QD1-1(g) (ix) an offence in connection with taxation in the European Union within the meaning of section 71 of the Criminal Justice Act 1993;	
	C3-QD1-1(g) (x) destroying, defacing or concealing of documents or procuring the execution of a valuable security within the meaning of section 20 of the Theft Act 1968* or section 19 of the Theft Act (Northern Ireland) 1969* or making, adapting, supplying or offering to supply articles for use in frauds within the meaning of section 7 of the Fraud Act 2006;	
	C3-QD1-1(g) (xi) in Scotland the offence of uttering; or	
	C3-QD1-1(g) (xii) in Scotland, the criminal offence of attempting to pervert the course of justice;	
	C3-QD1-1(h) money laundering within the meaning of section 93A, 93B, or 93C of the Criminal Justice Act 1988, section 45, 46 or 47 of the Proceeds of Crime (Northern Ireland) Order 1996 or the Money Laundering Regulations 2003 or money laundering or terrorist financing within the meaning of the Money Laundering Regulations 2007*;	

Table 11 – Core Question Module C3 for Defence and Security Public Contract Regulations 2011 Part 4 Regulation 23(1) – Mandatory exclusion *(continued)*

		Response
	C3-QD1-1(i) terrorist offences or offences linked to terrorist activities, as defined in Articles 1 and 3 of Framework Decision 2002/475/JHA*;	
	C3-QD1-1(j) an offence in connection with proceeds of drug trafficking within the meaning of section 49, 50 or 51 of the Drug Trafficking Act 1994; or	
	C3-QD1-1(k) in Scotland, the offence of incitement to commit any of the crimes described in Regulation 23(1);	
	C3-QD1-1(l) any other offence within the meaning of Article 39(1) of the Defence and Security Procurement Directive 2009/81/EC as defined by the national law of any member State.	

** including any amendments to the legislation identified"*

NOTE *Regulation requires that Defence and Security Public Contracts procurers exclude any applicant from the tender process who satisfies any of the criteria for rejection set out in Part 4, Regulation 23(1) of the DSPCR 2011. It is therefore essential that entities applying for pre-qualification are required to confirm that none of the circumstances set out in Part 4, Regulation 23(1) of the DSPCR 2011 apply to them or any member of an applicant group that they represent.*

Table 12 – Core Question Module C3 for Defence and Security Public Contract Regulations 2011 Regulation 23(4) – Discretionary exclusion

Q Ref	Information required and description of information expected, which will be taken into account in assessment	Answer	
C3-QD2	Do any of the circumstances as set out in Part 4 Regulation 23(4) of the Defence and Security Public Contracts Regulations 2011 (SI 1848), apply to the Applicant or to members of any Applicant Group? If yes, please supply details below.	YES ☐	NO ☐

	Question	Response
	C3-QD2-1 Is any of the following true of your organization?	

Table 12 – Core Question Module C3 for Defence and Security Public Contract Regulations 2011 Regulation 23(4) – Discretionary exclusion *(continued)*

	Question	Response
	C3-QD2-1(a) being an individual, is a person in respect of whom a debt relief order has been made or is bankrupt or has had a receiving order or administration order or bankruptcy restrictions order or debt relief restrictions order made against him or has made any composition or arrangement with or for the benefit of creditors or has made any conveyance or assignment for the benefit of creditors or appears unable to pay or to have no reasonable prospect of being able to pay, a debt within the meaning of Section 268 of the Insolvency Act 1986, or Article 242 of the Insolvency (Northern Ireland) Order 1989, or in Scotland has granted a trust deed for creditors or become otherwise apparently insolvent, or is the subject of a petition presented for sequestration of his estate, or is the subject of any similar procedure under the law of any other State;	
	C3-QD2-1(b) being a partnership constituted under Scots law, has granted a trust deed or become otherwise apparently insolvent, or is the subject of a petition presented for sequestration of its estate;	
	C3-QD2-1(c) being a company or any other entity within the meaning of section 255 of the Enterprise Act 2002 has passed a resolution or is the subject of an order by the court for the company's winding up otherwise than for the purpose of *bona fide* reconstruction or amalgamation, or has had a receiver, manager or administrator on behalf of a creditor appointed in respect of the company's business or any part of the company's business or is the subject of similar procedures under the law of any other State?	
	C3-QD2-2 Has your organization	

Table 12 – Core Question Module C3 for Defence and Security Public Contract Regulations 2011 Regulation 23(4) – Discretionary exclusion *(continued)*

	Question	Response
	C3-QD2-2(a) been convicted of a criminal offence relating to the conduct of its business or profession, including, for example, any infringements of any national or foreign law on protecting security of information or the export of defence or security goods;	
	C3-QD2-2(b) committed an act of grave misconduct in the course of its business or profession, including a breach of obligations regarding security of information or security of supply required by the contracting authority in accordance with Regulation 38 or 39 of the DSPCR during a previous contract;	
	C3-QD2-2(c) been told by a contracting authority, that the Potential Provider does not to possess the reliability necessary to exclude risks to the security of the United Kingdom*;	
	C3-QD2-2(d) failed to fulfil obligations relating to the payment of social security contributions under the law of any part of the United Kingdom or of the member State in which it is established;	
	C3-QD2-2(e) failed to fulfil obligations relating to the payment of taxes under the law of any part of the United Kingdom or of the member State in which it is established;	

***NOTE** The Authority is entitled to exclude applicants from participating in this procurement if any of the above apply but it may decide to allow the applicant to proceed further. If the applicant cannot answer 'No' to every question it is possible that its application might not be accepted. In the event that any of the following do apply, the applicant should set out (in a separate annex) full details of the relevant incident and any remedial action taken subsequently. The information provided will be taken into account by the Authority in considering whether or not to allow the applicant to proceed further.*

4.5 Supplementary or additional questions

Introduction: Table 13 provides a format for asking supplementary or additional questions which, if necessary can be interpolated into the core and optional question modules presented in Tables 1 to 8. In recognizing that supplementary or additional questions may need to be asked and providing for their inclusion in existing question modules, **Clause 3.2** specifically requires that any supplementary or additional questions be referenced in a manner that clearly identifies the fact that they are supplementary or additional questions and numbered in a manner that does not change the number sequence of the original PAS 91 questions, in the module in which they are inserted.

This format and the example questions used for its demonstration in Table 13, may be used in prequalification processes that relate to specific projects or frameworks, where applicants are required to meet minimum standards of technical and/or professional ability. Before choosing to use these example questions however, buyers and assessment providers should have particular regard to reducing unnecessary documentation requirements for businesses and in any event only request information that is related and proportionate to the subject matter of the contracts likely to be awarded (see Note to this Clause).

Whilst the use of this particular format and numbering system are not requirements of this PAS and users may adopt whatever method of presentation is best suited to the nature of the question(s) to be asked, the requirements of **Clause 3.2** in respect of relevance and proportionality, additionality and numbering, shall still be met for any supplementary or additional questions that may be asked.

NOTE *Where prequalification processes are required to be OJEU compliant, the allowable means of evaluating compliance with minimum standards of technical and professional ability are described in Public Contracts Regulations 2015 Regulations 58(15) - 58(18) and Regulation 60(9), and questions should be formulated to address such evaluation. They should also be related and proportionate to the subject matter of the contracts likely to be awarded.*

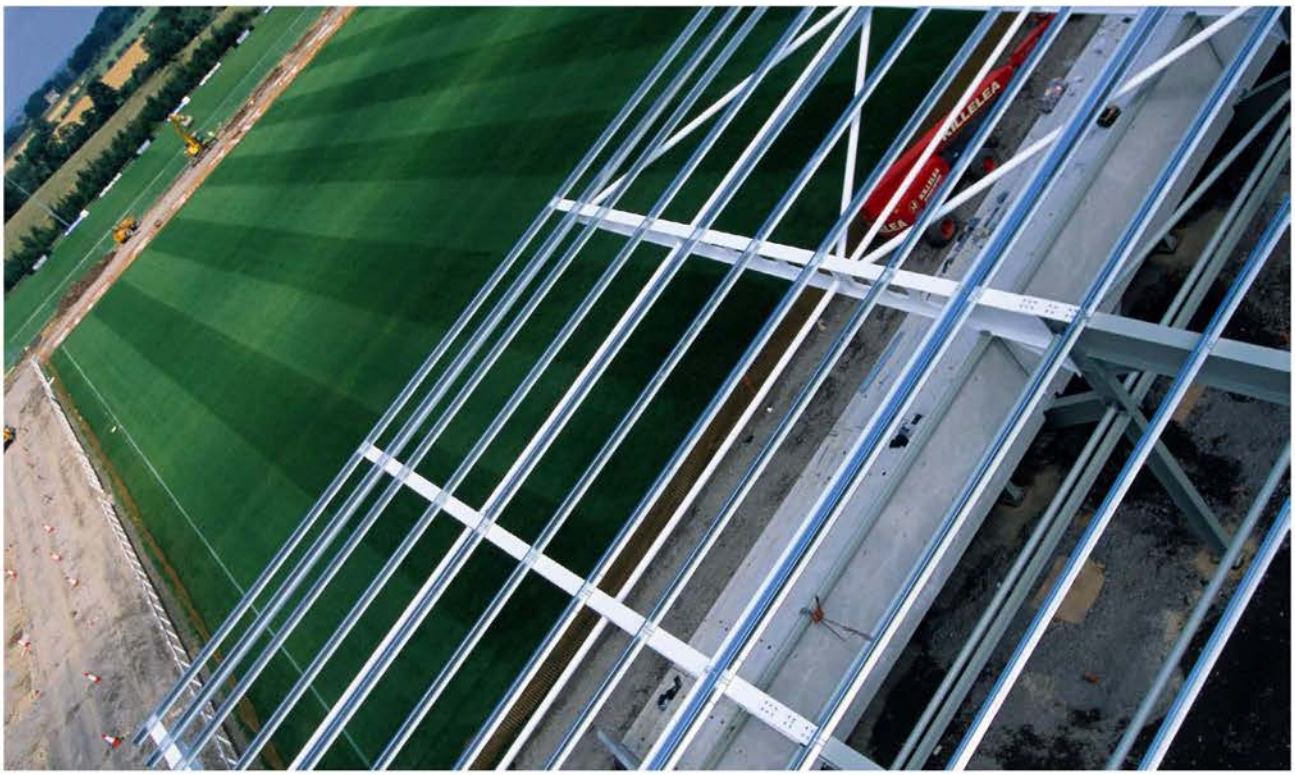


Table 13 – Examples of supplementary/additional questions including in respect of organizational technical and/or professional capability

Example numbering	Example question	Description of information in support of response, which will be taken into account in assessment	YES	NO	Unique reference to supporting information
S1-Q1	**Do you and/or your company have the technical ability to carry out the activities that are the subject of this prequalification questionnaire?**	Evidence of your company's capability of carrying out the activities described, by way of a completed project record, demonstrating the skills, efficiency, experience and reliability of your organization. Responses will be evaluated with regard to provision of comprehensive information on the following: i) description of the project including project value and Client details and Client brief; ii) pre-construction services, including any pre-contract advice, surveys and design drawings undertaken by your company, pre-contract planning, construction phase programming and management plans; iii) construction phase Health & Safety services, including examples of Construction Phase Health & Safety Project Plan and Health & Safety Inspections; iv) cost planning and management; v) specific working methods for providing, maintaining and monitoring a high level of service delivery and customer satisfaction; vi) details of meetings, communications and interactions between all parties to ensure efficient project completion; vii) description of approach to handover, including awareness training of all relevant persons involved.	☐	☐	

Table 13 – Examples of supplementary/additional questions including in respect of organizational technical and/or professional capability *(continued)*

Example numbering	Example question	Description of information in support of response, which will be taken into account in assessment	YES	NO	Unique reference to supporting information
S1-Q2	**Have you and/or your company carried out activities of the same or similar nature to that which is the subject of this prequalification questionnaire?**	A list of relevant activities carried out over the past 5 years together with evidence of satisfactory completion for the most important of those activities, indicating in each case: i) project size (e.g. by value); and ii) when and where the work or works were carried out.	☐	☐	
S1-Q3	**Have you and/or your company provided supplies or services of the same or similar nature to that which is the subject of this prequalification questionnaire?**	A statement of the principal supplies sold or services provided in the past 3 years including: i) the dates on which the supplies or services were provided; ii) the identity of the person to whom the supplies were sold or the services were provided; and iii) any certificate issued or countersigned by that person confirming the details of the contract for those supplies sold or services provided.	☐	☐	
S1-Q4	**Do you and/or your company have the necessary technical facilities to fabricate, supply and deliver the supplies and services that are the subject of this prequalification questionnaire?**	A statement of the professional qualifications held by you and/or other members of staff/workforce within your company who will be responsible for providing the services or carrying out the activities that are the subject of this prequalification questionnaire.	☐	☐	
S1-Q5	**Do you and/or your company have the necessary numbers of staff to fabricate, supply and deliver the activities, supplies and/or services that are the subject of this prequalification questionnaire?**	A statement of the average annual number of managerial staff and other workforce over the previous 3 years.	☐	☐	

***NOTE** In the question referencing above, the questions are numbered appropriately for inclusion in a separate set of supplementary or additional questions. If the supplementary or additional questions are to be interpolated into PAS 91 core or optional question modules, the letter in the first element will be C or O dependent upon whether the question is to be added to a core or optional module and the number of the first element will be determined by the particular module into which the question is being inserted. SUP is then added as a suffix to denote a supplementary or additional question.*

Annex A PAS 91 Overview (informative)

This Annex builds on the information provided in the introduction to this PAS and includes:

- **A1 Introduction**
- **A2 What are the buyer benefits?**
- **A3 What are the supplier benefits?**
- **A4 How should a buyer use the PAS?**
- **A5 Use of assessment providers**
- **A6 How to use the PAS when looking at projects with different levels of risk?**
- **A7 Application of the PAS to additional cases**

A.1 Introduction

The problem – Across the construction supply chain suppliers wishing to prequalify for work are frequently required to complete a variety of different prequalification questionnaires. This leads to considerable duplication of supplier effort which costs both time and money. Often, particular questions are essentially seeking the same information but because they are presented in a different way and in a different order, suppliers can be placed under resource and other pressures due to confusion and the wasted money, time and effort required. There is also increased risk that responses will differ unnecessarily. On the other side of the process, buyers or their assessment providers may have to devote excessive time and effort to reading and evaluating this variety of responses, which adds yet more unnecessary cost to the overall process.

The solution – This PAS provides a standard wording and order for a set of questions that will enable the acquisition of the essential information required in all prequalification processes in a uniform and commonly usable, manner. The intention is that buyers should use these "core" questions, either directly or through an assessment provider that complies with this PAS to obtain the information they require. A supplier can then efficiently complete a prequalification questionnaire, referring to their pre-prepared answers.

Further standard questions, which may be relevant to some but not all construction procurements, are provided in optional modules that can be used as required.

It is important to recognize that prequalification is an initial filter of interested suppliers who can then be short-listed for the tender stage. So the questions should be kept to a minimum and only include those that will help with this stage of the buying decision.

However, if prequalification is in respect of a specific project, additional project-specific questions can also be used to filter out those companies that do not have the technical capability to successfully complete an invitation to tender.

A.2 What are the buyer benefits?

Less time spent on routine tasks, more confidence that they are following good practice, more sustainable processes, more time to focus on significant parts of the tendering process, more suppliers willing to apply for work, giving more choice.

By utilizing this PAS greater clarity is provided bringing more certainty that buyers are prequalifying suppliers correctly whilst simultaneously saving time and resources. By using a set of questions with which potential suppliers will be familiar the cost and uncertainty surrounding basic prequalification will be reduced for suppliers, so that more suppliers should feel able to take part, bringing greater choice to clients. In addition, the use of this PAS should also enable buyers to devote more time to developing any necessary project-specific questions.

Use of this PAS can be of benefit to an organization in relation to corporate responsibility, as it is part of the common agenda to reduce burdens on buyers and suppliers alike, and to increase the understanding and application of widely applicable standards in the construction industry.

Occasional buyers – This PAS gives a clear guide and structure to the prequalification process which can be of considerable help to the occasional buyer. Use of the PAS gives assurance to buyers that they are following good practice without needing to invest a lot of time researching processes and experiencing delay as a result. They can also have confidence that they will have greater opportunity for response from better prepared and informed suppliers.

A.3 What are the supplier benefits?

Less confusion, less possibility of misunderstanding what information is required, less time taken to prepare responses, less cost and paperwork, more confidence in the process bringing greater certainty that questionnaires have been completed correctly, and more time to spend on other business activity.

A supplier should be able to devote time to developing an authoritative set of standard answers to the "core" questions which will then be a resource that they can then use, update and adapt as necessary in response to any buyer using PAS 91 in its prequalification processes. In this situation, answering a prequalification questionnaire becomes a routine process, saving both time and money with the result that a supplier is likely to feel more confident about applying for more contracts. It is important to recognize however that suppliers will need to maintain the currency, content and relevance of their pre-prepared answers to ensure that they are up to date and fit for purpose, at any given time.

Use of this PAS is in line with public sector policy in that it will help to open more opportunities to small- and medium-sized organizations. This is achieved not only through its standardization of the questions, but also by its requirement that the information being asked for should be limited to that which is related and proportionate to the subject matter of the contracts likely to be awarded.

A.4 How should a buyer use the PAS?

PAS 91 takes a modular approach to its set of questions and is structured to enable buyers to include the minimum number of modules necessary to cover the areas of capability that are relevant to the procurement process being undertaken.

Clause **4.1** contains modules that constitute the "core" questions that are to be asked in all prequalification activity These core modules are:

- C1: Supplier identity; key roles and contact information;
- C2: Financial information;
- C3: Business and professional standing;
- C4: Health and safety policy and capability.

For public sector or defence and security buyers, Tables 9 and 10 or 11 and 12, provide alternative questions to **C3**.

In addition, where it is necessary to assess supplier capability in the areas of equal opportunity, environmental management and quality management, optional question modules are provided in Clause **4.2**, as follows:

- O1: Equal opportunity and diversity policy and capability;
- O2: Environmental management policy and capability;
- O3: Quality management policy and capability;
- O4: Building information management policy and capability.

Although the optional questions in **4.2** need not be asked by all construction buyers, it is vital that if they are asked, then they should be consistently used. Adoption of the **4.2** question modules will increase consistency in prequalification activity across the industry.

Can I ask additional questions beyond those listed in 4.1 and 4.2?

Yes, if the answers will help with the procurement in question. Although the PAS sets out the essential **"core"** questions and common **"optional"** questions, it is recognized that a buyer can require additional project-related information and may therefore need to ask questions about professional or technical ability or other "project specific" issues, to obtain it. The PAS makes provision for this (see **3.2** and **4.5**) however buyers should have particular regard to reducing unnecessary documentation requirements for businesses and the requirement that in any event the information being asked for should be limited to that which is related and proportionate to the subject matter of the contracts likely to be awarded.

A.5 Use of Assessment providers

Types of providers – Various organizations provide third-party prequalification assessment services to buyers and many of them only provide assessment in the area of Health and Safety (notably SSIP, see www.SSIP.org.uk).

Some assessment providers operate a single register of prequalified construction suppliers; from which lists of potential suppliers can be selected according to preferred criteria, e.g. size of company/turnover, geographic location, etc. Some assessment providers maintain lists by industry sector (e.g. a trade association) whilst others maintain local lists. The use of the "core" questions in this PAS is not affected by these different approaches. Assessment providers are therefore encouraged to use this PAS, and buyers are encouraged to select assessment providers whose information collection processes comply with the PAS and its principles.

Capability of assessment providers – Other than for exemption purposes, the scope of this PAS does not address the capability of assessment providers, whether by UKAS accreditation or other means. Accordingly, it is a matter for buyers to satisfy themselves that the assessment provider(s) whose members they accept through the prequalification services provided, are sufficiently able to carry out a reliable assessment of suppliers.

Additional questions – Assessment providers often ask additional questions to provide the functionality that buyers require. Assessment providers and their clients however should have particular regard to reducing unnecessary documentation requirements for businesses

and in any event only require suppliers to provide information and evidence that is related and proportionate to the subject matter of the contracts likely to be awarded. Such additional questions should be clearly shown to be supplementary to (and beyond the scope of) this PAS.

Transitional adoption of the PAS – It may not be practical or cost effective for all assessment providers to fully adopt this PAS immediately. Wholesale modification of existing question sets to comply with this PAS together with requirement that all members should resubmit applications at that point could be unhelpful to buyers and suppliers. It is therefore reasonable to "migrate" to the full adoption of this PAS over a practical time frame but the intention to do so should be made clear to existing and new buyers and suppliers at the earliest opportunity.

A.6 How to use the PAS when looking at projects with different levels of risk

Types of project "risk" – For any given project there will be a number of "risks" to its successful completion, and these will depend on the nature of the individual project and the environment in which it is being undertaken. The same prequalification questions can still be used however, for the core and optional requirements but buyers may need to apply different types of assessment to the evaluation of supplier responses, depending on the risk levels involved. For example with projects which are not likely to go wrong or for which there will not be serious consequence if upsets occur, buyers may be satisfied with not assessing the prequalification information supplied by suppliers, in any degree of detail.

At the other end of the spectrum, for "mission critical" projects, buyers may wish to know that the suppliers' answers have been thoroughly checked.

Where a third-party assessment provider is used by a buyer, the buyer's choice of assessment provider(s) should take account of the processes the assessment provider follows, and whether this is likely to provide the assurance that they require for their projects in respect of a potential supplier's capability.

The three assurance level model – Although this paragraph models assessment by reference to three types of assessment, this should be seen as a simplified framework – there is in fact a continuous spectrum from high to low.

Verification and assessment of supplier – Level 1

The assessment includes an audit typically involving on-site verification and outcome assessment, before accepting the supplier as meeting the requirements:

- most expensive for suppliers, most certain for buyers. Preferable for where high levels of assurance are essential or sought;
- limited choice of suppliers.

Validated assessment – Level 2

The assessment includes for example obtaining copies of certificates, details of company procedures, etc. This commonly includes so-called "desktop" assessment:

- medium cost for suppliers;
- more certainty for buyers;
- wider choice of suppliers.

Self- assessment – Level 3

The supplier fills in a questionnaire and makes statements about their work and certifications, minimal verification activity is carried out:

- cheapest for suppliers, least certain for buyers;
- widest choice of suppliers.

Various approaches to assessment may be suitable throughout the supply chain. Equally the buyer may choose to carry out a higher level of verification during the tender stage so it can be very project specific.

A.7 Application of the PAS to additional cases

A.7.1 Supplier cannot answer a question – In some circumstances, a question in the PAS may not be answerable by suppliers For example:

- a start-up company would not be able to supply a financial history;
- a self-employed supplier may not need to show evidence of employee communication.

Assessment providers may already have "exception procedures" in place to deal with these and similar issues and they may continue to do so. Again, it is for the buyers to satisfy themselves that acceptable assessment procedures are in place.

A.7.2 Use of PAS 91 with unincorporated Joint Ventures or Consortia – these are often temporary entities that combine to pool resources and/or capability to bid for a specific project, although more permanent relationships also exist.

For procurements subject to the Public Contracts Regulations 2015 (PCR 2015) which exceed the relevant EU declared threshold, there are specific requirements under the PCR 2015 (see the supplementary questions to table 1, question **C1-Q13** and the notes to table 1, and also Annexes B and C for further details).

Other than for the above, PAS refers to no specific provisions and it is for buyers and assessment providers to satisfy themselves that adequate provision is included.

Annex B Public sector buyers (informative)

This Annex covers:

- B1 General
- B2 Procurement policy
- B3 Mandatory and discretionary exclusion
- B4 Organizational roles where the supplier is participating in procurement together with others
- B5 Subcontractors not relied upon
- B6 Scoring mechanism
- B7 Use of equivalent standards

in relation to public-sector procurement.

B.1 General

This Annex briefly explains for public sector buyers how the PAS enables compliance with regulations

Public sector and certain other buyers (e.g. some utilities) are subject to EU treaties and directives regarding procurement of works, supplies and services contracts or frameworks. For projects or frameworks the value of which exceeds EU declared thresholds EU Directive 2014/24/EU is implemented in the UK by the Public Contracts Regulations and explained in Procurement Policy Note 2/15. Although broadly similar, the regulations for Scotland contain some significant differences from those applicable in England and Wales, and Scottish procurers should ensure that these differences are accounted for when conducting procurement exercises. Both the English/Welsh and Scottish regulations require procurers to act in an open, transparent and non-discriminatory way when selecting companies to receive tender enquiries, and so place certain restrictions on what public sector buyers can ask of contractors, suppliers, and consultants during the procurement process.

A prequalification process is often, but not always, used at the selection stage of a restricted procedure, where a candidate's capability of performing the contract or framework is evaluated. Information requested at prequalification stage that is intended to be used to evaluate a candidate's technical and professional capability is required to be consistent with Regulations 58(15) to 58(18) and 60(9) of the Public Contracts Regulations 2015 and for their financial and economic standing with Regulations 58 (7) to (10) and 60 (6) to (8); it is also necessary that the process be capable of being evaluated objectively and proportionately. Contracting authorities should ensure that the questions asked of candidates are related and proportionate to the subject matter of the contract or framework.

It is important to distinguish between the Prequalification Questionnaire (PQQ) and Invitation To Tender (ITT) and decide at this stage what information is required to enable identification of which candidates are capable of delivering the contract or framework and can, therefore, be invited to submit a tender. Questions asked in the PQQ must be in respect of the organization's legal status, economic and financial standing (Regulations 58 (7) to (10) and 60(6) to 60(8)) and technical or professional ability (Regulations 58(15) to 58(18) and 60(9)) to perform the contract only and must not be based on criteria that examine quality. Questions asked at PQQ stage must not be repeated in the ITT, and they must not be expressed in such a way that would discriminate against non UK candidates. Specific questions about how suppliers would deliver the contract or framework should be dealt with within the ITT.

Where project-specific contract or framework tenders are being sought, for which questions in respect of technical and professional ability are necessary, in accordance with Regulations 58(15) to 58(18) and 60(9) of the Public Contracts Regulations 2015, appropriate additional questions may be included in a PAS 91 compliant questionnaire. Table 13 provides example of how such questions can be included.

The questions in **4.1** and **4.2** of this PAS are all allowable at prequalification stage under the above Regulations. Users should ensure that any additional questions inserted in the modules are also allowable.

B.2 Procurement policy

Public sector buyers are also often committed to promoting certain policy objectives in their procurements, such as local employment, apprenticeships and training, SME-friendly, social and environmental matters, etc., and will wish to confirm that candidates are capable of complying with such objectives. In these cases it is unlikely that questions regarding information that is intended to be used

to evaluate a candidate's capability are allowable at prequalification stage.

In some cases it may be appropriate to ask additional "policy delivery" questions at the prequalification stage for evaluation purposes, if they are directly related to the subject matter of the contract or framework. In these cases, such questions should be treated in exactly the same way as any additional "project specific" questions. In any case, buyers should ensure that these policy questions are acceptable under the Regulations.

Following the key tenet of this PAS, if policy-related prequalification questions are to be asked, it is strongly recommended that all buyers that ask such questions are consistent, i.e. they use the same questions to the maximum practical extent. Policy makers are therefore encouraged to provide clear guidance on the questions and/or contract clauses relevant to the particular policy aim.

To fulfil buyers' policy objectives, there may be a requirement to agree in the awarded contract or framework to work to certain standards or agree to other conditions not directly associated with the delivery of the work. These requirements should be made clear to candidates at the prequalification stage to avoid them expending effort in prequalifying if they do not find the additional policy requirements acceptable.

B.3 Mandatory and discretionary exclusion

The Public Contracts Regulations 2015 introduces the European Single Procurement Document that contains the exclusion grounds for public procurement. It is essential that a candidate confirms whether it is liable to be excluded from a public procurement and, if liable to exclusion, can explain what action it has taken to ensure that a breach of the exclusion grounds will not recur. The PAS 91 Module **C3** Tables 9 and 10 incorporate the ESPD exclusion questions.

Clause **4.3** (Tables 9 and 10) of this PAS includes all questions and references to grounds for mandatory and discretionary exclusion in accordance with Regulation 57 and 59 of the Public Contracts Regulations 2015.

Clause **4.4** (Tables 11 and 12) of this PAS include questions relating to mandatory and discretionary exclusion in accordance with Regulation 23 of the Defence and Security Public Contract Regulations 2011.

B.4 Organizational roles where the supplier is participating in the procurement together with others

Where the supplier is participating in the procurement with others as referred to in **question C1-Q13-2** in Table 1, the organizational roles should be understood, as follows:

- **Sole supplier/Lead entity:** Sole entity or, in case of consortium, joint venture or other types of groups, the leader of the group.
- **Group member:** Member (not leader) of the consortium, joint venture or other type of group.
- **Other entity (relied upon):** Entity on which the main supplier, the group or other subcontractor, relies in order to meet the selection criteria.
- **Other entity (not relied upon):** Entity on which the main supplier, the group or other subcontractor, does not rely in order to meet the selection criteria.

B.5 Subcontractors not relied upon

Contracting authorities may ask for information on subcontractors that are not relied on and have several choices regarding this.

- A contracting authority may choose to ask whether the candidate intends to subcontract (Regulation 71 (1) Public Contracts Regulations 2015).
- A contracting authority may choose to ask for details of the proposed subcontractors (in so far as this is possible) (Regulation 71 (1) Public Contracts Regulations 2015)
- A Contracting authority may choose to ask for self-declarations relating to the exclusion grounds from subcontractors who are not being relied on by the candidate to meet the selection criteria. However if subcontractors who are not being relied on are asked to complete the self-declaration then the procurement documents are to explicitly state that one is required. If a self-declaration is requested and there are mandatory grounds for exclusion, then the candidate is to be required to replace the subcontractor. If there are discretionary grounds for exclusion then the candidate may be required to replace the subcontractor. (Regulation 71 (8) Public Contracts Regulations 2015).

It is essential that the procurement documents make clear what information a candidate is required to provide in respect of subcontractors that are not being relied on.

B.6 Scoring mechanism

As with all selection processes, PQQs should be evaluated consistently and objectively according to a defined scoring model. The scoring model should be formulated prior to inviting expressions of interest but has to be finalized and candidates informed prior to completing the PQQ. The Regulations require that where a scoring model is used, candidates are to be advised of:

- the scoring model, including the weightings and maximum marks assigned to each question;
- if and where an unsatisfactory answer to one or more questions may of itself lead to exclusion from further consideration (irrespective of the quality of the remainder of the responses); and
- the criteria to be applied where the buyer elects to limit the number of candidates to be invited to tender.

B.7 Use of equivalent standards

Contracting authorities may lay down technical specifications which are to be met, but they are required to ensure that such technical specifications do not create barriers to open competition. Where PQQs require compliance with British, European or International standards, technical approvals or technical specifications or other technical reference systems, each reference is to be accompanied by "or equivalent". Public Sector Buyers are therefore required to consider offers which claim to satisfy the requirements in an equivalent manner even though they do not conform to the standard in question. It is required that tenders be examined to establish whether they satisfy the contracting authority's requirements in an equivalent manner and under no circumstances may contracting authorities reject offers solely on the grounds that they are not based on a specified standard or technology. The burden of proving technical equivalence will fall on the bidder in the absence of certification of conformity with the standard.

Annex C Requirement for a declaration (informative)

C.1 Provision of declaration

The Public Contracts Regulations 2015 (Regulation 59) stipulate that suppliers and any entities relied on, be required to complete a declaration in respect of their prequalification responses, and that this be included with the issued questionnaire (see **C.2** for form of declaration). Subcontractors not relied on that are instructed to complete a self-declaration (as per **B.5**) also required to complete the declaration.

C.2 Form of declaration

I declare that to the best of my knowledge the answers submitted and information contained in this completed document (questionnaire) are correct and accurate, including Tables 1, 9 and 10 and where applicable Tables *(document compiler to insert the table numbers for all of the other questions included for the procurement)*

I declare that, upon request and without delay I will provide the certificates and/or documentary evidence referred to in this document.

I understand that the information will be used in the selection process to assess my organization's suitability to participate further in this procurement.

I understand that the contracting authority may reject this submission in its entirety if there is a failure to answer all the relevant questions fully, or if false/misleading information or content is provided in any section.

I am aware of the consequences of serious misrepresentation.

By completing this declaration you are agreeing with the statement above

Details of person completing the Declaration.

Signature .....

(an electronic signature is acceptable)

Name.....

Position.....

For and on behalf of.....

Date.....

Annex D Health and safety: SSIP and supplier capability (informative)

PAS 91 provides for acceptance by buyers of relevant successful assessments by registered members of the Safety Schemes in Procurement Forum (SSIP), against Module **C4**.

SSIP and Module **C4** cover health and safety questions only.

To help reduce cost and bureaucracy for the buyer and supplier, buyer compliance with PAS 91 includes acceptance of relevant, successful assessments by an SSIP registered member scheme in lieu of responses to Module **C4**, without requiring separate responses from the supplier to the corresponding health and safety questions in Module **C4** of this PAS.

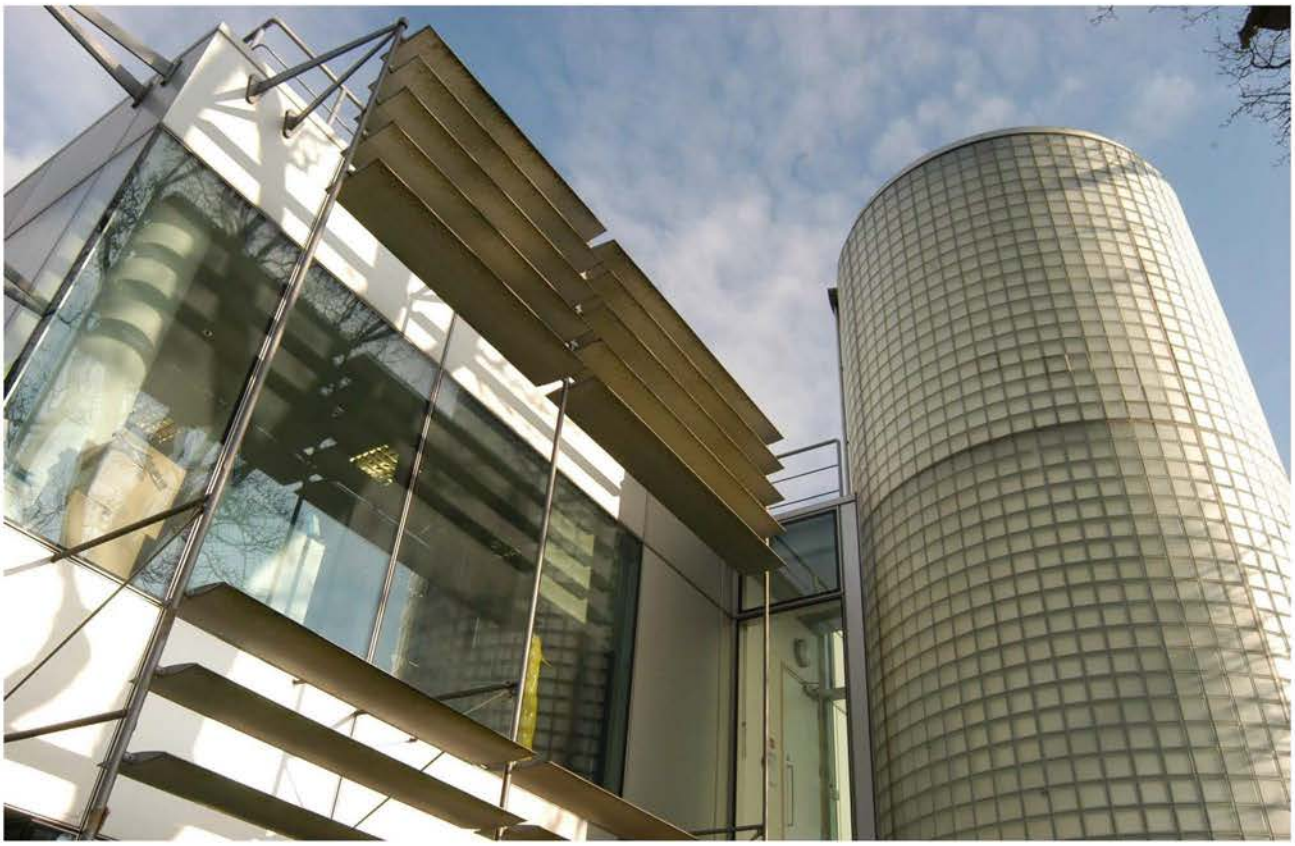
Furthermore, accepting an SSIP registered member-assessed supplier as part of general PQQs can allow buyers to give additional attention to project-specific health and safety questions and can make a significant contribution to "mutual recognition" of core health and safety prequalification requirements.

The HSE actively supports SSIP, noting that suitable assessment of a supplier by an SSIP member assessor meets the buyer's general requirement to exercise "reasonable judgment" based on the evidence provided. However, using an SSIP member-assessed scheme, or adopting PAS 91, does not remove the buyer's responsibility to:

- ensure that a supplier is indeed "SSIP member-assessed";
- further enquire, as necessary, about the supplier's health and safety capability to carry out specific projects, services or other activities.

SSIP member schemes are subjected annually to independent third-party audit.

For more on SSIP- and the prequalification assessment schemes in the SSIP Forum – go to:www.ssip.org.uk/



Annex E Building Information Modelling and PAS 91 (informative)

Building Information Modelling (BIM) involves the creation, collation and exchange of shared 3D models throughout the asset lifecycle, including the intelligent, structured data attached to the models. Effective use of BIM is underpinned by collaborative working and effective information exchange.

The Government's BIM Strategy, promoted by The Department for Environment and Business Strategy (BEIS) and the Efficiency and Reform Group of the Cabinet Office (ERG), prepared by industry representatives and originally published in March 2011, set out the route map by which widespread adoption of BIM to Level 2 will be achieved, aimed at delivering benefits during construction and post-occupancy.

Following the publication of the strategy, the BIM Task Group has been established to bring together expertise from industry, government, public sector, institutes and academia in the development of standards and ways of working. The work of the Task Group can be accessed on the website http://www.bimtaskgroup.org/.

Widespread adoption of BIM was a key recommendation of the Government Construction Strategy, published in May 2011 The Government Construction Strategy (GCS) required fully collaborative 3D BIM (with all project and asset information, documentation and data being electronic) as a minimum by April 2016 on all centrally procured Government projects as outlined in the GCS including new build and retained estate, vertical and linear.

In recognition of the Government BIM mandate, optional questions have been included within PAS 91 examining competence in BIM and collaborative information exchange.

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Natural Ventilation for Infection Control in Health-Care Settings

Edited by:
James Atkinson, Yves Chartier, Carmen Lúcia Pessoa-Silva, Paul Jensen, Yuguo Li and Wing-Hong Seto

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Foreword

In June 2007, the World Health Organization (WHO) released a guideline document on infection prevention and control entitled *Infection prevention and control of epidemic- and pandemic-prone acute respiratory diseases in health care — WHO interim guidelines* (WHO, 2007). In this new guideline, natural ventilation is considered for the first time among the effective measures to control infections in health care. Such a recommendation from WHO demonstrates a growing recognition of the role of ventilation and natural ventilation for infection control.

The 2007 guideline demonstrated that further study was required in areas such as minimum requirements for natural ventilation and design, construction, operation and maintenance for effective natural ventilation systems for infection control.

Over the past two years, a multidisciplinary team of engineers, architects, infection-control experts and microbiologists has been working to produce this WHO guideline, providing a design and operation guide for hospital planners, engineers, architects and infection-control personnel. The recommendations in this WHO guideline followed a systematic review of the literature on the association of ventilation and disease transmission, as well as effective natural ventilation solutions for infection control.

This WHO guideline should be used in conjunction with other relevant infection-control guidelines.

There are very few studies on natural ventilation for infection control in hospitals. The authors of this guideline have attempted to document what is known today. Any comments from the users and readers of this guideline will be useful for future revisions and further information may be obtained at http://www.who.int/csr/natvent (and follow the ‘natvent’ links), or at http://www.who.int/csr/bioriskreduction/natvent/en/.

Dr Maria Neira
Director
Department for Public Health and Environment
Health Security and Environment
World Health Organization

Dr Michael Ryan
Director
Department of Global Alert and Response
Health Security and Environment
World Health Organization

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Contributors

Technical Guideline Development Group

Editors

WHO

James ATKINSON
Yves CHARTIER
Carmen Lúcia PESSOA-SILVA

External

Paul JENSEN, Centers for Disease Control and Prevention, Atlanta, Georgia, United States
Yuguo LI, The University of Hong Kong, Hong Kong SAR
Wing-Hong SETO, Queen Mary Hospital, Hong Kong SAR

Authors

WHO

James ATKINSON
Yves CHARTIER
Fernando OTAIZA
Carmen Lúcia PESSOA-SILVA

External

Pat CHING, Queen Mary Hospital, Hong Kong SAR
Derek CROOME, University of Reading, United Kingdom
Rod ESCOMBE, Imperial College, London, United Kingdom
Yuguo LI, The University of Hong Kong, Hong Kong SAR (lead author)
Li LIU, The University of Hong Kong, Hong Kong, SAR
Zhiwen LUO, The University of Hong Kong, Hong Kong SAR
Jianlei NIU, The Hong Kong Polytechnic University, Hong Kong SAR
Marco PERINO, Politecnico di Torino, Italy
Hua QIAN, Southeast University, China
Matthew SALT, Salt.arq Architects, Porto, Portugal
Takao SAWACHI, National Institute for Land and Infrastructure Management, Japan
WH SETO, Queen Mary Hospital, Hong Kong SAR
Julian Wei-Tze TANG, National University Hospital, Singapore
Xiaojian XIE, Nanjing Normal University, China

WHO Guideline Steering Group

Chair(s)

Yves CHARTIER
Carmen Lúcia PESSOA-SILVA

Members

Jamie BARTRAM
Yves CHARTIER
Andrei ISSAKOV
Carmen Lúcia PESSOA-SILVA
Rose PRAY
Cathy ROTH
Fabio SCANO
Susan WILBURN

External Guideline Steering Committee

Michael GARDAM, Ontario Agency for Health Protection and Promotion and University of Toronto, Canada
Paul JENSEN, Centers for Disease Control and Prevention, Atlanta, Georgia, United States
Hal LEVIN, Building Ecology Research Group, Santa Cruz, California, United States
Jan SUNDELL, University of Texas at Tyler, United States

Systematic review team

External

James AXLEY, Yale University, Connecticut, United States
Christopher Yh CHAO, Hong Kong University of Science and Technology, Hong Kong SAR
Benjamin COWLING, The University of Hong Kong, Hong Kong SAR
Michael GARDAM, Ontario Agency for Health Protection and Promotion and University of Toronto, Canada
Michael HODGSON, Veterans Health Administration, United States
Paul JENSEN, Centers for Disease Control and Prevention, Atlanta, Georgia, United States
Stephen LAU, The University of Hong Kong, Hong Kong SAR
Michael LEUNG, The University of Hong Kong, Hong Kong SAR
Hal LEVIN, Building Ecology Research Group, Santa Cruz, California, United States
Yuguo LI, The University of Hong Kong, Hong Kong SAR (Principal Investigator)
Chun-Ho LIU, The University of Hong Kong, Hong Kong SAR
Arsen MELIKOV, Technical University of Denmark, Denmark
Peter V NIELSEN, Aalborg University, Denmark

Steven RILEY, University of Hong Kong, Hong Kong SAR
Mats SANDBERG, KTH Research School, Sweden
Wing-Hong SETO, Queen Mary Hospital, Hong Kong SAR
Adrian SLEIGH, Australian National University, Australia
Jan SUNDELL, University of Texas at Tyler, United States
Ignatius TS YU, Chinese University of Hong Kong, Hong Kong SAR (Principal Investigator)
Shelly Lap Ah TSE, Chinese University of Hong Kong, Hong Kong SAR
Kwok WAI THAM, National University of Singapore, Singapore

WHO

James ATKINSON
Yves CHARTIER
Andrei ISSAKOV
Fernando OTAIZA
Carmen Lúcia PESSOA-SILVA
Fabio SCANO
Nahoko (Nikki) SHINDO
Susan WILBURN

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Executive summary

In June 2007, the World Health Organization (WHO) released new guidelines entitled *Infection prevention and control of epidemic- and pandemic-prone acute respiratory diseases in health care — WHO interim guidelines* (WHO, 2007). In this guideline, natural ventilation was considered among the effective environmental measures to reduce the risk of spread of infections in health-care settings.

The purpose of this latest guideline is twofold:

- to promote natural ventilation design for infection control in health care (Part 1); and
- to describe the basic principles of how to design, construct, operate and maintain an effective natural ventilation system for infection control (Part 2).

This guideline is primarily developed for engineers and architects who design or operate health-care facilities. The guideline is also useful for health-care workers, particularly infection-control professionals who work in health-care facilities. The guideline recognizes that the hospital designers, operators and health-care workers need to work together for effective infection control.

This guideline applies to diseases that can be transmitted through fine droplets or through droplet nuclei. The guideline describes how an airborne precaution room and its adjacent areas can be designed to provide natural ventilation control of infections. However, this guideline does not include thorough descriptions for other infection-prevention and control measures.

The development of this guideline involved:

- a two-day multidisciplinary consensus meeting on the scope and main elements on use of natural ventilation for infection control (May 2007);
- a systematic review of the literature covering the association between ventilation and infection, and natural ventilation solutions (March–December 2008) (see Annex A for details);
- WHO external panel review and outline of the main recommendations (November–December 2008); and
- WHO internal and external peer review (January–May 2009).

The main recommendations are listed in the following box.

Main recommendations

1. To help prevent airborne infections, adequate ventilation in health-care facilities in all patient-care areas is necessary.

Overall ranking: Strong recommendation

2. For natural ventilation, the following minimum hourly averaged ventilation rates should be provided:
   - 160 l/s/patient (hourly average ventilation rate) for airborne precaution rooms (with a minimum of 80 l/s/patient) (note that this only applies to new health-care facilities and major renovations);
   - 60 l/s/patient for general wards and outpatient departments; and
   - 2.5 l/s/m^3 for corridors and other transient spaces without a fixed number of patients; however, when patient care is undertaken in corridors during emergency or other situations, the same ventilation rate requirements for airborne precaution rooms or general wards will apply.

The design must take into account fluctuations in ventilation rate.

When natural ventilation alone cannot satisfy the recommended ventilation requirements, alternative ventilation systems, such as hybrid (mixed-mode) natural ventilation should be considered, and then if that is not enough, mechanical ventilation should be used.

Overall ranking: Conditional recommendation

3. When designing naturally ventilated health-care facilities, overall airflow should bring the air from the agent sources to areas where there is sufficient dilution, and preferably to the outdoors.

Overall ranking: Conditional recommendation

4. For spaces where aerosol-generating procedures associated with pathogen transmission are conducted, the natural ventilation requirement should, as a minimum, follow Recommendation 2. Should the agent be airborne, Recommendations 2 and 3 should be followed.

Overall ranking: Conditional recommendation

These four recommendations were developed by the systematic review external panel using the GRADE appraisal system during the panel's meeting in Geneva in November 2008 (see Annex B). In areas where vector-borne disease is endemic (e.g. malaria, dengue), the use of natural ventilation should not affect in any way the usage policy or practice of mosquito nets.

Only basic principles of design, construction, operation and maintenance are described in this guideline, and the designers will need to consult engineering design guides and textbooks for technical details of natural ventilation. The readers are reminded about the limitations of natural ventilation when there is a lack of natural forces, such as winds and breezes, especially for the delivery of the high airflow rates recommended in this guideline for airborne precaution rooms. Users are reminded not to rely solely on this guideline for design guidance for their naturally ventilated facilities.

Naturally ventilated hospitals or airborne precaution rooms need to be designed properly for natural ventilation to provide the recommended ventilation rates, otherwise, factors such as the lack of directional control of airflow may lead to a potential for transmission of infection. Interested readers should obtain or consult the referenced technical documents when contemplating renovation or construction using natural ventilation.

This guideline will be reviewed five years after its publication to include new data on the association between natural ventilation rates and infection.

Implementation plan

The guideline is a new area so there is no adaptation plan available.

A follow-up project has already started and covers “low-cost health-facility design with naturally ventilated infection-control characteristics”. It aims at providing design assistance for naturally ventilated, low-cost health facilities in low-income settings. More information regarding this may be found at http://www.who.int/csr/natvent.

WHO intends to provide sample designs, plans and guidance for the renovation and construction of health facilities to be posted on a web page for free downloading. This will build on the current guideline to encourage and facilitate the provision of low-cost health-care facilities with infection-control characteristics, in low-income countries, that use affordable and sustainable means and (if feasible) natural ventilation.

Acronyms and definitions of terms

Acronyms

ACH	air changes per hour
PPE	personal protective equipment
SAR	Special Administrative Region
SARS	severe acute respiratory disease
TB	tuberculosis
WHO	World Health Organization

Definitions of terms

Administrative controls	Set of managerial measures to warrant the needed conditions for the application of infection control principles in health care. These include establishment of sustainable infection control infrastructures and activities, clear policies on early recognition of infections, implementation of appropriate infection control measures, regular supplies and organization of services (e.g. creation of patient triage system and placement). The health-care facility management should also have staff planning to promote an adequate patient-to-staff ratio, provide staff training, and establish staff health programmes (e.g. vaccination, prophylaxis) to enhance the general health of the health-care workers (WHO, 2007).
Aerosol-generating procedure associated with pathogen transmission	High-risk procedures that may increase the potential of generating droplet nuclei because of the mechanical force of the procedure (e.g. intubation, cardiopulmonary resuscitation, bronchoscopy, autopsy, and surgery where high-speed devices are used) (WHO, 2007).
Aerosol-generating procedures	A procedure that can induce the production of fine respiratory droplet in the patient.
Airborne precaution room	A room with ≥12 air changes per hour (ACH) and controlled direction of air flow. An airborne precaution room can be naturally or mechanically ventilated. In addition to the requirement of ≥12 ACH, in a mechanically ventilated airborne precaution room, negative pressure is created to control the direction of air flow. It is equivalent to the “airborne infection isolation room” described by the United States Centers for Disease Control and Prevention. In naturally ventilated airborne precaution rooms the air flow should be directed to areas free of transit, or permit the rapid dilution of contaminated air into the surrounding areas and the open air (WHO, 2007).

Airborne transmission	The transmission of disease caused by dissemination of droplet nuclei that remain infectious when suspended in air over long distance and time. Airborne transmission can be further categorized into obligate and preferential airborne transmission. Obligate airborne transmission refers to pathogens that are transmitted only by deposition of droplet nuclei under natural conditions (e.g. pulmonary tuberculosis). Preferential airborne transmission refers to pathogens that can initiate infection by multiple routes, but are predominantly transmitted by droplet nuclei (e.g. measles, chickenpox) (WHO, 2007).
Air changes per hour (ACH)	For a positive pressure room — the ratio of the volume of outdoor air flowing into a given space in an hour divided by the volume of that space. For a negative pressure room — the exhaust airflow rate is used for calculation.
Anteroom	A small room leading from a corridor into another room, often an isolation room.
Balanced mechanical ventilation systems	A system where supplies and exhausts have been tested and adjusted to meet particular design specifications.
Droplet nuclei	Dried-out residuals of droplets <5 μm in diameter.
Droplets	Inspirable particles larger than 5 μm in diameter, which can be deposited on upper respiratory tract levels and mucosa.
Envelope opening	Purpose-built openings in buildings for natural ventilation (e.g. windows, doors, solar chimneys, wind towers, trickle ventilators).
Exfiltration	Outflow through unintended leakages in buildings.
High-tech natural ventilation system	A natural ventilation system that uses modern computer control systems, and may be assisted by mechanical ventilation systems.
Hybrid ventilation	Combination of both mechanical and natural ventilation (also called mixed-mode ventilation).
Infiltration	Air flow through unintended leakages into buildings.
Mixed-mode ventilation	See hybrid ventilation.
Natural ventilation	Use of natural forces to introduce and distribute outdoor air into or out of a building. These natural forces can be wind pressures or pressure generated by the density difference between indoor and outdoor air.
Negative pressure mechanical ventilation system	A mechanical ventilation system that uses an exhaust fan through which air is released.
Negative pressure room	The difference in air pressure between two areas. A room that is under negative pressure has a lower pressure than adjacent areas, which keeps air from flowing out of the room and into adjacent rooms or areas.

Opportunistic airborne transmission	Transmission of droplet nuclei at short range during special circumstances, such as the performance of aerosol-generating procedures associated with pathogen transmission.
Piston (or plug-flow) ventilation system	The ideal displacement in which ventilation air is pushed from one side of the room to the other without any recirculation and minimal air mixing. The piston ventilation system is the most efficient method of air exchange.
Positive pressure mechanical ventilation system	A mechanical ventilation system that uses a supply fan through which air is pushed into the room.
Quantum	A quantity or an amount of particles.
Recirculated airflow rate	The amount of the returned air (for recirculation). Although recirculated air can be filtered, its air quality is often worse than the outdoor air for most conventional applications. Therefore, filtered, recirculated air cannot replace outdoor air for ventilation.
Respiratory droplet	Depending on the size of the particles (which range from large droplets to small droplet nuclei), respiratory droplets can be divided into large droplets, fine inhalable aerosols and droplet nuclei (see Annex C for more details).
Short-circuiting airflow pattern	The pattern of airflow that occurs when part of the air is stagnant in a ventilated room, and the ventilation air can bypass the stagnant air and move directly to the exhaust outlets.
Transmission-based precautions	A set of practices that apply to hospital inpatients with specific infections for which precautions beyond the standard precautions are needed to control infection in the health-care setting.
Ventilation	Ventilation provides outdoor air into a building or a room and distributes air within the building. The purpose of ventilation in buildings is to provide healthy air for breathing by diluting pollutants originating in the building with clean air, and by providing an airflow rate to change this air at a given rate. Ventilation is also used for odour control, containment control and climatic control (temperature and relative humidity).

Part 1 — Infection control and ventilation

The purpose of Part 1 is to establish the recommendations for natural ventilation in the context of infection control. Chapter 1 explains the general principles of infection control as related to ventilation. Chapter 2 describes the basic concept of ventilation, as well as justifications for the use of natural ventilation for infection control. Chapter 3 discusses the association between ventilation and airborne infection, and gives the rationales and the World Health Organization consensus on the minimum requirements of natural ventilation design for infection control.

1 General principles of infection control

1.1 The concept of isolation precaution and an historical review

Isolation precaution is an important strategy in the practice of infection control. The spread of some infections can be impeded if infected patients are segregated from those who are not yet infected. Although there is no single study showing the effectiveness of isolation, there are many reports documenting the efficacy of the various components of isolation, including use of private rooms (Anderson et al., 1985), and protective equipments such as masks, gloves and gowns (Klein, Perloff & Maki, 1989; Maki, 1994; Maloney et al., 1995).

The concept of isolation can be traced back to biblical times when lepers were segregated from the rest of the populace. Towards the end of the 19th century, there were recommendations for patients with infectious diseases to be placed in separate facilities, which ultimately became known as infectious diseases hospitals (Lynch, 1949). However, in the early 1950s, many of these infectious diseases hospitals closed and the patients were moved to general hospitals. The need for proper isolation of infections in the context of these general hospitals thus became an important issue. Since then, several isolation systems evolved (NCDC, 1970; Lowbury et al., 1975; Garner & Simmons, 1983) with transmission-based precautions the most widely used, which included standard precautions (to avoid direct, unprotected contact with blood and body fluids), contact precautions, droplet precautions and airborne precautions (Gardner, 1996; Siegel et al., 2007).

Spatial separation is critically important when using isolation precautions because, as Florence Nightingale observed, many infectious diseases spread mainly through direct contact when patients are near to one another. Usually, special ventilation controls are not required; these are needed for diseases that can be transmitted over long distances by droplet nuclei (Gardner, 1996). Most diseases are not of this category. However, the infectious diseases that can be transmitted through long distance by aerosols (i.e. airborne infections) can result in large clusters of infection in a short period. Therefore, the proper isolation of these diseases is critically important.

Specific natural ventilation recommendations for isolation of airborne infections are discussed in detail in this guideline (see section 3.2).

1.2 Isolation practices for infection control

This guideline does not describe the details of the various transmission-based precautions, except for airborne precautions. Details of the other categories can be found in the relevant references (Siegel et al., 2007; WHO, 2007).

When using isolation precautions, three levels of controls must be considered (Gerberding, 1993).

The first level of control is administrative controls, which are measures taken to ensure that the entire system is working effectively. These controls include:

- implementing proper procedures for triage of patients
- detecting infections early
- separating infectious patients from others
- transporting the patients
- educating the patients and staff
- designating responsibilities clearly and correctly
- communicating with all relevant partners.

The second level is “environmental and engineering controls”, including cleaning of the environment, spatial separation and the ventilation of spaces.

The third level of control to further decrease the risk of transmission is personal protection, which is the provision of the proper personal protective equipment (PPE) (e.g. masks, respirators).

When setting up an isolation system in the hospital, all levels of controls (administrative controls, environmental and engineering controls, and personal protection) must be given proper attention for the system to work effectively, and for the different levels to support each other.

1.3 Isolation practices for airborne infections

Airborne transmission occurs by dissemination of droplet nuclei over long distance from infectious patients (for more details on respiratory droplets, see Annex C). For pathogens to be disseminated via droplet nuclei, some requirements must be met, including:

- existence of viable pathogen inside the droplet at the source;
- survival of the pathogen inside the droplet after being expelled from the source, and retention of its ability to infect after exposure to physical challenges (evaporation, light, temperature, relative humidity, etc.);
- attainment of sufficient infective dose to cause infection in a susceptible host; and
- exposure of a susceptible host.

Infectious agents that may be dispersed over long distances by air currents and infect other susceptible individuals include *Mycobacterium tuberculosis* (Riley et al., 1957, 1959), rubeola virus (measles) (Bloch et al., 1985) and Varicella-zoster virus (chickenpox) (Gustafson et al., 1982). Preventing the spread of airborne infections involves implementing airborne precautions, which requires the three controls (see above in section 1.2): administrative controls; environmental and engineering controls — patient room with special air handling and ventilation; and PPE — the use of particulate respirators by health-care workers whenever possible (WHO, 2007).

Patients who require airborne isolation precautions should be placed in an airborne precaution room (WHO, 2007). An airborne precaution room is a room with ≥12 air changes per hour (ACH) (e.g. equivalent to ≥80 l/s for a 4×2×3 m^3 room) and controlled direction of airflow, and can be used to contain airborne infections (AIA, 2001; Wenzel, 2003; Mayhall, 2004; WHO, 2007). A mechanically ventilated room is equivalent to the airborne infection isolation room described by the United States Centers for Disease Control and Prevention, which should have special features in air handling and airflow direction, including (CDC, 2003):

- a negative pressure differential of ≥2.5 Pa (0.01-inch water gauge);
- an airflow differential >125-cfm (56 l/s) exhaust versus supply;
- clean-to-dirty airflow;
- sealing of the room, allowing approximately 0.5 square feet (0.046 m^2) leakage;
- ≥12 ACH for a new building, and ≥6 ACH in existing buildings (e.g. equivalent to 40 l/s for a 4×2×3 m^3 room) for an old building; and
- an exhaust to the outside, or a HEPA-filter if room air is recirculated.

The concept of natural ventilation for airborne precaution rooms was discussed in the recent World Health Organization interim guidelines (WHO, 2007). Natural ventilation can be used in airborne precaution rooms. The purpose of this document is to provide basic design guidance for the use of natural ventilation for infection control. More detailed “design guides” will follow the publication of this document.

1.4 Infection control for high-risk procedures

Airborne precautions were advised after the severe acute respiratory syndrome (SARS) epidemic for patients infected with open pulmonary tuberculosis, measles, smallpox and chickenpox. However, people also started to notice that there were situations in which other, non-airborne pathogens could be transmitted through droplet nuclei when patients had certain health-care procedures.

Presently, there is no clear definition or a precise list of high-risk health-care procedures during which some pathogens (e.g. SARS-Coronavirus, influenza) can be spread through droplet nuclei over short distances. The mechanism of this transmission is described as an opportunistic airborne transmission (Roy & Milton, 2004), and high-risk procedures may increase the potential of generating droplet nuclei because of the mechanical force of the procedure (Ip et al., 2007). Some of these procedures have been associated with a significant increase in the risk of disease transmission, and have been termed aerosol-generating procedures associated with pathogen transmission (WHO, 2007). These procedures include intubation, cardiopulmonary resuscitation, bronchoscopy, autopsy, and surgery where high-speed devices are used (WHO, 2007).

As in all areas of infection control, administrative controls, environmental and engineering controls plus the use of PPE should play a part in controlling the spread of infections during high-risk procedures.

For administrative control, it is critically important to limit these procedures to those patients who need them. Adequate staff training and the provision of safe equipment may also be important for reducing the risk. The proper use of PPE, including the use of particulate respirators, eye protection, gowns and gloves, will also provide additional protection to health-care workers. Finally, performing such procedures in a well-ventilated location, away from other patients and health-care workers, may help prevent the spread of infection. Although no studies have evaluated the impact of ventilation on reducing the risk of infectious droplet nuclei during aerosol-generating procedures, it would be best to perform these procedures in an adequately ventilated room, particularly for patients infected with known life-threatening pathogens (e.g. SARS, avian influenza).

However, it might be difficult to implement the measures stated above, especially during an emergency situation (e.g. resuscitating a collapsed patient in an outpatient department). Therefore, it is important to have in place contingency plans for such scenarios and have an emergency department that is appropriately equipped and well ventilated. Patients could then be moved rapidly to a safe location with good ventilation that is already identified for such purposes. Crowd control is also important to keep patients separate from other people. Appropriate PPE should be worn by health-care workers before starting the high-risk procedure.

1.5 Summary

In summary, although there is little evidence from studies to show an association between isolation precautions and infection control, reports and case studies indicate that some types of isolation (e.g. using private rooms and PPE) may help to prevent the spread of infection in health-care facilities.

All levels of control in an isolation system (administrative controls, environmental and engineering controls, and personal protection) are important, and should be taken into account when designing an isolation system in a hospital. Furthermore, isolation systems should be designed to prevent the spread of disease via respiratory droplets over long distances, with particular consideration paid to controlling transmission during high-risk health-care procedures (such as intubation, cardiopulmonary resuscitation, bronchoscopy, autopsy, and surgery where high-speed devices are used).

2 Concepts and types of ventilation

2.1 Ventilation

Ventilation moves outdoor air into a building or a room, and distributes the air within the building or room. The general purpose of ventilation in buildings is to provide healthy air for breathing by both diluting the pollutants originating in the building and removing the pollutants from it (Etheridge & Sandberg, 1996; Awbi, 2003).

Building ventilation has three basic elements:

- *ventilation rate* — the amount of outdoor air that is provided into the space, and the quality of the outdoor air (see Annex D);
- *airflow direction* — the overall airflow direction in a building, which should be from clean zones to dirty zones; and
- *air distribution or airflow pattern* — the external air should be delivered to each part of the space in an efficient manner and the airborne pollutants generated in each part of the space should also be removed in an efficient manner.

There are three methods that may be used to ventilate a building: natural, mechanical and hybrid (mixed-mode) ventilation.

2.1.1 What is natural ventilation?

Natural forces (e.g. winds and thermal buoyancy force due to indoor and outdoor air density differences) drive outdoor air through purpose-built, building envelope openings. Purpose-built openings include windows, doors, solar chimneys, wind towers and trickle ventilators. This natural ventilation of buildings depends on climate, building design and human behaviour.

2.1.2 What is mechanical ventilation?

Mechanical fans drive mechanical ventilation. Fans can either be installed directly in windows or walls, or installed in air ducts for supplying air into, or exhausting air from, a room.

The type of mechanical ventilation used depends on climate. For example, in warm and humid climates, infiltration may need to be minimized or prevented to reduce interstitial condensation (which occurs when warm, moist air from inside a building penetrates a wall, roof or floor and meets a cold surface). In these cases, a positive pressure mechanical ventilation system is often used. Conversely, in cold climates, exfiltration needs to be prevented to reduce interstitial condensation, and negative pressure ventilation is used. For a room with locally generated pollutants, such as a bathroom, toilet or kitchen, the negative pressure system is often used.

In a positive pressure system, the room is in positive pressure and the room air is leaked out through envelope leakages or other openings. In a negative pressure system, the room is in negative pressure, and the room air is compensated by "sucking" air from outside. A balanced mechanical ventilation system refers to the system where air supplies and exhausts have been tested and adjusted to meet design specifications. The room pressure may be maintained at either slightly positive or negative pressure, which is achieved by using slightly unequal supply or exhaust ventilation rates. For example, a slight negative room pressure is achieved by exhausting 10% more air than the supply in a cold climate to minimize the possibility of interstitial condensation. In an airborne precaution room for infection control, a minimum negative pressure of 2.5 Pa is often maintained relative to the corridor (CDC, 2003).

2.1.3 What is hybrid or mixed-mode ventilation?

Hybrid (mixed-mode) ventilation relies on natural driving forces to provide the desired (design) flow rate. It uses mechanical ventilation when the natural ventilation flow rate is too low (Heiselberg & Bjørn, 2002).

When natural ventilation alone is not suitable, exhaust fans (with adequate pre-testing and planning) can be installed to increase ventilation rates in rooms housing patients with airborne infection. However, this simple type of hybrid (mixed-mode) ventilation needs to be used with care. The fans should be installed where room air can be exhausted directly to the outdoor environment through either a wall or the roof. The size and number of exhaust fans depends on the targeted ventilation rate, and must be measured and tested before use.

Problems associated with the use of exhaust fans include installation difficulties (especially for large fans), noise (particularly from high-power fans), increased or decreased temperature in the room and the requirement for non-stop electricity supply. If the environment in the room causes thermal discomfort spot cooling or heating systems and ceiling fans may be added.

Another possibility is the installation of whirlybirds (whirligigs or wind turbines) that do not require electricity and provide a roof-exhaust system increasing airflow in a building (see Figure I.2 in Annex I).

2.2 Assessing ventilation performance

Ventilation performance in buildings can be evaluated from the following four aspects, corresponding to the three basic elements of ventilation discussed above.

- Does the system provide sufficient ventilation rate as required?
- Is the overall airflow direction in a building from clean to dirty zones (e.g. isolation rooms or areas of containment, such as a laboratory)?
- How efficient is the system in delivering the outdoor air to each location in the room?
- How efficient is the system in removing the airborne pollutants from each location in the room?

Two overall performance indices are often used. The air exchange efficiency indicates how efficiently the fresh air is being distributed in the room, while the ventilation effectiveness indicates how efficiently the airborne pollutant is being removed from the room. Engineers define the local mean age of air as the average time that the air takes to arrive at the point it first enters the room, and the room mean age of air as the average of the age of air at all points in the room (Etheridge & Sandberg, 1996). The age of air can be measured using tracer gas techniques (Etheridge & Sandberg, 1996).

The air exchange efficiency can be calculated from the air change per hour and the room mean age of air (Etheridge & Sandberg, 1996). For piston-type ventilation, the air exchange efficiency is 100%, while for fully mixing ventilation the air exchange efficiency is 50%. The air exchange efficiency for displacement ventilation is somewhere in between, but for short-circuiting the air exchange efficiency is less than 50%.

Ventilation effectiveness can be evaluated by either measurement or simulation (Etheridge & Sandberg, 1996). In simple terms, the ventilation flow rate can be measured by measuring how quickly injected tracer gas is decayed in a room, or by measuring the air velocity through ventilation openings or air ducts, as well as the flow area. The airflow direction may be visualized by smoke. Computational fluid dynamics and particle image velocimetry techniques allow the air distribution performance in a room to be modelled (Nielsen, 1974; Chen, 1996; Etheridge & Sandberg, 1996).

2.3 Comparison of mechanical and natural ventilation

2.3.1 Mechanical ventilation

If well designed, installed and maintained, there are a number of advantages to a mechanical system.

- Mechanical ventilation systems are considered to be reliable in delivering the designed flow rate, regardless of the impacts of variable wind and ambient temperature. As mechanical ventilation can be integrated easily into air-conditioning, the indoor air temperature and humidity can also be controlled.
- Filtration systems can be installed in mechanical ventilation so that harmful microorganisms, particulates, gases, odours and vapours can be removed.
- The airflow path in mechanical ventilation systems can be controlled, for instance allowing the air to flow from areas where there is a source (e.g. patient with an airborne infection), towards the areas free of susceptible individuals.
- Mechanical ventilation can work everywhere when electricity is available.

However, mechanical ventilation systems also have problems.

- Mechanical ventilation systems often do not work as expected, and normal operation may be interrupted for numerous reasons, including equipment failure, utility service interruption, poor design, poor maintenance or incorrect management (Dragan, 2000). If the system services a critical facility, and there is a need for continuous operation, all the equipment may have to be backed up — which can be expensive and unsustainable.
- Installation and particularly maintenance costs for the operation of a mechanicalventilation system may be very high. If a mechanical system cannot be properly installed or maintained due to shortage of funds, its performance will be compromised.

Because of these problems, mechanical ventilation systems may result in the spread of infectious diseases through health-care facilities, instead of being an important tool for infection control.

2.3.2 Natural ventilation

If well installed and maintained, there are several advantages of a natural ventilation system, compared with mechanical ventilation systems.

- Natural ventilation can generally provide a high ventilation rate more economically, due to the use of natural forces and large openings.
- Natural ventilation can be more energy efficient, particularly if heating is not required.
- Well-designed natural ventilation could be used to access higher levels of daylight.

From a technology point of view, natural ventilation may be classified into simple natural ventilation systems and high-tech natural ventilation systems. The latter are computer-controlled, and may be assisted by mechanical ventilation systems (i.e. hybrid or mixed-mode systems). High-tech natural ventilation may have the same limitations as mechanical ventilation systems; however, it also has the benefits of both mechanical and natural ventilation systems.

If properly designed, natural ventilation can be reliable, particularly when combined with a mechanical system using the hybrid (mixed-mode) ventilation principle, although some of these modern natural ventilation systems may be more expensive to construct and design than mechanical systems.

In general, the advantage of natural ventilation is its ability to provide a very high air-change rate at low cost, with a very simple system. Although the air-change rate can vary significantly, buildings with modern natural ventilation systems (that are designed and operated properly) can achieve very high air-change rates by natural forces, which can greatly exceed minimum ventilation requirements.

There are a number of drawbacks to a natural ventilation system.

- Natural ventilation is variable and depends on outside climatic conditions relative to the indoor environment. The two driving forces that generate the airflow rate (i.e. wind and temperature difference) vary stochastically. Natural ventilation may be difficult to control, with airflow being uncomfortably high in some locations and stagnant in others. There is a possibility of having a low air-change rate during certain unfavourable climate conditions.
- There can be difficulty in controlling the airflow direction due to the absence of a well-sustained negative pressure; contamination of corridors and adjacent rooms is therefore a risk.
- Natural ventilation precludes the use of particulate filters. Climate, security and cultural criteria may dictate that windows and vents remain closed; in these circumstances, ventilation rates may be much lower.
- Natural ventilation only works when natural forces are available; when a high ventilation rate is required, the requirement for the availability of natural forces is also correspondingly high.
- Natural ventilation systems often do not work as expected, and normal operation may be interrupted for numerous reasons, including windows or doors not open, equipment failure (if it is a high-tech system), utility service interruption (if it is a high-tech system), poor design, poor maintenance or incorrect management.
- Although the maintenance cost of simple natural ventilation systems can be very low, if a natural ventilation system cannot be installed properly or maintained due to a shortage of funds, its performance can be compromised, causing an increase in the risk of the transmission of airborne pathogens.

These difficulties can be overcome, for example, by using a better design or hybrid (mixed-mode) ventilation. Other possible drawbacks, such as noise, air pollution, insect vectors and security, also need to be considered. Because of these problems, natural ventilation systems may result in the spread of infectious diseases through health-care facilities, instead of being an important tool for infection control.

Table 2.1 summarizes the advantages and disadvantages of ventilation systems for hospitals.

Table 2.1 Summary of advantages and disadvantages of different types of ventilation systems for hospitals

	Mechanical ventilation	Natural ventilation	Hybrid (mixed-mode) ventilation
Advantages	Suitable for all climates and weather with air-conditioning as climate dictates	Suitable for warm and temperate climates — moderately useful with natural ventilation possible 50% of the time	Suitable for most climates and weather
	More controlled and comfortable environment	Lower capital, operational and maintenance costs for simple natural ventilation	Energy-saving
	Smaller range of control of environment by occupants	Capable of achieving high ventilation rate Large range of control of environment by occupants	More flexible
Disadvantages	Expensive to install and maintain	Easily affected by outdoor climate and/or occupant's behaviour	May be expensive
	Reported failure rate in delivering the required outdoor ventilation rate	More difficult to predict, analyse and design	May be more difficult to design
	Potential for noise from equipment	Reduces comfort level of occupants when hot, humid or cold	
		Inability to establish negative pressure in isolation areas, but may be provided by proper design; depends on situation	
		Potential for noise intrusion	
		High-tech natural ventilation shares some of the limitations and disadvantages of mechanical ventilation	

2.4 Mechanical versus natural ventilation for infection control

The decision whether to use mechanical or natural ventilation for infection control should be based on needs, the availability of the resources and the cost of the system to provide the best control to counteract the risks.

For example, in the United Kingdom, the National Health Service policy tends to limit the adoption of mechanical ventilation to the principal medical treatment areas such as airborne infection isolation rooms, operating theatres and associated rooms. Patient wards are usually not required to be mechanically ventilated and natural ventilation through opening windows is usually the most common solution (Mills, 2004). Mills (2004) also states that "One of the major energy users in hospitals is air treatment. The low-energy hospital study identified this as an area for saving by naturally ventilating all 'non-clinical' areas, and current NHS guidance has adopted this conclusion." Conversely, in the American Society of Heating, Refrigerating and Air-Conditioning Engineers design guide (ASHRAE, 2007a, 2007b) all areas are required to be ventilated mechanically.

Mechanical ventilation is expensive to install and maintain in isolation rooms. It often does not deliver the recommended ventilation rate and may fail to maintain negative pressure (and may even be under positive pressure). For example, Pavelchak et al. (2000) evaluated 140 designated airborne infection isolation rooms in 38 facilities during 1992 to 1998 and found that unwanted directional airflow out of the patient room was observed in 38% of the facilities. Primary factors that were associated with the incorrect operation of the airborne infection isolation rooms included:

- ventilation systems not balanced (54% of failed rooms)
- shared anterooms (14%)
- turbulent airflow patterns (11%)
- automated control system inaccuracies (10%).

In addition, a number of problems related to the use of mechanical ventilation can arise from the lack of active collaboration between medical and technical personnel, which can also occur with natural ventilation. For example (ISIAQ, 2003):

- building repair, without adequate control, may adversely affect nearby areas with high cleanliness requirements;
- sophisticated and expensive ventilation systems are often not properly integrated into the building design, and then maintained, or even used; and
- medical staff often have poor knowledge of the intended operational performance of ventilation systems, even with regard to their protective functions; systems that were originally properly designed can be misused to the extent that the intended functionality is reduced, leading to increased risks.

Other problems with mechanical ventilation include the loss of negative pressure differential in isolation rooms due to the opening of the doors; clogged filters; and adjacent, negatively pressurized spaces (Fraser et al., 1993; Dahl et al., 1996; Sutton et al., 1998; Pavelchak et al., 2001; Rice, Streifel & Vesley, 2001).

In response to the 2003 severe acute respiratory syndrome (SARS) outbreak, the government of Hong Kong SAR constructed 558 SARS isolation rooms with more than 1300 beds in 14 hospitals. The negative pressure, airflow path, air-change rate and local ventilation effectiveness were measured in selected isolation rooms in nine major hospitals (Li et al. 2007). Of the 38 rooms tested, 97% met the recommended negative pressure difference of 2.5 Pa between corridor and anteroom; and 89% of the 38 rooms tested met the same requirement between anteroom and cubicle. Although no leakage of air to the corridor was found, 60% of the toilets/bathrooms were operated under positive pressure. More than 90% of the corridor–anteroom or anteroom–cubicle doors had a bi-directional flow when the door was open. Of the 35 cubicles tested, 26% had an air-change rate less than 12 air changes per hour (ACH).

Most of these problems can also occur with natural ventilation.

A comparative analysis of mechanical and natural ventilation systems looked at eight hospitals in Lima, Peru (Escombe et al., 2007). Five of the hospitals had an “old-fashioned” design (built before 1950) and three had a “modern” design (built from 1970 to 1990). Seventy naturally ventilated clinical rooms for infectious patients were studied. These rooms were compared with 12 mechanically ventilated, negative-pressure respiratory isolation rooms built after 2000. The analysis found that:

- opening windows and doors provided a median ventilation of 28 ACH — more than double the recommended 12 ACH in mechanically ventilated, negative-pressure rooms, but relies on correct door and window operation; none of the rooms were normally operated with windows and doors open; and
- facilities built more than 50 years ago, characterized by large windows and high ceilings (larger values of the volume to patient ratio), with windows and doors open, had greater ventilation than modern, naturally ventilated rooms (40 ACH versus 17 ACH).

However, these results should be used with caution. The ventilation rates in the analysis were reported without detailed information on climatic conditions, such as wind velocity and direction. The ventilation rate measurements were also affected by the carbon dioxide measurement device, and the fact that measurements were taken in buildings with multiple, inter-connected spaces, which would have affected the mixing conditions within the measured interior space.

2.5 Summary

The use of outdoor air for natural ventilation, combined with natural cooling techniques and the use of daylight, have been essential elements of architecture since ancient times and up to the first part of the 20th century (ASHRAE, 2007b). Classical architecture with H, L, T or U-shaped floor plans was used, together with open courts, limited plan depth and maximum windows sizes, to exploit natural ventilation and daylight. In recent times, natural ventilation has been largely replaced by mechanical ventilation systems in high- and middle-income countries. At first, full mechanical heating, ventilation and air-conditioning systems appeared to be able to solve all the practical problems of natural ventilation for year-round control of indoor environmental conditions.

However, mechanical ventilation also requires careful design, strict equipment maintenance, adoption of rigorous standards, and design guidelines that take into consideration all aspects of indoor environmental quality and energy efficiency (ASHRAE, 2007b). The same is also true for high-tech natural ventilation. Natural ventilation is not without its problems, particularly for facilities in countries where winters are cold. More work is needed to design low-cost and reliable ventilation systems for rooms that encourage rather than prevent the flow of air and yet allow internal temperature control.

It follows that natural and mechanical ventilation systems can, in practice, be equally effective for infection control. However, natural ventilation only works when natural forces are available, for example, winds or breezes, and when inlet and exhaust apertures are kept open. On the other hand, the difficulties involved in properly installing and maintaining a mechanical ventilation system may lead to a high concentration of infectious droplet nuclei and ultimately result in an increased risk of disease transmission.

In existing health-care facilities with natural ventilation, this system should be maximized where possible, before considering other ventilation systems. However, this depends on climatic conditions being favourable for its use.

3 Infection and ventilation

3.1 The association between ventilation and infection

There is little evidence that ventilation directly reduces the risk of disease transmission, but many studies suggest that insufficient ventilation increases disease transmission. A number of studies have looked at the possible transmission routes of diseases, but few have looked at the direct impact of ventilation on disease transmission.

Historically, the concept of airborne spread was first described by Wells (1934, 1955) and then by Riley & O'Grady (1961). The Wells–Riley equation (Riley, Murphy & Riley, 1978) was used to evaluate the effect of ventilation, filtration and other physical processes on transmission through droplet nuclei (Nardell et al., 1991; Fennelly & Nardell, 1998).

Detection of pathogens in room air and buildings may suggest a possible, indirect association between ventilation and disease transmission (Artenstein et al., 1967; Sawyer et al., 1994; Aintablian, Walpita & Sawyer, 1998; Mastorides et al., 1999; Suzuki et al., 2002, 2003; Booth et al., 2005; Chen & Li, 2008; Huynh et al., 2008). However, other aspects (e.g. necessary infecting dose, susceptibility of the host, infectivity of the pathogen, other environmental factors) are important for determining the ability of a pathogen to be transmitted. Therefore, data on presence of pathogens in the air does not provide the full evidence for disease transmission, and should be used in conjunction with other data (e.g. epidemiological data).

To develop this guideline, a systematic review of scientific literature up to June 2008 was used (see Annex A) to answer two questions.

1. Does ventilation rate (measured by air changes per hour — ACH — or flow rate in m^3/s) have an effect on decreasing (i) rates of infections or (ii) outbreaks of infectious diseases by agents that are transmitted by each of the modes of transmission listed in Table 3.1, in (a) patients, (b) health-care workers and/or (c) other caregivers such as household members? If yes, what ventilation rate has been associated with each infectious agent?
2. Does airflow or direction have an effect on decreasing (i) rates of infections or (ii) outbreaks of infectious diseases by agents that are transmitted by each of the modes of transmission in (a) patients, (b) health-care workers and/or (c) other caregivers such as household members? If yes, what conditions of airflow or direction have been associated with this?

Table 3.1 The scope and definitions of three transmission models for the systematic review

Mode of transmission		Examples of the agents
Airborne	Transmission of disease caused by dissemination of droplet nuclei that remain infectious when suspended in air over long distance (>1 m) and time. Airborne transmission can be further categorized into obligate or preferential airborne transmission. Obligate airborne transmission refers to pathogens that are transmitted only by deposition of droplet nuclei under natural conditions. Preferential airborne transmission refers to pathogens that can initiate infection by multiple routes, but are predominantly transmitted by droplet nuclei.	Pulmonary tuberculosis, measles, chickenpox
Opportunistic airborne	Transmission of droplet nuclei at short range during special circumstances, such as the performance of aerosol-generating procedures associated with pathogen transmission.	SARS-Coronavirus, influenza
Droplet	Droplets are generated from an infected (source) person primarily during coughing, sneezing and talking. Transmission occurs when these droplets, containing microorganisms, are propelled a short distance (usually <1 m).	Adenovirus, respiratory syncytial virus, influenza, SARS-Coronavirus

SARS, severe acute respiratory syndrome.

The final selected studies ($n = 65$) (see Annex A for a list of these studies) were included based on an association of ventilation rate or airflow direction with spread of certain infectious diseases. The diseases that showed a possible association between transmission among humans and ventilation were chickenpox (Gustafson et al., 1982), measles (Bloch et al., 1985), smallpox (Wehrle et al., 1970) and pulmonary tuberculosis (TB) (Hutton et al., 1990; Calder et al., 1991; Menzies et al., 2000). In this guideline, these four diseases are referred to as airborne diseases.

There were five main findings of the systematic review.

- Lack of ventilation or low ventilation rates are associated with increased infection rates or outbreaks of airborne diseases.
- High ventilation rates could decrease the risk of infection. For non-isolation rooms, ventilation rates lower than 2 ACH (e.g. equivalent to 13 l/s for a $4 \times 2 \times 3$ m^3 room) are associated with higher tuberculin skin test conversion rates among staff. A higher ventilation rate is able to provide a higher dilution capability and consequently reduce the risk of airborne infections. For this reason, better ventilated areas have a lower risk of transmission of TB and other airborne infections. Annex D contains a more detailed explanation of how ventilation rates reduce the transmission of airborne infections.

- No information exists on the impact of ventilation rate on transmission of droplet-transmitted diseases. This agrees with the physics of droplet transmission, which shows that general ventilation should not affect large droplet transmission.
- The airflow from a contaminated source can lead to infection further away from the source. The rate of infection (attack) reduces as the physical distance from the source increases. One of the essential conditions for airflow-induced infection is that the airborne pathogen concentration in the source location must be sufficiently high (either due to high source strength or a low ventilation rate).
- Although there are not enough data to support this, it appears that the airflow from a contaminated source with sufficiently high dilution may not lead to further infection. No information is available on the exact amount of minimum dilution needed.

Despite more than 100 years of ventilation and infection study, the information is still sparse and incomplete. There are insufficient data to estimate minimum ventilation requirements in isolation rooms or in non-isolation areas in hospitals to prevent the spread of airborne infection. There are also insufficient data to estimate the minimum ventilation requirements in schools, offices and other non-hospital buildings to prevent the spread of airborne infection.

3.2 Ventilation requirements relating to airborne infection control

Central to the difficulties in developing ventilation guidelines for infection control is that there are not enough data to recommend a minimum ventilation flow rate for infection control against droplet nuclei. Ventilation can reduce the concentration of airborne pathogens through removing or diluting airborne droplet nuclei. A higher ventilation rate can provide a higher dilution capability and consequently potentially reduce the risk of airborne infections. In line with this assumption, Menzies et al. (2000) found that the tuberculin conversion among clinical personnel was significantly more rapid and frequent among those working in average ventilation lower than 2 ACH. A higher ventilation rate can dilute the contaminated air inside a space more rapidly than a lower ventilation rate, and can also decrease the risk of transmission of infectious droplet nuclei to individuals in the space. However, the maximum ventilation rate (above which there is no further reduction of infection risk) is not known. The choice of the minimum ventilation flow rate may be influenced by the need to reduce energy consumption (because higher ventilation rates have a higher energy cost for mechanical ventilation).

In this guideline, the rationale for determining the minimum ventilation rate requirements is based on two main aspects (see Annex E):

- the effect of air-change rate on decay of droplet nuclei concentration; and
- mathematical modelling of risk using the Wells–Riley equation to estimate the effect of ventilation rate on infection risk for known airborne diseases.

These underlying principles indicate that the higher the ventilation rate, the more rapid the decay of particles (e.g. droplet nuclei) in the room air. Also, according to the Wells–Riley equation, the probability of infection through infectious droplet nuclei is inversely correlated to the ventilation rate. The parameters used in the Wells–Riley equation include ventilation rate, generation of droplet nuclei from the source (quanta/minute) and duration of exposure

$$P = \frac{D}{S} = 1 - \exp\left(-\frac{Ipqt}{Q}\right)$$

where:

P = probability of infection for susceptibles
D = number of disease cases
S = number of susceptibles
I = number of infectors
p = breathing rate per person (m^3/s)
q = quantum generation rate by an infected person (quanta/s)
t = total exposure time (s)
Q = outdoor air supply rate (m^3/s).

Based on this model, in situations of high quanta production (e.g. high-risk, aerosol-generating procedures), the estimated probability of infection with 15 minutes of exposure in a room with 12 ACH would be below 5% (see Annex E for more details).

When ACH is used to measure ventilation performance, the volume of the enclosed room is clearly an important parameter. For a given ACH, a ward with a larger volume can provide a larger airflow rate (m^3/h or l/s) than a room with a smaller volume.

In some existing guidelines of mechanical isolation rooms (CDC, 2003), a minimum negative pressure needs to be maintained while the minimum ventilation rate is $\geq$12 ACH. As discussed, a major disadvantage of natural ventilation is the difficulty in achieving a consistent airflow direction, and major fluctuations may occur. Although negative pressure is difficult to achieve with natural ventilation, if dilution is sufficient, air being emitted to the open air presents a minimal risk.

Still, the choice of airborne precaution areas and the placement of patients within the areas need to be planned and designed carefully, so as to further reduce the risk of infection for people in the surrounding areas.

Based on the discussions above, the World Health Organization makes the recommendations contained in section 3.3, below.

3.3 World Health Organization recommendations relating to natural ventilation requirements

Please see the explanations for the overall ranking (i.e. strong versus conditional recommendation) of the recommendations in the respective appraisal tables in Annex B.

1. To help prevent airborne infections, adequate ventilation in health-care facilities in all patient-care areas is necessary (Gustafson et al., 1982; Bloch et al., 1985; Hutton et al. 1990; Calder et al. 1991).

Strong recommendation

Remarks: There is moderate evidence available to suggest that insufficient ventilation is associated with an increase of infection risk and favours the use of ventilation for airborne infection control.

2. For natural ventilation, the following minimum hourly averaged ventilation rates should be provided:
   - 160 l/s/patient (hourly average ventilation rate) for airborne precaution rooms (with a minimum of 80 l/s/patient) (note that this only applies to new health-care facilities and major renovations);
   - 60 l/s/patient for general wards and outpatient departments; and
   - 2.5 l/s/m^3 for corridors and other transient spaces without a fixed number of patients; however, when patient care is undertaken in corridors during emergency or other situations, the same ventilation rate requirements for airborne precaution rooms or general wards will apply.

The design must take into account fluctuations in ventilation rate.

When natural ventilation alone cannot satisfy the recommended ventilation requirements, alternative ventilation systems, such as a hybrid (mixed-mode) natural ventilation system, should be considered, and then if that is not enough, mechanical ventilation should be used.

Conditional recommendation

Remarks: The application of natural ventilation depends on climatic conditions being favourable.

3. When designing naturally ventilated health-care facilities, overall airflow should bring the air from the agent sources to areas where there is sufficient dilution, and preferably to the outdoors (Gustafson et al., 1982; Bloch et al., 1985; Hutton et al. 1990; Calder et al. 1991).

Conditional recommendation

Remarks: Despite some evidence suggesting a possible association of airflow direction with spread of airborne infections, such spread was observed at a very low (lower than 4 ACH) ventilation rate (Bloch et al., 1985). It is hypothesized that if the ventilation rate in adjacent spaces is sufficiently high, the risk would be very low to minimal (e.g. as in an open space). However, the precise ventilation rate required in closed spaces adjacent to airborne precaution rooms to reduce the risk of spread is not known. The application of natural ventilation depends on climatic conditions being favourable.

4. For spaces where aerosol-generating procedures associated with pathogen transmission are conducted, the natural ventilation requirement should, as a minimum, follow Recommendation 2. Should the agent be airborne, Recommendations 2 and 3 should be followed.

Conditional recommendation

Remarks: There is indirect evidence to show that some aerosol-generating procedures are associated with an increased risk of infection. Ventilation may play a role, but the minimum ventilation requirements for aerosol-generating procedures deserve further investigation.

3.3.1 Explanation of the World Health Organization recommendations

This guideline recognizes that the current epidemiological evidence of the association between ventilation rate and airborne infection is weak, but appreciates the importance of ventilation from both a theoretical point of view and the current practice in airborne isolation.

The guideline also recognizes the three major disadvantages of natural ventilation: fluctuation of the ventilation rate due to variable driving forces, the difficulty in achieving a consistent airflow direction and a comfortable internal temperature in extreme climates.

Although more research is needed on the effects of ventilation rate on infection risk, the currently recommended mechanical ventilation rate of ≥12 ACH for airborne isolation rooms (CDC, 2003, 2005) is adopted as a reference. Possible rationales (which do not have supporting evidence) for determining the minimum ventilation rate requirements are explained in Annex E. We also suggest that if natural ventilation is used for infection control, the minimum ventilation rate should be higher than the existing requirement for mechanical ventilation to compensate for the expected fluctuations in ventilation rate and difficulties in controlling airflow direction.

This guideline suggests the use of the volume of the room, the ventilation rate (litre per second per patient or l/s/patient or l/s/p) rather than air changes per hour (ACH) rate, although air-change rate is used commonly in other guidelines. The use of ventilation rate (l/s/patient) recognizes the direct link between exposure level and ventilation rate, as well as the direct association with the number of patients the space is designed to hold. However, for corridors and other spaces without a fixed number of patients, the ventilation rate is based on the volume of the space.

Other documents recommend 12 ACH for an airborne precaution room, which is equivalent to, for example, 80 l/s/patient in a $4\times2\times3$ m^3 room. This guideline recommends double this ventilation rate for naturally ventilated airborne precaution rooms. Therefore, for a room with similar volume, an hourly averaged ventilation rate of 160 l/s/patient is recommended. At the same time, the guideline also recommends a minimum ventilation rate of 80 l/s/patient at all times.

Refer to Annex B for factors considered in the appraisal of specific recommendations.

3.3.2 Review and assessment of recommendations

The recommended requirements of natural ventilation for infection control will need to be reviewed and updated once new data on the impact of ventilation are available.

The recommendations were developed by the systematic review external panel using the GRADE appraisal system during its meeting in Geneva in November 2008 (see Annex B).

Recommendation 1 was based mainly on the studies of Gustafson et al. (1982) (chickenpox), Bloch et al. (1985) (measles), Hutton et al. (1990) (TB) and Calder et al. (1991) (TB). These studies provided evidence of an association of ventilation with the spread of certain infectious diseases. Lack of ventilation or low ventilation rates were associated with an increase of infection rates or disease outbreak for either airborne transmission or opportunistic airborne transmission.

Recommendation 2 was based mainly on the studies of Menzies et al. (2000) and Bloch et al. (1985), which provided evidence of an association between low ventilation rate (lower than 2 ACH) and the spread of TB (Menzies et al., 2000) and measles (Bloch et al., 1985). These studies suggest an association of airflow direction with the spread of airborne infectious diseases.

For Recommendation 4, no study providing evidence of association between ventilation features and infection due to aerosol-generating procedures was found. However, there is indirect evidence to show that some aerosol-generating procedures are associated with an increased risk of infection.

3.4 Summary

The design of proper, general ventilation systems can play an important role in preventing the spread of infections. Patients with infectious diseases that spread easily through air (e.g. chickenpox, measles, tuberculosis) should be placed in airborne precaution rooms. However, there is often a delay between admission of these patients to the health-care facility, and the diagnosis of their infectious disease. Disease transmission to other patients or staff can occur while these patients are waiting in common areas (e.g. waiting room, emergency departments). Paying more attention to ventilation requirements in these common, non-isolation spaces could lead to significant infection-control benefits.

However, the strategies for disease control and prevention involve the assessment of threats and resources, and then applying appropriate administrative controls, environmental and other engineering controls, and PPE, in conjunction with using a suitable ventilation system.

Part 2 — Designing for natural ventilation

Part 2 provides an introduction to the basic elements of design for natural ventilation for infection control. This guideline focuses only on basic principles that will be expanded in a follow-up World Health Organization project.

The follow-up design project will build on the introduction provided in this guideline, and is aimed principally at providing the means with which to adapt health-care facilities to natural ventilation, thereby maximising outbreak preparedness while minimising costs and emissions. It is based on the premise that clear and well thought-out design guidance can assist health authorities, particularly in low-income countries. Such guidance will be available for download from a web page free of charge. By providing sound design advice, a relatively small investment in financial and staffing terms can achieve far-reaching results in areas of critical global significance.

Readers are reminded that naturally ventilated health-care facilities, or airborne precaution rooms, need to be properly designed if they are to function as intended.

4 Understanding natural ventilation

4.1 The driving forces of natural ventilation

Three forces can move the air inside buildings:

- wind pressure
- stack pressure (buoyancy)
- mechanical force.

The first two forces are explained in the following sections. Natural forces drive natural ventilation, while mechanical fans drive mechanical ventilation. Mechanical force can be combined with natural forces in a hybrid, or mixed-mode, ventilation system.

4.1.1 Wind pressure

When wind strikes a building, it induces a positive pressure on the windward face and negative pressure on the leeward face. This drives the air to flow through windward openings into the building to the low-pressure openings at the leeward face (see Figure 4.1). It is possible to estimate the wind pressures for simple buildings. Wind flows around buildings are complex and the subject of a number of textbooks, for example Aynsley, Melbourne & Vickery (1977) and Liu (1991).

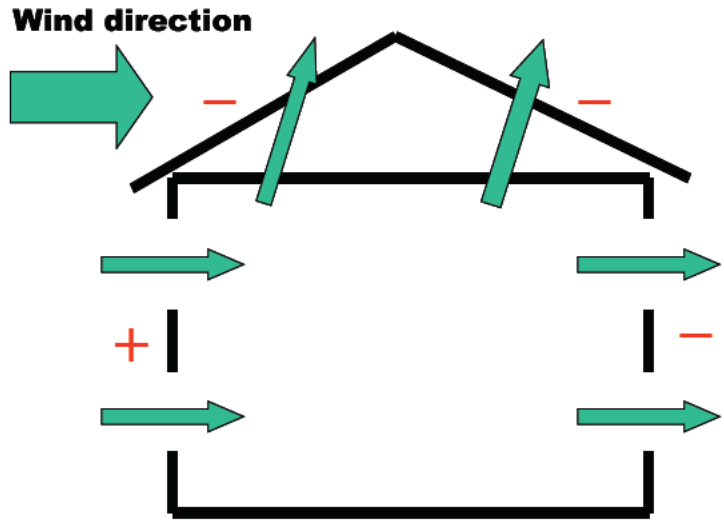


Figure 4.1 Wind-induced flow directions in a building

For single-sided ventilation with the rooms otherwise hermetically sealed, there is no contribution from mean wind pressures, only from the fluctuating components (see Figure 4.2). Etheridge & Sandberg (1996) covered the topic of unsteady pressures in some detail. This is a common design; however, over time, there becomes significant leakage around doors and other room penetrations. It must be remembered that just because a window is open, sufficient air changes per hour (ACH) may not necessarily be achieved.

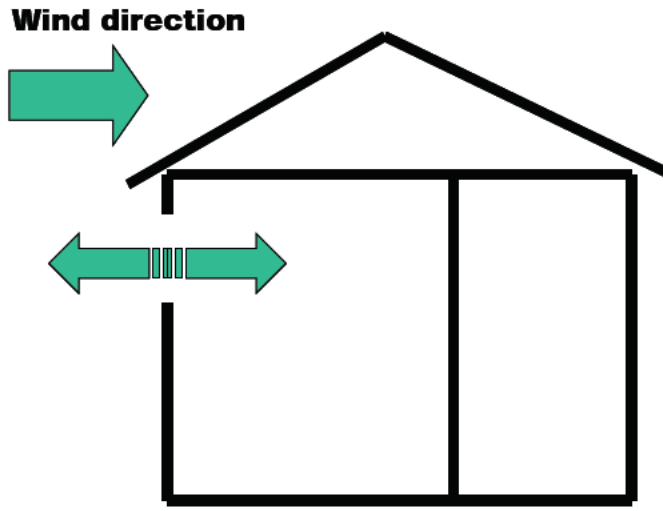


Figure 4.2 Fluctuating components contributing to single-sided airflow

The wind pressure generated on a building surface is expressed as the pressure difference between the total pressure on the point and the atmospheric static pressure. Wind pressure data can usually be obtained in wind tunnels by using scale models of buildings. If the shape of the building, its surrounding condition and wind direction are the same, the wind pressure is proportional to the square of outdoor wind speed. Thus, the wind pressure is usually standardized by being divided by the dynamic pressure of the outdoor wind speed. The standardized wind pressure is called the wind pressure coefficient and symbolized as C_p. The outdoor wind speed is usually measured at the height of the eave of the building in the wind tunnel:

$$C_p = \frac{P_T - P_{AS}}{\frac{1}{2}\rho V_H^2}$$

where:

C_p = wind pressure coefficient (–)
P_T = total pressure (Pa)
P_{AS} = atmospheric static pressure at the building height (Pa)
ρ = density of air (kg/m^3)
V_H = wind velocity at a remote site from surrounding influences at the building height (m/s).

4.1.2 Stack (or buoyancy) pressure

Stack (or buoyancy) pressure is generated from the air temperature or humidity difference (sometimes defined as density difference) between indoor and outdoor air. This difference generates an imbalance in the pressure gradients of the interior and exterior air columns, causing a vertical pressure difference.

When the room air is warmer than the outside air, the room air is less dense and rises. Air enters the building through lower openings and escapes from upper openings.

The flow direction reverses, to a lesser degree, when the room air is colder than the outside air; the room air is denser than the outside air. Air enters the building through the upper openings and escapes through the lower openings.

Stack (or buoyancy) driven flows in a building are driven by indoor and outdoor temperatures. The ventilation rate through a stack is a function of the pressure differential between the two openings of that stack.

Pressure differential can be calculated as follows:

$$\Delta P_s = (\rho_o - \rho_i) gH = \rho_o gH \frac{T_i - T_o}{T_o}$$

where:

P_s = stack (or buoyancy) pressure (Pa)
ρ_o = density of outdoor air (kg/m^3)
ρ_i = density of indoor air (kg/m^3)
g = gravity acceleration (9.8 m/s^2)
H = height between two openings (m)
T_i = indoor air temperature (^{o}K)
T_o = outdoor air temperature (^{o}K).

4.2 Ventilation flow rate

As a rule of thumb, wind-driven natural ventilation rate through a room with two opposite openings (e.g. a window and a door) can be calculated as follows:

$$\text{ACH} = \frac{0.65 \times \text{wind speed (m/s)} \times \text{smallest opening area (m}^2\text{)} \times 3600 \text{ s/h}}{\text{room volume (m}^3\text{)}}$$

$$\text{Ventilation rate (l/s)} = 0.65 \times \text{wind speed (m/s)} \times \text{smallest opening area (m}^2\text{)} \times 1000 \text{ l/m}^3$$

Table 4.1 provides estimates of the ACH and ventilation rate due to wind alone, at a wind speed of 1 m/s, assuming a ward of size 7 m (length) × 6 m (width) × 3 m (height), with a window of 1.5 × 2 m^2 and a door of 1 m^2 × 2 m^2 (smallest opening).

Table 4.1 Estimated air changes per hour and ventilation rate for a 7 m × 6 m × 3 m ward

Openings	ACH	Ventilation rate (l/s)
Open window (100%) + open door	37	1300
Open window (50%) + open door	28	975
Open window (100%) + closed door	4.2	150

The wind speed refers to the value at the building height at a site sufficiently away from the building without any obstructions (e.g. at an airport).

For stack (or buoyancy) natural ventilation, the ACH can be calculated as:

$$\text{Air changes per hour (ACH)} = \frac{0\ 15 \times \text{smallest opening area (m}^2) \times 3600\ \text{s/h} \times \sqrt{(\text{indoor} - \text{outdoor air temperature (}^{o}\text{K))} \times \text{stack height (m)}}}{\text{room volume (m}^3)}$$

$$\text{Ventilation rate (l/s)} = 0\ 15 \text{ x } 1000\ \text{l/m}^3 \times \text{smallest opening area (m}^2) \times \sqrt{(\text{indoor} - \text{outdoor air temperature (}^{o}\text{K))} \times \text{stack height (m)}}$$

Advanced design tools for both analysis and opening sizing are also available (CIBSE, 2005).

4.3 Summary

Before designing a purely natural ventilation system, designers need to understand the main driving forces of natural ventilation — wind pressure and stack (or buoyancy) pressure. These forces control how air moves within and through a building, and they can be combined, as needed, to design an optimal natural ventilation system.

5 Design and operation

5.1 Designs for natural ventilation and hybrid ventilation systems

This section outlines the main design categories of natural ventilation and hybrid (mixed-mode) ventilation systems.

5.1.1 Natural ventilation systems

As previously defined, natural ventilation is the use of natural forces to introduce and distribute outdoor air into or out of a building. These natural forces can be wind pressures or pressure generated by the density difference between indoor and outdoor air.

There are four design methods available for natural ventilation systems:

- *cross flow* (no corridor) — the simplest natural ventilation system with no obstacles on either side of the prevailing wind (i.e. windows of similar size and geometry open on opposite sides of the building);
- *wind tower* (wind catcher/wind extractor) — the positive-pressure side of the wind tower acts as a wind catcher and the negative-pressure side of the wind tower acts as a wind extractor;
- *stack* (or buoyancy), simple flue — a vertical stack from each room, without any interconnections goes through the roof; this allows for air movement based on density gradients; and
- *stack* (or buoyancy), solar atrium — a large stack that heats due to solar radiant loading, which induces air movement due to density (temperature) differentials; without radiant loading, the atrium provides minimal ventilation.

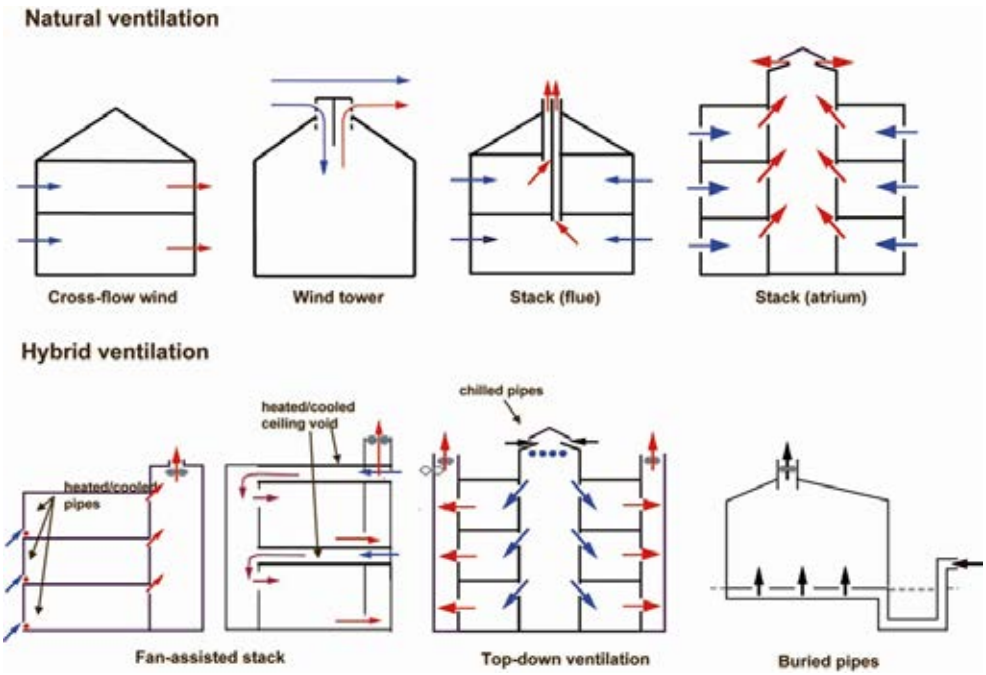
5.1.2 Hybrid (mixed-mode) ventilation systems

As previously defined, hybrid (mixed-mode) ventilation relies on natural driving forces to provide the desired (design) flow rate. It uses mechanical ventilation when the flow rate is lower than that required to produce natural ventilation.

Three design methods are available for hybrid ventilation systems.

- *Fan-assisted stack* — when there is insufficient solar radiant loading on the stack (i.e. evenings and inclement days) the ventilation rate is supplemented by extraction fans. Inlet air is heated and cooled to maintain comfort for building occupants.
- *Top-down ventilation* (fan-assisted stack plus a wind tower) — when there is insufficient solar radiant loading on the stack (i.e. evenings and inclement days) the exhaust ventilation rate is supplemented by extraction fans while the supply ventilation rate is supplemented by the wind tower (wind scoop). Inlet air is heated and cooled to maintain comfort for building occupants.
- *Buried pipes* — when land is available, ventilation pipes (ducts) can be buried. If air remains underground for long enough, the air will approach the steady-state underground temperature (i.e. warming or cooling the outside air). This system is not ideal for high ventilation rates.

Figure 5.1 illustrates the different systems of natural and hybrid ventilation.



Source: Courtesy of Professor Martin Liddament, VEETECH, Coventry, UK.

Figure 5.1 Different natural ventilation and hybrid ventilation systems

5.2 Basic design concepts for natural ventilation

Developing the design concept for a naturally ventilated building that incorporates infection control involves three basic steps, described in more detail in section 5.4.

1. Specify the desired airflow pattern from the inlet openings to the outlet openings.
2. Identify the main available driving forces that allow the desired airflow pattern to be achieved.
3. Size and locate the openings so that the required ventilation rates can be delivered under all operating regimes.

A general procedure for natural ventilation starts from the architectural design, system layout and component selection, vent sizing and design-control strategy. The procedure is concluded by detailed design drawing.

Converting an existing building or designing a new building to use natural ventilation for controlling airborne infection would, ideally, include the presence of single-bedded isolation rooms with operable windows and ensuite toilets. However, in resource-poor contexts, the number of such isolation rooms may need to be limited, with additional cohort isolation being provided, when necessary, by contingency facilities (e.g. outdoor isolation tents open to the wind).

There is a need to develop effective and appropriate engineering technologies and innovative architectural features to maximize the use of natural ventilation for different climatic conditions worldwide.

Unlike other types of buildings, when the prevailing wind direction and average velocity may be used, the design of natural ventilation for infection control should consider the worst situation — that is, when the wind is absent, and where supplementary mechanical ventilation may be needed.

5.3 Climatic and other considerations in ventilation design

A number of factors need to be considered when designing a building to effectively use natural ventilation for infection control.

High air-change rates are needed when infection control is the main building design objective. The impacts of the high air-change rates on the overall indoor environmental conditions should be considered; these include thermal comfort, indoor air quality and fire safety. Other likely unfavourable ambient environmental factors such as noise and air pollution, and their impacts on indoor environmental quality have to be assessed before building design starts. In cold climates, the need for warmth inside the building can be at odds with the high air-change rate needed for infection control. In transient seasons of hot and humid climates, moisture condensation in the ward interior can lead to wet beddings and floors, rainy ceilings, and mould and mildew growth — resulting in unpleasant and unhealthy conditions. However, large openings in the building envelope make it easier for insects, wild animals and other unwanted intruders, and may also cause problems relating to security and vector-borne infectious disease control.

5.3.1 Maintaining thermal comfort

In temperate and warm climates and under good ambient air quality conditions, a higher ventilation rate is good for both thermal comfort and indoor air quality. However, this is not true for cold climates where outdoor air infiltration should be minimized for thermal comfort. When the ambient air temperature stays above 30 °C, the thermal conditions in a naturally ventilated ward may become intolerable. Therefore, in a naturally ventilated building, more effort needs to be spent on the architectural and envelope design to achieve acceptable indoor thermal comfort than for a building with mechanical ventilation. This includes the selection of windows, proper external shading, envelope insulation and the properties of external surface materials with regard to solar absorption and thermal radiation. A design engineer must also understand that a final design is a compromise between the conflicting requirements in hot summer and cold winter conditions. Thermal performance simulation tools are available to help quantitatively assess and compare theeffectiveness of different design options. A more detailed explanation of the technology options and simulation techniques are provided in ASHRAE (2009).

5.3.2 Considerations for hot summers

Architectural design features

When the land area allows, active use of ground-to-sky radiation will greatly reduce the effective radiant temperature. Semi-open architectural design is preferred, and should allow direct long-wave radiation from ground to sky to occur. The semi-opening should be on the shade side of a building to avoid direct solar irradiation — this is how a sunshade works (see Figure 5.2).

Solar heat gain should be minimized by using proper external shading or the more sophisticated glazing systems. The buoyancy effects of the solar heat on airflow can be used to lead the warm air to the higher levels of the building. Fortunately, this is in line with the desired airflow patterns for infection control.

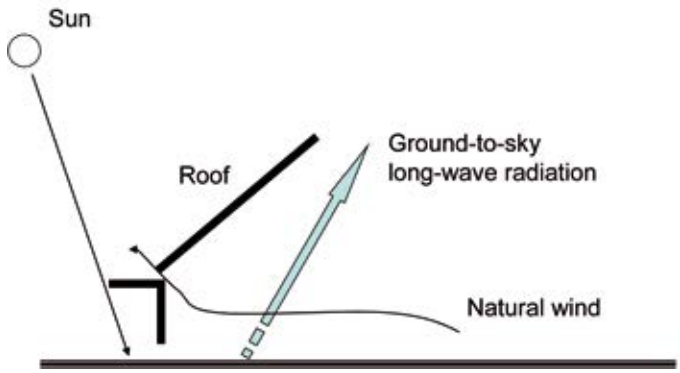


Figure 5.2 Semi-open design allowing ground-to-sky thermal radiation can greatly improve the thermal comfort in hot summer

Low-energy mechanical cooling

A high air change rate may be favourable for thermal comfort in cold weather; however, on muggy and calm days, high air change would make conditions uncomfortable. In low-wind conditions, air change that is caused by buoyancy may not generate enough internal air movement.

Mechanical cooling fans

In addition to hybrid (mixed-mode) ventilation systems, air movement can be improved using electric cooling fans — although improving air movement by introducing an artificial "breeze" does not necessarily increase the air-change rate.

ASHRAE (2009) provides design guides that use the widely accepted predicted mean vote (PMV) model, which takes into account the air temperature, radiant temperature, air velocity, clothing level and people's activity level. Designers can use the PMV model to estimate the raised air velocity required at higher air temperatures. When the temperature is below 30 ºC, acceptable thermal comfort can be achieved using elevated air speed (Xia et al., 2000). Temperatures above 30 ºC will inevitably cause thermal stress in the building's occupants.

Cooling fans with multiple speeds should be used, and people should be able to adjust the fan speed as needed. Using fans in this way greatly reduces energy consumption, compared with air-conditioning.

On hotter days when air temperature is above 30 ºC, using a cooling fan only would not be sufficient to keep the building cool enough for occupants. Instead, a low-cost evaporative cooling method can be used — and is particularly useful when there is a high air-change rate. This strategy also has a relatively low cost, compared with a full air-conditioning system (Zhang et al., 2000).

5.3.3 Considerations for winter

In cold winter conditions, a high air-change rate is not desirable for thermal comfort, particularly as windows may be closed to keep the building warm. Even if normal heating is introduced, with a high air-change rate the effects might be insignificant, and energy efficiency will be low. Therefore, heating strategies must be planned carefully. Building envelope design should be able to capture the solar heat and minimize conduction loss through the wall. Proper insulation of walls and the use of double glazing are desirable. For extremely cold climates, a rigorous assessment using simulation techniques should be undertaken, so that the degree of coldness can be quantified. This can be used to determine whether the natural ventilation strategy could be adopted for the climate being considered.

When considering active heating strategies, targeted radiant or direct near-body heating methods are more effective, and are preferred for two reasons. First, due to buoyancy effects, the warm air from the common convective radiators tends to float to the upper part of a space. Second, at a high air-change rate, the heat loss is tremendous. Modern, electric radiant heaters are readily available, and are a better option than other commonly used electric radiators.

Electrically heated mattresses are also available and typically use about 50–100 watts. They are effective for in-bed patients, and may allow patients to tolerate much lower in-ward air temperatures associated with the high air-change rate. They also help to avoid the excessive energy consumption associated with the ordinary space-heating methods.

5.3.4 Maintaining healthy indoor air quality

With a higher air-change rate, the indoor air quality is more linked to the ambient air quality. The benefit is that the indoor air quality is less likely to be affected by the presence of common indoor pollutant sources, such as the off-gassing from common building materials.

5.3.5 Managing ambient air pollution

With the high air-change rate of untreated outdoor air, indoor air quality will be more affected by the ambient air pollution (Weschler & Shields, 2000; Ghiaus et al., 2005). In regions with severe ambient air pollution problems, the location of an infectious disease hospital should be chosen carefully. A hybrid (mixed-mode) ventilation design may be the only option. Solely relying on ordinary window openings will expose the occupants to a high ambient pollutants level.

5.3.6 External noise

As pointed out in CIBSE (2005), the presence of significant noise sources is one of the main barriers to using natural ventilation. However, this guideline recommends two solutions: one is to place the ventilation inlets on the sides of the building away from the principal noise sources; the other is to integrate acoustic baffles into the ventilation opening. However, this second solution will reduce the air-change rate, and is therefore best combined with hybrid (mixed-mode) ventilation where a mechanical fan can avoid the increased pressure loss over such a vent.

5.3.7 Selecting low-emission interior materials

A comprehensive understanding of air pollutant emissions from interior building materials has developed over the years (Levin, 1989; Li & Niu, 2007). Designers and contractors should be aware of the standards and regulations on building materials for indoor use. In particular, materials that can potentially release airborne respiratory-tract irritants should be avoided.

5.3.8 Humidity and mould growth

Condensation can occur on ceilings, walls, floors and beddings for many reasons. For example, in buildings with a heavy structure and that use natural ventilation, a sudden change of weather with warm, moist ambient air may induce condensation when the surface temperature is lower than the dew-point temperature of the moist incoming air (Niu, 2001). While the conditions are a discomfort and annoyance during the condensation period, mould may also grow — which is a health hazard.

When designing buildings with natural ventilation for a hot and humid climate, lightweight and insulated walls should be used. The surface temperature of a lightweight construction or a wall with internal insulation will respond rapidly to changes in air temperature, limiting the rise of surface and internal relative humidity when the sudden warm and humid air comes in contact with the wall (e.g. in the transient spring season).

For existing buildings with massive concrete or masonry walls, several retrofitting, operation and maintenance strategies may be needed if a natural ventilation strategy is to be adopted. The first option would involve the interior surface treatment, which can either be long term or short term.

5.3.9 Security and vector-borne disease spread

Large openings in natural ventilation without any protection increase the risk of security breaches and the spread of vector-borne diseases. Purpose-designed barred windows and semi-transparent mosquito meshes can be used in these situations.

5.3.10 High-rise considerations

Locating respiratory wards on the top floors may be desirable for high-rise buildings to minimize the possible re-entry of the exhausts into adjacent floors. This re-entry is caused by buoyancy as the exhaust air is normally warm and tends to flow upwards after leaving the wards (Wehrle et al., 1970).

5.3.11 Fire safety considerations

Designing a building with openings connecting rooms may conflict with fire-safety and smoke-control requirements. Naturally ventilated buildings may also be zoned to be in line with the compartmentalization requirements for smoke control. Ventilation openings may also be shut during a fire. The fire escape route also needs special attention, because natural ventilation design also has an impact on smoke flow pattern.

5.4 Designing for natural and hybrid ventilation systems

When developing the design concept for a naturally ventilated building for infection control, three basic steps are involved.

1. Specify the desired airflow pattern from the inlet openings, through the wards and other hospital spaces such as corridors, to the outlet openings. This is associated with the form (single corridor, central corridor, courtyard, etc.) and organization (relative location of the nursing station, offices, storage, etc.) of the building, which in turn depends on its intended use and site conditions, such as prevailing winds.
2. Identify the main available driving forces that enable the desired airflow pattern to be achieved. The effective strategies for infection control tend to be mostly wind driven, although the stack-driven strategy may also work if designed properly. A combined wind-driven and stack-driven flow needs to be considered where necessary and feasible. In some cases, hybrid (mixed-mode) ventilation may be used and these natural forces can be supplemented by fans. In a good design, the available dominating driving forces are in synergy with the intended flow pattern.
3. Size and locate the openings so that the required ventilation rates can be delivered under all operating regimes. This is, in itself, a three-step process. First, the ventilation rates need to be determined based on the infection control requirements as specified in Part 1 of this document. Second, the openings need to be sized and located to deliver these airflow rates under design conditions. Third, a control system needs to be designed to maintain the required flow rates under varying weather and occupancy conditions.

A general procedure for natural ventilation design includes several components.

- *Architectural design* — architects and engineers must initially set the global geometric configuration of the system (e.g. siting of the building and landscape configuration, overall building form, and approximate positions of fresh air inlets and air exhausts), considering both dominant and prevailing wind conditions, as well as unusual conditions by time of day and season.
- *System layout and component selection* — the designer will then lay out the airflow paths from inlet to outlet that will achieve the desired airflow objective (e.g. for the purpose of infection control and thermal comfort) and then select the types of airflow components (e.g. windows, doors, vents, solar chimneys) that will provide the desired control of airflow.
- *Opening (door, window, vent etc) size* — the designer will then size the components selected considering the ventilation requirements and relevant climatic conditions. Both the indoor and outdoor design conditions (or design criteria) need to be considered.
- *Design control strategy* — the designer must then develop a strategy for controlling ventilation flow to the design objectives when the operating conditions vary. At this stage, both hardware and software for control may need to be chosen to implement the control strategy if a high-tech natural ventilation strategy is used.
- *Detailed design drawing* — finally, the designer must develop detailed drawings so that the systems can be built.

5.4.1 Vent sizing

Vent sizing refers to the process of estimating the area of openings to achieve the required ventilation flow rates based on certain geometry, climate and other data of the building design. The sizing of openings is also a function of the opening distribution, which is a part of the ventilation strategy.

There are two methods for estimating the size of the vents required.

- *Direct methods* are derived for simple buildings where the ventilation flow rate is a simple function of the governing parameters. Allard (1998) discussed five of these methods.
- *Indirect methods* use network models to try different opening size combinations and identify the best one. One promising design method is the loop pressure equation-based method suggested by Axley (1998).

After the necessary ventilation flow rates in each zone of a building are estimated, these methods can be used to design the main flow paths and size ventilation openings to satisfy ventilation requirements in each zone. When designing large buildings, designers might also need to know different design options, how natural ventilation compares with mechanical systems, etc.

When a building is designed and operated with a configuration of openings and flow paths, the ventilation flow rate will mostly be determined by the available natural driving forces. At the design stage, it is important to harness the prevailing winds and to enhance and control stack (or buoyancy) forces in the building. This can be done by carefully positioning and sizing the openings, and by innovative use of devices to increase natural forces, such as wind towers and solar chimneys.

Transient high ventilation allowances

Allowing a transient ventilation rate that is much higher than the minimum ventilation rate specified in Part 1 is one of the benefits of natural ventilation. When the outdoor temperature is comfortable and the air is clean, it is effective to allow more outdoor air into the building. For some climates and buildings, a transient high ventilation rate can also be used for summer cooling. A transient high ventilation rate might also be needed when there are renovation activities in the building, which generate a high amount of pollutants in the air.

5.4.2 Three major design elements of natural ventilation

Designing natural ventilation requires more than just estimating vent and window sizes — it also requires innovative design and significant attention to detail. Priolo (1998) presented a comprehensive design guideline for natural ventilation. This section gives a brief overview of the three layers of the design process related to natural ventilation design:

- *site design* — building location, layout, building orientation, landscaping;
- *building design* — type of building, building function, building form, envelope, natural ventilation strategy, internal distribution of spaces and functions, thermal mass, heating, ventilation and air-conditioning if it exists; and
- *vent opening design* — position of openings, types of openings, sizing of openings, control strategy.

Site design

Site design involves integrating the buildings with the surrounding topography and buildings. For some situations, minor changes to the local site may be allowed, within the limits of environment and wildlife protection.

For natural ventilation, it is best to use the natural airflow patterns of the site to increase the potential of natural ventilation.

- If the building needs summer cooling and minimum winter ventilation, investigate the summer and winter prevailing wind directions, and locate the building to receive more summer winds and protection from winter winds.
- When several buildings are being built on one site, make sure each of the buildings is exposed to summer winds, but not to winter winds in cold climates.

As discussed in section 4.1, the driving wind pressure is not just the positive pressure at the windward openings, but also the negative pressures at the leeward openings. Building form and orientation should result in an increase in the negative pressures in the wakes of airflows. Aynsley, Melbourne & Vickery (1977) provide a useful explanation of downwind wakes caused by different building forms.

Vegetation also affects air movement around the buildings through wind sheltering, wind deflection, funnelling and air acceleration. Air quality and conditions are also changed when travelling beneath canopies of vegetation (e.g. trees).

Building design

For simple buildings, follow the guidance of Priolo (1998) on roof design, aspects ratios and the use of overhangs, wind walls and recessed spaces. For large and complex buildings, use computational fluid dynamics (e.g. Fluent, 2003) to investigate various design options for improving the natural ventilation potentials, and to avoid cold draughts. Take care to ensure pedestrian comfort at the outdoor ground level.

Internal space distribution is also important. For example, relatively "dirty" spaces should be located on the leeward side to avoid back flow of polluted air and odours into other spaces. Large windows for other living spaces in the windward side, such as the wards, can create a funnel effect to induce more incoming air. Interior partitions and furniture should not block the airflow.

For infection control, a single-row ward layout works better than a double-row layout with a central corridor in terms of natural ventilation and daylight. Large, open spaces should always have large windows in opposite walls. With the central corridor layout, natural ventilation may be improved by combining cross-ventilation with stack (or buoyancy) ventilation through corridor vents or through shafts in multistorey buildings.

For multistorey hospitals, stairwells and other shafts can work as exhaust ventilation systems to avoid warm air entering the upper-level apartments or offices. The outlet openings of the shafts should be located on the leeward side of the building, above the top floor level, with the inlet openings on the windward side of the building.

As the penetration depth of wind-driven natural ventilation is limited, the width of the building is limited (CIBSE, 2005). However, the use of wind towers may permit deeper buildings.

Vent opening design

In any design, the smallest opening area (the bottleneck) controls natural ventilation flow rate. Inlet and outlet openings should have as near equal dimensions as possible to maximize the airflow rate.

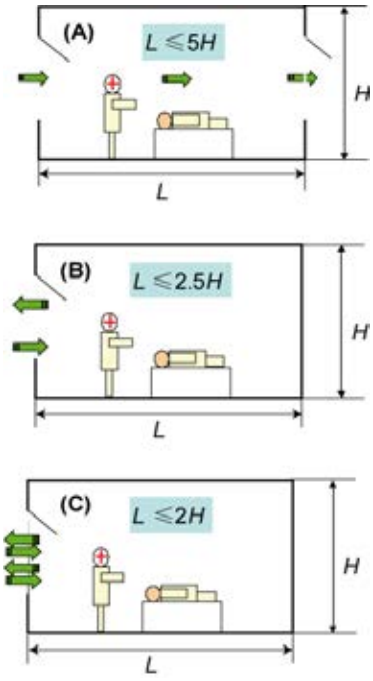
The position of openings needs to be considered with care, because of the possible conflict between cross and stack (or buoyancy) ventilation, human cooling or thermal mass cooling, etc.

Proper selection and design of openings such as windows, screens, louvres, solar chimneys, passive stacks, is also important. Proper sizing may be done using the vent sizing methods discussed earlier.

There are some other aspects to consider.

- *Furniture and internal portioning* — ventilation openings should not be blocked, and furniture layout and internal partitioning must not restrict the intended flow path and opening access.
- *Ward depth* — unlike mechanical ventilation, naturally ventilated buildings need to be narrow. The natural air currents may penetrate deeply into a building. The rules of thumb for the ward depth are available from CIBSE (2005) (see Figure 5.3).
- *Shading* — blinds, overhangs and projections (including deep window reveals) may be used. Self-shading by the building itself and remote shading (e.g. by another building or trees) may also work if properly considered. Retractable external blinds are desirable.
- *Daylight and glare control* — windows may be provided with a screen to avoid the direct sunlight. The shape and the position of the window openings are also important. The colour and the finishes of the surfaces must also be chosen properly for a comfortable level of lighting and glare control.

- *Heating and cold drafts* — during slightly cold weather, localized heating may be used to provide some thermal comfort. However, care should be taken if a greater indoor and outdoor air temperature difference is caused, because this can, in turn, increase the driving force. Natural ventilation may not be possible for ventilation control during very cold weather.
- *Cooling* — during hot and humid weather, local spot cooling or personalized cooling systems may be used (e.g. by using ceiling fans or desk fans).
- *Noise and acoustics* — external noise may be avoided by locating the windows and other ventilation openings away from the primary noise courses. Absorbent partitioning, ceiling banners, etc., may also be used to absorb noise.
- *Fire safety* — designing a building with openings that connect rooms may conflict with fire-safety and smoke-control requirements. Ventilation openings may need to be closed during a fine. Fortunately, naturally ventilated buildings can be designed to be in line with the compartmentalization requirements for smoke control. The fire escape route needs special attention, because natural ventilation design also has an impact on smoke flow pattern.
- *Security* — security risks may be created with opening windows, particularly on ground floors.



(A) Cross-ventilation. (B) Single-sided ventilation driven by buoyancy forces alone (i.e. stack (or buoyancy) ventilation, which is not effective for airborne infection control). (C) Single-sided ventilation (not effective for airborne infection control).

Figure 5.3 The rules of thumb for the depth of the ward for three different ventilation strategies

5.5 Types of natural ventilation systems

Natural ventilation systems are classified by their basic architectural design elements (corridors, courtyards, wind towers, chimneys, etc.). These building elements define the routes of airflow, as well as the basic natural ventilation strategy.

There are six basic types of natural ventilation systems:

- single-side corridor
- central corridor
- courtyard
- wind tower
- atrium and chimney
- hybrid (mixed-mode) ventilation.

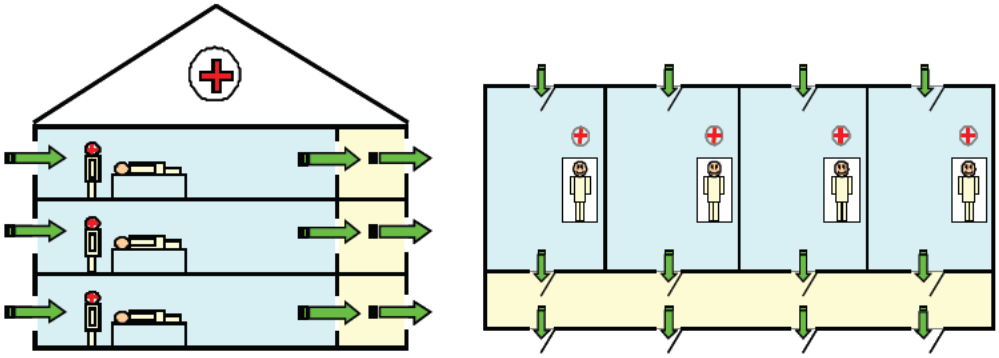
These systems are described in the following sections. It is possible to combine some of these systems to suit the local climate and particular hospital needs. Annexes F–I describe the natural ventilation systems used in four hospitals in different countries.

This guideline considers only simple natural ventilation systems, and designers will need to consider other aspects (e.g. control) when they are designing high-tech natural ventilation solutions.

5.5.1 Single-side corridor type

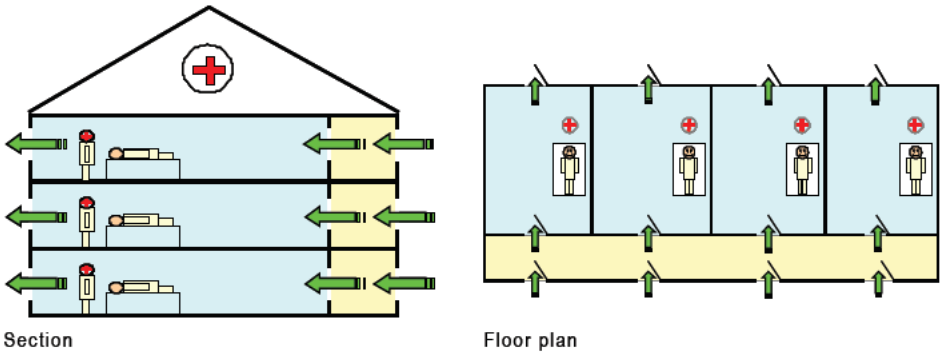
In the single-side corridor type of natural ventilation system, the corridor is on one side of the ward (see Figures 5.4 and 5.5). The airflow is a single directional flow either from the ward to the corridor or from the corridor to the ward, depending on the wind incident direction. This single directional flow can help to prevent cross-infection. The design of the windows is crucial for this type of design: it is better to position the windows in line with the ward door to create the path for cross-ventilation (Allard, 1998).

F Beer is credited with designing the first corridor hospital, where all the rooms were arranged alongside internal walkways. His hospital in Bern, built between 1718 and 1724, was the first of this type.



Note: This conceptual drawing should be used with care, and realistic limitations need to be considered.

Figure 5.4 Wind-driven natural ventilation in the single-side corridor type hospital with wind entering the ward



Note: This conceptual drawing should be used with care, and realistic limitations need to be considered.

Figure 5.5 Wind-driven natural ventilation in the single-side corridor type hospital with wind entering the corridor

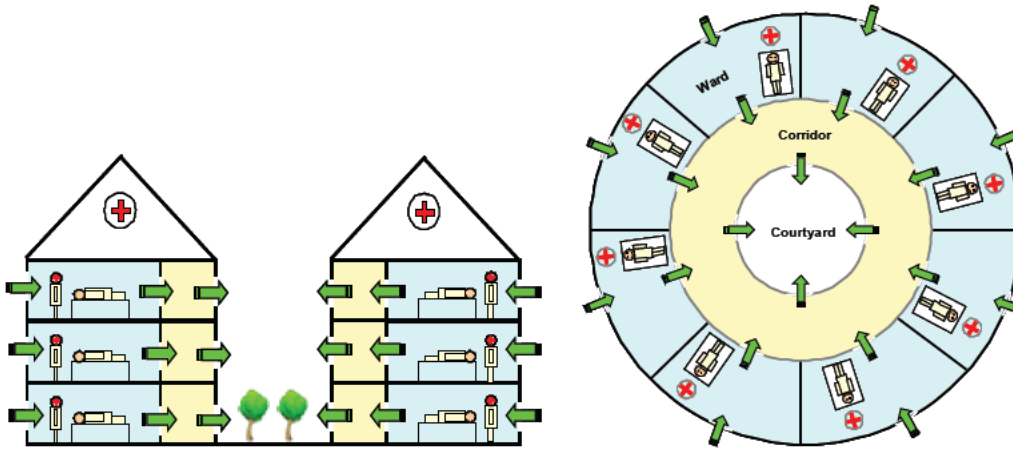
5.5.2 Central corridor type

The central corridor type of natural ventilation system is derived from the single-side corridor type by adding another series of wards on the other side of the corridor. The possible airflow path would be from one ward to the corridor, and then to the ward on the other side. When the wind is parallel to the windows, adding a wing wall helps to drive the outdoor air to enter the wards first, and exit from the central corridor. A central corridor type of floor layout would result in possibly contaminated air moving from the upstream ward to the downstream ward. At present, this guideline does not recommend this type of design.

5.5.3 Courtyard type

Courtyards are traditionally enclosed zones that can help to channel and direct the overall airflow and thus modify the microclimate around the buildings. Based on the relative position of wards and corridor to the courtyard, this type of natural ventilation system can be divided into the inner corridor and outer corridor subtypes (see Figures 5.6 and 5.7, respectively). This system can supply more ventilation than the others, as long as the courtyard is sufficiently large. The outer corridor type has an advantage over the inner type, because it can avoid cross-infection via connected corridors by delivering clean outdoor air into the corridor first.

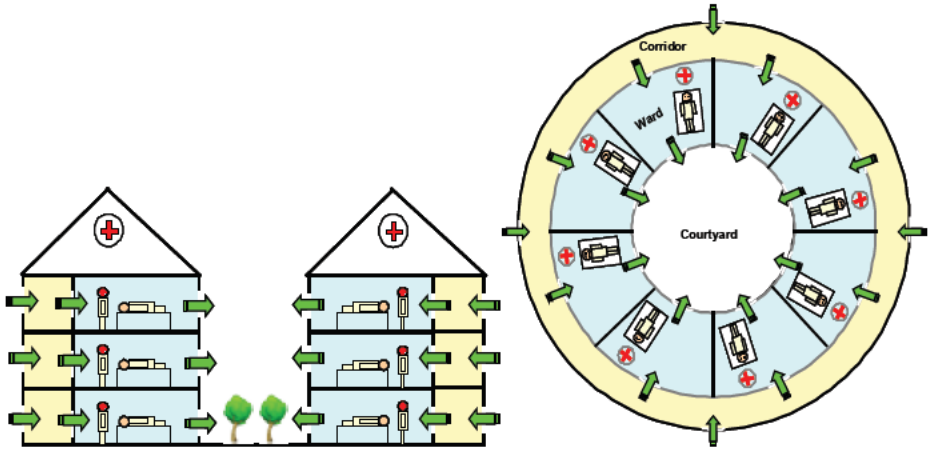
The first hospital of this type was Ospedale Maggiore, built in Milan in 1456, and designed by Antonio Averulino (better known as Filarete). The hospital is a symmetrical building with a large central courtyard; on both sides, the wings of the building delineate four smaller courtyards.



Section Floor plan

Note: This conceptual drawing should be used with care, and realistic limitations need to be considered.

Figure 5.6 Combined wind and buoyancy-driven natural ventilation in the courtyard type (inner corridor) hospital



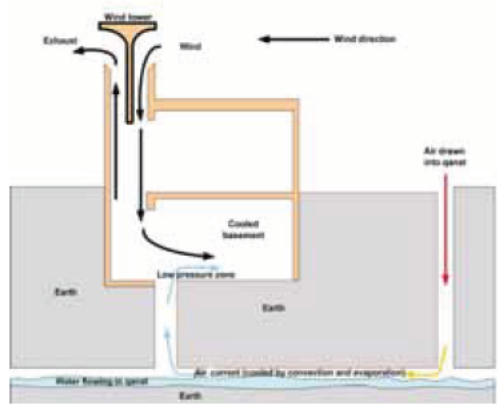
Section Floor plan

Note: This conceptual drawing should be used with care, and realistic limitations need to be considered.

Figure 5.7 Combined wind and buoyancy-driven natural ventilation in the courtyard type (outer corridor) hospital

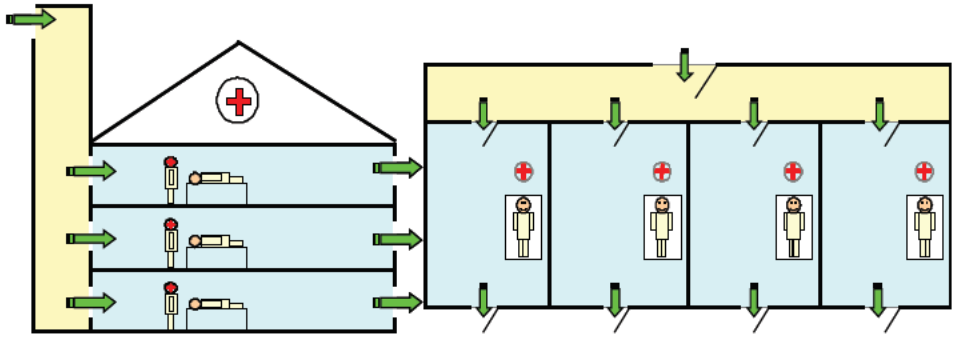
5.5.4 Wind tower type

A wind tower type of natural ventilation system can capture the wind at roof level and direct it down to the rest of the building (see Figures 5.8 and 5.9). Weatherproof louvres are installed to protect the interior of the building and volume control dampers are used to moderate flow. Stale air is extracted on the leeward side. The wind tower is normally divided into four quadrants, which can run the full length of the building and become air intakes or extractors depending on wind direction.



Note: This conceptual drawing should be used with care, and realistic limitations need to be considered.

Figure 5.8 Wind tower design



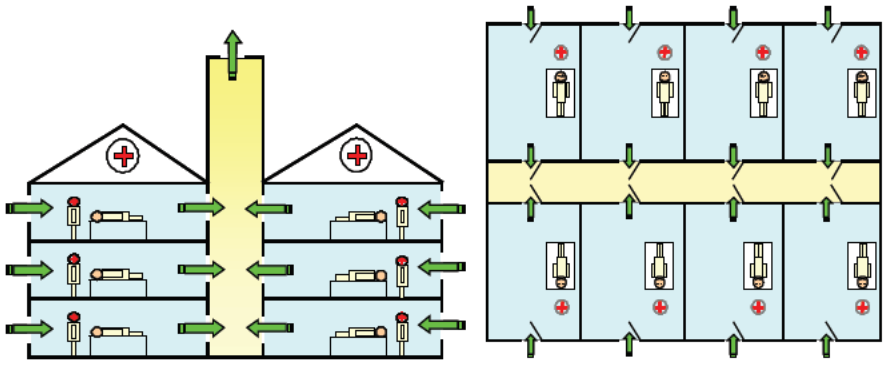
Section Floor plan

Note: This conceptual drawing should be used with care, and realistic limitations need to be considered.

Figure 5.9 Wind-driven natural ventilation in the wind tower type hospital

5.5.5 Atrium and chimney type

An atrium or chimney can help to increase the natural ventilation potential. An atrium or chimney type of natural ventilation system can be a side-atrium or chimney type, or a central atrium or chimney type, depending on the relative position of the wards, and the atrium or chimney (see Figure 5.10). Outdoor air is sucked into the wards through the windows by the stack (or buoyancy) effect. After diluting the contaminated air in the ward, the hot and polluted air converges in the atrium or chimney and discharges through the top openings. The applicability of this type of design will mainly rely on the height of the chimney, the indoor–outdoor temperature difference and its interaction with the background wind. This approach may be combined with motor-driven dampers and pressure sensors to control airflows and overcome some of the limitations of natural ventilation.



Section Floor plan

Note: This conceptual drawing should be used with care, and realistic limitations need to be considered.

Figure 5.10 Buoyancy-driven (including solar chimney) natural ventilation in the solar chimney type of hospital

5.5.6 Hybrid (mixed-mode) ventilation type

A limitation of natural ventilation is that it can sometimes depend too much on the outdoor climate. For example, if the outdoor wind speed is too small or the outdoor temperature is too high, the availability of natural ventilation will be reduced. To overcome this, hybrid (mixed-mode) ventilation can be used. In a simple hybrid (mixed-mode) ventilation system, mechanical and natural forces are combined in a two-mode system where the operating mode varies according to the season, and within individual days, reflecting the external environment and taking advantage of ambient conditions at any point of time.

The main hybrid (mixed-mode) ventilation principles are:

- switching between natural and mechanical ventilation
- fan-assisted natural ventilation
- concurrent use of natural and mechanical ventilation.

Each of the natural ventilation solutions discussed above (single-corridor, central corridor, courtyard, wind tower, and atrium and chimney) may be combined with mechanical fans to create a hybrid (mixed-mode) system. Of course, like all the systems that use natural or mechanical ventilation, design and control are critical.

5.6 Applicability of natural ventilation systems

Natural ventilation systems should be designed to take into account the local climate. There are four major climate types: hot and humid, hot and dry, moderate and cold.

Design of a natural ventilation system can also have one of three major objectives: to provide thermal comfort, to control airborne infection or indoor air quality, or to save energy.

When a ventilation type is evaluated against a climate type, both thermal comfort and infection control should be considered, but not energy-saving performance.

The performance is star-rated.

★	The performance in either thermal comfort or infection control is unsatisfactory. In terms of infection control, it means the magnitude of the ventilation rate.
★★	The performance is fair.
★★★	The performance is acceptable, but compromise may be needed in terms of thermal comfort.
★★★★	The performance is good in terms of both thermal comfort and airborne infection control.
★★★★★	The performance is very good (satisfactory) in terms of both thermal comfort and infection control.

Table 5.1 contains a comparison of the performance of different types of natural ventilation systems in the four major climate conditions.

Table 5.1 Potential applicability of natural ventilation solutions in ideal conditions (consensus of a WHO systematic review)

	Natural ventilation					Hybrid (mixed-mode) ventilation	Mechanical ventilation
			Courtyard				
Climate	Single-sided corridor	Stack (atrium/ chimney)	Outer corridor	Inner corridor	Wind tower		
Hot and humid	★★	★	★★	★★	★	★★★	★★★★
Hot and dry	★★★	★	★★★	★★★	★★★	★★★★	★★★★
Moderate	★★★	★★★	★★★	★★★	★★★	★★★★	★★★★
Cold	★	★★	★	★	★	★★	★★★★

Note: The actual achievement is not always up to the potential and care must be taken with all ventilation designs in the critical setting of health-care facilities with airborne infectious agents known or expected to be present.

5.7 Commissioning, operation and maintenance

The performance of a ventilation system depends crucially on design, operation and maintenance — collectively known as commissioning. These determine the performance and reliability of the ventilation system and are important whatever the level of technology used in the building's ventilation system. Proper construction and commissioning are needed to ensure the desired ventilation performance is achieved under different (climatic) circumstances, while proper operation and maintenance are needed to ensure the desired ventilation during the system's lifetime.

5.7.1 Commissioning

It is important that, even for a very low-tech system using grilles and vents, for example, the documentation describing the reasons for the design, how it works and how it should be maintained be handed over to the building manager or operator. For example, design and maintenance documentation describing why vents are of a certain size and in certain places will enhance the understanding of the system and help to ensure it is maintained properly.

The designers need to provide documentation to the personnel managing the building and its ventilation system:

- about the design strategy and expected operation of the natural or hybrid (mixed-mode) ventilation system;
- on the operation of the natural or hybrid (mixed-mode) system in day or night time, during different seasons, in extreme weather conditions, and when adapted for emergency conditions;
- for the patients and health-care workers explaining how the building works, is operated, and who has the right to open windows, etc;
- describing the operation and maintenance of the for the ventilation system, developed jointly with the commissioning personnel (i.e. an operating and maintenance manual); and
- explaining all the above (i.e. commissioning documentation).

It is desirable that the people using the system have the opportunity to provide feedback to the designers, however simple the system. Feedback and fine-tuning are essential to iron out potential problems in the system, and should continue for the first year of operation.

The commissioning process acts as a checking procedure to ensure that:

- the ventilation system is installed and operated as designed
- the system can be operated correctly and safely
- the system may be adjusted to satisfy the ventilation requirement at different climatic conditions
- ventilation rates under different weather conditions are appropriate.

This process should be maintained at least for the first year of operation.

5.7.2 Operation and maintenance

Operation and maintenance personnel should understand how the systems operate, and have some knowledge of infection control. Special attention is needed for the documentation and instructions for these personnel.

Operation personnel need training for the procedure to follow in special weather conditions, such as heavy rain, typhoons and heavy storms.

Patients are generally not permitted to operate the system unless instructed to do so (this includes opening windows).

Natural ventilation or hybrid (mixed-mode) ventilation usually has many distributed components, such as windows and fans. Detecting faults in these components can be time consuming.

It is crucial for any hospital designed for infection control to be reconsidered in terms of ventilation design when the occupancy patterns are changed.

Regular occupant surveys and checks will help to identify potential operational problems, as well as deal with complaints.

In naturally ventilated hospitals, the satisfaction of the patients and health-care workers may be improved if they understand how the system works.

5.8 Summary

Designing a naturally ventilated building for infection control follows three basic steps: selecting the desired airflow pattern, identifying the main driving forces, and sizing and locating openings. Although these steps are common to designing all such buildings, local conditions, such as the year-round climate and the impact this has on infection control, must also be taken into account.

At a more specific level, the main design elements of natural and hybrid (mixed-mode) ventilation systems are dictated by the specific components used. Aspects of different ventilation systems can be selected and combined as needed to suit the local climate and the requirements of each individual hospital.

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Annexes

Annex A Articles included in the systematic review on the association between ventilation and infection

The systematic review questions were defined by the World Health Organization Guideline Development Group, and the systematic review methodology was developed by the Technical Guideline Development Group and overseen by the External Steering Committee.

The systematic review was done by a team of research assistants (led by Prof Yuguo Li, University of Hong Kong), under the guidance of a librarian from the University of Hong Kong library. Search terms included keywords and medical subject headings (MeSH) relating to ventilation, infection and buildings. Databases searched included MEDLINE, EBM Reviews, ISI Web of Science, ScienceDirect, Engineering Village 2 and ISI ProceedingsSM. Google Scholar was also searched.

Set inclusion and exclusion criteria were used, and a review panel (comprising experts in medicine, health, engineering and architecture) oversaw the literature review process from the development of the search strategy to the critical appraisal of identified studies, data extraction and reporting. The External Steering Committee oversaw the final results and application of the results for the development of the guideline.

There were 13 661 articles searched using identified keywords as agreed in the systematic review protocol. Of these, 388 articles were retrieved and 65 were retained according to the inclusion and exclusion criteria, and distributed to a panel of sixteen experts from Europe, North America, Australia and Asia.

The 65 articles retrieved are listed below.

Anderson JD et al. Lack of nosocomial spread of Varicella in a pediatric hospital with negative pressure ventilated patient rooms. *Infection Control*, 1985, 6(3):120–121.

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Annex B Recommendation GRADE appraisal tables (GRADE system)

B.1 Explanation of the GRADE appraisal of recommendations

Several factors should be taken into account to appraise the strength of the recommendations, including the available scientific evidence, the balance of benefits versus harms and burdens, differences in values, and the balance of net benefits and costs.

The scientific evidence was assessed through the systematic review designed for the purpose of this guideline (see Annex A for details).

The overall ranking of the strength of the recommendations would consider each of the abovementioned factors as follows.

- The higher the quality of evidence, the more likely is a strong recommendation.
- The larger the difference between the desirable and undesirable consequences, the more likely is a strong recommendation warranted. The smaller the net benefit and the lower certainty for that benefit, the more likely is a weak recommendation warranted.
- The greater the variability in values and preferences, or uncertainty in values and preferences, the more likely is a weak recommendation warranted.
- The higher the costs of an intervention, that is, the more resources consumed, the less likely is a strong recommendation warranted.

B.1.1 Strong versus conditional recommendations

The definitions of strong and conditional recommendations are:

- **strong recommendation** — the panel is confident that the desirable effects of adherence to a recommendation outweigh the undesirable effects; and
- **conditional recommendation** — the panel concludes that the desirable effects of adherence to a recommendation probably outweigh the undesirable effects, but is not confident.

B.1.2 Implications of strong and conditional recommendations

The implications of a strong recommendation are:

- for patients — most people in your situation would want the recommended course of action and only a small proportion would not; request discussion if the intervention is not offered;
- for clinicians — most patients should receive the recommended course of action; and
- for policy makers — the recommendation can be adopted as a policy in most situations.

The implications of a conditional recommendation are:

- for patients — most people in your situation would want the recommended course of action, but many would not;
- for clinicians — you should recognize that different choices will be appropriate for different patients and that you must help each patient to arrive at a management decision consistent with his or her values and preferences; and
- for policy makers — policy making will require substantial debate and involvement of many stakeholders.

B.2 Recommendation appraisal tables

Recommendation 1:

To help prevent airborne infections, adequate ventilation in a health-care facility, in all patient-care areas, is necessary.

Population: Health-care settings

Intervention: Ventilation

Factor	Decision	Explanation
Quality of evidence	Moderate	There is moderate evidence available to suggest that insufficient ventilation is associated with an increased risk of infection (Gustafson et al., 1982; Bloch et al., 1985; Hutton et al., 1990; Calder et al., 1991).
Benefits or desired effects	Strong (benefits sometimes outweigh disadvantages)	Reduce the exposure to infectious droplet nuclei by patients and health-care workers. Improved indoor air quality for patients and health-care workers.
Disadvantages or undesired effects		There is a cost implication to install adequate ventilation in health-care facilities. Proper operation and maintenance procedures need to be followed.
Costs	May be low or high	Low cost is possible if simple natural ventilation is used and properly designed according to local climate. High initial cost is likely if full mechanical ventilation or high-tech natural ventilation or hybrid (mixed-mode) ventilation is used.
Feasibility	Conditional to climate	Mechanical ventilation and hybrid (mixed-mode) ventilation are feasible in all climates, but may be limited due to availability of resources. High-tech natural ventilation is feasible in most climates and if designed properly, simple natural ventilation is also feasible in resource-limited countries.
Overall ranking	**STRONG RECOMMENDATION**	
Research gap	There is a need to determine the ventilation rate requirements in health-care settings for infection control.	

Recommendation 2:

For natural ventilation, the following minimum hourly averaged ventilation rates should be provided:

- 160 l/s/patient (hourly average ventilation rate) for airborne precaution rooms (with a minimum of 80 l/s/patient) (note that this only applies to new health-care facilities and major renovations);
- 60 l/s/patient for general wards and outpatient departments; and
- 2.5 l/s/m^3 for corridors and other transient spaces without a fixed number of patients; however, when patient care is undertaken in corridors during emergency or other situations, the same ventilation rate requirements for airborne precaution rooms or general wards will apply.

The design must take into account fluctuations in ventilation rate.

When natural ventilation alone cannot satisfy the recommended ventilation requirements, alternative ventilation systems such as a hybrid (mixed-mode) natural ventilation system should be used, and then if that is not enough, mechanical ventilation should be used.

Population: Health-care settings

Intervention: Natural ventilation

Factor	Decision	Explanation
Quality of evidence	Low	There is no direct evidence available to suggest the direct impact of natural ventilation on disease transmission, though there is strong engineering evidence that natural ventilation can achieve a very high ventilation rate and it is suggested that a high ventilation rate can reduce airborne infection (Menzies et al., 2000).
Benefits or desired effects	Moderate (benefits sometimes outweigh disadvantages)	Suitable for mild or moderate climates. Lower capital, operational and maintenance costs. Capable of achieving very high ventilation rate. Large range of control of environment by occupants.
Disadvantages or undesired effects		Easily affected by outdoor climate. More difficult to predict, analyse and design to ensure airflow direction control. Reduces comfort level of occupants when hot, humid or cold. Inability to establish negative pressure in isolation areas, but may be provided by proper design; depends on situation.
Costs	May be low and high	Low cost if simple ventilation is used and properly designed with suitable climate. Can be higher if hybrid (mixed-mode) ventilation or high-tech natural ventilation is used.
Feasibility	Conditional to country settings	Natural ventilation is less feasible in extreme climates (extreme cold, hot, noisy, polluted).
Overall ranking	**CONDITIONAL RECOMMENDATION**	
Research gap	There is a need to determine the natural ventilation requirements in terms of variable ventilation rate and variable airflow direction for infection control in health-care settings.	

Recomendation 3:

When designing naturally ventilated health-care facilities, overall airflow should bring the air from the agent sources to areas where there is sufficient dilution, and preferably to the outdoors.

Population: Health-care settings

Intervention: Airflow control in natural ventilation

Factor	Decision	Explanation
Quality of evidence	Low	There is moderate evidence available to suggest that incorrect airflow direction is associated with an increased risk of infection (Gustafson et al., 1982; Bloch et al., 1985; Hutton et al., 1990; Calder et al., 1991).
Benefits or desired effects	Moderate (benefits sometimes outweigh	Possibly minimized transmission risks between rooms.
Disadvantages or undesired effects	disadvantages)	More challenging in design and operation of the natural ventilation systems.
Costs	May be low and high	Low cost if simple natural ventilation is used and properly designed with suitable climate. Can be higher if a hybrid (mixed-mode) ventilation system or high-tech natural ventilation is used or additional engineering measures are used to control airflow direction.
Feasibility	Conditional to design and control	Natural ventilation is less feasible in providing airflow control and requires careful engineering and architectural design.
Overall ranking	**CONDITIONAL RECOMMENDATION**	
Research gap	There is a need to study engineering and architectural methods for airflow control in naturally ventilated buildings.	

Recommendation 4:

For spaces where aerosol-generating procedures associated with pathogen transmission are conducted, the natural ventilation requirement should, as a minimum, follow Recommendation 2. Should the agent be airborne, Recommendations 2 and 3 should be followed.

Population: Health-care settings

Intervention: Room ventilation for spaces with aerosol-generating procedures

Factor	Decision	Explanation
Quality of evidence	Very low	There is indirect evidence available to show that aerosol-generating procedures are associated with an increased risk of infection and ventilation may play a role.
Benefits or desired effects	Moderate (benefits sometimes outweigh disadvantages)	Possibly reduced infection risk.
Disadvantages or undesired effects		Reduces comfort level of occupants when hot, humid, or cold.
Costs	May be low and high	Low cost if simple natural ventilation is used. Can be higher if a hybrid (mixed-mode) ventilation system or high-tech natural ventilation is used.
Feasibility	Conditional to country settings	Natural ventilation is less feasible in extreme climates (extreme cold, hot, noisy, polluted).
Overall ranking	**CONDITIONAL RECOMMENDATION**	
Research gap	There is a need to determine the minimum ventilation requirements for natural ventilation in terms of variable ventilation rate and airflow direction control for aerosol-generating procedures.	

Annex C Respiratory droplets

According to Wells (1955), the vehicle for airborne respiratory disease transmission is the droplet nuclei, which are the dried-out residual of droplets possibly containing infectious pathogens.

C.1 Droplet generation and sizes

The term “droplet”, as used in this context, consists mostly of water with various inclusions, depending on how it is generated.

Naturally produced droplets from humans (e.g. droplets produced by breathing, talking, sneezing, coughing) include various cells types (e.g. epithelial cells and cells of the immune system), physiological electrolytes contained in mucous and saliva (e.g. Na+, K+, Cl-), as well as, potentially, various infectious agents (e.g. bacteria, fungi and viruses).

With artificially generated droplets in a health-care setting (e.g. suction of respiratory tract), the main constituent will also be sterile water, with various electrolytes (e.g. “normal” or physiological saline, including Na+, Cl-) and often the molecules of a drug (e.g. salbutamol for asthmatics).

Both these naturally and artificially generated droplets are likely to vary in both size and content. Droplets >5 μm tend to remain trapped in the upper respiratory tract (oropharynx — nose and throat areas), whereas droplets ≤5 μm have the potential to be inhaled into the lower respiratory tract (the bronchi and alveoli in the lungs).

Currently, the term droplet is often taken to refer to droplets >5 μm in diameter that fall rapidly to the ground under gravity, and therefore are transmitted only over a limited distance (e.g. ≤1 m). In contrast, the term droplet nuclei refers to droplets ≤5 μm in diameter that can remain suspended in air for significant periods of time, allowing them to be transmitted over distances >1 m (Stetzenbach, Buttner & Cruz, 2004; Wong & Leung, 2004). Other studies suggest slightly different definitions, with ranges for “large” droplets, “small” droplets and droplet nuclei being >60 μm in diameter, ≤60 μm in diameter and <10 μm in diameter, respectively (Tang et al., 2006; Xie et al., 2007). The concept is that the naturally and artificially produced aerosols will contain a range of droplet sizes, whose motion will depend significantly on various environmental factors, such as gravity, the direction and strength of local airflows, temperature and relative humidity (which will affect both the size and mass of the droplet due to evaporation).

There have been several studies on the number and size of droplets of saliva and other secretions from respiratory activities (Jennison, 1942; Duguid, 1945; Hamburger & Roberston, 1946; Loudon & Roberts, 1967; Papineni & Rosenthal, 1997; Fennelly et al., 2004) and excellent reviews have been written (Nicas, Nazaroff & Hubbard, 2005; Morawska, 2006). These studies and reviews note that the size of droplet nuclei due to sneezing, coughing and talking is likely to be a function of the generation process and the environmental conditions. The actual size distribution of droplets also depends on

parameters, such as the exhaled air velocity, the viscosity of the fluid and the flow path (i.e. through the nose, the mouth or both) (Barker, Stevens & Bloomfield, 2001). There is also a great individual variability (Papineni & Rosenthal, 1997; Fennelly et al., 2004).

Humans can produce respiratory aerosols (droplets) by several means, including breathing, talking, coughing (Figure C.1, A), sneezing (Figure C.1, B) and even singing (Wong, 2003; Toth et al., 2004).

(A) (B)

Source: Photographs reproduced with the kind permissions of (A) Prof Gary S Settles, Department of Mechanical and Nuclear Engineering, Pennsylvania State University, PA, USA; and (B) Prof Andrew Davidhazy, School of Photographic Arts and Sciences, Rochester Institute of Technology Rochester, NY, USA, respectively.

Figure C.1 (A) Schlieren image (visualization using light refraction caused by differences in air density) of a human cough, and (B) flash photo of a human sneeze

There is a natural physiological variation in the volume and composition of such aerosols generated between individuals and even within the same individual during any of these activities. An infection is likely to increase this variability, which itself may vary as the host immune system starts responding to the infection over time. For example, a patient with chickenpox will have no specific antibodies to the virus at the beginning of the infection, making the viral load much higher and thus potentially more transmissible during the acute, febrile, coughing, prodromal phase of the infection than later, when the specific antibody response starts to develop.

Relatively few studies have characterized the number, size and content of droplets generated by either natural or artificial means. Also, because of individual variation, studies on naturally generated droplets may be of limited use, and will not necessarily be relevant to so-called “super-spreaders” — infected individuals who manage to infect many others, generating many more secondary cases than is expected on average. This may be due to a number of reasons, including a poor host immune response to controlling the infection, concomitant diseases or other respiratory infections that increase the degree of shedding of the infectious agent, and environmental factors favourable to the survival of such agents (Bassetti, Bischoff & Sherertz, 2005).

Published data have suggested that sneezing may produce as many as 40 000 droplets between 0.5–12 μm in diameter (Cole & Cook, 1998; Tang et al., 2006) that may be expelled at speeds up to 100 m/s (Wells, 1955; Cole & Cook, 1998), whereas coughing may produce up to 3000 droplet nuclei, about the same number as talking for five minutes (Cole & Cook, 1998; Fitzgerald & Haas, 2005; Tang et al., 2006). Despite the variety in size, large droplets comprise most of the total volume of expelled respiratory droplets. Further data on the behaviour of droplet dispersion in naturally generated aerosols are needed.

Infectious aerosols are generated when they come into contact and mix with exhaled air that may carry infectious agents from patients' respiratory tracts. Several medical procedures generate aerosols, and some of these procedures may be associated with an increased risk of pathogen transmission. However, many of the most recent studies of these procedures have significant methodological flaws that preclude the use of their conclusions to draw recommendations. Overall, the risk associated with many of the aerosol-generating procedures is not yet well defined, and understanding the aerobiology of the aerosol-generating procedures may change with further studies. For the purpose of this guideline, the term aerosol-generating procedure associated with a documented increase in risk of pathogen transmission refers to the performance of the following procedures in acute respiratory disease patients:

- intubation and related procedures (e.g. manual ventilation, suctioning)
- cardiopulmonary resuscitation
- bronchoscopy
- surgery and autopsy.

C.2 Droplet evaporation

In the classic study of airborne transmission, Wells (1934) was able to identify the difference between disease transmission via large droplets and by airborne routes. Wells found that, under normal air conditions, droplets smaller than 100 μm in diameter would completely dry out before falling approximately 2 m to the ground. This finding allowed the establishment of the theory of droplets and droplet nuclei transmission depending on the size of the infected droplet. The Wells evaporation-falling curve of droplets (see Figure C.2) is important in understanding airborne transmission and transmission by large droplets. Wells' study also demonstrated that droplets could transform into droplet nuclei by evaporation.

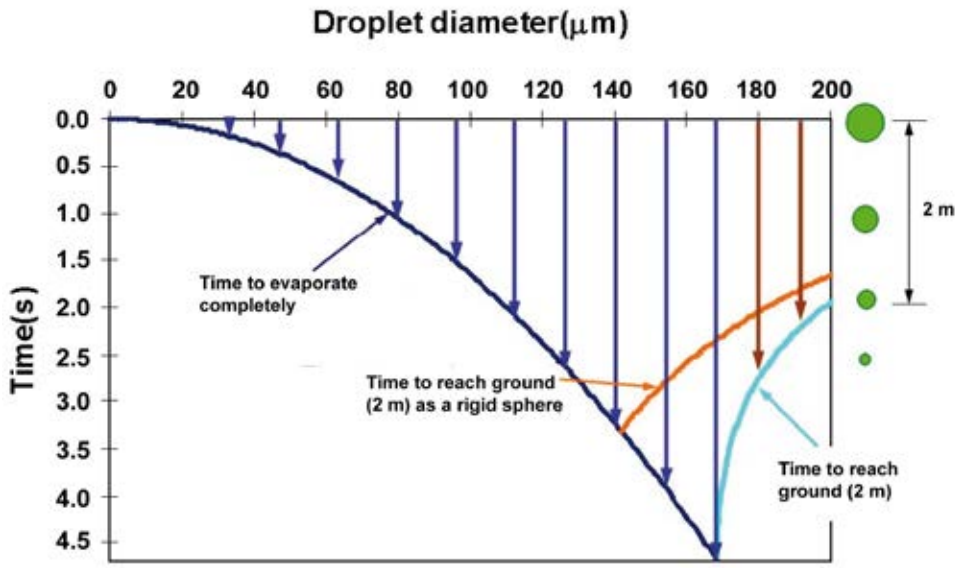
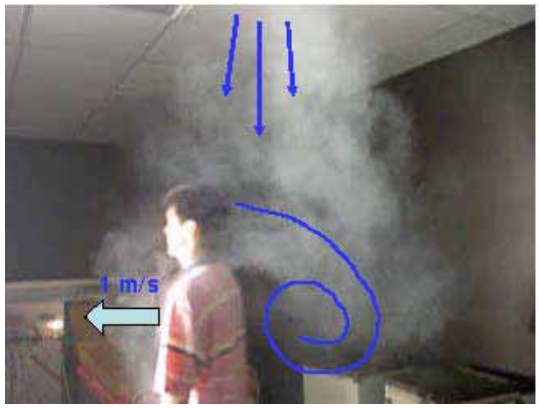


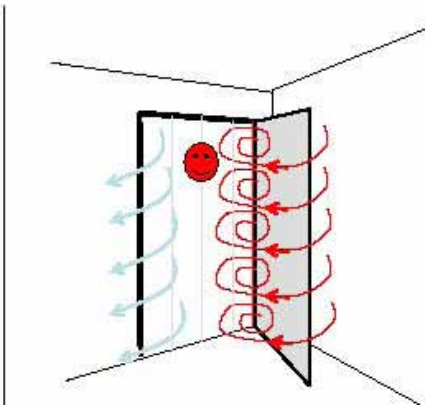
Figure C.2 The Wells evaporation-falling curve of droplets

C.3 Movement of air

Droplet nuclei floating on the air may be carried by the movement of air. Entrainment of air into neighbouring airspaces may occur during the most innocuous daily activities; for example, as a result of people walking, or the opening of a door between a room and the adjacent corridor or space (Hayden et al., 1998; Edge, Paterson & Settles, 2005; Tang et al., 2005, 2006). In addition, the air temperature (and therefore air density) differences across an open doorway will also cause air exchange to occur between the two areas, providing a second mechanism to allow air into other areas (Tang et al., 2005, 2006) (see Figure C.3).



(A)



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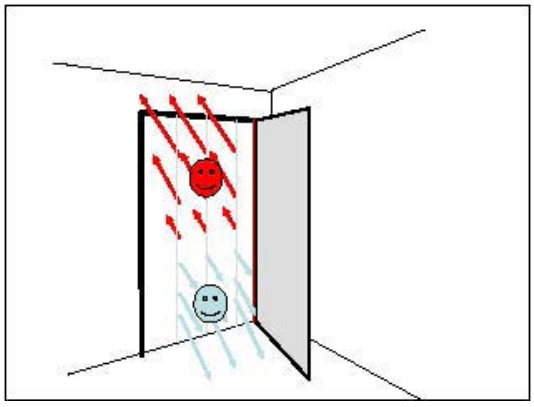


(C)

(A) Demonstration of how a walking person may entrain air into their wake (Tang et al., 2006). (B) Demonstration of how opening a door may transport air from inside an isolation room to the outside, during the door-opening motion itself (Tang et al., 2005). (C) Demonstration of how an open door can allow air of different temperatures and densities to mix and exchange (Tang et al. 2005).

Figure C.3 Patterns of air exchange during daily activities

Even a patient simply sitting in or beside the bed will create air temperature differences from their body heat. A higher air temperature directly above the patient's head (or body, if lying down) will create convective air currents that may entrain potentially infectious air from neighbouring spaces into the higher temperature column rising air above the patient (Craven & Settles, 2006). Patients lying in bed, breathing or sleeping, may produce exhaled airflows that can reach the airspace of a patient in the neighbouring bed, and even further in the presence of certain types of ventilation systems (see below) (Qian et al., 2006). In the same way, other mechanical devices, including fans, televisions and medical equipment, may also disturb nearby airflows and disseminate air from nearby patients to the rest of the ward.

Annex D Basic concept of ventilation flow rate

The ventilation flow rate can be referred to as either an absolute ventilation flow rate in l/s or m^3/s, or an air-change rate relative to the volume of the space. In this guideline, the ventilation rate is referred to as the absolute amount of inflow air per unit time (litre per second or l/s, cubic meter per hour or m^3/hr) and the air-change rate as the relative amount of inflow air per unit time. For example, in an airborne infection isolation room, we need a 12 ACH air-change rate (CDC, 2005), while in an office, we need a 10 l/s per person ventilation rate.

The relationship between ventilation rate in l/s and air-change rate is:

Air-change rate = [ventilation rate (l/s) × 3600 (s/hr)] × 0.001 (m^3/s)]/[room volume (m^3)] (C.1)

or,

Ventilation rate (l/s) = air-change rate × room volume (m^3) × 1000 (l/m^3)/3600 (s/hr) (C.2)

The effect of ventilation rate on indoor air quality may be seen from its impact on the airborne pollutant concentration through examining the simple macroscopic governing equation of ventilation in a single room.

Consider a fully mixed room — meaning that the pollutant concentration is the same everywhere in the room. When there is a pollutant source in the room, the governing equation for the concentration can be written as:

$$V\frac{dc}{dt} = q\left(c_o - c\right) + \dot{V}_{pol} \quad \text{(C.3)}$$

where:

V = volume of space (m^3)
c = concentration (% or kg/m^3)
q = ventilation rate (m^3/s)
c_o = supply air concentration (% or kg/m^3)
dc = change in concentration
dt = change in time

$\dot{V}_{pol}$ = pollutant generation rate in the room (m^3/s or kg/s).

Equation (C.3) is called the equation of ventilation, which shows the basic relationship between concentration, ventilation rate, initial indoor concentration, outdoor concentration and the pollutant generation rate. The general solution for equation (C.3) can be written as follows

$$c = (c_o + c_G)\left(1 - e^{-nt}\right) + c_I e^{-nt} \tag{C.4}$$

where:

$c_G = \dfrac{\dot{V}_{pol}}{q}$ = source concentration

cI = initial concentration at time *t* = 0
n = air-change rate.

On the right-hand side of the solution (C.4), there are two parts. The first part shows how the concentration approaches its steady-state solution, and the second part shows how the initial concentration decays with time. When the time is sufficiently large, the second part will diminish while the pollutant concentration approaches the steady-state solution

$$c = c_o + \frac{\dot{V}_{pol}}{q} \tag{C.5}$$

The difference between the ventilation rate and air-change rate can be seen from the solutions (C.4) and (C.5). In (C.5), the steady-state concentration of a pollutant is determined by the pollutant generation rate and the ventilation rate (absolute ventilation flow rate), but not the air-change rate. Therefore, for the purpose of controlling long-term exposure to pollutants, we should specify the ventilation rate, not the air-change rate.
In (B.4), assuming we consider the situation of concentration decay without a constant pollutant source (the first term = 0), the decay rate is governed by the air-change rate, not the ventilation rate. Therefore, for the purpose of reducing the pollutant concentration in a short time after a sudden release of a pollutant, the air-change rate is the most appropriate.

The above solution (C.5) can be re-written as the following relationship for the indoor and outdoor concentration of gaseous pollutants

$$\text{Indoor concentration} = \text{Outdoor concentration} + \frac{\text{Pollutant generation rate}}{\text{Ventilation flow rate}} \tag{C.6}$$

This is a useful relationship. We can easily find that:

- the higher the outdoor concentration, the higher the indoor concentration
- the higher the ventilation rate, the lower the indoor concentration
- the higher the generation rate, the higher the indoor concentration.

Equation (C.6) is derived from a simplified steady-state equation that ignores various removal processes, such as deposition on surfaces, transformation by collision with other particles, chemical processes and decay or loss of viability of organisms.

Ventilation systems can be classified according to:

- their driving forces — natural ventilation including infiltration, mechanical ventilation and hybrid (mixed-mode) ventilation;
- supply or exhaust — supply only mechanical ventilation, exhaust-only ventilation, balanced mechanical ventilation;
- integration with air-conditioning systems — fan coil and induction systems, constant air volume systems, variable air volume systems, single air duct systems, dual air duct systems; and
- air distribution strategies — mixing ventilation and displacement ventilation.

Annex E Rationale for determining the minimum ventilation rate requirements

The rationale for determining the minimum ventilation rate requirements is based on two main aspects.

First, we consider the effect of air-change rate on decay of droplet nuclei concentration. Table E.1 shows the calculated pollutant concentration decay with different ventilation rates in fully mixed isolation rooms, assuming the pollutant concentration in outdoor air is 0 and there is no source in the enclosed space according to the simple concentration decay equation. The table shows that there is 7-fold dilution within 10 minutes at 12 air changes per hour (ACH), 20-fold dilution within 10 minutes at 18 ACH and 54-fold dilution within 10 minutes at 24 ACH.

Table E.1 Decay of droplet nuclei concentration in an isolation room for different ventilation rates and duration of time

Time (minutes)	Ventilation rate (ACH) (%)			
	6	12	18	24
0	100.00	100.00	100.00	100.00
10	37.00	13.50	4.98	1.83
20	13.50	1.83	0.25	0.03
50	0.67	0.00	0.00	0.00
60	0.25	0.00	0.00	0.00

ACH, air changes per hour.

Second, we use mathematical modelling of infection risk using the Wells–Riley equation to estimate the effect of ventilation rate on infection probability for known airborne diseases. The Wells–Riley equation was developed for predicting the probability of airborne disease transmission.

We can calculate the infection risk in an enclosed room with different ventilation rates and quanta generations. The calculated results are shown in Table E.2 when we assume one infector entering an enclosed room with a dimension of 6 m × 6.7 m × 2.7 m over a period of one hour. The cross-infection risk of airborne-transmitted diseases decreases when the ventilation rate increases, especially for the low quanta-generation rate, while the actual reported average quanta-generation rate of different airborne diseases is low.

The benefits of using higher ventilation rates are also obvious. In clinical situations, where droplet nuclei are an important mode of disease transmission, the average quanta production rates in clinical patients not undergoing aerosol-generating procedures is usually <1 quanta/minute, and between 4–6 quanta/minute for bronchoscopy. With a quanta production rate of 10 quanta/minute, the estimated risk of infection with 15 minutes of exposure in a room with 12 ACH is 4%, and with 24 ACH is 2%, which illustrates the importance of adequate ventilation.

Table E.2 Infection risk with 15 minutes exposure with different ventilation rates and quanta generation for an infector entering an enclosed space with a dimension 6 m × 6.7 m × 2.7 m

Quanta generation (quanta/min)	Ventilation rate (air changes per hour) (%)							
	1	3	6	12	15	18	24	30
1	0.05	0.02	0.01	0.00	0.00	0.00	0.00	0.00
2	0.10	0.03	0.02	0.01	0.01	0.01	0.00	0.00
3	0.14	0.05	0.03	0.01	0.01	0.01	0.01	0.01
4	0.19	0.07	0.03	0.01	0.01	0.01	0.01	0.01
5	0.23	0.08	0.04	0.02	0.02	0.01	0.01	0.01
6	0.27	0.10	0.05	0.03	0.02	0.02	0.01	0.01
7	0.30	0.11	0.06	0.03	0.02	0.02	0.01	0.01
8	0.34	0.13	0.07	0.03	0.03	0.02	0.02	0.01
9	0.37	0.14	0.07	0.04	0.03	0.03	0.02	0.02
10	0.40	0.16	0.08	0.04	0.03	0.03	0.02	0.02
11	0.43	0.17	0.09	0.05	0.04	0.03	0.02	0.02
12	0.46	0.19	0.10	0.05	0.04	0.03	0.03	0.02
13	0.49	0.20	0.11	0.05	0.04	0.04	0.03	0.02
14	0.51	0.21	0.11	0.06	0.05	0.04	0.03	0.02
15	0.54	0.23	0.12	0.06	0.05	0.04	0.03	0.03
16	0.56	0.24	0.13	0.07	0.05	0.04	0.03	0.03
17	0.58	0.25	0.14	0.07	0.06	0.05	0.04	0.03
18	0.61	0.27	0.14	0.07	0.06	0.05	0.04	0.03
19	0.63	0.28	0.15	0.08	0.06	0.05	0.04	0.03
20	0.64	0.29	0.16	0.08	0.07	0.06	0.04	0.04

Annex F Natural ventilation example I: Hospital Nacional Dos de Mayo, Lima, Peru

Note: Inclusion of the example hospitals in Annexes F–I does not necessarily mean that this guideline considers the hospitals' designs to be effective. The examples are included because elements of their construction are of interest when considering design that improves natural ventilation. For an effective natural ventilation design, ventilation rates should be measured over one year, under variable climate and operating conditions. This has not been done in any of the examples included in these annexes.

F.1 Description and history of the hospital

Hospital Nacional Dos de Mayo is a government general hospital in Lima, Peru. It was founded in 1538, and was Peru's first hospital. In 1875, the hospital was moved to its current location in Barrios Altos, near the historic centre of Lima. The hospital has 646 beds, and offers services in all the major medical and surgical specialities, in addition to paediatrics and obstetrics. There are approximately 14 500 inpatients attended annually, 240 000 outpatient consultations and 50 000 patients seen in the emergency department. The hospital has 248 doctors and 912 other health-care workers. The hospital has a nationally renowned infectious diseases and tropical medicine service. The respiratory department inpatient wards are located upstairs above this service, and include beds for multidrug-resistant tuberculosis (TB). These buildings for infectious disease and tropical medicine were built in the 1950s at the northern end of the hospital, specifically for the isolation of TB patients, following many of the design principles of European TB sanatoria (see Figure F.1).

(A) The Hospital Nacional Dos de Mayo. (B) View of the building housing the infectious disease service

Figure F.1 Hospital Nacional Dos de Mayo

F.2 Principal architectural styles in the hospital

Many of the buildings that form the current hospital date from its inauguration in 1875, and exhibit the characteristics of Spanish colonial architecture. These include high ceilings (generally 4.2 m or higher), large windows, and skylights for light and ventilation. The general medical and surgical wards — large 'Nightingale' wards of 40 beds — are situated around a central garden where patients and staff can relax outside. The building housing the infectious diseases and respiratory wards, named Santa Rosa after the patron saint of Lima, is a two-storey building with high ceilings, large windows and balconies for TB patients to take the air (see Figure F.2). Part of the ground floor has been converted into mechanically ventilated negative-pressure isolation rooms for TB-HIV patients.

Substantial additions were made to the hospital in 1971 using modern building design and construction. These additions include the emergency department, paediatric and surgical departments, and laboratory and X-ray services. These buildings generally have small windows and low ceilings (approximately 2.9 m high).

F.3 Natural ventilation in wards built pre-1950

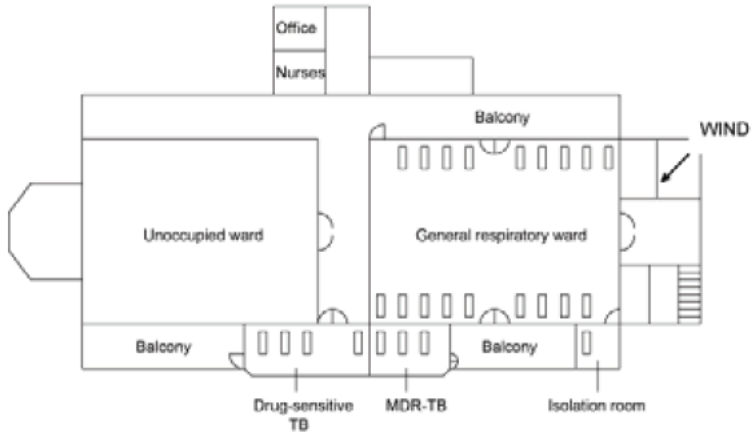
Ventilation was measured using a carbon dioxide tracer gas technique. The air changes per hour (ACH) quoted in Table F.1 are for the configuration of all windows and doors open, unless otherwise stated.

The respiratory wards are located on the first floor, well exposed to prevailing winds. Lima is situated on the coast, and winds come from the south-west off the Pacific Ocean. The general respiratory ward has 18 widely spaced beds, and room area of 166 m^2. The room has excellent cross-ventilation, with windows on the two long walls, and has four double doors.

Table F.1 Ward data and measured air changes per hour

Parameters	General respiratory ward	Drug-susceptible TB ward	MDR-TB ward	Isolation room	Procedures room
Floor area (m^2)	166	51	35	11.7	23
Ceiling height (m)	4.2	4.2	4.2	4.2	4.2
Total window area (m^2)	32.3	32.3	18.4	3.0	20.3
Openable window area (m^2)	12.5	22.0	12.3	3.0	19.6
Area of doors (m^2)	16.6 (n = 4)	9.2 (n = 2)	3.8 (n = 1)	2.0 (n = 1)	3.7
Mean ACH	25 (n = 26)	29 (n = 15)	33 (n = 42)	49 (n = 7)	51 (n = 7)

ACH, air changes per hour; MDR, multidrug resistant; TB, tuberculosis.
Note: The climatic conditions at the time of the measurement of ventilation rate were not available; therefore, the measured air change rates here are only indicative and short-term "snapshots". The accuracy of the measured ACH is not known.



(A) Floor plan of the respiratory wards

(B) General respiratory ward

(C) Drug-susceptible TB ward

(D) MDR-TB ward

(E) Location of the MDR-TB ward

MDR, multidrug resistant.

Figure F.2 Floor plan and photos of different wards in Hospital Nacional Dos de Mayo

The drug-susceptible TB ward has four beds, and is well ventilated due to the high ratio of window or door area to room volume, despite the ward being on the side of the building that is protected from prevailing winds. The façade of this room is seen on the first floor in Figure F.1.

The multidrug-resistant TB ward is adjacent to the drug-susceptible TB ward. Although still on the lee side of the building, it has better exposure to the prevailing winds. This ward has three beds for multidrug-resistant TB patients. Smoke testing consistently demonstrated airflow in through the door and out through the windows.

The isolation room is located off the main general respiratory ward (see Figure F.2, A). The door connects with the general respiratory ward, and three windows open to the outside. With the door closed, mean 23 ACH were measured with the three windows fully open ($n = 3$). Opening the door as well permitted cross-ventilation, and mean 49 ACH ($n = 7$) were measured. Smoke testing consistently demonstrated direction of airflow from the main ward, into the isolation room, and out the windows.

The procedures room (not shown) is currently disused owing to structural damage to this wing of the building. It is hexagonal in shape and has large windows on five sides, and large doors on the remaining wall for cross-ventilation. The room is also situated on the side of the building sheltered from the wind. Multiple measurements of ventilation were made with increasing numbers of windows and/or doors open.

F.4 Improvements to natural ventilation made through simple modifications

An example is given here to improve natural ventilation in a general outpatient waiting room (see Figure F.3). To measure the impact of the interventions, ACH were measured first in the original configuration (skylight re-sealed with plastic sheeting, removed panes of glass covered with plastic sheeting), following which the plastic sheeting was removed to measure ACH in the new configuration.

(A) (B)

(A) Photo of the general outpatient waiting room. (B) The ventilation rate increased from a mean of 6.5 ACH to 15 ACH with the opening of skylights in the general outpatient waiting room.

Figure F.3 Improving natural ventilation in the outpatient waiting room of the Hospital Nacional Dos de Mayo

The waiting area for general outpatients (including most medical specialties, surgery and psychiatry) is located in the large hall shown in the photograph. The consulting rooms lead off from both sides of this waiting hall. A front entrance leads out to the street, and doors at either end lead to other parts of the hospital, as seen in Figure F.4. Up to 300 patients share this room during consulting hours in the mornings and afternoons.

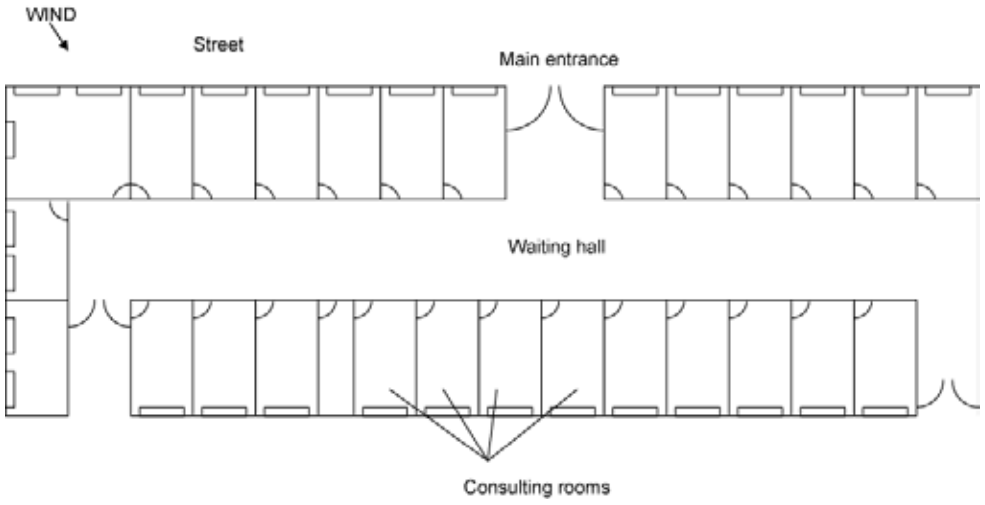


Figure F.4 Floor plan showing the waiting hall and consulting rooms

The roof of the outpatient waiting room originally had four sealed glass sections, two measuring 14 m × 2.4 m, the other two measuring 5 m × 2.4 m. These were raised on one-metre stilts to allow air to enter the waiting room through the roof. Ventilation was considerably improved with this simple intervention that cost approximately US$1000. Ventilation was originally a mean of 5.5 ACH with windows and doors open, which increased to a mean of 15 ACH with the opening of the skylights ($n = 4$).

Readers are reminded that the purpose of these examples is to provide case studies of naturally ventilated hospitals for infection control. Some of the infection-control design features in these examples (e.g. multi-bed wards, lack of alcohol-based hand sanitizers in the photos) mean that these examples may not be ideal.

Annex G Natural ventilation example II: Grantham Hospital, Hong Kong SAR, China

G.1 Description and history of the hospital

The tuberculosis (TB) wards in the Grantham Hospital are located on the seventh floor. Natural ventilation has been used in the TB wards since the hospital was built in 1957, and no central air-conditioning systems have been installed, although ceiling fans are used in summer (see Figures G.1 and G.2). The windows and doors are kept open all the time. The following is a description of the hospital in 1957:

> In designing a tuberculosis hospital airiness and spaciousness are a prime necessity, and it is for this reason that the main hospital building takes the form of a thin vertical slab and is kept well away from the administration building, so that there will be the maximum of through ventilation. It is oriented to catch the summer breezes, while being sheltered by the hills to the north from the cold winds in winter. It faces just east of south to give better shelter from the summer sun.

Figure G.1 Open wards and windows in the tuberculosis ward in Grantham Hospital

Figure G.2 A ceiling fan for summer cooling and a radiator for winter heating

G.2 Measuring natural ventilation rates

Two measurements of natural ventilation rates were taken on 9–10 November 2005 and 28 August 2008. During each measurement, four TB wards were vacated and simple thermal manikins were moved in to simulate thermal buoyancy flows of the inpatients. The heat generation of each thermal manikin was about 76 watts (W) corresponding to an adult at rest.

The decay method was used to measure the air-change rate. A tracer gas, sulfur hexafluoride (SF_6), was injected continually into the ward until its concentration become steady, then injection was stopped and the concentration decay measured. Two electrical fans were used to mix the air in the ward during the measurement. The injection of SF_6 was controlled by multi-gas sampler and doser type 1303 and the concentration of SF_6 was measured by the single-gas monitor 3425. Due to the difficulties in ensuring good mixing in the test room, the tracer gas decay was measured at two points in the room for each measurement, allowing two ventilation rates to be obtained. The ventilation rate for the ward is reported as the mean value.

G.3 Measured ventilation rates

Ventilation rates were measured in different situations, including when doors and windows were closed or open, and when the exhaust fans were turned on or off. In total, 20 tests were taken (see Table G.1, below).

The measured ventilation rate increased as the opening area of windows and doors increased. The mean measured ventilation rate was highest when all openings were fully open. When all openings were closed in the ward, the measured ventilation rate due to infiltration was only 0.71 in Test 15. When the openings connected to the corridor were fully open, the window to the outdoor was closed and exhaust fans were off, the ventilation rate was 8.7 air changes per hour (ACH) (Test 14).

The occurrence of a high ventilation rate depends on wind direction, wind speed and whether the two ventilation openings align with the prevailing wind direction. This explains the difference in measured ventilation rates in Tests 4 and 17 in the same ward; see Figure G.3. Figure G.3 shows the measured temperature, wind speed and direction from Hong Kong observatory during tests. Test 4 was done at 15:19 to 15:30 on 9 November 2005, when the wind speed and wind direction were 3.6 m/s and 150° respectively at 15:00, and 2.4 m/s and 170° respectively at 16:00. Test 17 was done at 17:42 to 18:04 on 28 August 2006, when the wind speed and direction were 4.1 m/s and 100° respectively at 17:00, and 4.8 m/s and 90° at 18:00. Despite the much higher wind speed during Test 17 compared with Test 4, the measured ventilation rate of Test 17 (18.5 ACH) was much lower than that of Test 4 (42.2 ACH). This was because of the wind direction. The angle between the wind direction and the tables and windows of Test 17 were less than 10°, while the angle of Test 4 was almost 75°. The effective wind speed flow to the windows was $3.0 \times \sin(75°) = 2.9$ m/s for Test 4, while the effective wind speed was less than $4.5 \times \sin(10°) = 0.78$ m/s. The results indicate the significance of wind speed and wind direction to the ventilation rate.

Table G.1 Measured ventilation rates in tuberculosis wards

Test	Date	Ward	Windows /doors to outdoor (% open)	Door to corridor (% open)	Fan	Room type	ACH
1[a]	9 Nov	Cubicle 7;	100	100	off	2 beds	30.3
2	2005	6/F	100	closed	off	2 beds	17.6
3			50	closed	off	2 beds	14.6
4		Cubicle 4;	100	100	off	2 beds	42.2
5		6/F	100	closed	off	2 beds	15.4
6			50	closed	off	2 beds	10.7
7			100	closed	on	2 beds	22.5
8[b]	10 Nov	Cubicle 0;	100	100	off	2 beds	60.2
9	2005	2/F	100	closed	off	2 beds	16.0
10			50	closed	off	2 beds	12.9
11[b]		Cubicle 7;	100	100	off	5 beds	69.0
12		2/F	100	closed	off	5 beds	31.6
13			50	closed	off	5 beds	23.5
14			closed	100	off	5 beds	8.70
15	28 Aug	Cubicle 4;	closed	closed	off	2 beds	0.71
16	2006	6/F	100	100	off	2 beds	14.0
17			100	100	off	2 beds	18.5
18			closed	closed	on	2 beds	12.6
19			100	100	on	2 beds	14.6
20			100	100	on	2 beds	29.2

ACH, air changes per hour.

[a] The window air-conditioner was on in the ward during the experiment.

[b] Tests 8 and 11: the ventilation rates were so high that the sampled data were inadequate.

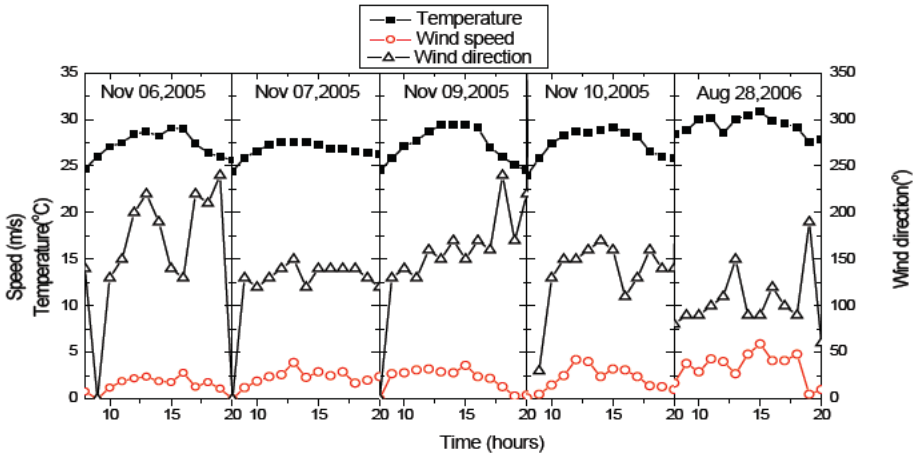


Figure G.3 Ambient air temperature, wind speed and wind direction measured by the Hong Kong Observatory at Wong Chuk Hang weather station, close to the Grantham Hospital

The results show that it is important to recognize the large dependence of ventilation rate and flow direction on wind speed and direction. Building designers should identify the dominant or average conditions and create a design to address them. This guideline is intended to be used in a wide range of climates and under a wide range of economic circumstances, as well as in an unlimited range of sites with varying topographic characteristics and other variable conditions. It is important that building designers, facility managers and people who control the openings into and out of critical spaces, potentially containing infectious agents, take these parameters into account.

Annex H Natural ventilation example III: Tuberculosis Control Unit, Tan Tock Seng Hospital, Singapore

The Tuberculosis Control Unit (TBCU) outpatient services comprise the Diagnostic Clinic where TB patients are evaluated and treated, and the Contact Clinic where TB contacts are screened and managed. The 20-bed TBCU ward (see Figure H.1) houses inpatients who are mostly long stayers with poor social or family support, and those under legal order for inpatient directly observed therapy. The ward is staffed by two to four nurses, and one health-care attendant per rotating shift (three shifts in 24 hours). The medical and nursing staff do not normally wear masks in the ward.

Figure H.1 **Two views of the single-storey tuberculosis inpatient ward; the perimeters are free from obstruction, allowing natural ventilation throughout the year**

The building has a long, sloping roof that overhangs the windows on each side; these windows are slatted and kept open. There are multiple axes for wind-driven airflow to ventilate the ward naturally. There are also numerous ceiling fans for cooling. The male and female patient areas are separate, with the health-care workers workstation located in between (see Figure H.2).

At any time, the ward has an occupancy rate of about 80%. The beds are spaced approximately 1.35 m apart, but patients are free to walk around the ward and to sit outside where there is a large, covered entrance area. The staff office area (not shown) is situated at the far end of the ward, opposite the main entrance and is separated from the main ward by incomplete partitions rather than doors. The back door can be opened to assist the flow of air along the length of the ward, and the slatted glass windows allow a cross-flow across the ward (see Figure H.3).

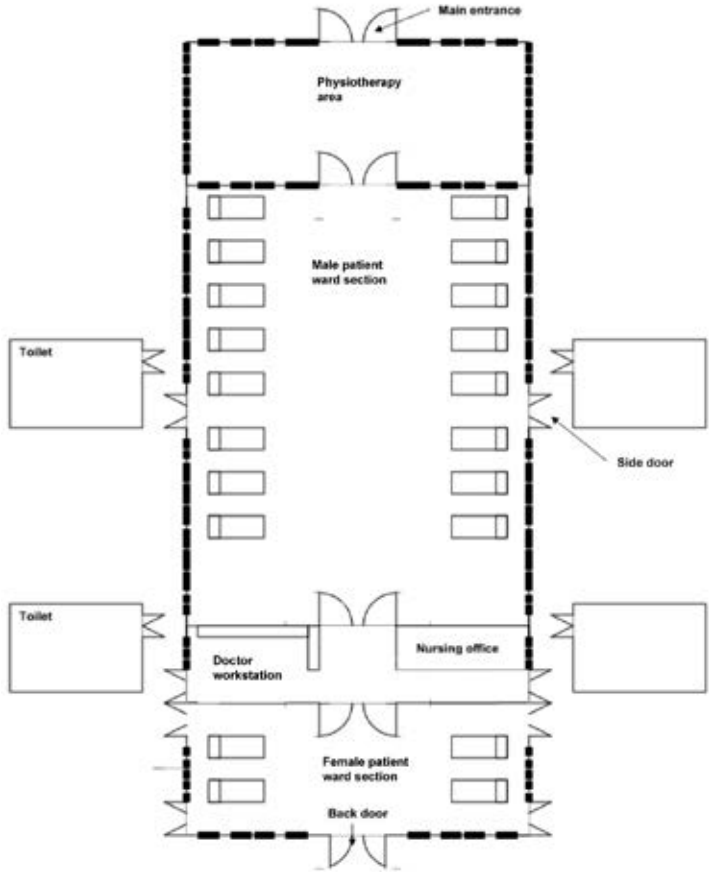


Figure H.2 Floor plan of tuberculosis unit inpatient ward

(A) (B)

(A) The side walls are of partial height so that there is a large gap between the top of the wall and the ceiling. (B) Ventilation is improved by the high ceiling and multiple ceiling fans.

Figure H.3 Inside the tuberculosis inpatient ward

Natural ventilation has been used in the Singapore TBCU for more than 50 years. Despite being situated near the downtown area of a modern, crowded island city, the environment is open, spacious and pleasant for the patients. The wind-assisted ventilation in both the outpatient clinic and inpatient ward allows for air exchange throughout potentially infectious patient areas, to maintain a healthier environment for both staff and patients.

No measured ventilation data are available for this facility.

Annex I Natural ventilation example IV: IOM Isolation Centre, Damak, Nepal

The International Organization for Migration (IOM) Holding Centre in Damak provides accommodation for migrants while they are undergoing IOM processing and health screening. The isolation units adjacent to the centre provide capacity to isolate any people who test positive for, or show signs of, infectious disease.

Both the compound (Figure I.1) and the individual buildings (Figure I.2) are designed to provide a secure and safe environment for those isolated and for those necessarily coming into contact with infected people through health-care treatment or otherwise. The design of the isolation units is expected to provide safe conditions for occupants in terms of the risk of airborne infection transmission, particularly for migrants who have been diagnosed with an infectious disease.

Figure I.1 The IOM Holding Centre in Damak

Figure I.2 Individual isolation unit (left), and the gap between the vertical wall and the roof for natural ventilation (right)

The units have three windows and a large, 0.8-m gap between the upper part of the wall and the eaves. There is a rotating “whirlybird” on the roof apex intended to increase ventilation rates and ensure an upwards movement of air. However, this has not been effective.

The units are designed for single occupancy and include a built-in shower. There are communal latrines in the compound.

The overall design is intended to maximize natural ventilation by providing a constant updraft with the intended airflow direction through the windows, to exit at the eaves and through the whirlybird.

The units are easy to build and could be built anywhere out of a range of locally available materials. Although the roof design provides all-year-round ventilation, it may also allow heavy rain to enter the unit via the gap between the wall and the roof.

The overhang of the roof should be increased to up to 1000 mm (from 450 mm) to let patients keep windows open during the rainy season, minimizing the penetration of heavy rain through the gap beneath the roof.

The IOM Construction Officer responsible for the design of these units intends to attach a polypropylene skirt of approximately one-metre depth around the roof edge. This will keep out slanting rain while not affecting greatly the ventilation of the building.

Given the substantial natural ventilation that large windows could provide (the existing windows seem to be too small), the whirlybird and the opening in the apex of the roof may not be necessary.

The limited area of this compound means that the nine units are relatively close to each other. Greater space between the units (achieved through a slightly larger compound) would help to create more air movement and therefore air exchange between the units. This may decrease the risk of any airborne infection between the units.

This document is the product of collaboration between WHO Water Sanitation and Health (WSH) and WHO Biorisk Reduction for Dangerous Pathogens (BDP), whose websites appear below:

http://www.who.int/water_sanitation_health/en/

http://www.who.int/csr/bioriskreduction/en/

From: Morrison A (Alan)
To: McCallum R (Richard)
Subject: *** NHS Lothian RHCYP Oversight Board_ToR (A25383738)
Date: 24 February 2021 13:21:32
Attachments: ___ NHS Lothian RHCYP Oversight Board_ToR.docx

Morrison, Alan A (U415280) has sent you a copy of "*** NHS Lothian RHCYP Oversight Board_ToR" (A25383738) v1.3 from Objective.

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

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Name	Title	Date	Version
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Ms Freeman	Cabinet Secretary		

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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

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.

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.

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.

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.

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.

3.	Scope of work

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

4.	Membership

The Board membership will be:

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)

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

RHCYP & DCN Oversight Board

6.

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
[redacted]

[redacted]

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

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); Prof J. Reilly, HAI executive lead for NHS National Services 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 on 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 which is 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**

6. Commercial Position and Contract Management

6.1 Ms Goldsmith presented the previously circulated paper which outlined the options for engagement with IHSL and the legal advice received by NHS Lothian.

6.2 Mr Reekie advised that if it was agreed that the critical care work was separate and NHS Lothian accepted responsibility to pay for this then this should be moved forward as soon as possible while negotiations took place to determine which of the other issues were NHS Lothian's or IHSL's responsibility, as this would take some time.

6.3 It was agreed that IHSL's performance issues would be used as part of the cost negotiation, but that breaking the contract would not be the best means of getting the hospital opened as soon as possible. It was agreed that warnings could be issued which would give NHS Lothian rights to terminate the contract which they would decide not to act on.

6.4 It was agreed that a formal agreement between IHSL and NHS Lothian needed to be negotiated and agreed for the resolution works.

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

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
Prof Jacqui Reilly, HAI executive lead for NHS National Services 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.

4.3.7 There was discussion on resilience; risk and contractor interpretation around standards or guidance.

4.3.8 The Chair stated that there was still not enough clarity on the timeframe which was frustrating and asked if the group could do anything to assist this.

4.3.9 Mrs Goldsmith confirmed that the letter of intent should be ready early next week for Cabinet Secretary sign-off and the letter plus the HPS/HFS ventilation report and the overarching tracker should be enough to enable clarification of the timeframe.

4.3.10 Mrs Goldsmith made the point that IHSL and MPX would like to have engagement with the oversight board. The Chair commented that the Terms of Reference does make provision for such engagement as appropriate and there would need to be separate discussion on the purpose of such engagement.

5. Commercial Progress

5.1 Commercial Position and Contract Management Update – Mrs Goldsmith introduced the paper that set out the actions taken to progress the recommendations agreed by the oversight board on 8th August 2019 and a subsequent meeting with IHSL and Multiplex on 13th August 2019. It described the overall commercial approach to contract management in this pre-occupation period, and progress with the measures taken to achieve rectification of the ventilation air change rate in critical care.

5.1.1 The oversight board noted that the proposed NHSL letter of intent confirmed NHSL intent (but no obligation) to enter into the Supplemental Agreement No. 2 with IHSL for the design, construction, completion and commissioning, funding and maintenance, of the Ventilation Works. Seven board changes relating to water, had now been agreed as required to meet the necessary standards:

- The design will satisfy all of NHSL's requirements and comply with all laws and consents, quality plans, health and safety requirements, and be conducted on an open book basis, without conflict of interest, with appropriate indemnities and insurances in place;
- That the timetable to be agreed will be adhered to, to commence as soon as the letter is agreed and until SA2 is entered into or an expiry date to be agreed. If the Letter expires before the design work is complete, work done to date will novate to NHSL;
- Payment for the design work will be due once SA2 is entered into. The advantage of this approach is that it incentivizes IHSL to enter into the SA2 swiftly.
- That there will be a maximum limit of expenditure also to be agreed, which NHSL will underwrite, but beyond which NHSL will have no liability. NHSL will be liable for the design costs incurred by IHSL (up to the agreed cap) in the event that SA2 is not entered into. Accordingly, NHSL are still underwriting the costs of design as agree in principle with IHSL;
- Waiver wording has been included that broadly mirrors SA1. This waiver is subject to acceptable commercial terms being negotiated for SA2 which again incentivizes IHSL but importantly also ensures they remain committed to carrying out the construction works;

- That IHSL will in effect leave the facility as they find it once the Design Works are carried out;

5.1.2 The oversight board welcomed the helpful paper and continued to support the approach to commercial negotiations with IHSL as set out by the Oversight Board on 8th August 2019.

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.

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.

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: Prof Jacqui Reilly, HAI executive lead for NHS National Services 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 however, both need to be part of the design solution
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 this 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 for electrical infrastructure review and the report is awaited. The review of medical gases has not started; the first on-site visit for medical gases is the 6th September.

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.

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 undertake 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 ascompliant 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*.

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

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*.

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

<u>Recommendation for Air Handling Units Remedial Works</u>

- 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 was 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 issue 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 witnessed – 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*.

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*.

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

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 due to contractual negotiations
- 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 will be 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*.

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

- Noted 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 to the Cabinet Secretary meeting 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 near future.

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*.

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 four main risk areas set out – fire; ventilation; timing and existing sites. A matrix to be developed for this.

TG/AMcM

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

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.**

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 take 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.**

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.**

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.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.

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-C1.4-017en-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*

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'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 ……

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 Career Break: 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 for her career break. 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.**

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.**

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 information 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.

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 <u>Confirmation of the ventilation/management requirements for source isolation of high consequence infectious diseases</u>

- 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

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. Roberton, 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 20 February 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 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 constructers 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.

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; 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

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 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 how 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
  - Impicatons 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.

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

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 <u>NHS Lothian Covid-19 planning</u>

- 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 aorund 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

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

- Issue resolved with confirmation from that the local Health and Safety lead adviser now content with doors from health and safety aspect. Not from ventilation or fire safety point of view as this was for Oakleaf to confirm.

2.2 DCN Migration

- Fluid situation - working with clinical teams to move Out Patients service and diagnostics on 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 with this achievement in DCN services 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 Works now completed – minor issues to complete as part of commissioning plan
- 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 key milestone for the programme
  - Discussion about what could be driving IHSL stance, consideration of meeting directly with funders IHSL represent to break constant 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 will be 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

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 responsiblity 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

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

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

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 <u>SA2 Progress</u>

- 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

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 Roberton 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.

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 <u>Sale of RHSC</u>

- 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**

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**

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

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 bac 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

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.

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 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;
Mrs S. Goldsmith, Director of Finance, NHS Lothian;
Mr C. Sinclair, Chief Executive, NHS National Services Scotland;
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
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:

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

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

IHS Lothian Limited
C/O Pinsent Masons
13 Queens Road
Aberdeen
AB15 4YL

IHS LOTHIAN LTD

Mark Griffiths and David Carr
Bouygues E&S FM UK Limited,
Becket House,
1 Lambeth Palace Road,
London, SE1 7EU.

20 December 2019

BY FIRST CLASS POST & Email

Dear Sirs

Services Contract between IHS Lothian Limited ("ProjectCo") and Bouygues E&S FM UK Limited ("Service Provider") dated 13th February 2015 (as amended, supplemented, varied, extended or restated from time to time) ("Services Contract")

Royal Hospital for Sick Children, Child and Adolescent Mental Health Service and the Department of Clinical Neurosciences (the "Project")

Notice pursuant to Clause 4.7 of the Services Contract

1. We refer to:

1.1 the Services Contract;

1.2 the agreement 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 as amended by the amendment agreement between the Board and Project Co dated 19 December 2018 and the PA Settlement Agreement dated 22nd February 2019 (the "**Project Agreement**");

1.3 the agreement between Project Co and Brookfield Multiplex Construction Europe Limited (the "**Contractor**") dated 13th February 2015 setting out the terms and conditions for the design and construction of new facilities at 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 as amended by the construction contract settlement agreement dated 22nd February 2019 (the "**Construction Contract**");

1.4 the agreement among ProjectCo, the Service Provider and the Contractor dated 13th February 2015 setting out the interface arrangements between the Service Provider and the Contractor ("**Interface Agreement**"); and

1.5 the Clause 4.7 Notice served on you dated 22nd February 2019 in relation to the PA settlement agreement dated 22nd February 2019.

2. Terms defined and references construed in the Services Contract shall have the same meaning and construction herein, except to the extent that the context requires otherwise.

3. The Board has informed Project Co that it wishes to appoint Project Co to design, construct, complete and commission ventilation works to the paediatric critical care ventilation system and the haematology/oncology ventilation system pursuant to the Board's technical requirements detailed in change notice HCV 107 ("**Ventilation Works**"). It is the Board's wish to appoint Project Co in respect of the Ventilation Works but neither the Board nor Project Co is in a position to enter into a contract to instruct the Ventilation Works by way of Supplemental Agreement No.2. As a result, the Board and Project Co have entered into an initial engagement agreement to enable advance design works to be carried out dated 16th December 2019 ("**Initial Engagement Agreement**") and a waver letter to reflect the Board waiving £280,000 of Deductions accrued up to and including 30th September 2019 dated 16th December 2019 ("**Waiver Letter**").

4. ProjectCo and Imtech Engineering Services Central Limited ("**Ventilation Works Subcontractor**") will be entering into an initial engagement agreement for the carrying out of the advance design works prior to 30 December 2019 ("**Subcontract Initial Engagement Agreement**") and we will issue a conformed copy of the Subcontract Initial Engagement Agreement to you along with the appropriate Clause 4.7 notice in accordance with the terms of the Services Contract in due course.

5. In accordance with the provisions of Clause 4.7 of the Services Contract, along with this notice, we are delivering the following conformed copies, duly certified as a true copy by a Director (as an officer of) of ProjectCo: (i) the Initial Engagement Agreement; and (ii) the Waiver Letter.

6. In delivering the Initial Engagement Agreement to you within ten Business Days of the date of their execution or creation, and in accordance with Clause 4.7, your obligations under the Services Contract shall be deemed to have been amended to the like extent.

7. On receipt of this notification and in accordance with the provisions of the Services Contract you undertake:

7.1 to act reasonably, collaboratively and in good faith with ProjectCo, the Board and the Ventilation Works Subcontractor; and

7.2 not to hinder or impede the ProjectCo in the performance of its obligations under the Initial Engagement Agreement or the Ventilation Works Subcontractor.

8. Notwithstanding the above, the provisions of the Services Contract continue in full force and effect and nothing contained within this notice shall constitute a waiver pursuant to Clause 65 of the Services Contract or otherwise and Project Co reserves any and all rights and/or remedies under the Services Contract that it may have now or at any time thereafter.

9. We look forward to hearing from you within ten Business Days of this notification if the Initial Engagement Agreement contains amendments or new provisions which have a material adverse effect on your obligations under the Services Contract or will cause a material increase in the cost of you providing the services.

Signed by IHS Lothian Limited
acting by

MATTHEW TEMPLETON
.....
Full Name (Director)

[redacted]
Signature of Director

IHS LOTHIAN LTD

A47193110

(1) IHS LOTHIAN LIMITED

(2) IMTECH ENGINEERING SERVICES LTD

AGREEMENT FOR

MVC WORKS

BASED ON THE NEC4 ECC OPTION E AND ADDITIONAL CONDITIONS OF CONTRACT (OPTION Z)

Pinsent Masons

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 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, manufacture, supply, construction and installation, testing, commissioning and completion of (a) the fire enhancement works to the Department of Clinical Neurosciences forming part of the Hospital all as described in and as instructed under Board Change Notice MVC 112; and (b) the fire enhancement works to the Royal Hospital for Children and Young Persons forming part of the Hospital all as described in and as instructed under Board Change Notice MVC 126; and (c) the alteration works to CAMHS forming part of the Hospital all as described in and as instructed under Board Change Notice MVC127 and (d) the fire enhancement works to CAMHS forming part of the Hospital all as described in and as instructed under Board Change Notice MVC 131 and (e) the fire enhancement works to Critical Care and Haematology and Oncology forming part of the Hospital all as described in and as instructed under Board Change Notice MVC 164 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 8 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 ninety one (91) pages) are executed as follows:

SUBSCRIBED for and on behalf of
IHS LOTHIAN LIMITED
by DocuSigned by: [redacted] 7E3303D3505B492...
..... Director
Matthew Templeton
..... Full Name

at [redacted]
on the 29th day
of January 2021

DocuSigned by: [redacted] 228FBC590839448...
..... Director/Company Secretary
Vivienne Marie Cockburn
..... Full Name

at [redacted]
on the 29 day
of January 2021

SUBSCRIBED for and on behalf of
IMTECH ENGINEERING SERVICES LTD
by [redacted] 73BA9D5558B3461...
..... Director/Authorised Signatory
Darron Jonathan Littlehales
..... Full Name

at 15.10 Imtech Engineering Services, Hooton Street, Carlton, Nottingham, NG3 5GL
on the 1st day
of Feb 2021

[redacted] D0D7D43E6945466...
..... Director/Company Secretary/Authorised Signatory
Neil Evans
..... Full Name

at Imtech Engineering Services, Hooton Street, Nottingham, NG35GL
on the 2nd day
of Feb 2021

This is the Schedule Part 1 referred to in the foregoing Contract Agreement between **IHS LOTHIAN LIMITED** and **IMTECH ENGINEERING SERVICES LTD**.

ADDITIONAL CONDITIONS OF CONTRACT (OPTION Z)

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: "• met all the Completion Criteria; and • supplied all the documents and information which the Scope states he is to supply by the Completion Date" In the definition of Disallowed Cost, at the fourth bullet point delete: "after Completion"
11.2(13)	after "*Client*" insert "(which expression shall include its successors in title and assignees)"
11.2	Add the following defined terms: "(35) Applicable Services Date means in relation to:- (a) the fire enhancement *works* to the Department of Clinical Neurosciences forming part of the Hospital all as described in and as instructed under Board Change Notice MVC 112, 28 April 2020, and (b) the fire enhancement *works* to the Royal Hospital for Children and Young Persons forming part of the Hospital all as described in and as instructed under Board Change Notice MVC 126, 6 July 2020; (c) the fire enhancement *works* to CAMHS forming part of the Hospital all as described in and as instructed under Board Change Notice MVC 131, 8th October 2020; (d) the Other MVC Works, the earlier of (i) the date on which the *Project Manager* certifies that the applicable *works* pursuant to the relevant Board Change Notices MVC, are complete such as to allow the Board to occupy and use the applicable area(s) of the Hospital affected by the applicable *works* and such that the Services may be provided to the applicable area(s) of the Hospital affected by the applicable *works* or (ii) Completion; (36) Associated Client Company is any subsidiary of the *Client* or other company within the same group of companies as the *Client*. (37) Audit Scotland means the governmental body responsible for checking that public money is spent efficiently and effectively in Scotland. (38) Beneficiaries are each of: • any Associated Client Company; • the Board; (and "**Beneficiary**" is any one of them).

(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. 4)

(39A) Board Change Notices MVC means the Board Change Notice MVC 112 dated 3 February 2020, Board Change Notice MVC 126 dated 4 March 2020, Board Change Notice MVC 127 dated 4 March 2020, Board Change Notice MVC 164 dated 9 June 2020 and Board Change Notice MVC 131 dated 4 March 2020 as more fully set out in Part A of the Scope;

(40) Business Day is any day other than a Saturday, Sunday or a bank holiday in Scotland.

(41) Certificate of Completion means the certificate in the form in Schedule Part 8.

(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.

(43) Commercially Sensitive Information means:

- information about the *Contractor*'s processes, methodologies, working methods and information relating to the development of new processes and methodologies which amount to a trade secret or which, if disclosed, could reasonably be considered to provide a commercial advantage to the *Contractor*'s competitors;
- the *Contractor*'s bank account information;
- breakdown of prices within the overall Fee; or
- information on the *Contractor*'s costing mechanisms including information obtained from the *Contractor* relating to risks related to the works and pricing of the same and cost information relating to third party contractors and any sub-contractors.

(43A) Completed MVC Works means (a) the fire enhancement *works* to the Department of Clinical Neurosciences forming part of the Hospital all as described in and as instructed under Board Change Notice MVC 112 and (b) the fire enhancement *works* to the Royal Hospital for Children and Young Persons forming part of the Hospital all as described in and as instructed under Board Change Notice MVC 126 and (c) the fire enhancement *works* to CAMHS forming part of the Hospital all as described in and as instructed under Board Change Notice MVC 131; and as more fully described in the Scope.

(44) Completion Criteria means the criteria contained in the Schedule Part 7.

(45) Confidential Information means:

(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;

(b) any Commercially Sensitive Information.

(46) Consents are any building regulations warrant and/or consent, in each case as required to be obtained in relation to the *works and* "Consent" is one of them)

(47) COVID-19 is the Corona Virus Disease 2019.

(48) A COVID-19 Trigger Event is any of the following events if caused or contributed to by the occurrence of COVID-19:

(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*;

(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 *Client* 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 *Contractor* Providing the Works as envisaged at the Contract Date;

(c) an event including a change in the programming that delays or prevents the *Contractor* 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 *works*;

(d) the change to or the imposition of a new requirement for any licence or consent required by the *Contractor* to Provide the Works which was not required at the Contract Date;

(e) a change unforeseeable at the Contract Date to the business or economic environment in which the *Contractor* operates which is not caused by one of the other COVID-19 Trigger Events in this definition.

(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 *Contractor* from time to time.

(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.

(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 *works*.

(52) Guarantor has the meaning set out in clause 91.1.

(53) Hospital means Royal Hospital for Children & Young People (RHCYP) & Department of Clinical Neurosciences (DCN), Edinburgh.

(54) Human Resources are all persons involved in the management of this contract and in Providing the Works whether employed or engaged by the *Contractor*, any Subcontractor or otherwise.

(55) Not used.

(56) Information has the meaning under section 73 of the FOI(S)A.

(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 *sui generis* rights of extraction relating to databases, trade secrets and other confidential information or know-how.

(58) Law(s) means:

(a) any applicable statute or proclamation or any delegated or subordinate legislation;

(b) any enforceable community right within the meaning of section 2(1) of the European Communities Act 1972 as the same may be varied amended, replaced or repealed following the exit of the United Kingdom from the European Union;

(c) any applicable guidance, direction or determination with which the Board, the *Client* or the *Contractor* 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 *Client* by the *Contractor*; and

(d) any applicable judgement of a relevant court of law which is binding precedent in Scotland,

in each case in force in Scotland.

(59) Longstop Date is the date falling 12 weeks following the Completion Date.

(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.

(60A) Other MVC Works means (a) the alteration *works* to CAMHS forming part of the Hospital all as described in and as instructed under Board Change Notice MVC 127 and (b) the fire enhancement *works* to Critical Care and Haematology and Oncology forming part of the Hospital all as described in and as instructed under Board Change Notice MVC 164; and as more fully described in the Scope;

(61) Project Agreement is the project agreement dated 12th and 13th February 2015 and entered into between the Board and the *Client* as varied by Supplemental Agreement (No.1) and Supplemental Agreement (No.2) and Supplemental Agreement (No. 4).

(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).

(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.

(64) Reviewable Design Data has the meaning set out in clause 21A.1.

(65) Scottish Futures Trust means the executive non-departmental public body of the Scottish Government established with the aim of improving public infrastructure.

(66) Scottish Government means the devolved government for Scotland with responsibilities including the provision of healthcare to the people of Scotland.

(67) Senior Funders are any parties providing finance in relation to the Hospital.

(68) Not used.

(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.

(70) Services has the meaning given to it in the Project Agreement;

	(70A) Supplemental Agreement (No.1) means the first supplemental agreement to the Project Agreement entered into between the Board and the *Client* dated 22 February 2019. (70B) Supplemental Agreement (No.2) means the second supplemental agreement to the Project Agreement entered into between the Board and the *Client* dated 5th August 2020 and delivered on 7th August 2020. (71) Supplemental Agreement (No.4) means the third supplemental agreement to the Project Agreement entered into between the Board and the *Client* in relation to the procurement of the *works*. (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. (73) 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 the *Contractor* from time to time."
12	**Interpretation and the law**
12.4	Before the full stop, insert: "and supersedes any prior negotiations and agreements between the Parties in connection with the *works*. 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."
12.5	Insert a new clause as follows: "12.5 To the extent that any services or works relating to the works were carried out prior to or otherwise than under this contract, the *Contractor* confirms that it shall be deemed to have carried out such services or works subject to and in accordance with this contract. In respect of the Completed MVC Works, the Contractor acknowledges that access has already been provided for the purposes of carrying out and completing the Completed MVC Works. Accordingly, from the *starting date*, the Client shall grant or procure that the Contractor is granted access to each part of the Working Areas relating to the Completed MVC Works to the extent that such access is required for assessing, attending to and/or carrying out works and/or inspections in relation to Defects in accordance with the access arrangements described in the access protocol contained within the Scope."
12.6	Insert a new clause as follows: "12.6 Without prejudice to clause 12.4, the *Contractor* 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 *Contractor* by or on behalf of the *Client* regarding the Site or the *works* 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 *Client* 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 *Client* has no liability (save in respect of any fraudulent misrepresentation by the *Client*) 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."
12.7	Insert a new clause as follows: "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.”
12.8	Insert a new clause as follows: "12.8 In this contract, unless specified otherwise, reference to days shall mean calendar days."
12.9	Insert a new clause as follows: "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 *Client* and the *Contractor*."
12.10	Insert a new clause as follows: "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."
12.11	Insert a new clause as follows: "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."
13	**Communications**
13.1	At the end insert the following sentence: “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.”
13.6	Insert "and the Board" at the end of the first sentence and at the end of the second sentence.

14	**The *Project Manager* and the *Supervisor***
14.1	Delete the existing text and replace with the following "No • communication (including instructions, the Defects Certificate or other certificates), • acceptance of a communication from the *Contractor*, • failure to withhold acceptance of, express disapproval of or otherwise approve, review or comment on a submission or the *works* carried out by the *Contractor,* or • enquiry, inspection, test, review, comment, consent, decision, approval, sanction or acceptance of the *Contractor*'s work by the *Client*, the *Project Manager* or the *Supervisor* excludes, limits or otherwise diminishes or changes the *Contractor*'s liability under this contract, including the *Contractor*'s responsibility to Provide the Works, his liability for Defects and for the design. 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."
15	**Early warning**
15.2	At the end of the sentence commencing "The *Project Manager* or the *Contractor* may instruct other people to attend…", insert: "provided that the *Client* and the Board shall be invited to and shall be entitled to attend every early warning meeting."
15.5	Insert a new clause: "15.5 The Early Warning Register does not allocate risk to anyone and/or change the rights and obligations of the parties."
16	**Contractor's Proposals**
16.3	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: "used for any other services or activities of the *Client* or Board or any Others, subject to where access can be provided in accordance with the access protocol contained within the Scope"
17	**Requirements for instructions**
17.1	Delete clause 17.1 and replace with the following: "(a) The *Contractor* examines the Scope and all other documents forming this contract and confirms to the *Client* that he is not aware of any ambiguity or inconsistency: (i) with the exception of Part A of the Scope, within; or (ii) between any of the contract documents which might adversely affect the carrying out of the *works*. (b) The *Project Manager* or the *Contractor* notifies the other and the *Client* and the Board as soon as either becomes aware of any such ambiguity or inconsistency: (i) other than Part A of the Scope, within; or

	(ii) between 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 *Project Manager* 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."
2	**The *Contractor*'s main responsibilities**
20	**Providing the Works**
20.1	Delete the existing text and replace with the following "The *Contractor* 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 *works* will comply with each of: • the Scope, • the other provisions of this contract, • the Laws, • the Consents, • Good Industry Practice, and • Supplemental Agreement (No.4) so that the various elements of the *works* are compatible and are properly co-ordinated and integrated with each other."
20.3	In the first line, after "*Project Manager*" insert "with copies of any such advice sent to the *Client* 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 *Client* and the Board on the same date".
21	**The *Contractor*'s design**
21.1	Delete the existing text and replace with: "21.1.1 The *Contractor* designs the whole of the *works*. The *Contractor* accepts 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*, including without limitation any and all design undertaken before or after the Contract Date; 21.1.2 The *Contractor* warrants and undertakes that once the *works* are completed they will meet any performance specification and/or requirements for the *works* set out in Part A of the Scope and without prejudice to this the *Contractor* warrants and undertakes that the design of the *works* (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 *works*; 21.1.3 The *Contractor* 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 *Contractor* 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 21.1.4 The design of the *works* 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.*"*
21A	**Development of detailed design**
21A.1	Insert new clause 21A as follows: "21A.1 The *Client* and the *Contractor* acknowledge that elements of design of the *works* require review following the Contract Date as identified in the Scope ("**Reviewable Design Data**") and remain to be reviewed. 21A.2 The *Contractor* shall submit the Reviewable Design Data for approval by the *Client* and the Board in accordance with the Request for Information Protocol, and shall provide all such reasonable assistance as the *Client* or the Board may require in relation to the review and approval of the detailed designs pursuant to the Request for Information Protocol.
22	**Using the *Contractor*'s design**
22.1	Delete the existing text and replace with: "22.1 The *Contractor* shall (and shall procure that the owner who can grant the same shall): 22.1.1 make available to the *Client* and the Board without charge all data, materials and documents acquired or brought into existence in any manner whatsoever by the *Contractor* for the purposes of the *works* and which might reasonably be required by the *Client* 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 *works,* 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 22.1.2 make available to *Client* such data, materials and documents acquired or brought into existence by third parties for the purposes of the *works*

	as may reasonably be required by the *Client* and/or the Board for the purposes referred to in clause 22.1.1. 22.2 The *Contractor* hereby grants (and shall procure that the owner who can grant the same shall grant) to the *Client* 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 *Contractor* for any purpose relating to the construction, installation, commissioning testing, completion, handback, maintenance, repair, renewal, replacement, reinstatement, of the *works,* 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. 22.3 The *Client* 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*. 22.4 The *Contractor* shall indemnify the *Client* 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 *Client* arising as a result of any infringement of any intellectual property rights of any third parties as a result of the *works*, the completed *works* 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."
24	**People**
24.1	After the first full stop insert: "The *Contractor* does not replace a key person unless the *Project Manager* agrees" and Before the last full stop insert: "or that his character or behaviour does not conform to the *Client*'s policies or standards. The *Contractor* shall ensure that all persons employed in performing the *works* are properly trained, qualified and supervised."
24.2	Delete clause 24.2 and replace with: "The *Project Manager* may having stated his reasons, instruct the *Contractor* to remove any of the Human Resources. The *Contractor* then arranges that, after one (1) day, the Human Resources in question have no further connection with the *works*. The *Project Manager* may require the removal from Site of persons who are in the *Project Manager*'s 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 *Client* 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 of the *Client* or by Others and whether on Site or the Working Areas or not, the *Contractor* shall: • 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 *works* with the carrying out and completion of the design and construction of such work so as to minimise interference, delay and disruption to the *works* and to such works; and • provide such supplies, access and facilities to the Board, the Ventilation Tester and the Fire Tester as set out or referred to in the Scope, Provided always that: • 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 *Client* taking over any part of the *works* affected by those works."
26	**Subcontracting**
26.1	At the beginning insert: "The *Contractor* shall not place any sub-contracts or materials supply orders in connection with the *works* other than the appointment of Hoare Lea LLP (registered number OC407254) without first obtaining written consent from the *Client* (such consent not to unreasonably withheld or delayed)."
26.3	After the words "*Project Manager*" where they appear on line 2 and line 6 insert the words "and the *Client*". Delete the first two bullet points and the text of them and replace with: "the *Project Manager* and the *Client* have agreed that no submission is required." and Before the first remaining bullet point insert: "● they do not require the Subcontractor to maintain professional indemnity insurance at a level acceptable to the *Client* 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	Insert new clause: "26.5 The *Contractor* 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 *Client's* prior written approval."
27	**Other responsibilities**
27.2	In the second bullet point after "the *Supervisor*" insert "the Board, the Ventilation Tester and the Fire Tester"
	After 27.4 insert the following new clauses: "27.5 The *Contractor* obtains all Consents. The *Contractor* supplies the *Client* with copies of all relevant documentation in a timely manner, and co-ordinating and managing

	interface issues affecting the *works* with Others. Compliance with this clause by the *Contractor* is not a compensation event. 27.6 The *Contractor* shall be a "Designer", the "Principal Designer" and the "Principal Contractor" under the CDM Regulations for the purposes of the *works*, and warrants that: • 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 *works* and with the *Client* 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 *Client*; • take account of and/or apply the general principles of prevention as required by the CDM Regulations; and • shall provide to the *Client* and the Board: • 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 *Contractor* in its role as "Principal Designer" pursuant to the CDM Regulations in relation to the *works*."
28	Delete the title **"Assignment"** and replace with **"Assignation and collateral warranties"**
28	Insert a new clause 28.2 as follows: "28.2 Within fourteen (14) days of request from either the *Client* or the Project Manager, the *Contractor* delivers to the *Client* 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: • the *Contractor* 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 *Client*, such approval not to be unreasonably delayed or withheld, and the *Client* shall not be liable to make any payment under this contract until such collateral warranty is provided to the *Client*; and • using best endeavours to secure from any Subcontractor engaged by the *Contractor* in favour of the *Client* 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 along with a certified copy of the relevant appointment of the relevant Subcontractor.*"*

29	**Disclosure**
	Delete the existing clause 29 and insert the following: "29.1 The *Contractor* 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): • 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 *works*) and the *Contractor* 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 *Client* shall notify the *Contractor* in writing not less than five (5) Business Days prior to any intended provision or publication of information pursuant to this Clause 29.1. 29.2 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 *Contractor* 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. 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 *Contractor*'s competitors which shall be kept confidential for five years from the date on which the information is produced to the Board 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. 29.3 Clause 29.2(b) and (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 contract 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 contract or Supplemental Agreement (No.4) or in connection with a dispute between the *Client* and the Service Provider or any of its other 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 Board or the Senior Funders or the Board's or the Senior Funders' professional advisers or insurance advisers;

g) any disclosure by the Board or the *Client* 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;

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 the *Client*'s or the *Contractor*'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 29.3(d)) compliance with the FOI(S)A and the Environmental Information (Scotland) Regulations;

k) any disclosure to the extent required pursuant to Clause 29.1; or

l) any disclosure to the extent required pursuant to Clause 29B.2.

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.

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.

29.5 The *Contractor* shall not make use of this contract or any information issued or provided by or on behalf of the *Client* or the Board in connection with this contract otherwise than for the purpose of this contract, except with the written consent of the *Client*.

29.6 Where the *Contractor*, in carrying out its obligations under this contract, is provided with information relating to any of the *Client*'s 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 *Contractor* has obtained the prior written consent of that person and has obtained the prior written consent of the *Client*.

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 any documents in the possession, custody or control of a Subcontractor, are delivered up to the *Client*.

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.

29.9 The provisions of this clause 29 are without prejudice to the application of the Official Secrets Acts 1911 to 1989.

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 *Contractor* 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)."
29A	**Freedom of Information**
	Insert new clause 29A: "29A.1 The *Contractor* 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. 29A.2 Where the Board receives a Request for Information in relation to Information that the *Contractor* via the *Client* is holding on its behalf and which the Board does not hold itself the Board or the *Client* may refer to the *Contractor* such Request for Information and the *Contractor* shall: a) provide the Board and the *Client* with a copy of all such Information in the form that the Board or the *Client* 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 b) provide all necessary assistance as reasonably requested by the Board or the *Client* 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. 29A.3 Following notification under Clause 29A.2, and up until such time as the *Contractor* has provided the Board and the *Client* with all the Information specified in Clause 29A.2(a), the *Contractor* 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 2004; and b) whether Information is to be disclosed in response to a Request for Information, and in no event shall the *Contractor* respond directly, or allow any Subcontractor to respond directly, to a Request for Information unless expressly authorised to do so by the Board.

	29A.4	The *Contractor* 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 *Client* 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 *Client* for them to hold on behalf of the Board for the remainder of the term of the Project Agreement.
	29A.5	The *Contractor* shall transfer to the *Client* any Request for Information received by the *Contractor* as soon as practicable and in any event within one (1) Business Day of receiving it.
	29A.6	The *Contractor* 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.
	29A.7	In the event of a request from the Board pursuant to Clause 29A.2 the *Contractor* shall as soon as practicable, and in any event within three (3) Business Days of receipt of such request, inform the Board and the *Client* of the *Contractor*'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 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 *Client* in writing whether or not it still requires the *Client* to comply with the request and where it does require the *Client* to comply with the request the *Client* shall so inform the *Contractor* 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 *Client* shall notify the *Contractor* of such additional days as soon as practicable after becoming aware of them and shall reimburse the *Contractor* for such costs as the *Contractor* 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.
	29A.8	The *Contractor* 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 *Client* or the *works*:

	a) in certain circumstances without consulting with the *Client* or the *Contractor*; or b) following consultation with the *Client* and having taken their views into account, provided always that where Clause 29A.8(a) above applies the *Client* shall where notified by the Board, in accordance with the recommendations of the Code, draw this to the attention of the *Contractor* prior to any disclosure. 29A.9 In the event that the *Contractor* becomes subject to the Environmental Information (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 *Client* before disclosing information about it or the Board or any agreement entered into between the Board and the *Client* or the *Client* and the *Contractor* in relation to the *works*."
29B	**Information and Audit**
	Insert new clause 29B: "29B.1 The *Contractor* shall provide to the *Client* all information, documents, records and the like in the possession of, or available to, the *Contractor* (and to this end the *Contractor* shall use all reasonable endeavours to procure that all such items in the possession of any Subcontractor shall be available to it and the *Contractor* has included, or shall include, relevant terms in all subcontracts with the Subcontractors to this effect) as may be reasonably requested by the *Client* for any purpose in connection with this contract. 29B.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 the *Contractor* (and the *Contractor* 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 *Contractor* to produce such oral or written explanations as he considers necessary. 29B.3 The *Contractor* shall provide and shall procure that its Subcontractors shall provide such information as the *Client* 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."
29C	**Data Protection**
	Insert new clause 29C: "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**"). 29C.2 The *Contractor* 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 *works*. 29C.3 The *Contractor* undertakes that, where it is required to process any personal data made available to it by or on behalf of the *Client*, it will act only on the instructions of the Client. 29C.4 The *Contractor* 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. 29C.5 The *Contractor* undertakes to allow the *Client* and the Board access to any relevant premises on reasonable notice to inspect the procedures described in 29C.2. 29C.5 The *Contractor* undertakes to notify the *Client* 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: (a) inform the *Client* 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 *Client* 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 *Client* informed shall continue until such actual or suspected, threatened or "near miss" personal data breach is fully rectified and/or is no longer threatened. 29C.6 The *Contractor* shall indemnify the *Client* on demand and keep the *Client* indemnified from and against all losses suffered or incurred by the *Client* arising out of or in connection with any claims and proceedings arising from any breach by the *Contractor* 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	In line 1 after “does the work” insert:- “so that the Applicable Services Date for (a) the alteration *works* to CAMHS forming part of the Hospital all as described in and as instructed under Board Change Notice MVC127 occurs on or before 11 November 2020 and for (b) the fire enhancement *works* to Critical Care and Haematology and Oncology forming part of the Hospital all as described in and as instructed under Board Change Notice MVC 164 occurs on or before 30 November 2020, and” Before the full stop insert: “and Provides the Works regularly and diligently”
30.2	Delete and substitute:- “The *Project Manager* shall certify each part of the Other MVC Works for the applicable Board Change Notices MVC on the dates on which the *Project Manager* decides that the applicable *works* are complete such as to allow the Board to occupy and use the applicable area(s) of the Hospital affected by such *works* and such that the Services may be provided to the applicable area(s)of the Hospital affected by such *works,* and the *Project Manager* decides the date of Completion and issues the Certificate of Completion 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 *works* to be completed by the Completion Date if implemented; or • where in the opinion of the *Client* 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 *Contractor*'s obligation to provide and update the programme, the *Contractor* 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 *Client* and shall have due regard to any representations made by the *Client*, the Board and/or its representatives, the Service Provider or any of the consultants engaged by the *Client* in relation to the *works*."
33	**Access to and use of Site**
33.1	Delete text and replace with the following: “33.1 The *Contractor* acknowledges that it will not have exclusive access to the Site and/or the Working Areas and acknowledges the occupation and use by the Board of and the provision of the Services in the applicable area(s) of the Hospital affected by the Completed MVC Works and the Other MVC Works from the relevant Applicable Services Date. Insofar as the *Client* 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 *Contractor* which is necessary for the *works* in accordance with the access arrangements described in the access protocol contained within the Scope. Where the *Contractor* receives an instruction that access to and use of a part of the Site and/or the Working Areas required by the *Contractor* 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 *Contractor* 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 *Contractor* suffers a delay as a result of any unavailability in accordance with this clause 33.1, the *Contractor* may be entitled to a Compensation Event pursuant to clause 60.1(1), provided the *Contractor* has mitigated the extent of any such delay as far as possible.”
35	**Take over**
35.3	Delete clause 35.3 and replace with the following: "35.3 The *Project Manager* certifies Completion using the form of Certificate of Completion on the date when the whole of the works have achieved Completion in accordance with this contract and all of the Completion Criteria have been complied with;"
41	**Tests and Inspections**
41.3	Delete clause 41.3 and replace with the following: "41.3 The *Contractor* and the *Supervisor* 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 Service Provider, the Board, the Ventilation Tester and the Fire Tester of the results. The *Contractor* informs the *Supervisor* of a test or inspection to be arranged and does not do any work which would obstruct the test or inspection. The *Supervisor,* the Service Provider, the Board, the Ventilation Tester and the Fire Tester may watch any test done by the *Contractor*."
41.5	At the beginning of the clause delete "The *Supervisor* does" and insert "The *Supervisor* and the *Project Manager* do".
41.8	Insert new clause as follows: “41.8 The *Contractor* and the *Supervisor* shall notify the *Client*, the Board the *Project Manager*, the Service Provider, the Senior Funders, the Senior Funders' technical advisor, 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 *defect correction period* the Board, the Board's technical advisor the Senior Funders, the Senior Funders' technical advisor (if applicable), the Service Provider, the Ventilation Tester and the Fire Tester shall have the right to attend and witness any relevant tests and inspections and the *Contractor* and the *Supervisor* shall ensure that any reasonable and proper instructions or representations made by the *Client*, the Board and/or the Board's technical advisors or the Service Provider shall be taken into consideration."
41.6	After "incurred by the *Client*" insert "and/or the Board"
41.7	After "incurred by the *Client*" insert "and/or the Board"
44	**Correcting Defects**
44.2	Delete clause and replace with the following "44.2 The *Contractor* corrects a notified Defect from each Applicable Services Date and before the end of the *defect correction period* (or such longer period as may be agreed by the Board and the *Client* 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 working reasonably required by the *Project Manager* and, in any event and without prejudice to the generality 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 *Project Manager*. The *defect correction period* begins at Completion for Defects notified before Completion and when the Defect is notified for other Defects."
44.2A	Insert new clause as follows: "44.2A In addition to its obligations under clause 44.2, during the *defect correction period*, the *Contractor* 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 *Contractor* does not take action to correct a critical defect within the required timescale the *Client* or the *Project Manager* shall instruct a third party to take action and the *Contractor* shall pay the cost of remediation by such third party. The *Client* shall take reasonable steps to ensure such costs are reasonably incurred and properly mitigated."
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 *Project Manager*, no change may be proposed without the *Project Manager* first obtaining the consent of the *Client* and the Board to the change."
45.2	After "consider the change, " in the first line, insert "and provided that the *Client* 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 *Client* 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 *Client* 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 "*Project Manager*", insert "seven (7) days" In the second line, after "assessment date", insert "with a copy sent to the Board on the same date". Insert the following wording as a new paragraph after the first paragraph and before the second paragraph of clause 50.2: "The *Contractor* acknowledges and confirms that the sum of £2,010,181.92 plus VAT has been paid by the *Client* to the *Contractor* prior to the date of this contract in respect of the *works* and such sum forms part of the Prices. The *Contractor* further acknowledges and confirms that such sum shall be deducted from the amount of the first interim payment due to the *Contractor* under this contract."
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 "*Project Manager*" insert "with copies sent to the *Client* and the Board on the same date". In the eighth line after "requested" delete "or advises the" and insert "by the Project Manager to the Project Manager with copies sent to the *Client* 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 *Client* may deduct from any money due to the *Contractor* under this contract any sum due to the *Client* from the *Contractor* under this contract. The *Client* may deduct from any money due to the *Contractor* under this contract any sum required by any applicable Law to be deducted." 51.7 The *Contractor* allows the *Client,* the *Project Manager* and their respective agents at any reasonable times to inspect and take copies of, and extracts from, the *Contractor's* 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 *Client* 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 “a change made in order to accommodate the *Contractor*’s method of working or" and in the original second bullet point delete “for his design”.
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)	Delete “The *Client* or Others” and replace with “Subject to clause 25.4, the *Client* or Others”. Delete the full stop and insert, not as a bullet point: "provided that where the Other in question is the Board, the *Contractor* notifies the *Client* and the Board, giving not less than 4 weeks notice, of when the Board is required to carry out any activities necessary for the *Contractor* to be able to carry out the *works* 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 *Contractor* does all that it reasonably can to co-ordinate the activities of that Other with the *works* so as to avoid any delay or disruption to the *works*."
60.1(7)	Delete and insert "Not Used"
60.1(13)	Replace “A *weather measurement* is recorded” with “Subject to clause 63.1A, a *weather measurement* is recorded”
60.1(19)	replace “An event” with: “Subject to clause 63.1A, an event”.
60.1(22)	Insert a new clause 60.1(22) as follows: "A delay arising from a delay by the Board or the Client in reviewing the Reviewable Design Data".
60.1(23)	Insert a new clause 60.1(23) as follows: "A COVID-19 Trigger Event".
60.1(24)	Insert a new clause 60.1(24) as follows: "A notice is issued by the Board to the *Client* and the *Contractor* to stop the carrying out of the *works* pursuant to clause Z4.2".
60.1	At the end of the clause, insert the following new paragraph: “Notwithstanding anything to the contrary: • nothing is a compensation event to the extent that it arises from the breach, negligence, error, and/or default of the *Contractor* or any of its persons; and • the *Contractor* will only be entitled to a compensation event if the *Contractor* 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 *Contractor* 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 *Project Manager* shall not assess any compensation event notified after the relevant *defects date*. The *Contractor* 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 *defects date*.”
61.8	Insert new clause "Notwithstanding any other provision of this contract, the *Contractor* 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 *Client* 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 "*Project Manager*" insert "after seeking approval from the *Client* and the Board". In the third line after “*Project Manager*” insert "with copies sent to the *Client* and the Board on the same date".
62.5	In the first line after "*Project Manager*" insert "after seeking approval from the *Client* 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 *Project Manager*’s assessments**
64.3	In the first line after “*Contractor*” insert “and the *Client* and the Board on the same date”
7	**Title**
70	**The *Client*’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 *Project Manager* is satisfied that title to it vests unconditionally in the *Contractor* and that unconditional title will transfer to the *Client* immediately on payment. 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 • the *Project Manager* is satisfied that title to it vests unconditionally in the *Contractor* and that unconditional title will transfer to the *Client* 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	After clause 83.1 insert the following clause: "83.1A The *Contractor* shall maintain professional indemnity insurance in an amount not less than £10,000,000.00 (TEN MILLION POUNDS STERLING) for any one claim and in the aggregate, subject to unlimited reinstatements from the *starting date* 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. 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 *Contractor* immediately notifies the *Client* and the *Contractor* insures at the maximum level which is so available. The maintenance of (or failure to maintain) the insurances required by this contract does not relieve the *Contractor* of his other obligations and liabilities under this contract."
83.3	After "has been issued" insert: "and are: • without excesses save as agreed by the *Client*, • 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 o to the effect that an insured must discharge any liability before being entitled to recover from insurers or o 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 *Client*) against insurers."
84	**Insurance policies**
84.1	After "the *starting date"* insert ", otherwise as the *Project Manager* requires". In line 2 after "*Project Manager*" insert "with copies to the *Client* and the Board on the same date"
85	**If the *Contractor* does not insure**
85.1	after "insure if" insert: "the *Contractor* does not maintain insurance as required by this contract or".
90	**Termination**
90.2	In the first row of the Termination Table delete "R1-R15, R18 or R22" and insert "R1-R15, R18, R22 or R23". Insert a new row in The Client terminating party section as follows:

Reason	Procedure	Amount Due
R24	P1 and P4 save where the *Contractor* has failed to	A1 and A2 save where the *Contractor* has

			comply as provided for in clause 93.4, where P1, P2 and P3 applies	failed to comply as provided for in clause 93.4, where A1 and A3 apply
91	**Reasons for termination**			
91.1	At the end of the first sentence, insert "and the *Client* may also terminate if the company providing the guarantee pursuant to clause X4 (the "**Guarantor**") has done one of the following or its equivalent."; In the first bullet point after "other Party" insert "and/or the Guarantor"; and In the second bullet point after "other Party" insert "and/or the Guarantor".			
91.2	Delete clause and replace with: "91.2 The *Client* may terminate if • the *Project Manager* has notified that the *Contractor* has substantially failed to comply with his obligations in relation to the *works* 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 *Contractor* has not provided a guarantee which this contract requires (R12), or • the *Contractor* has assigned or charged any rights and benefits arising out of this contract (R12).			
91.6	Insert the following paragraph at the end of clause "The *Contractor* does not terminate unless he has notified the *Project Manager* of his intention to do so and the *Project Manager* has not given an instruction allowing the *works* to re-start or start within four weeks of the notification."			
91.9	Insert a new clause 91.9 as follows: "91.9 The *Client* may terminate if Completion does not occur by the Longstop Date (R23)."			
91.10	"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.4) or the Project Agreement are terminated (R24)."			
92	**Procedures on termination**			
92.1	Delete clause and replace with: "92.1 On termination, the *Client* may complete the *works* himself or employ other people to do so and may use any Plant and Materials to which he has title (P1)."			
93	**Payment on termination**			
93.1	Delete the second sub-bullet in the second main bullet in clause 93.1 and replace with: "● to which the *Client* has title and which the *Contractor* delivers to the Working Areas or to another location reasonably instructed by the *Project Manager*,".			

93.2	Delete amount A3 in clause 93.2 and replace with: "A3 A deduction of the forecast of the additional cost to the *Client* and/or the Board of completing the whole of the *works* 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 *Client* and/or the Board as a result of the termination or the event giving rise to it."
93.3	Insert, as a new clause 93.3: "In the event of any termination, notwithstanding any other provision of the contract but save as provided for in clause 93 the *Client* shall not be liable for and the *Contractor* 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."
93.4	Insert, as new clause 93.4: "In the event of termination of Supplemental Agreement (No.4) under clause 91.10 if the reason for termination of Supplemental Agreement (No.4) or of the *Client's* employment under Supplemental Agreement (No.4) is that the *Contractor* has failed to comply with his obligations under this contract, the amount due on termination of the contract includes A1 and A3. 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)	Insert the following after the third sentence: "The *Contractor* acknowledges and agrees that the *Client* 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. 4) that the Board is joined in any adjudication brought pursuant to this clause W2.3 subject to the agreement of the *Adjudicator*".
W2.3(11)	Delete clause and replace with: The *Adjudicator*'s decision under this contract or, in the event that the *Adjudicator* orders that a dispute under Supplemental Agreement (No. 4) 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 *Adjudicator*'s decision is also binding on the Board unless and until revised by the *tribunal* and is enforceable as a matter of contractual obligation between the Parties and/or the Board and not as an arbitral award."
W2.4	Insert as new clause W2.4: "Where a dispute arises under Supplemental Agreement (No.4) between the Board and *Client* in relation to a decision made by the *Client,* the *Project Manager* or the *Supervisor* pursuant to this contract, including but not limited to: • 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; the *Contractor* acknowledges and agrees that any adjustments shall not take effect until such disputes are resolved pursuant to Supplemental Agreement (No.4) and the Contractor shall proceed regularly and diligently with the works (as far as reasonably practicable) until such dispute is resolved."
PART Z3	**ADDITIONS AND AMENDMENTS TO SECONDARY OPTION CLAUSES**
Option X7	**Delay Damages**
X7.4	Insert a new clause as follows:

	"X7.4 If Completion has not occurred by the Longstop Date then whether or not delay damages have been paid and without affecting the *Contractor's* obligation to pay further delay damages the *Client* shall be entitled to terminate the *Contractor*'s 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."
Option X18	**Limitation of Liability**
X18.5	In the first bullet point after "Client's" insert "and/or the Board's" 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: "• liability for death or personal injury caused or contributed to by the *Contractor*, • liability in respect of the indemnities given by the *Contractor* 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 *Contractor*, and • liabilities of the *Contractor* (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	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".
PART Z4 –	**ADDITIONAL CLAUSES**
Z4.1	Insert the following clause: "Z4.1 **Advertising** In addition to its obligations under clause 27, the *Contractor* agrees not to use any trading relationship between the *Client*, its name and trading style or any registered or unregistered trade mark which the *Client* may use, for any marketing or advertising purposes, without first obtaining the *Client's* written authorisation. The terms and conditions of this clause shall survive any termination, cancellation or expiration of the Contract."
Z4.2	Insert the following clause: "Z4.2 **Board's right to stop the carrying out of the *works*** Z4.2(1) The *Contractor* acknowledges that pursuant to clause 6.5.4 of the Supplemental Agreement (No.4), the Board has the right at any time through its representative to verbally or in writing instruct the *Client* to stop the relevant part or parts of the *works* and to allow the Board and/or its representatives to inspect the relevant part or parts of the *works* if the Board reasonably believes that: (i) the carrying out of the relevant part or parts of the *works* has or is likely to:

	(A) have a potentially adverse impact on the clinical services and/or operation of the Hospital and/or the Royal Infirmary Edinburgh; or (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 (ii) a Major Incident has occurred. Z4.2(2) In the event that the *Client* receives an instruction from the Board to stop the relevant part or parts of the *works* pursuant to clause Z4.2(1), the *Project Manager* notifies the *Contractor* and the *Contractor* immediately stops the relevant part or parts of the *works* until such time as the *Project Manager* 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 *Project Manager* confirms that the *Contractor* is able to re-start the relevant part or parts of the *works*."

This is the Schedule Part 2A referred to in the foregoing Contract Agreement between **IHS LOTHIAN LIMITED** and **IMTECH ENGINEERING SERVICES LTD**.

CONTRACT DATA PART ONE

Contract Data

PART ONE – DATA PROVIDED BY THE *CLIENT*

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	W2
Secondary Options	X2, X4, X7, X18, Y(UK)2
The *works* are	the design, manufacture, supply, construction and installation, testing, commissioning and completion of (a) the fire enhancement works to the Department of Clinical Neurosciences forming part of the Hospital all as described in and as instructed under Board Change Notice MVC 112; and (b) the fire enhancement works to the Royal Hospital for Children and Young Persons forming part of the Hospital all as described in and as instructed under Board Change Notice MVC 126; and (c) the alteration works to CAMHS forming part of the Hospital all as described in and as instructed under Board Change Notice MVC127 and (d) the fire enhancement works to CAMHS forming part of the Hospital all as described in and as instructed under Board Change Notice MVC 131 and (e) the fire enhancement works to Critical Care and Haematology and Oncology forming part of the Hospital all as described in and as instructed under Board Change Notice MVC 164, as further described in the Scope.

The *Client* is

Name	IHS LOTHIAN LIMITED
Address for communications	13 Queens Road Aberdeen AB15 4YL
Address for electronic communications	[redacted]

The *Project Manager* is

Name	Robert Eastham or such replacement person as the *Client* shall notify to the *Contractor*
Address for communications	The Axis 10 Holliday Street Birmingham

	West Midlands B1 1TF
Address for electronic communications	[redacted] or such alternative address as the *Client* shall notify to the *Contractor*

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~~	~~is~~
~~• The *period for reply* for~~	~~is~~

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: 4 weeks

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

	condition to be met	Key date
(1)	Applicable Services Date for the alteration *works* to CAMHS forming part of the Hospital all as described in and as instructed under Board Change Notice MVC127 to occur by	11 November 2020
(2)	Applicable Services Date for the fire enhancement works to Critical Care and Hematology and Oncology forming part of the Hospital all as described in and as instructed under Board Change Notice MVC 164 to occur by	30 November 2020
(3)		

The *Contractor* prepares forecasts of the total Defined Cost for the whole of the *works* at intervals no longer than: 4 weeks

3 Time

The *starting date* is: 3 February 2020

The *access dates* are

	part of the Site	date
(1)	MVC 112 MVC 126 MVC 127 MVC 131 MVC 164	10th February 2020 6th April 2020 5th May 2020 5th May 2020 26th February 2020
~~(2)~~		
~~(3)~~		

The *Contractor* submits revised programmes at intervals no longer than: 4 weeks

If the *Client* has decided the completion *date* for the whole of the *works*

The *completion date* for the whole of the *works* is: 30th November 2020

Taking over the *works*

The *Client* **is/~~is not~~** willing to take over the *works* before the

before the Completion Date

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~~ | | ~~is~~ |

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~~	
~~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~~	

Resolving and avoiding disputes

The *tribunal* is: Litigation

~~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): Stephen Kelly

Address for communications	Royal Hospital for Children & Young People (RHCYP) & Department of Clinical Neurosciences (DCN), Edinburgh, 9 Sciennes Road Edinburgh EH9 1LF
Address for electronic communications	[redacted]
Name (2)	Matthew Templeton
Address for communications	Dalmore Capital Limited Caledonian Exchange 19a Canning Street Edinburgh EH3 8EG
Address for electronic communications	[redacted]

The *Adjudicator* is

Name	Appointed by the *Adjudicator nominating body*
Address for communications	N/A
Address for electronic communications	N/A

The *Adjudicator nominating body* is	Royal Institution of Chartered Surveyors Scottish Branch

~~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)~~	~~N/A~~	~~N/A~~
~~(2)~~		
~~(3)~~		
~~(4)~~		

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: (1) from the Completion Date until the earlier of: (i) Completion; and (ii) 24 January 2021, £0 per week; and (2) from 25 January 2021 until Completion, £5,000 per week

~~If Option X7 is used with OptionX5~~ ~~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~~

_____

_____

~~The *Subcontractor undertaking to Others* are works~~ ~~provided to~~

~~N/A~~ _____

~~The *Subcontractor undertaking to the Client* are~~

~~works~~

~~N/A~~

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)

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: £3,000,000

For any one event, the *Contractor's* liability to the *Client* for loss of or damage to the *Client's* property is limited to: £3,000,000

The *Contractor's* liability for Defects due to its design which are not listed on the Defects Certificate is limited to: £3,000,000

The *Contractor's* total liability to the *Client* for all matters arising under or in connection with the contract, other than excluded 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~~

~~*item*~~	~~description~~	~~amount per day~~
~~(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 21 (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~~

~~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

This is the Schedule Part 2B referred to in the foregoing Contract Agreement between **IHS LOTHIAN LIMITED** and **IMTECH ENGINEERING SERVICES LTD**.

CONTRACT DATA PART TWO

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	Imtech Engineering Services Ltd
Address for communications	G&H House Hooton Street Carlton Road Nottingham NG3 5GL
Address for electronic communications	[redacted]

The *fee percentage* is 18 %

The *working areas* are See the Schedule Part 5

The *key persons* are

Name (1)	David Keenan
Job	Regional Director
Responsibilities	
Qualification	
Experience	35 years
Name (2)	Dom Gallagher
Job	Construction Lead
Responsibilities	
Qualifications	
Experience	37 years

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

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	Imtech Engineering Services Scotland The Hub, East Gateway Beancross Road Grangemouth FK3 8WH
Address for electronic communications	[redacted]
Name (2)	Mark Simpson

Address for communications	Hooton Street Carlton Road Nottingham NG3 5GL
Address for electronic communications	[redacted]

~~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
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
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
Heater Batteries	Rates as per supplier
Attenuators	Rates as per supplier
Grilles	Rates as per supplier
Joinery	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 Planner	£ 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 £140 per hour
Director £110 per hour
Associate Director £100 per hour
Senior Associate £95 per hour
Associate £85 per hour
Principal Engineer £82 per hour
Senior Engineer £65 per hour
Engineer £55 per hour
Graduate £45 per hour
Admin £40 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 “SA4 USB Technical Data”, referred to in and forming part of this contract

This is the Schedule Part 3 referred to in the foregoing Contract Agreement between **IHS LOTHIAN LIMITED** and **IMTECH ENGINEERING SERVICES LTD**.

SCOPE

The Scope is as set out on the USB memory stick in the Agreed Form identified as the Scope with reference "SA4 USB Technical Data", referred to in and forming part of this contract, provided that wherever any part of the Scope refers to the "Independent Tester" the Parties agree that this is deemed instead to mean the "*Project Manager*"

This is the Schedule Part 4 referred to in the foregoing Contract Agreement between **IHS LOTHIAN LIMITED** and **IMTECH ENGINEERING SERVICES 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 “SA4 USB Technical Data”, referred to in and forming part of this contract

This is the Schedule Part 5 referred to in the foregoing Contract Agreement between **IHS LOTHIAN LIMITED** and **IMTECH ENGINEERING SERVICES 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 “SA4 USB Technical Data”, referred to in and forming part of this contract

This is the Schedule Part 6 referred to in the foregoing Contract Agreement between **IHS LOTHIAN LIMITED** and **IMTECH ENGINEERING SERVICES LTD**.

PART A

Form of *Contractor* Collateral Warranty

Collateral warranty

AMONG

IHS LOTHIAN LIMITED

and

IMTECH ENGINEERING SERVICES LTD

and

LOTHIAN HEALTH BOARD

relating to the design, manufacture, supply, construction, installation, testing, commissioning and completion of MVC Works 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 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, manufacture, supply, construction, installation, testing, commissioning and completion of (a) fire enhancement works in DCN (Board Change Order MVC 112) and CAMHS (Board Change Order MVC 131) and Critical Care and Haematology and Oncology (MVC 164) and other areas of the Hospital (Board Change Order MVC 126) and (b) alteration works to CAMHS (Board Change Order MVC 127) (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**

by …….....

..... Authorised Signatory
..... Full Name

at …….....

on …….....

..... Authorised Signatory
..... Full Name

at …….....

on …….....

SUBSCRIBED for and on behalf of **IMTECH ENGINEERING SERVICES 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 …….....

PART B

Forms of *Subcontractor* Collateral Warranty ifo (1) the Client and (2) the Board

CONSULTANT'S COLLATERAL WARRANTY

relating to a project at

ROYAL HOSPITAL FOR SICK CHILDREN & YOUNG

PEOPLE + DCN

among

HOARE LEA LLP

and

IHS LOTHIAN LIMITED

AGREEMENT

AMONG

PARTIES

(1) **HOARE LEA LLP** (registered number OC407254) of 155 Aztec West, Almondsbury, Bristol, England, BS32 4UB (**Consultant**).

(2) **IHS LOTHIAN LIMITED** of 13 Queen's Road, Aberdeen, AB15 4YL (**Beneficiary which term shall include it 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.

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 on or around the date hereof between the Client and the Consultant.

Project: means the design, manufacture, supply, construction, installation, testing, commissioning and completion of (a) fire enhancement works in DCN (Board Change Order MVC 112) and CAMHS (Board Change Order MVC 131) and Critical Care and Haematology and Oncology (MVC 164) and other areas of the Property (Board Change Order MVC 126) and (b) alteration works to CAMHS (Board Change Order MVC 127).

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 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 Scottish 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 Scotland, be deemed to include a reference to that which most nearly approximates to the Scottish 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, provided that claims for negligence or breach of duty in respect of cladding and fire safety and/or asbestos in respect of which the Consultant is obliged to have professional indemnity insurance pursuant to clause 2.6 shall in the case of (1) cladding and fire safety, be limited to £5,000,000 in the aggregate and (2) asbestos, be limited to £5,000,000 in the aggregate, 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 Professional Appointment, the Consultant shall maintain professional indemnity insurance of at least £10,000,000 any one claim and unlimited in the period of insurance but subject to separate aggregate limits of indemnity for all claims notified within the period of insurance relating to pollution/contamination at £10,000,000, cladding and fire safety at £5,000,000 and asbestos at £5,000,000 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 that Completion of the whole of the Project is certified under the Sub-Contract.

4. ASSIGNATION

The Beneficiary may assign the benefit of this agreement no more than twice, provided the Consultant is notified of each such assignation. Additional assignations 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 Limited	c/o Pinsent Masons LLP 13 Queens Road Aberdeen AB15 4YL

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 Contract (Third Party Rights) (Scotland) Act 2017 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 Scotland.

8. JURISDICTION

Each party irrevocably agrees that the courts of Scotland 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 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 Consultant, and the Beneficiary. The Consultant and the Beneficiary 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 six (6) pages are executed as follows:

SUBSCRIBED for and on behalf of **HOARE LEA LLP**

by

..... Member

..... Full Name

at …….....

on …….....

..... Member

..... 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 …….....

CONSULTANT'S COLLATERAL WARRANTY

relating to a project at

ROYAL HOSPITAL FOR SICK CHILDREN & YOUNG

PEOPLE + DCN

among

HOARE LEA LLP

and

LOTHIAN HEALTH BOARD

AGREEMENT

AMONG

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 Heath 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 it 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.

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 on or around the date hereof between the Client and the Consultant.

Project: means the design, manufacture, supply, construction, installation, testing, commissioning and completion of (a) fire enhancement works in DCN (Board Change Order MVC 112) and CAMHS (Board Change Order MVC 131) and Critical Care and Haematology and Oncology (MVC 164) and other areas of the Property (Board Change Order MVC 126) and (b) alteration works to CAMHS (Board Change Order MVC 127).

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 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 Scottish 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 Scotland, be deemed to include a reference to that which most nearly approximates to the Scottish 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, provided that claims for negligence or breach of duty in respect of cladding and fire safety and/or asbestos in respect of which the Consultant is obliged to have professional indemnity insurance pursuant to clause 2.6 shall in the case of (1) cladding and fire safety, be limited to £5,000,000 in the aggregate and (2) asbestos, be limited to £5,000,000 in the aggregate, 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 Professional Appointment, the Consultant shall maintain professional indemnity insurance of at least £10,000,000 any one claim and unlimited in the period of insurance but subject to separate aggregate limits of indemnity for all claims notified within the period of insurance relating to pollution/contamination at £10,000,000, cladding and fire safety at £5,000,000 and asbestos at £5,000,000 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 that Completion of the whole of the Project is certified under the Sub-Contract.

4. ASSIGNATION

The Beneficiary may assign the benefit of this agreement no more than twice, provided the Consultant is notified of each such assignation. Additional assignations 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	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 Contract (Third Party Rights) (Scotland) Act 2017 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 Scotland.

8. JURISDICTION

Each party irrevocably agrees that the courts of Scotland 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 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.

IN WITNESS WHEREOF these presents consisting of this and the preceding six (6) pages are executed as follows:

SUBSCRIBED for and on behalf of **HOARE LEA LLP**

by

..... Member

..... Full Name

at …….....

on …….....

..... Member

..... Full Name

at …….....

on …….....

SUBSCRIBED for and on behalf of **LOTHIAN HEALTH BOARD**

by

..... Authorised Signatory
..... Full Name

at …….....

on …….....

..... Authorised Signatory
..... Full Name

at …….....

on …….....

This is the Schedule Part 7 referred to in the foregoing Contract Agreement between **IHS LOTHIAN LIMITED** and **IMTECH ENGINEERING SERVICES LTD**.

COMPLETION CRITERIA

Terminology

In this Completion Criteria document:-
The term 'Completion Criteria' means "Completion Criteria MVC" in Supplemental Agreement No. 4; and
The term 'Project Co' means the "*Client*" as described in the NEC4 contract (otherwise called the "MVC Works Contract"); and
The term "MVC Works Contractor" means the "*Contractor*" as described in the NEC4 contract; and
The term "MVC Works Contract" means the NEC4 contract as amended; and
The terms "MVC Works" mean the "*works"* as defined in the NEC4 Contract; and
The term "Scope MVC" means the "Scope" as described in the NEC4 contract; and
The term "Facilities" means the "Facilities" as defined in the Project Agreement as amended by the *works.*

Completion Criteria

Project Co and the MVC Works Contractor shall demonstrate that the following criteria have been achieved:

General

1.1 The MVC Works are designed, constructed, installed, tested, commissioned and completed as required in accordance with Schedule Part 3 (Scope MVC) and all post contract RFIs through the Request For Information Protocol agreed between the Board and Project Co/MVC Works Contractor.

1.2 The room conditions are proven against the required parameters in order to ensure the specified room conditions are achieved in all relevant accommodation.

1.3 The 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/MVC 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 MVC Works incorporate comments from the room review process.

1.5 The MVC Works are reinstated in accordance with the as built drawings and Part B (Dilapidation Survey) of Schedule Part 3 (Scope MVC).

Ventilation

1.6 The MVC Works have been tested, commissioned, and operate satisfactorily in accordance with the following:-

- 1.6.1 The requirements as set out in Schedule Part 3 (Scope MVC); and
- 1.6.2 Post contract RFIs as agreed between the Board and Project Co/MVC Works Contractor through the Request for Information Protocol; and
- 1.6.3 The construction methodology and commissioning methodology (and Method Statements) as agreed between the Board and Project Co/MVC Works Contractor through the Request for Information Protocol; and
- 1.6.4 All manufacturers testing, commissioning and operating requirements; and
- 1.6.5 All other relevant terms of the Project Agreement (as amended by Supplemental Agreement No. A 4).

1.7 Project Co and the MVC Works Contractor shall certify that the MVC Works have been installed, tested and commissioned in accordance with the requirements of Schedule Part 3 (Scope MVC), the post contract RFIs through the Request for Information Protocol and all relevant guidance.

Fire

1.8 The Combined Smoke and Fire Dampers (CSFD) have been installed at all existing ventilation terminals in corridors in accordance with MVC 112 and MVC 126 and MVC 131 and MVC 164.

1.9 The CSFD in ductwork traversing room to room boundaries have been installed in accordance with MVC 112 and MVC 126 and MVC 131 and MVC 164.

1.10 Fire Doors have been installed to all rooms within corridors serving sleeping accommodation, in accordance with SHTM 81 and the Buildings (Scotland) Regulations 2004 Building Standards technical handbook 2017: non-domestic buildings, including the installation of intumescent seals and cold smoke seals. Project Co and the MVC Works Contractor to provide copies of the manufacturer and installer certification.

1.11 All mechanical self-closing devices have been installed to doors and half leaf doors to all rooms opening onto corridors within sleeping accommodation areas and have been tested and commissioned in accordance with MVC 112 and MVC 126 and MVC 131 and MVC 164.

1.12 All electro mechanical, free swing self-closing devices have been installed to doors and half leaf doors for all rooms opening onto corridors within sleeping accommodation areas and linked to the fire alarm system in accordance with MVC 112 and MVC 126 and MVC 131 and MVC 164.

1.13 Existing walls between rooms and corridors, and between rooms have been upgraded to “short duration” in accordance with the Buildings (Scotland) Regulations 2004 Building Standards technical handbook 2017: non-domestic buildings and MVC 112 and MVC 126 and MVC 131 and MVC 164.

1.14 The MVC Works for fire are tested, commissioned, and operating satisfactorily in accordance with the following:-

1.14.1 The fire requirements as set out in MVC 112 and MVC 126 and MVC 131 and MVC 164; and

1.14.2 The construction methodology and commissioning methodology (and Method Statements) as agreed between the Board and Project Co/MVC Works Contractor through the Request for Information Protocol; and

1.14.3 Any manufacturers’ testing, commissioning and operating requirements; and

1.14.4 All other relevant terms of the Project Agreement.

1.15 All fire detection, alarm and suppression systems including the interconnection with the existing RIE Facilities are complete, tested, commissioned and operational.

1.16 Cause and effect testing of the fire detector, manual call point and fire-alarm in each zone has been completed and proven.

1.17 Those elements of the fire management strategy and fire safety risk assessment in accordance with the Fire (Scotland) Act 2005, for which Project Co is responsible, have been updated.

Equipment

1.18 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 (Scope MVC), manufacturers testing, commissioning and operating requirements and all other relevant terms of the Project Agreement (as amended by Supplemental Agreement No. 4).

Affected Services

1.19 All services and building fabric that are affected by the MVC Works are tested, re-commissioned, and operating satisfactorily in accordance with the following:-

1.19.1 The Construction and Commissioning Methodologies as agreed between the Board and Project Co/MVC Works Contractor through the Request for Information Protocol; and

1.19.2 Any manufacturers' testing, commissioning and operating requirements; and

1.19.3 All other relevant terms of the Project Agreement (as amended by Supplemental Agreement No. 4).

1.20 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 MVC 127 in connection with the modification and reinstatement of all services affected by the MVC 127. This should include but not limited to:-

1.20.1 Medical Gases; and

1.20.2 LV; and

1.20.3 Water; and

1.20.4 Ceiling Hoists.

Construction activity

1.21 Project Co and the MVC Works Contractor shall ensure the MVC 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.

1.22 Project Co and the MVC Works Contractor shall ensure all elements of the Handover Clean, are complete.

1.23 Project Co and the MVC Works Contractor shall ensure the following finishing works are completed:-

(a) Removal of Site establishment; and

(b) Cap off and completely remove temporary site services and record positions; and

(c) Removal of temporary materials, including surfacing, complete with full reinstatement.

1.24 Project Co and the MVC Works Contractor shall reinstate the work areas of the Site and/or rooms where the MVC Works are being undertaken to the standard set out in the Project Agreement (as amended and supplemented pursuant to Supplemental Agreement No 4, Supplemental Agreement No. 2 and SA1).

Handover Clean

On completion of the MVC Works, Project Co and the MVC 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:

1.25 **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.

1.26 **Floors**

1.26.1 All floors are cleaned to remove dust, dirt, grit, lint, litter, water, and other liquids.

1.26.2 All carpets, vinyl and other floor coverings are clean and vacuumed.

1.26.3 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.

1.26.4 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.

1.26.5 Barrier matting zones are vacuumed and wells free of debris.

1.27 **Fixtures and Fittings**

1.27.1 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.

1.27.2 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.

1.27.3 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.

1.27.4 Protective film is removed from all hard surfaces, equipment and appliances unless otherwise requested by the Service Provider.

1.27.5 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.

1.27.6 Light switches and electrical sockets are wiped clean and light fittings are cleaned to remove dust, dirt, grit, lint, film leaving surfaces visibly clean.

1.28 **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.

1.29 **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.

1.30 **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 MVC Works Contractor shall provide all documentation to the *Project Manager* in accordance with Supplemental Agreement No. 4 and the MVC Works Contract and including:-

1.31 Project Co and the MVC Works Contractor shall, on completion of the MVC 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 (Scope MVC) (containing, as a minimum, all the testing and commissioning information including as-built drawings / test results) to allow the Facilities to be operated safely; and

1.32 Project Co, the Service Provider and/or the MVC 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/MVC Works Contractor as per the Request for Information Protocol; and

1.33 Project Co and the MVC Works Contractor shall update the Room Data Sheets for all rooms and areas included in Schedule Part 3 (Scope MVC) within the Facilities or as amended through the Request for Information Protocol. These Room Data Sheets shall be complete in all respects; and

1.34 In addition, Project Co and the MVC Works Contractor shall also provide the following:-

- Building warrant completion certificates.
- Evidence that all conditions for which Project Co and/or the MVC 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.

This is the Schedule Part 8 referred to in the foregoing Contract Agreement between **IHS LOTHIAN LIMITED** and **IMTECH ENGINEERING SERVICES LTD**.

CERTIFICATE OF COMPLETION

Certificate of Completion of MVC Works

Issued by:	Project Manager – **[ ]**
Address:	[ ]
Project Co:	**IHS LOTHIAN LIMITED**
Address:	[ ]
Board:	**LOTHIAN HEALTH BOARD**
Address:	[ ].
MVC Works Contractor:	**IMTECH ENGINEERING SERVICES LTD**
Address:	[ ]

Issue date: ……

MVC Works:

Situated at:

Supplemental Agreement (No 4). dated: ……

Under the terms of the above-mentioned Supplemental Agreement (No 4).

I/we certify that the MVC Works Completion Date was achieved on [ ].

To be signed by or for the issuer named above.

Signed.....……
[PROJECT MANAGER]

IHS LOTHIAN LTD

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

	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]

Full Names MATTHEW THOMPSON

HANNAH BLECK Witness

[redacted] 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

Signed .....Director

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 Imtech 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")

NHS Lothian

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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.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.

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-C1.4-017en-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*

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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'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

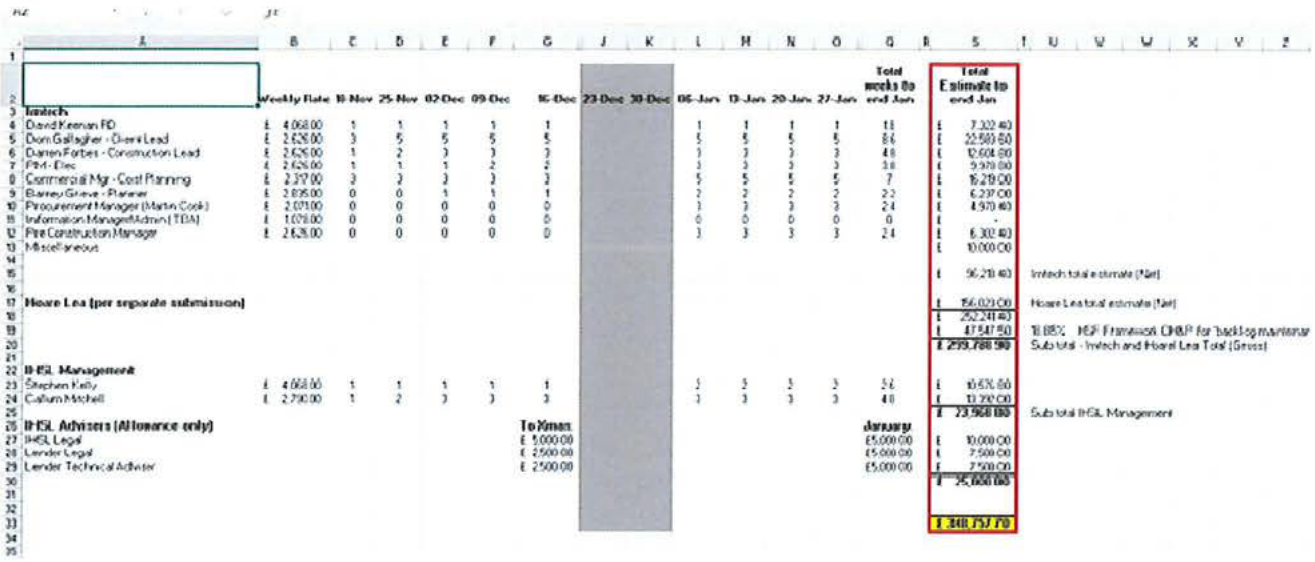
We require the Change described above.
Please advise when Project Co will submit a High Value Change Proposal for the above.

Signed on behalf of NHS Lothian: .. [redacted] .....

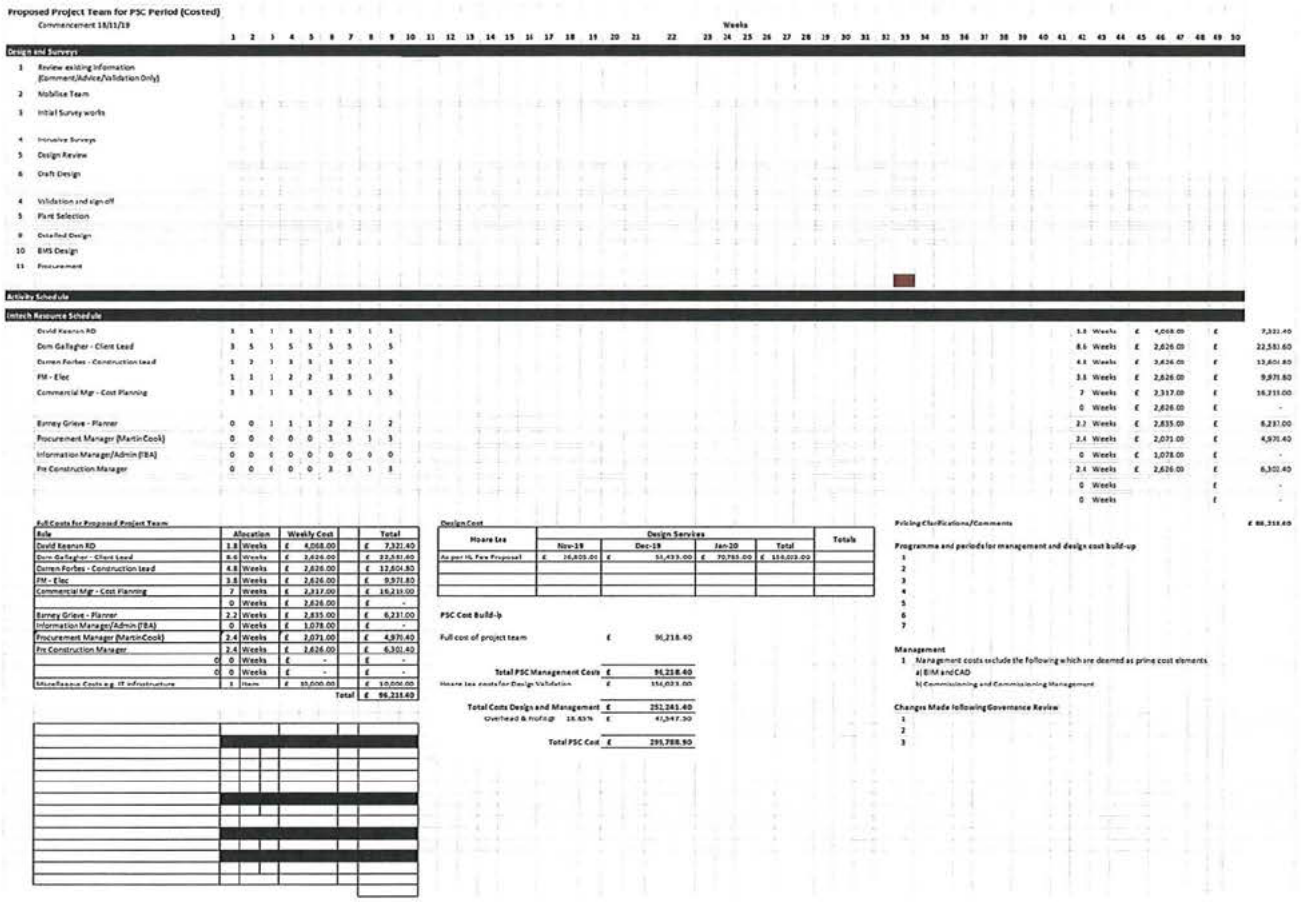
Name of Signatory (type or print): .....Brian Currie – Board Rep – NHS Lothian.....

Date: 5th December, 2019 .....

HVCN 0107



		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 FD	£	4,068.00	1	1	1	1	1			1	1	1	1	11	£	7,322.40	
Dom Gallagher - Client Lead	£	2,626.00	3	5	5	5	5			5	5	5	5	84	£	22,580.60	
Darren Forbes - Construction Lead	£	2,626.00	1	2	3	3	3			3	3	3	3	48	£	12,604.80	
PM - Elec	£	2,626.00	1	1	1	2	2			3	3	3	3	38	£	9,979.88	
Commercial Mgr - Cost Planning	£	2,317.00	3	3	3	3	3			5	5	5	5	7	£	16,219.00	
Blamey Grieve - Planner	£	2,895.00	0	0	1	1	1			2	2	2	2	22	£	6,237.00	
Procurement Manager (Martin Cook)	£	2,071.00	0	0	0	0	0			3	3	3	3	24	£	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	24	£	6,302.40	
Miscellaneous															£	10,000.00	
															£	96,210.48	Imtech total estimate (*Net)
Hoare Lea (per separate submission)															£	156,023.00	Hoare Lea total estimate (Net)
															£	252,241.48	
															£	47,547.52	18.85% HEF Framework CHBP for backlog maintenar
															£	299,788.99	Sub total - Imtech and Hoare Lea Total (Gross)
IHSL Management																	
Stephen Kelly	£	4,068.00	1	1	1	1	1			1	1	1	1	14	£	10,670.80	
Callum Mitchell	£	2,790.00	1	2	3	3	3			3	3	3	3	48	£	13,290.00	
															£	23,960.80	Sub total IHSL Management
IHSL Advisers (Allowance only)							**To Xmas**							**January**			
IHSL Legal							£ 5,000.00							£5,000.00	£	10,000.00	
Lender Legal							£ 2,500.00							£5,000.00	£	7,500.00	
Lender Technical Adviser							£ 2,500.00							£5,000.00	£	7,500.00	
															£	25,000.00	
															£	348,757.79	



Proposed Project Team for PSC Period (Costed)
Commencement 18/11/19

Weeks

		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
Design and Surveys																																																			
1	Review existing information (Comment/Advice/Validation Only)																																																	
2	Mobilise Team																																																	
3	Intial Survey works																																																	
4	Intrusive Surveys																																																	
5	Design Review																																																	
6	Draft Design																																																	
4	Validation and sign off																																																	
5	Plant Selection																																																	
9	Detailed Design																																																	
10	BMS Design																																																	
11	Procurement																																																	
Activity Schedule																																																	
Intech Resource Schedule																																																	
	David Keenan RD	1	1	1	1	1	1	1	1	1																																								
	Dom Gallagher - Client Lead	1	1	1	1	1	1	1	1	1																																								
	Darren Forbes - Construction lead	1	1	1	1	1	1	1	1	1																																								
	FM - Elec	1	1	1	2	2	1	1	1	1																																								
	Commercial Mgr - Cost Planning	1	1	1	1	1	1	1	1	1																																								
	Barney Grieve - Planner	0	0	1	1	1	2	2	1	2																																								
	Procurement Manager (MartinCook)	0	0	0	0	0	1	1	1	1																																								
	Information Manager/Admin (TBA)	0	0	0	0	0	0	0	0	0																																								
	Pre Construction Manager	0	0	0	0	0	1	1	1	1																																								

1.8	Weeks	£	4,068.00	£	7,321.40
8.6	Weeks	£	2,626.00	£	22,581.60
4.8	Weeks	£	2,626.00	£	12,604.80
3.8	Weeks	£	2,626.00	£	9,971.80
7	Weeks	£	2,317.00	£	16,211.00
0	Weeks	£	2,626.00	£	-
2.2	Weeks	£	2,835.00	£	6,237.00
2.4	Weeks	£	2,071.00	£	4,970.40
0	Weeks	£	1,078.00	£	-
2.4	Weeks	£	2,626.00	£	6,302.40
0	Weeks			£	-
0	Weeks			£	-

Full Costs for Proposed Project Team

Role	Allocation		Weekly Cost		Total
David Keenan RD	1.8	Weeks	£ 4,068.00	£	7,321.40
Dom Gallagher - Client Lead	8.6	Weeks	£ 2,626.00	£	22,581.60
Darren Forbes - Construction lead	4.8	Weeks	£ 2,626.00	£	12,604.80
FM - Elec	3.8	Weeks	£ 2,626.00	£	9,971.80
Commercial Mgr - Cost Planning	7	Weeks	£ 2,317.00	£	16,211.00
	0	Weeks	£ 2,626.00	£	-
Barney Grieve - Planner	2.2	Weeks	£ 2,835.00	£	6,237.00
Information Manager/Admin (TBA)	0	Weeks	£ 1,078.00	£	-
Procurement Manager (MartinCook)	2.4	Weeks	£ 2,071.00	£	4,970.40
Pre Construction Manager	2.4	Weeks	£ 2,626.00	£	6,302.40
0	0	Weeks	£ -	£	-
0	0	Weeks	£ -	£	-
Miscellaneous Costs e.g. IT infrastructure	1	Item	£ 10,000.00	£	10,000.00
			Total	£	96,218.40

Design Cost

Hoare Lea	Design Services				Totals
	Nov-19	Dec-19	Jan-20	Total	
As per HL Fee Proposal	£ 16,805.00	£ 51,433.00	£ 70,765.00	£ 138,003.00	

PSC Cost Build-b

Full cost of project team	£	96,218.40
Total PSC Management Costs	£	96,218.40
Hoare lea costs for Design Validation	£	154,023.00
Total Costs Design and Management	£	251,241.40
Overhead & Profit@ 16.65%	£	41,847.50
Total PSC Cost	£	293,788.90

Pricing Clarifications/Comments £ 88,218.40

Programme and periods for management and design cost build-up

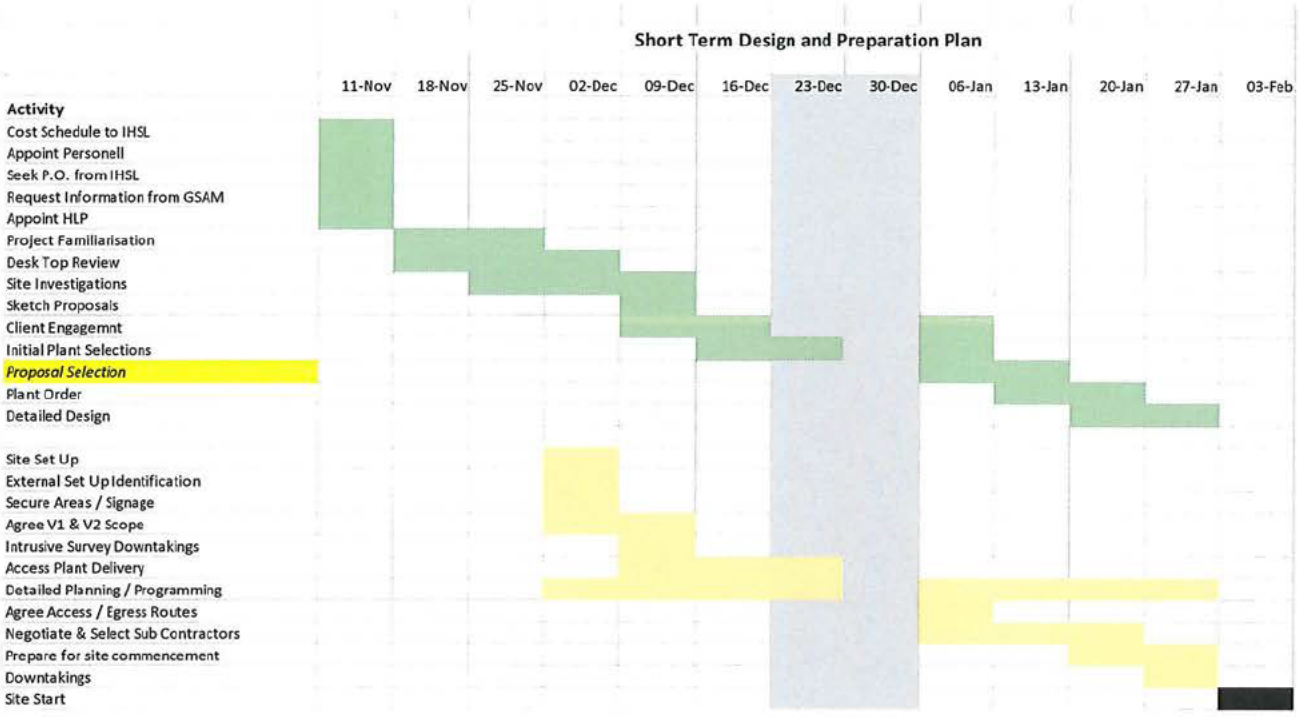
1
2
3
4
5
6
7

Management

1 Management costs exclude the following which are deemed as prime cost elements
   a) BIM and CAD
   b) Commissioning and Commissioning Management

Changes Made following Governance Review

1
2
3


Short Term Design and Preparation Plan
11-Nov
18-Nov
25-Nov
02-Dec
09-Dec
16-Dec
23-Dec
30-Dec
06-Jan
13-Jan
20-Jan
27-Jan
03-Feb
Activity
Cost Schedule to IHSL
Appoint Personell
Seek P.O. from IHSL
Request Information from GSAM
Appoint HLP
Project Familiarisation
Desk Top Review
Site Investigations
Sketch Proposals
Client Engagemnt
Initial Plant Selections
Proposal Selection
Plant Order
Detailed Design
Site Set Up
External Set Up Identification
Secure Areas / Signage
Agree V1 & V2 Scope
Intrusive Survey Downtakings
Access Plant Delivery
Detailed Planning / Programming
Agree Access / Egress Routes
Negotiate & Select Sub Contractors
Prepare for site commencement
Downtakings
Site Start

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.

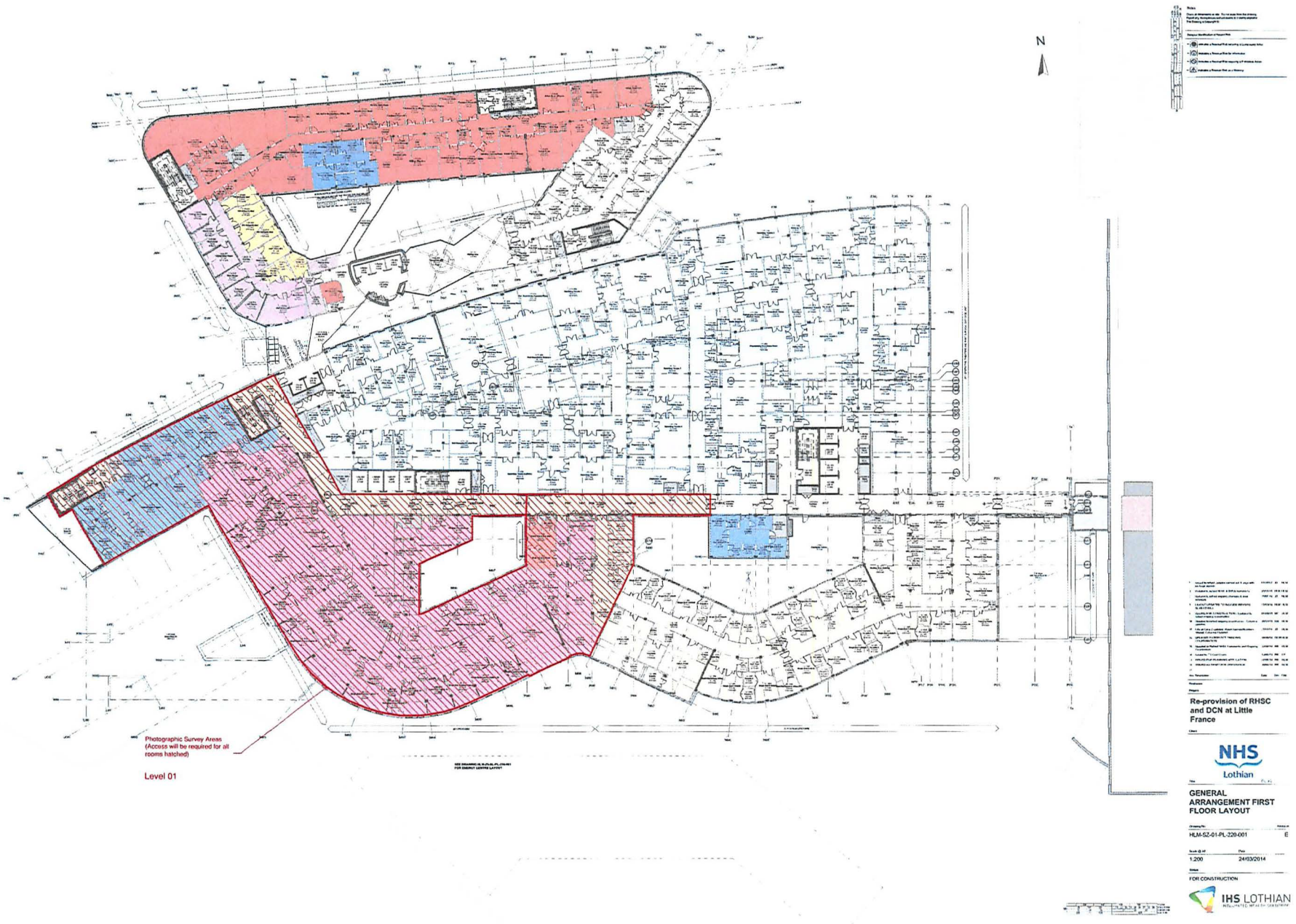
The Subcontractor and ProjectCo shall notify one another within three (3) Business Days of any circumstances which may give rise to a claim under the insurances referred to in this Schedule Part 3.

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.



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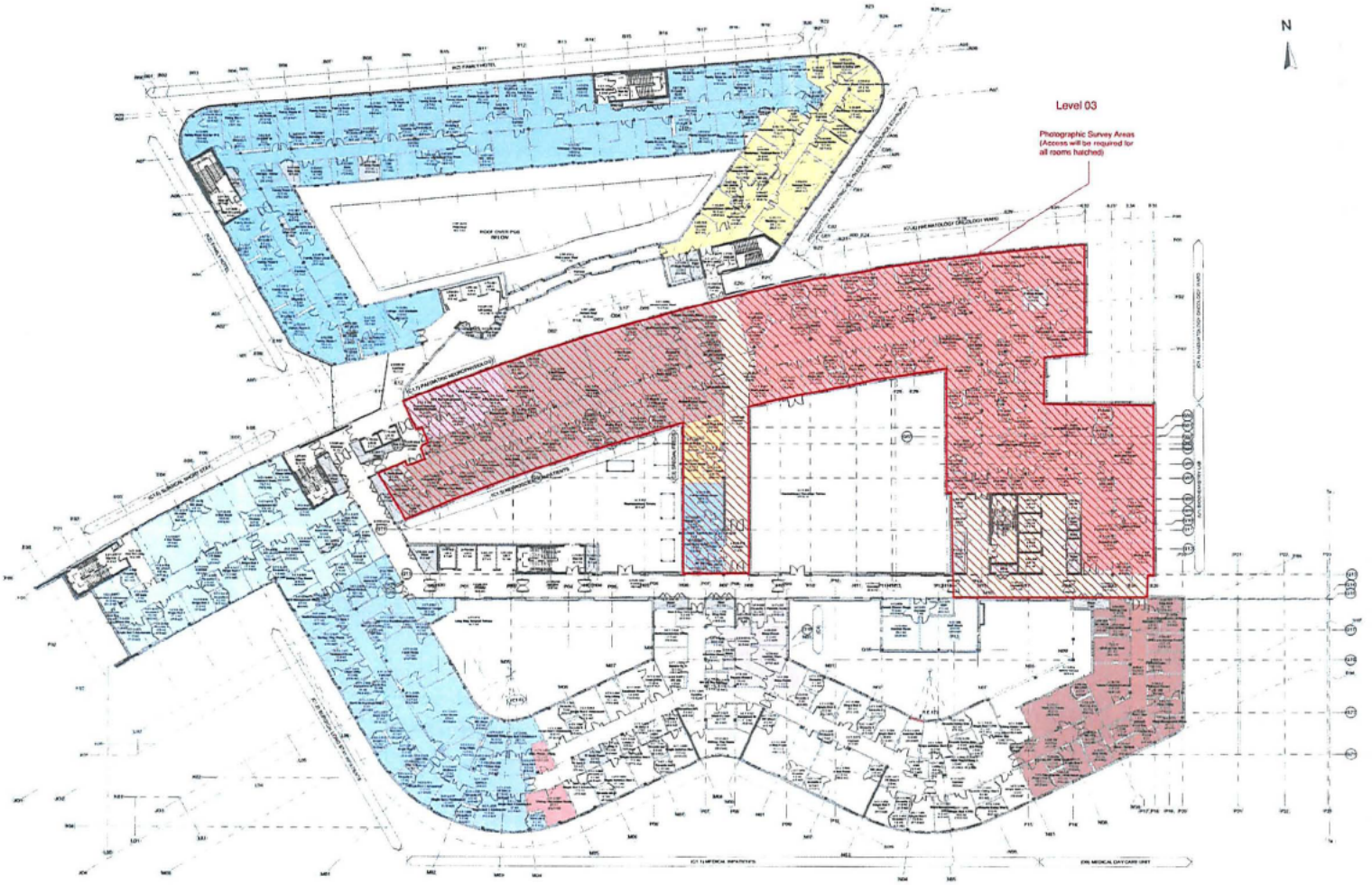

Re-provision of RHSC and DCN at Little France

NHS Lothian

GENERAL ARRANGEMENT THIRD FLOOR LAYOUT

1:200

24/03/2014

FOR CONSTRUCTION

IHS LOTHIAN

IHS LOTHIAN LTD

A47193110

HOARE LEA

Royal Hospital for Children and Young People + DCN. Edinburgh.

IHS Lothian.

MEP ENGINEERING
STAGE 4 REPORT

REVISION 07 – 21 DECEMBER 2020

STAGE 4

A47193110

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

Project number: 27/27164
Document reference: REP-2727164-08-SV-20200313-Stage 4 Report-Rev07

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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 2020-04016
- 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 and 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: 11/02454/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 required 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

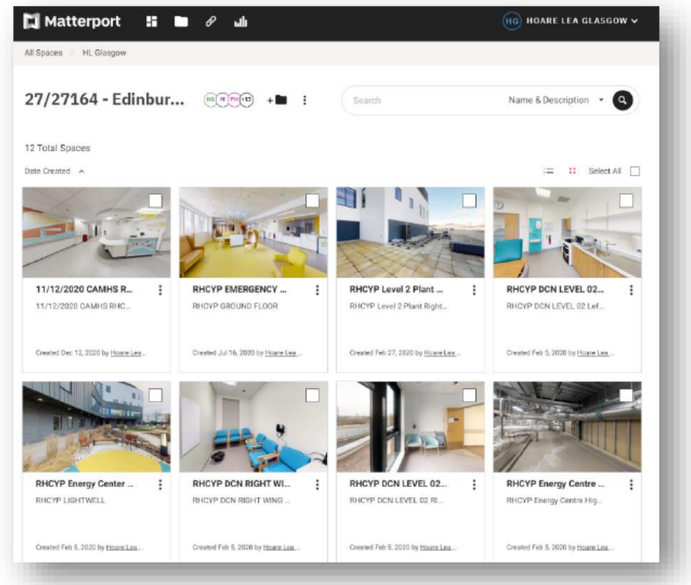
The plant replacement and maintenance strategy is described in section 10 of this report

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.

https://matterport.com/en-gb

[redacted]



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:

NHS Lothian

IHS LOTHIAN LTD

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.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.

HVCN 0107

NHS Lothian

IHS LOTHIAN LTD

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-C1.4-017en-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*

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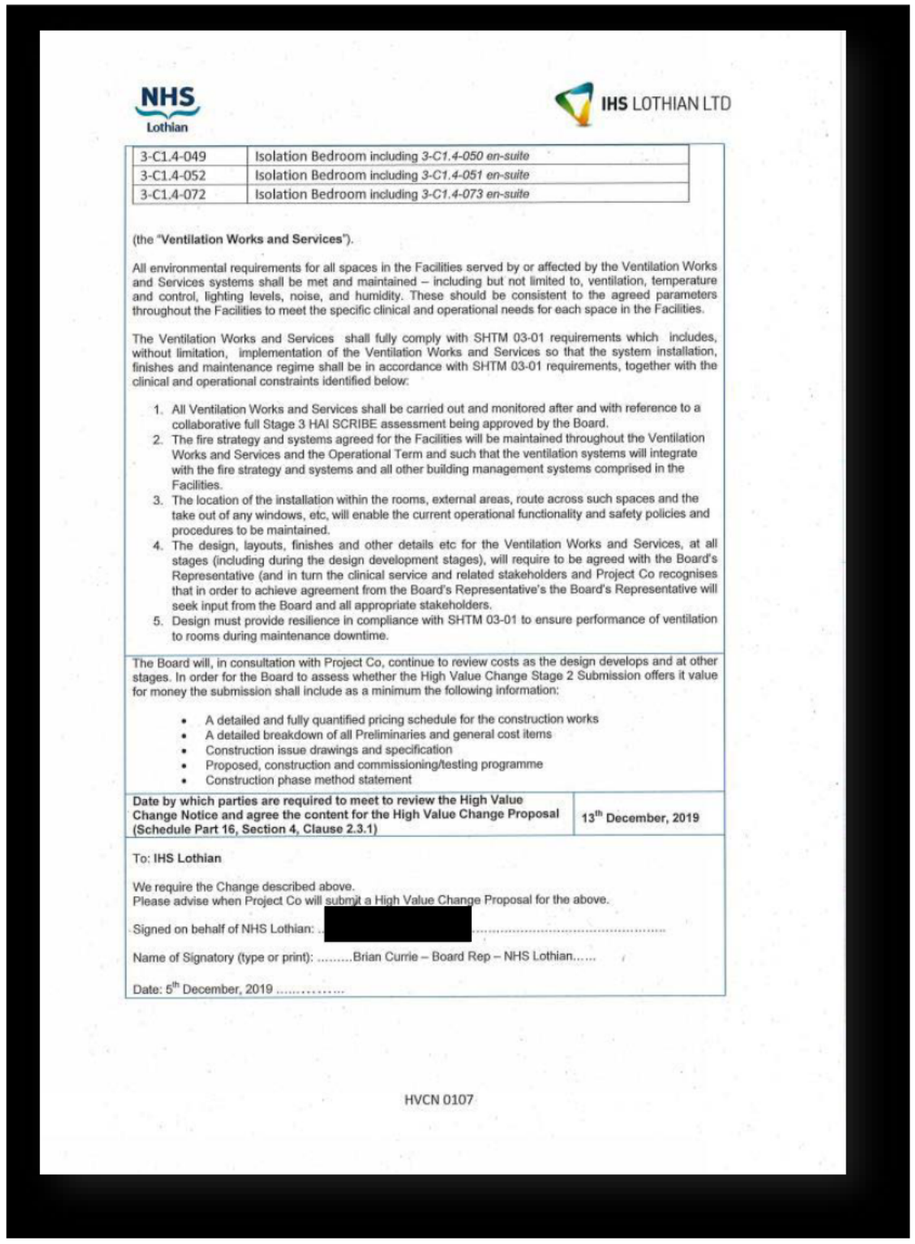

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3-C1.4-049	Isolation Bedroom including *3-C1.4-050 en-suite*
3-C1.4-052	Isolation Bedroom including *3-C1.4-051 en-suite*
3-C1.4-072	Isolation Bedroom including *3-C1.4-073 en-suite*

(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'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: [redacted]

Name of Signatory (type or print): .....Brian Currie – Board Rep – NHS Lothian.....

Date: 5th December, 2019 .....

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.

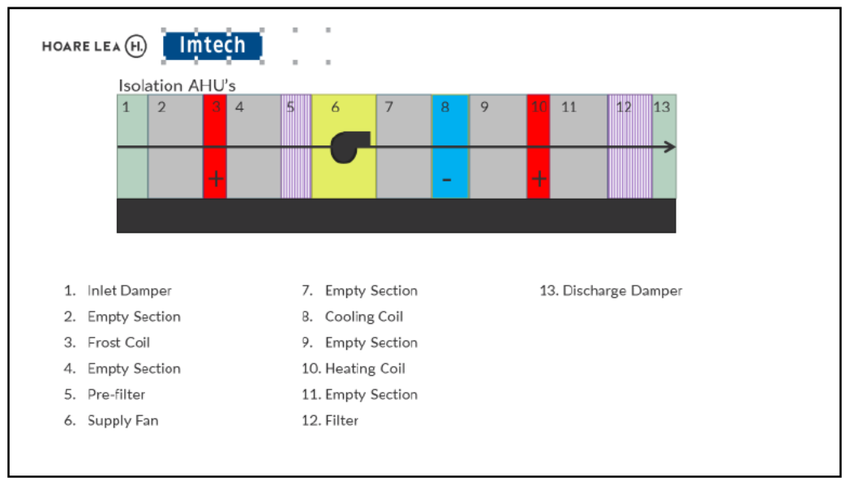
During the first technical workshop 2 options were presented to achieve compliance with HVC107:

- 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 disadvantaged 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.

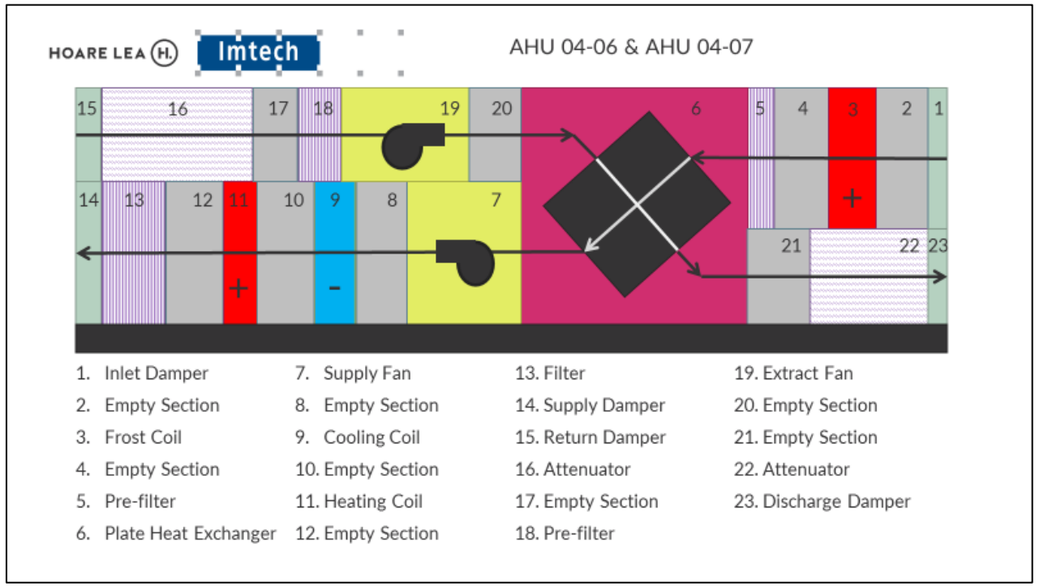
The isolation room air handling units will be located on the external grass area adjacent to the energy centre mezzanine level. The area around the new enclosure (and the air intakes) will have a slabbed are and a cage to prevent vegetation entering the air stream in accordance with clause 3.65 of SHTM03-01.

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.

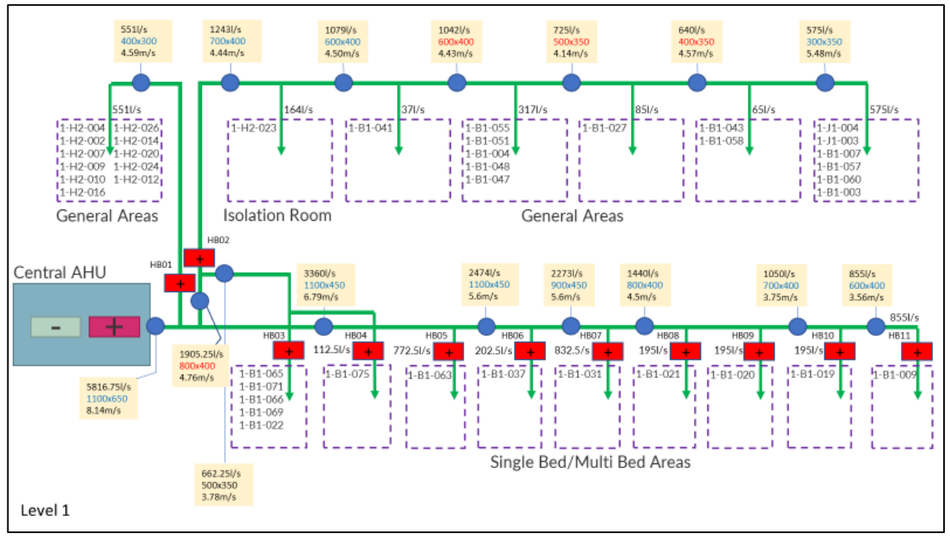
A site measured survey has been carried out and a new flat packed unit can be installed in the area of the existing unit (AHU04-06).

As agreed during Technical Workshop 3 a plate heat exchanger will be utilised for heat recovery purposes.



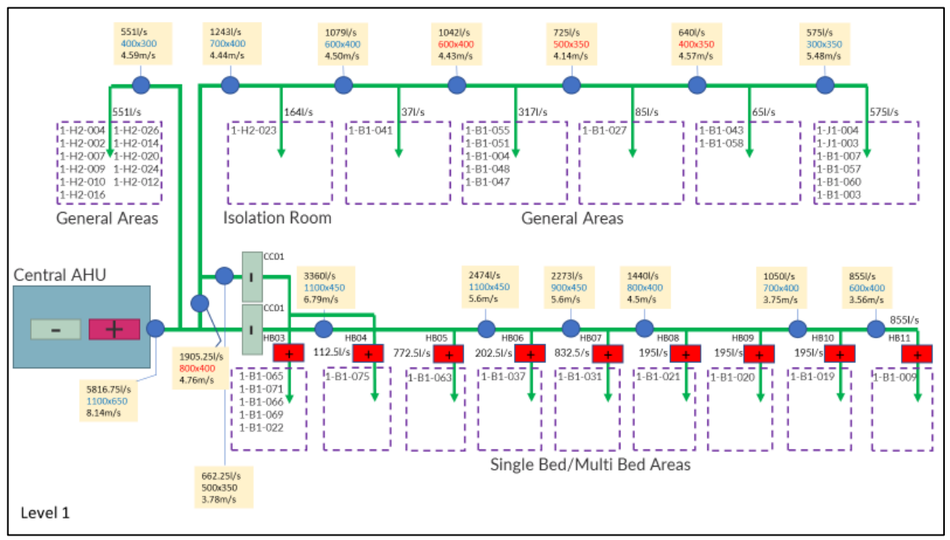
3.1.1.3 General Supply and Extract AHU Schematic (Option1)

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 issued 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 disconnector, 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 '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 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.

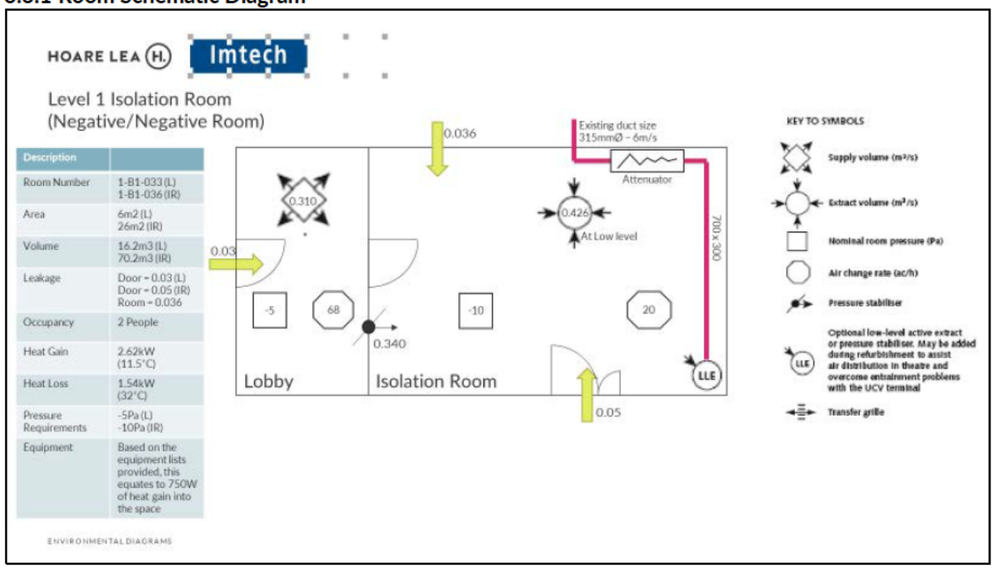
Fire detection and alarm equipment shall be provided within the enclosure in accordance with BS5839-1. This shall comprise fire detectors, break-glass call points, sounders and visual alarm devices (VADs). The devices within the enclosure shall be connected to the existing fire alarm system by extending 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

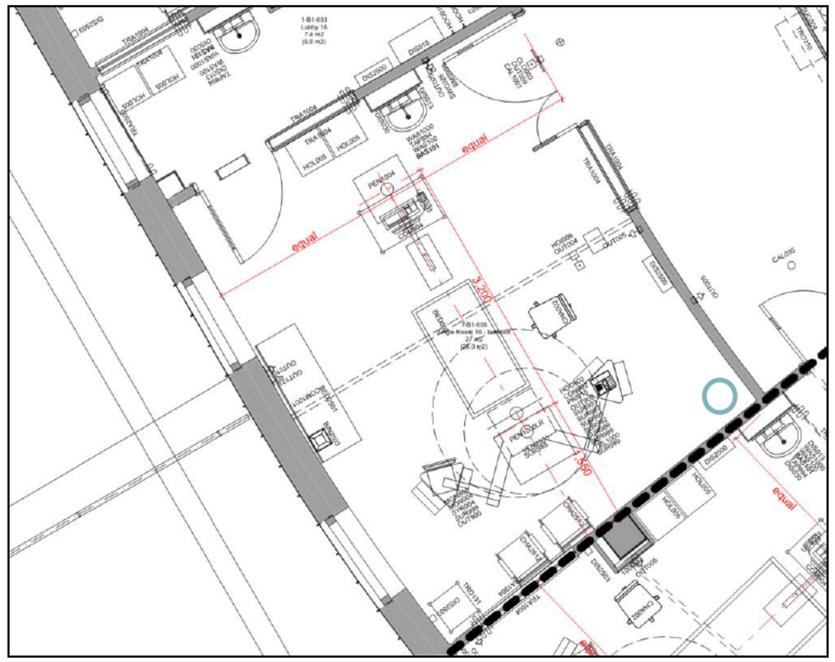


Excerpt from Hoare Lea Environmental Diagrams

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.

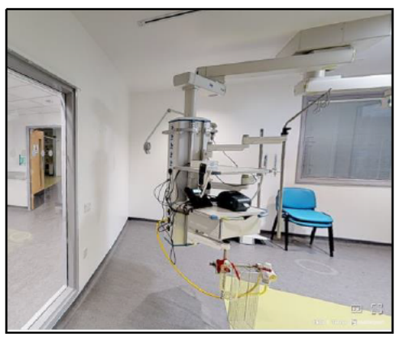
4. Equipment Layout

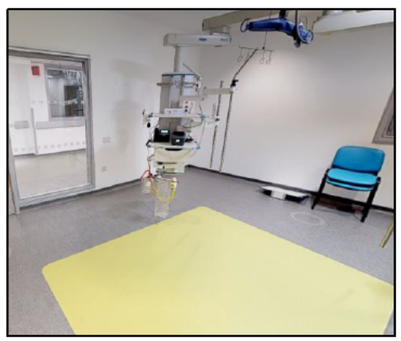


Excerpt from Drawing HLM-Z4-01-PL-400-418 Rev I

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

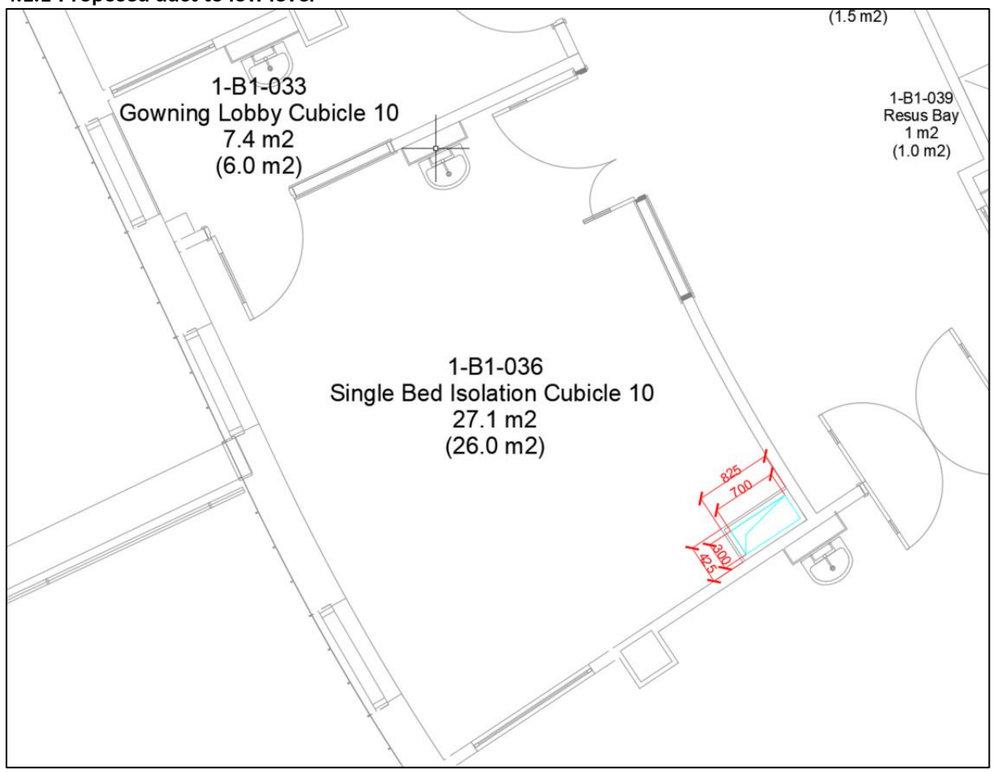
We have assessed the equipment layout for the room and NHSL have suggested that there would be no change in layout associated with the change to the ventilation strategy or future proofing required. The room equipment layout and survey photos do not show any equipment or furniture in this corner that 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.

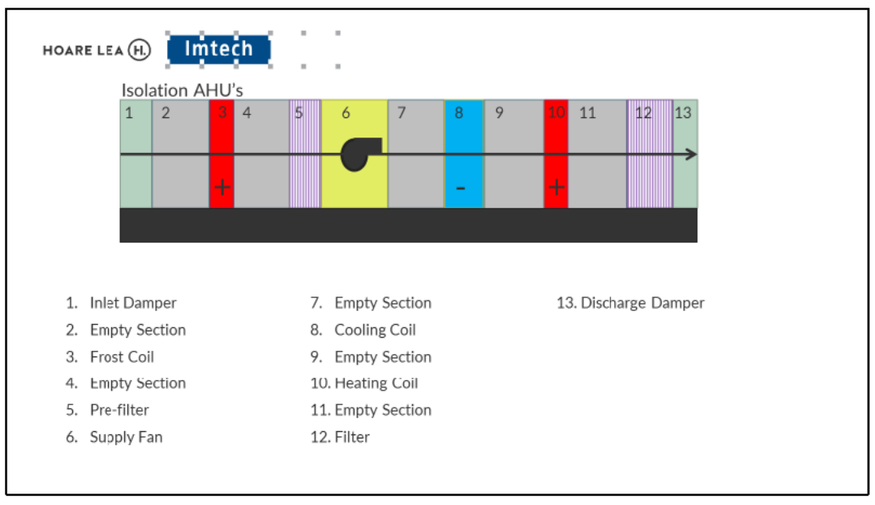
During the first technical workshop 2 options were presented to achieve compliance with HVC107:

- 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 disadvantaged 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.

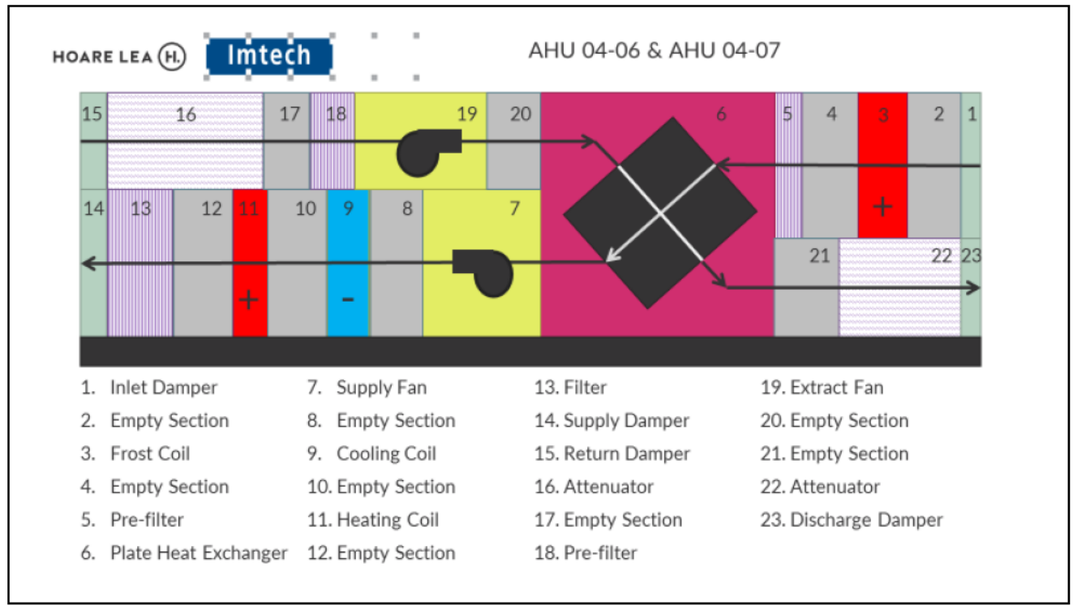
The isolation room air handling units will be located on the grass areas adjacent to the energy centre mezzanine level.

5.1.1.2 General Supply and Extract AHU

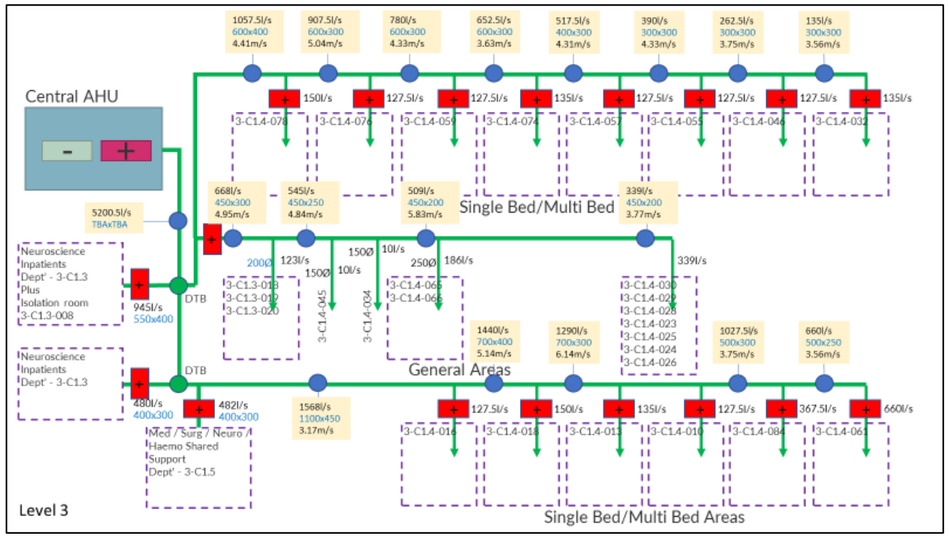
The existing supply and extract air handling unit serving the Level 3 Haematology and Oncology will be replaced with a new unit that can deliver the enhanced air volume and pressure to achieve the requirements of HVC107.

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).

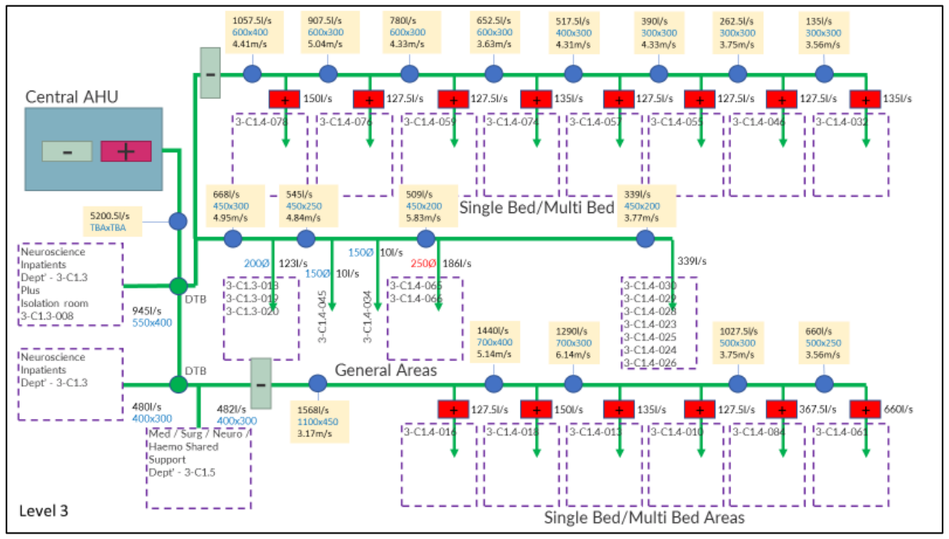
As agreed during Technical Workshop 3 a plate heat exchanger will be utilised for heat recovery purposes.



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.

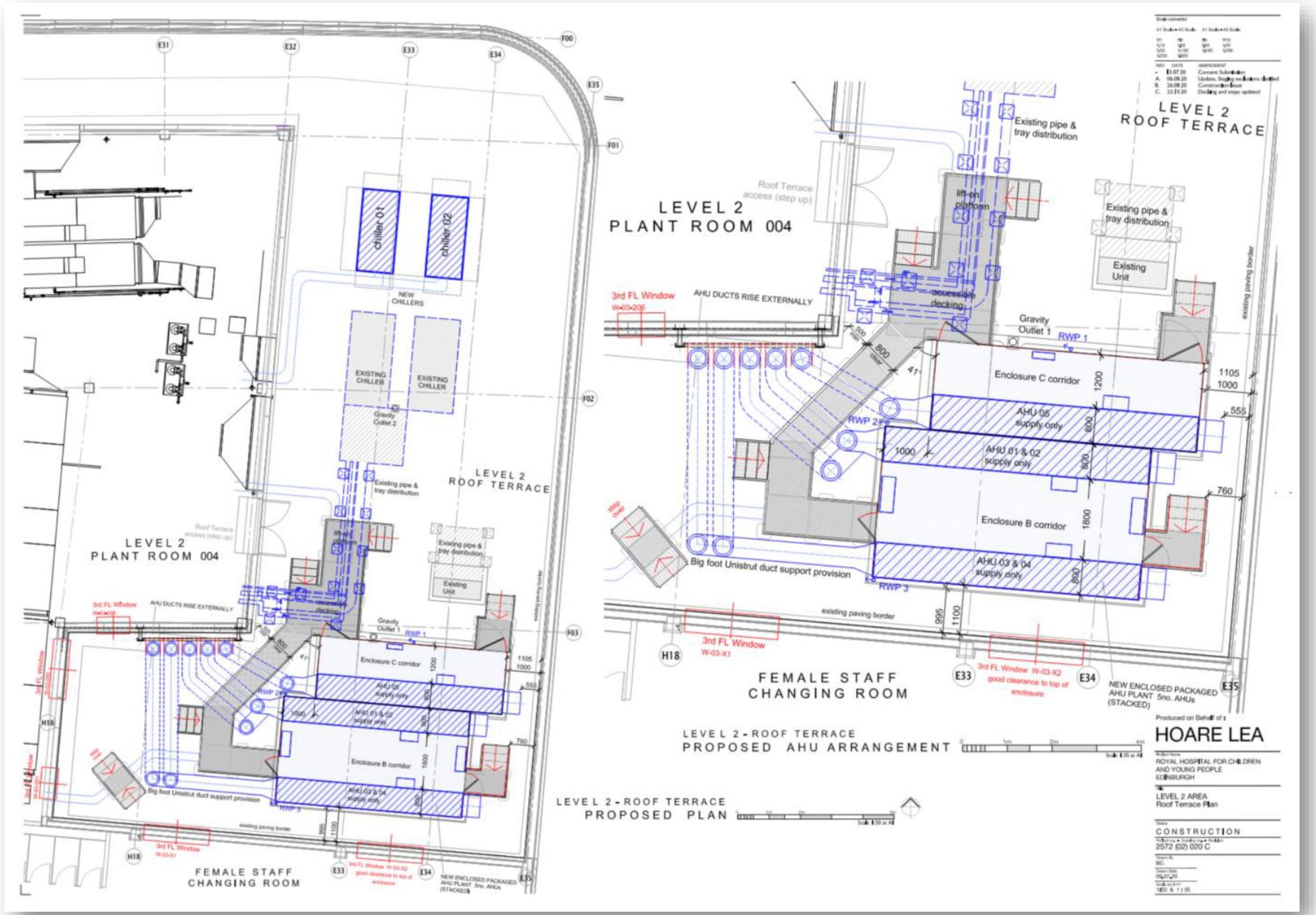
5.1.3 Cooling Strategy
A stand-a-lone Chilled Water Air Cooled Chiller (run and standby configuration) will be installed adjacent to the new AHU plantroom enclosure on the grass area adjacent to the energy centre mezzanine level. The Chiller will deliver Chilled Water to the 5 No. Isolation room Air Handling Unit cooling coils.

30% Glycol will be added to the CHW circuit in addition to trace heating to ensure there are no issued in winter periods.

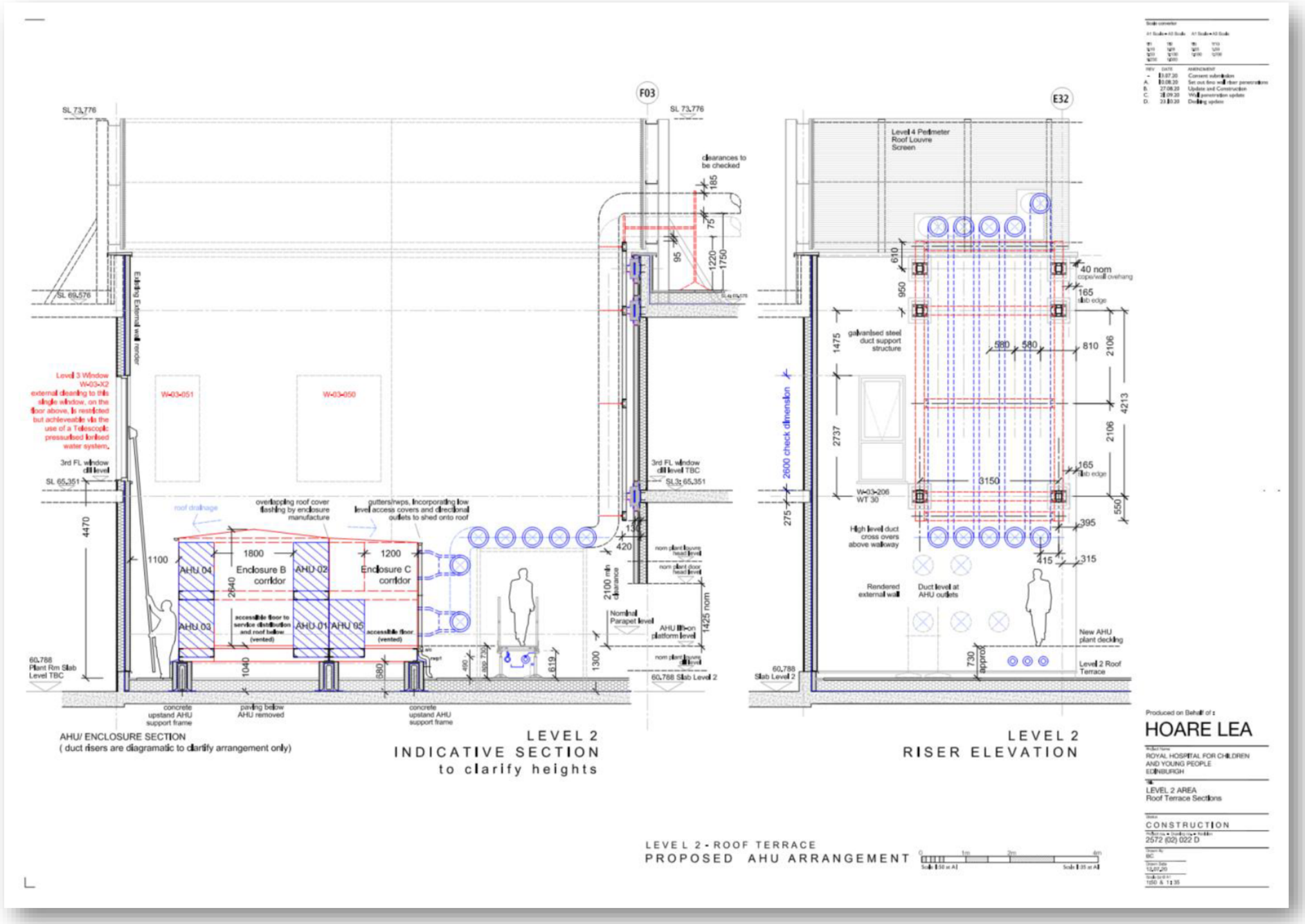
5.1.4 AHU Enclosure Services (Mechanical)
The new Isolation room AHU enclosures will come as a packaged plantroom, complete with all internal pipework, valves and control devices.

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
PLANT ROOM 004
Chiller 01
Chiller 02
NEW CHILLERS
EXISTING CHILLER
EXISTING CHILLER
Gravity Outlet 2
Existing pipe & tray distribution
LEVEL 2
ROOF TERRACE
Roof Terrace access (step up)
3rd FL Window
AHU DUCTS RISE EXTERNALLY
Existing Unit
Gravity Outlet 1
RWP 1
RWP 2
RWP 3
Enclosure C corridor
AHU 05 supply only
AHU 01 & 02 supply only
Enclosure B corridor
AHU 03 & 04 supply only
Big foot Unistrut duct support provision
existing paving border
3rd FL Window W-03-X1
3rd FL Window W-03-X2 good clearance to top of enclosure
NEW ENCLOSED PACKAGED AHU PLANT 5no. AHUs (STACKED)
FEMALE STAFF
CHANGING ROOM
lift-on platform
accessible decking
existing paving border
LEVEL 2 - ROOF TERRACE
PROPOSED AHU ARRANGEMENT
LEVEL 2 - ROOF TERRACE
PROPOSED PLAN
HOARE LEA
ROYAL HOSPITAL FOR CHILDREN AND YOUNG PEOPLE EDINBURGH
LEVEL 2 AREA
Roof Terrace Plan
CONSTRUCTION
2572 (02) 020 C

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 disconnector, 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 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 '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 and 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)

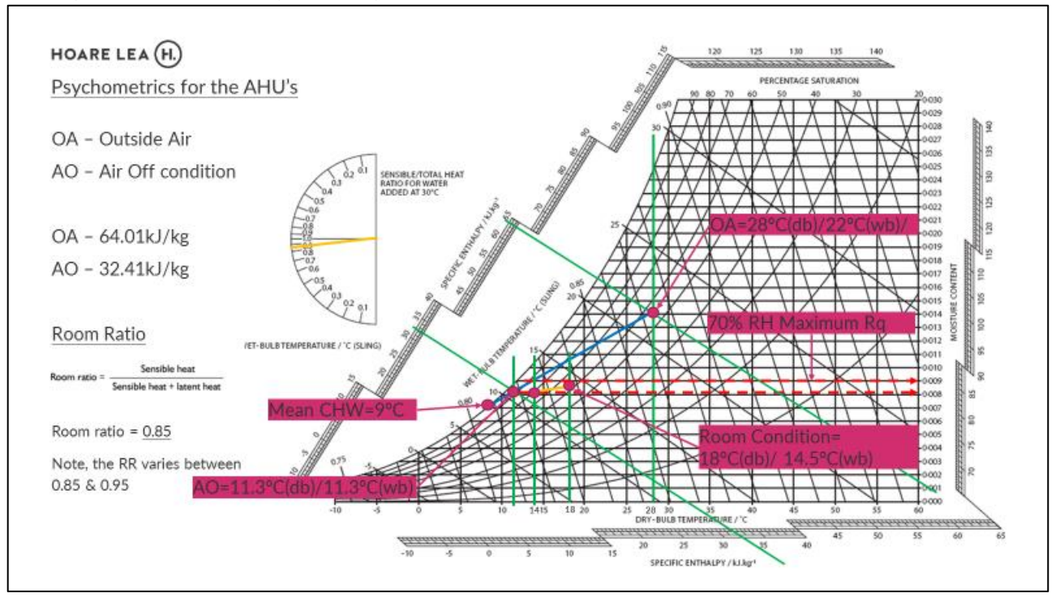
Initial fill and one spare set of all filters allowed.

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 Psychometric 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.

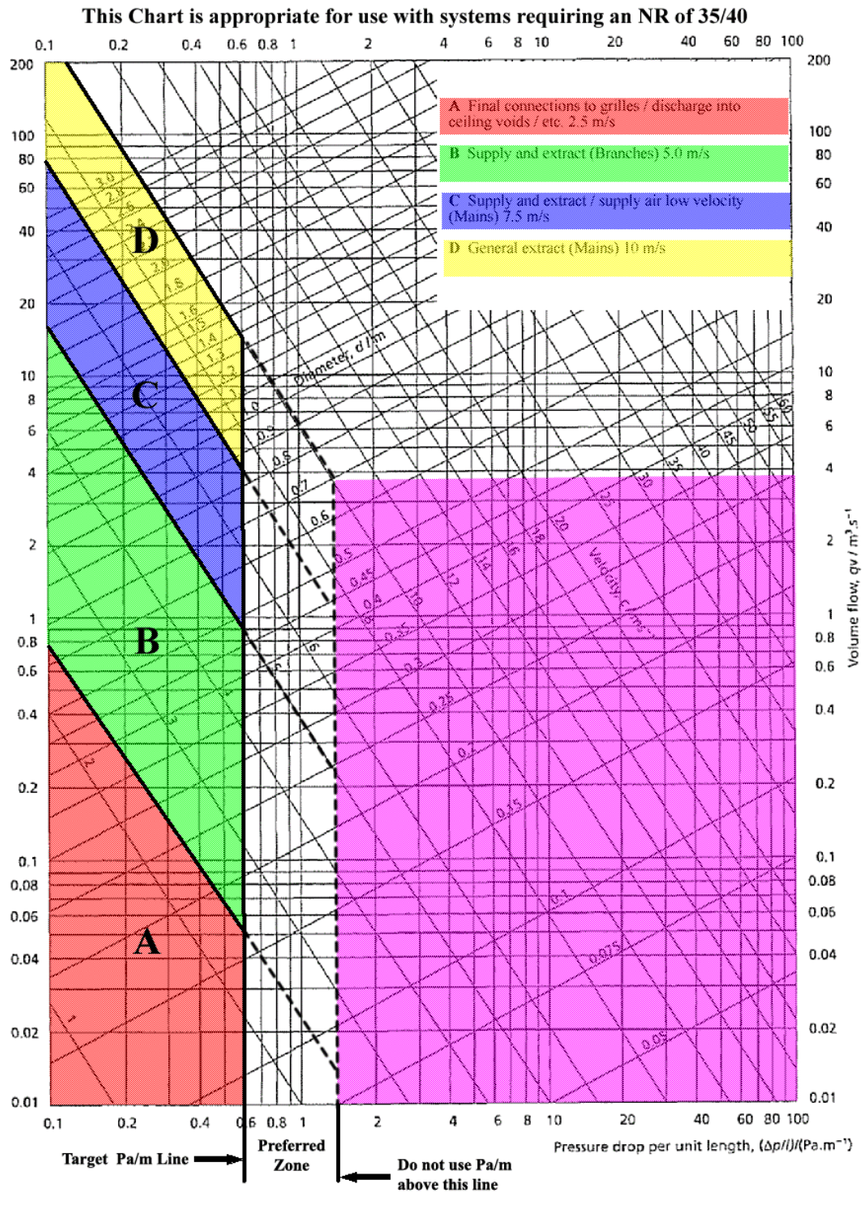
The cooling coil has been sized for an enthalpy difference of (64.01-32.41) 31.6kJ/kg.

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

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 amplifications	
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-Ddocx.docx

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 plan 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 (VIE) 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.

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.

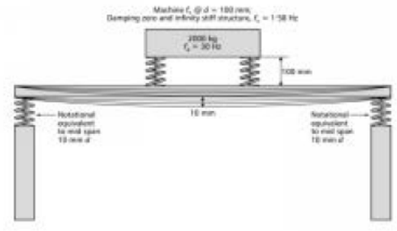


Figure 2: Consideration of non-rigid support conditions

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 (spectra) 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 plant 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.

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 cranage 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

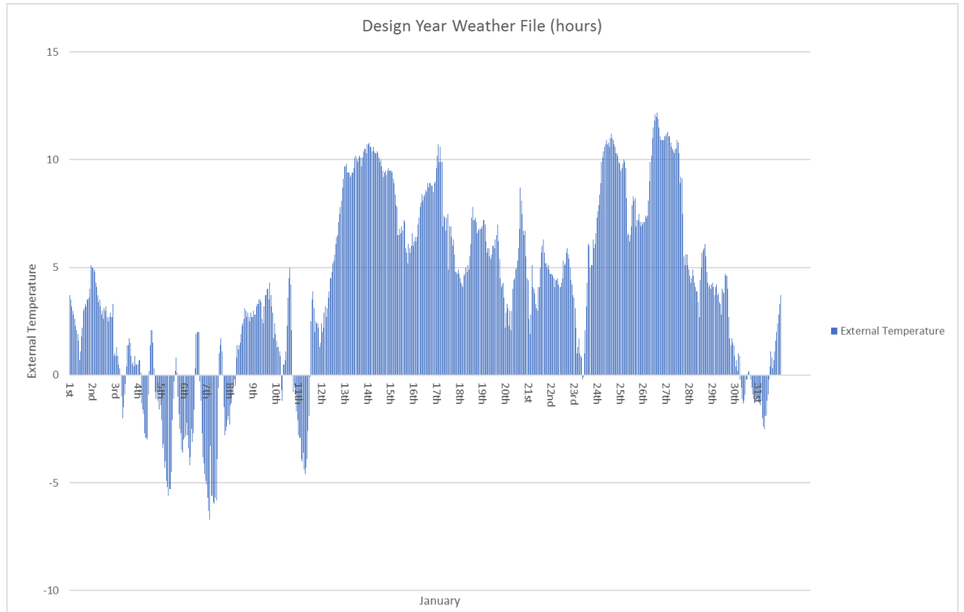
All new LTHW ducted heater batteries serving level 01 and level 03 areas will be installed out with the clinical rooms that they are serving and typically located in corridors or adjacent ancillary rooms.

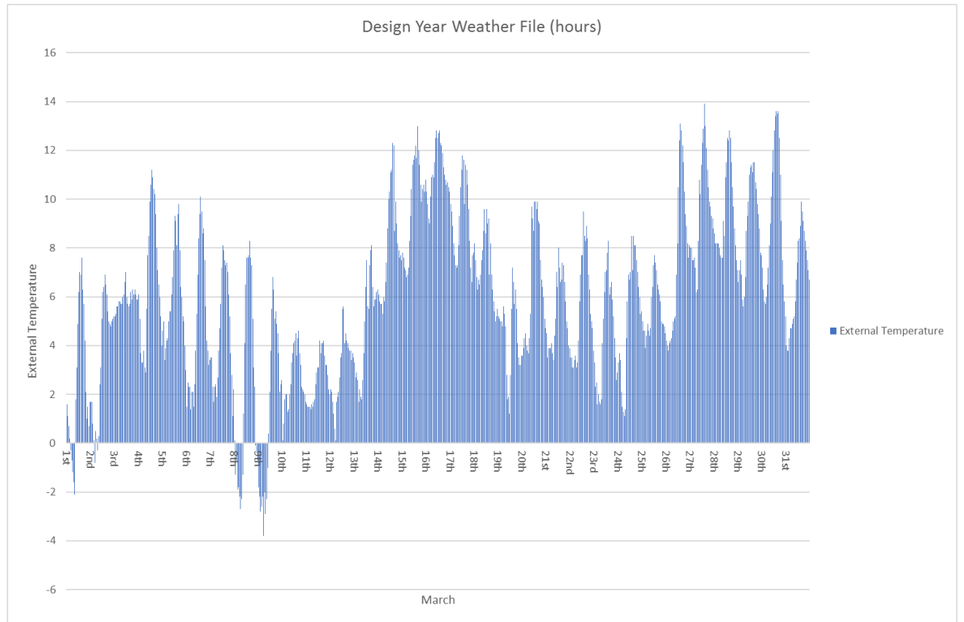
Due to the physical size of the heater batteries and their enclosures every effort will be made to install them with minimum impact to already installed services. This will not be achievable everywhere but any control valve serving those heater batteries will be installed in an easily accessible location.

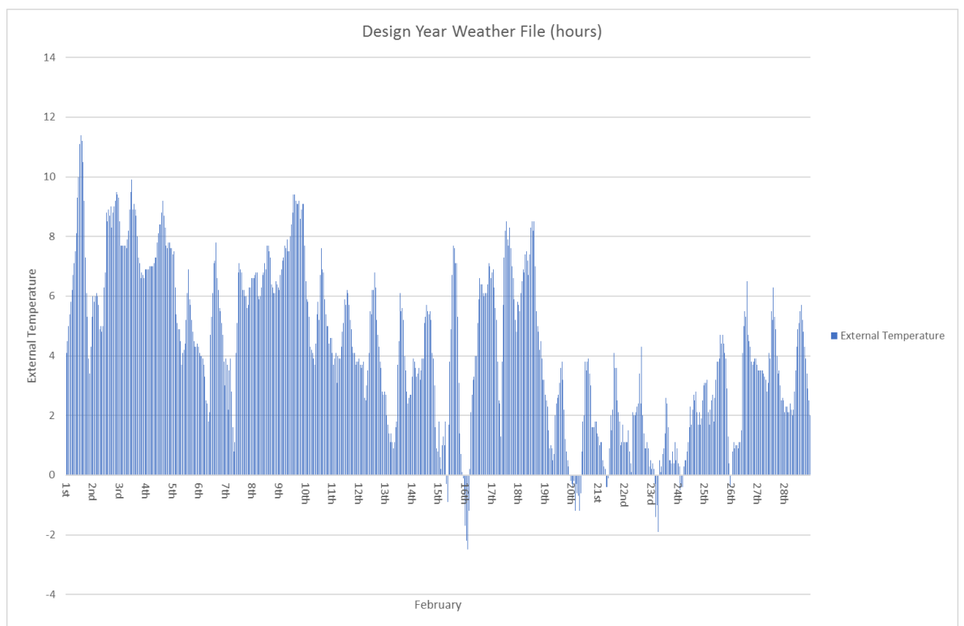
More information on this item will be provided at the next stage and once all investigative works have been complete.

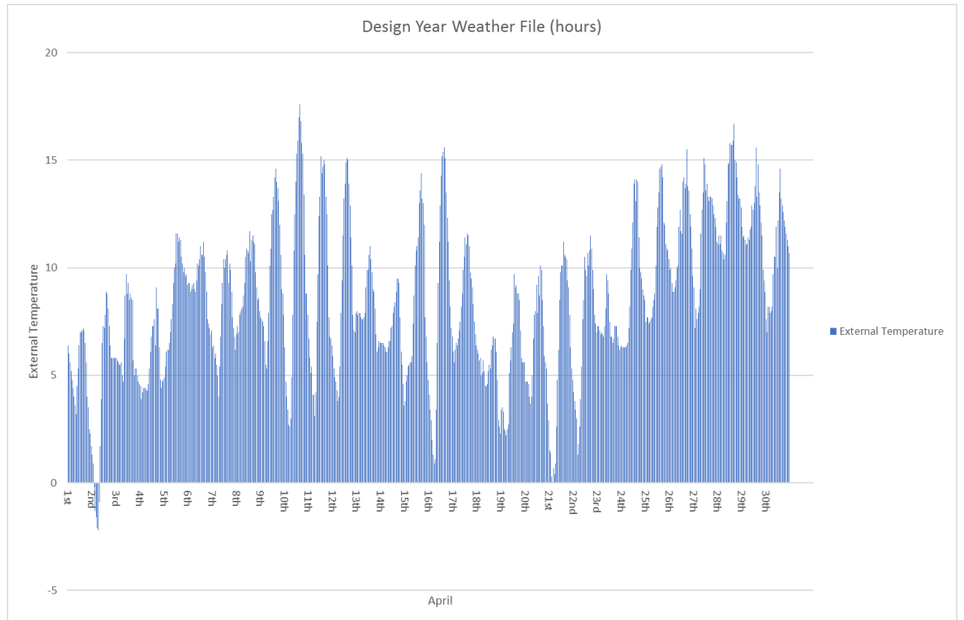
12. Energy Study

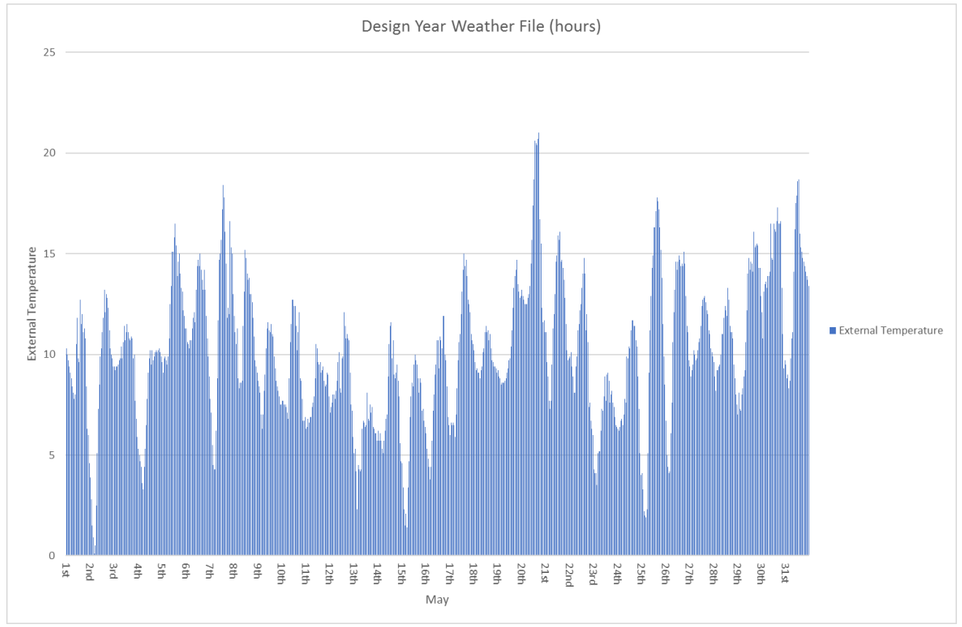
The CIBSE design weather file (TRY for Edinburgh) has been utilised for the purposes of the energy calculations. The design weather conditions are shown in the following graphs:

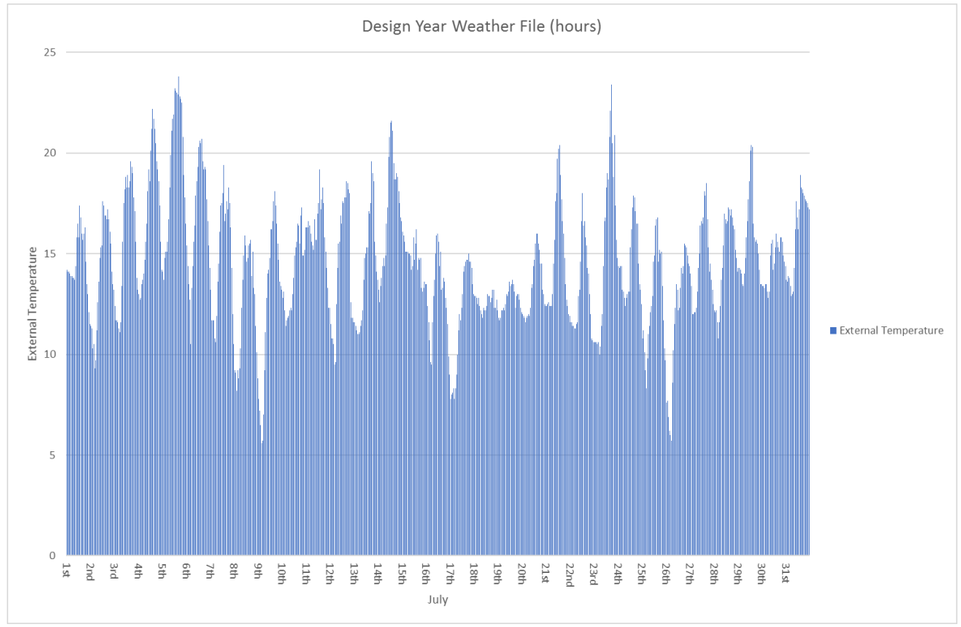


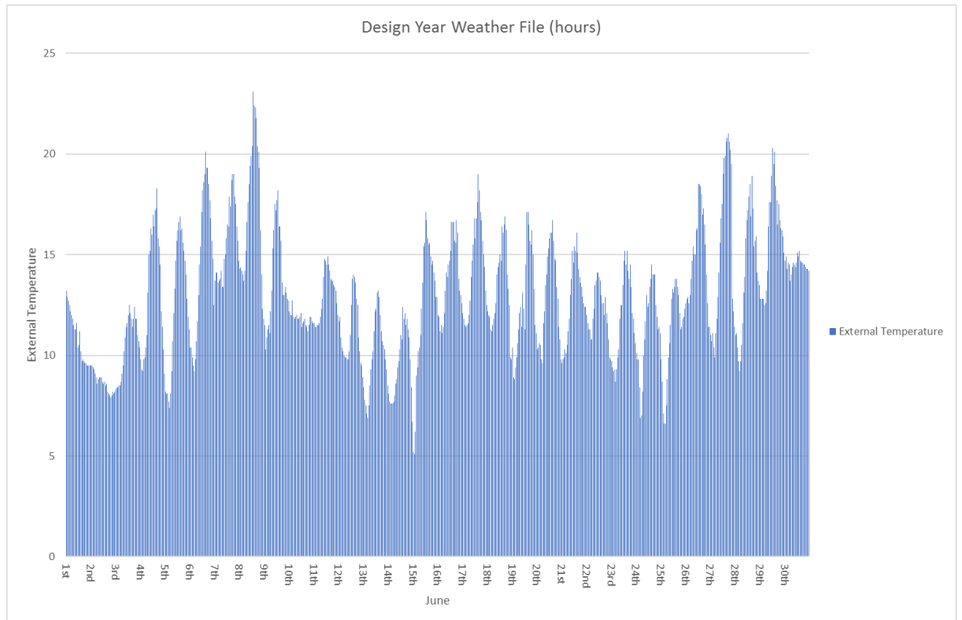


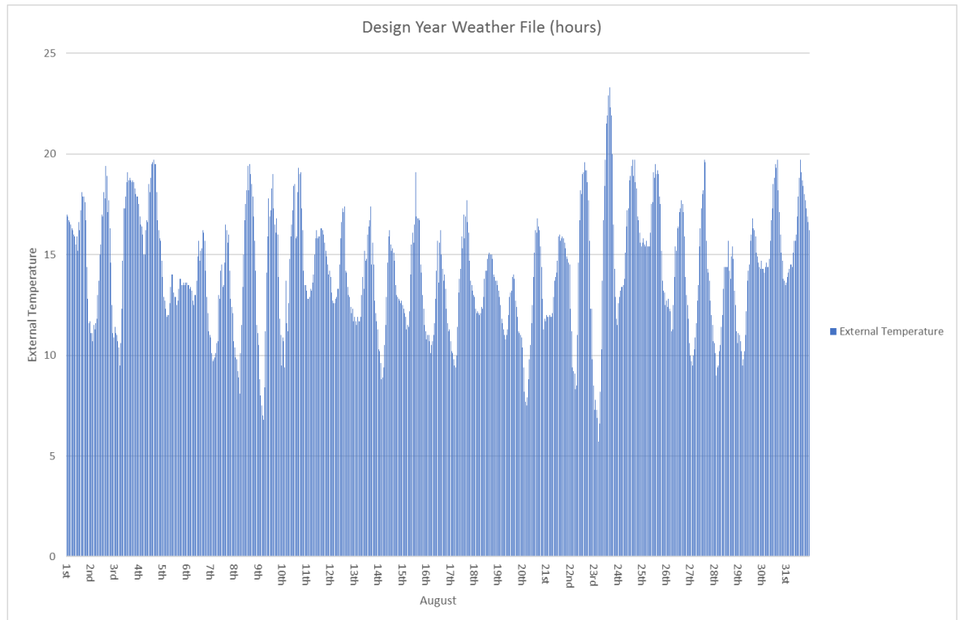


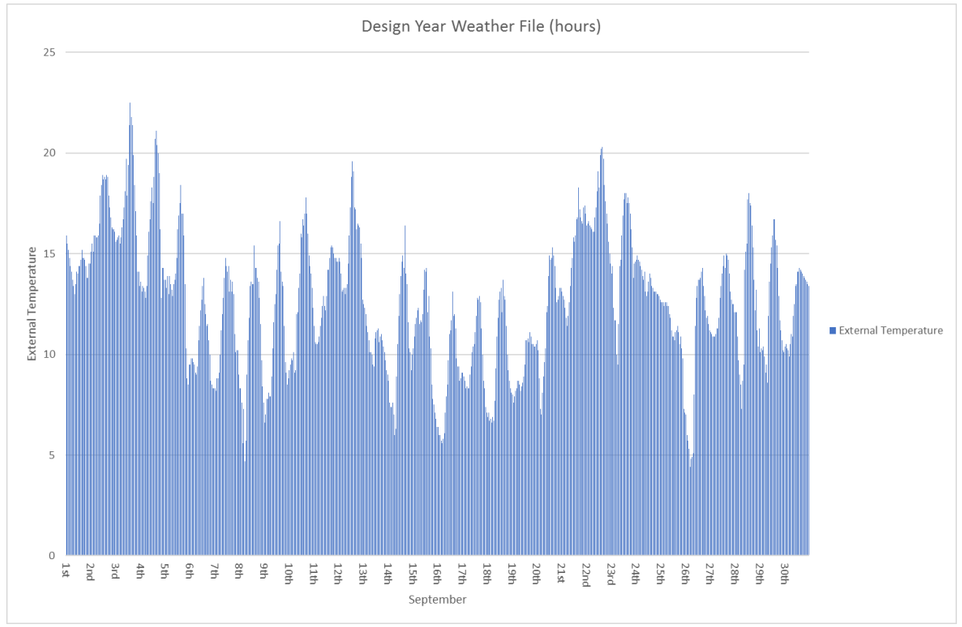



Design Year Weather File (hours)
External Temperature
External Temperature
May


Design Year Weather File (hours)
External Temperature
External Temperature
July


Design Year Weather File (hours)
External Temperature
External Temperature
June


Design Year Weather File (hours)
External Temperature
External Temperature
August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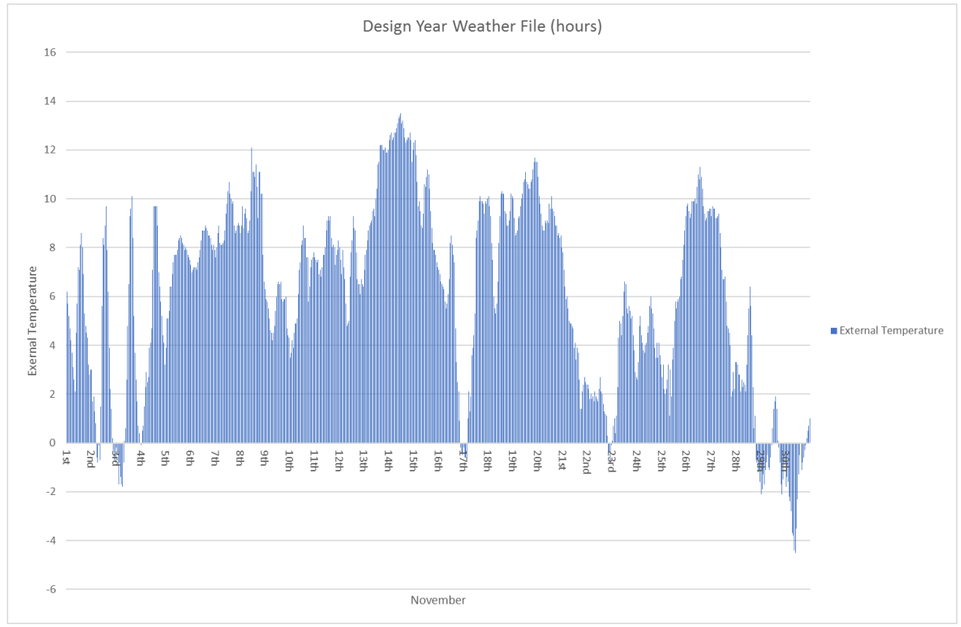
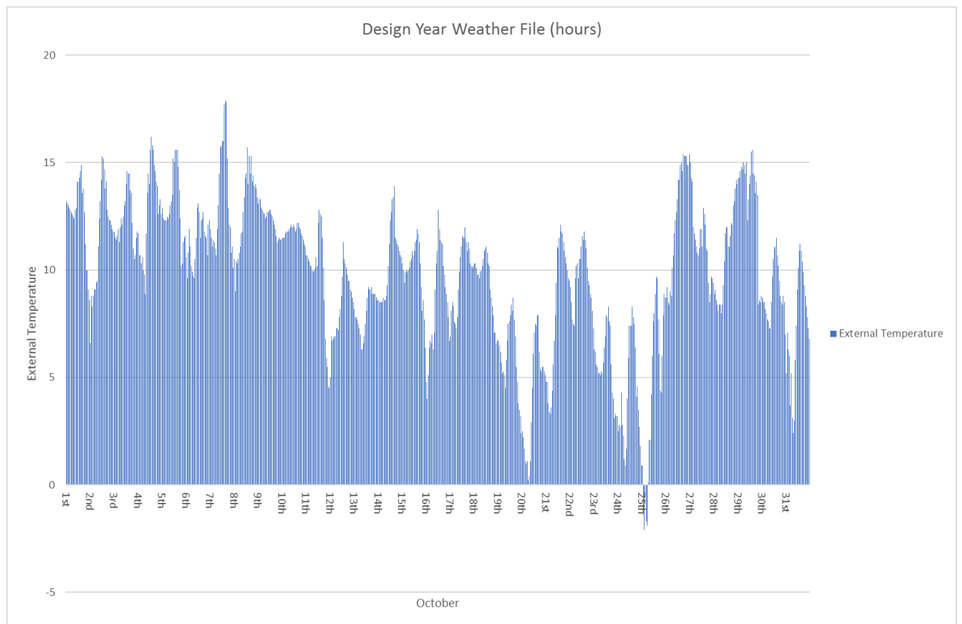
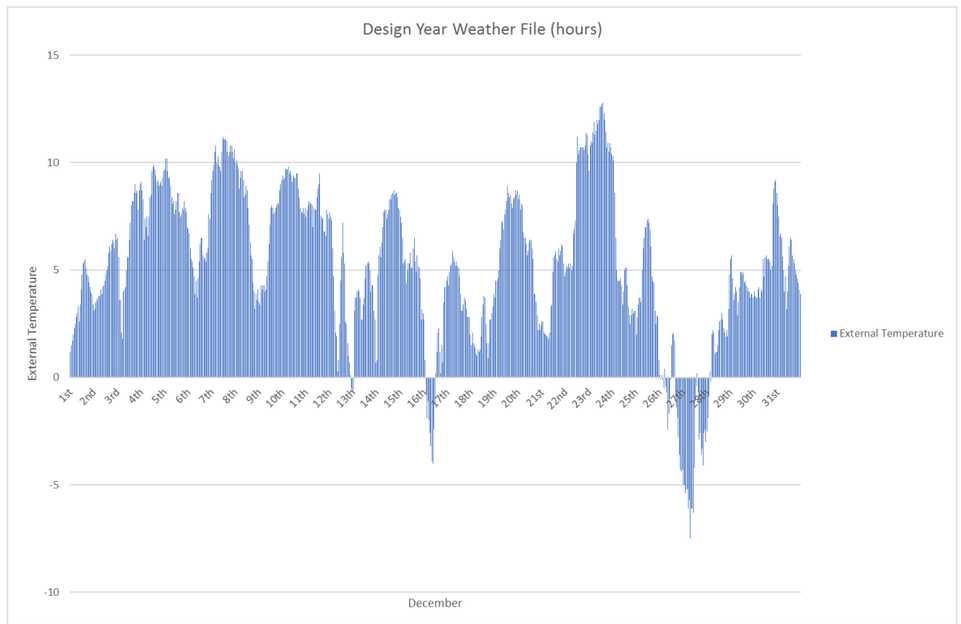
External Temperature
September
External Temperature


Design Year Weather File (hours)
External Temperature
November
External Temperature


Design Year Weather File (hours)
External Temperature
October
External Temperature


Design Year Weather File (hours)
External Temperature
December
External Temperature

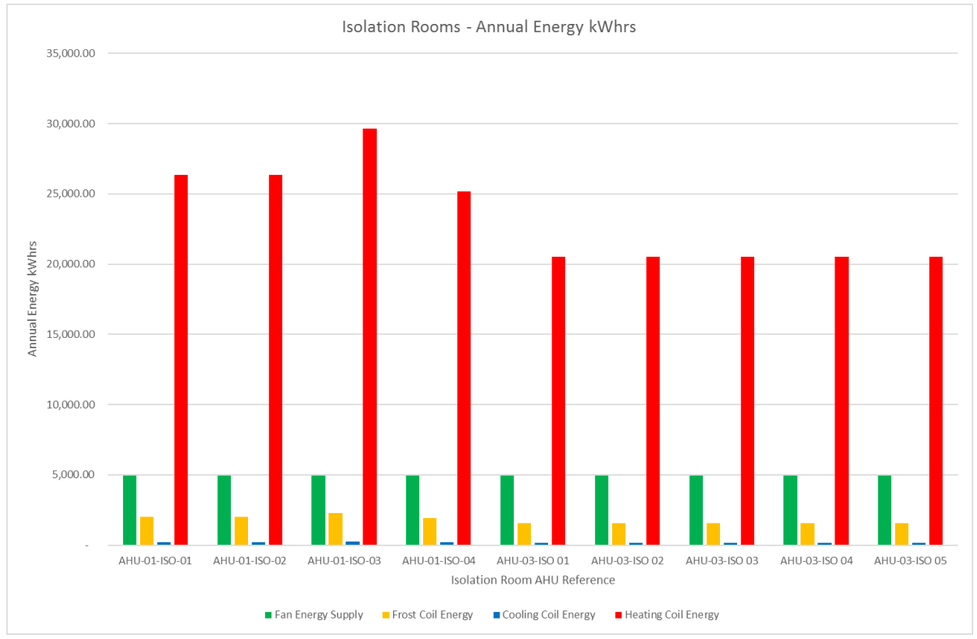
12.1 Energy Calculations

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

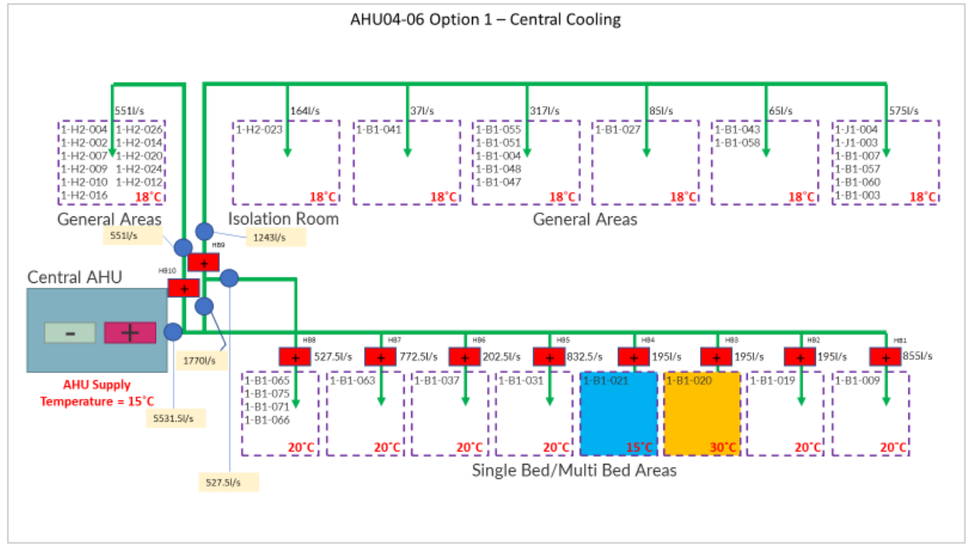
It is proposed to install an additional 9No. Isolation room Air Handling Units. The units are supply air only and do not have any heat recovery. The units are all relatively small in comparison to the central Air Handling Units located within the main plantrooms. They operate 24 hours per day and will 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

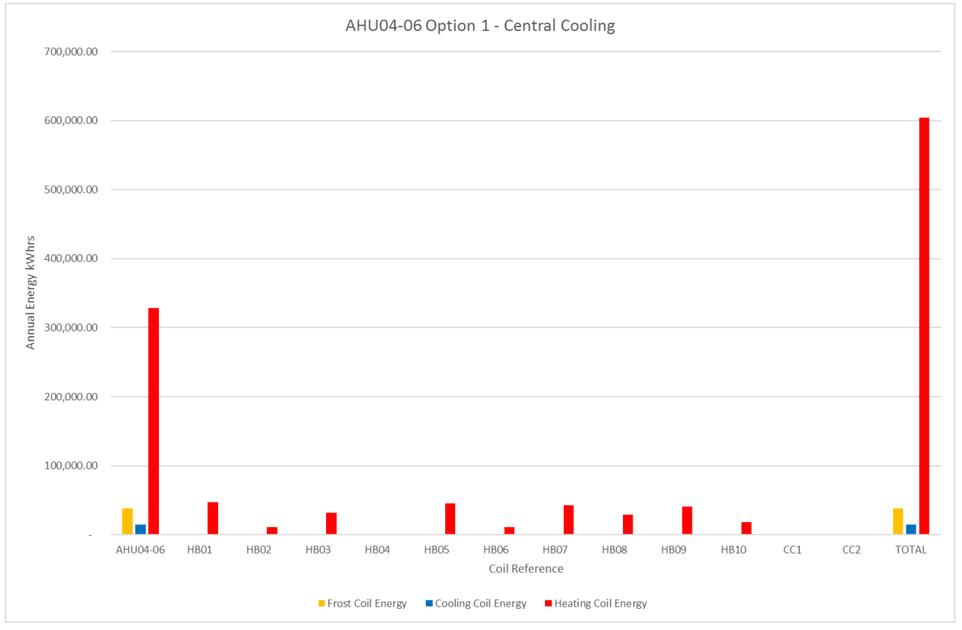


12.1.2 AHU04-06 Option 1 (Central Cooling) Energy Calculation

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.

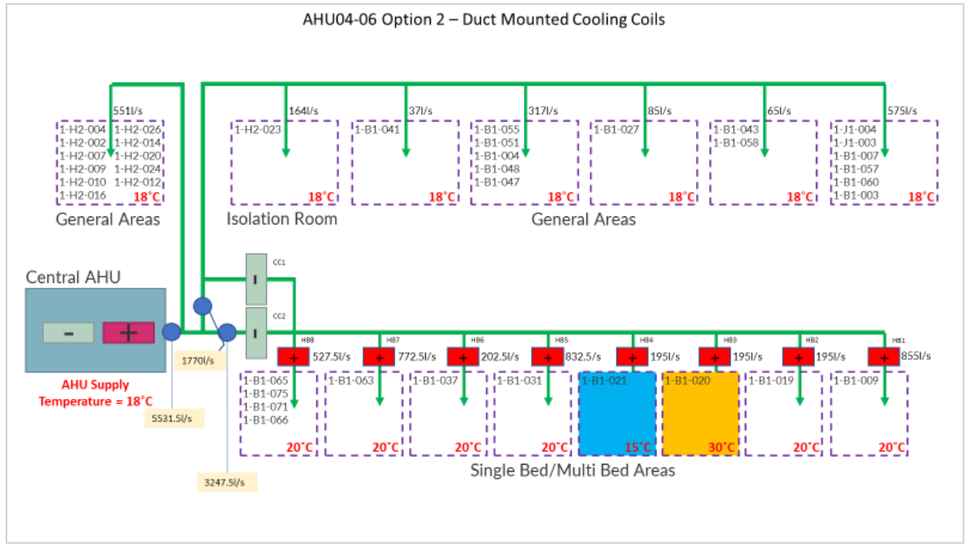


The graph below shows the annual energy that this option uses. A comparison between Option 1 & 2 is contained in section 10.1.6.



12.1.3 AHU04-06 Option 2 (Duct Mounted Cooling Coils) Energy Calculation

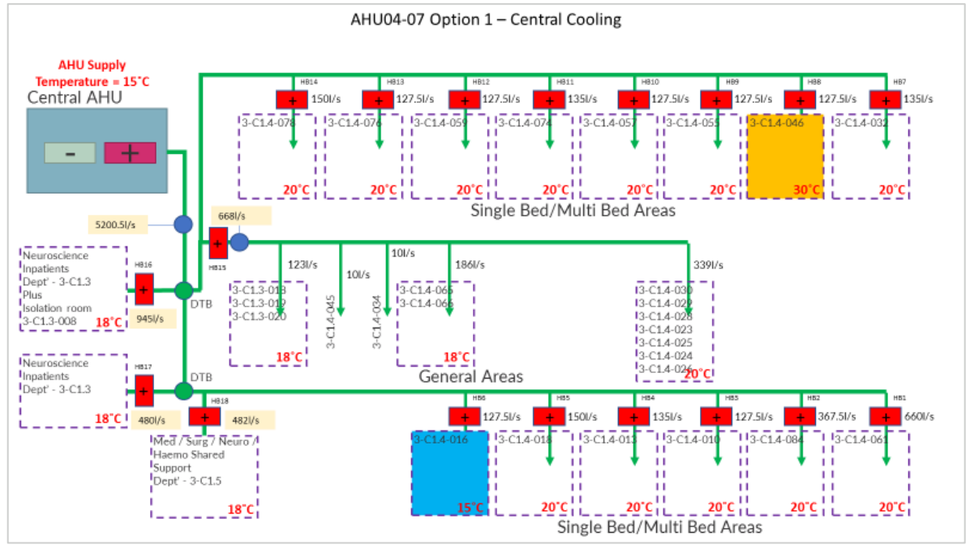
For Option 2 the central AHU will heat the air to 18deg C. This then requires 2No duct mounted cooling coils to be installed to lower the supply temperature to 15deg C to allow any single bed or multi bed room to be controlled to 18 deg C. The single bed and multi bed rooms not requiring the low supply temperature are then heated to 20 deg C. Note that all duct mounted coils can raise the temperature from 15deg C to 30deg C.



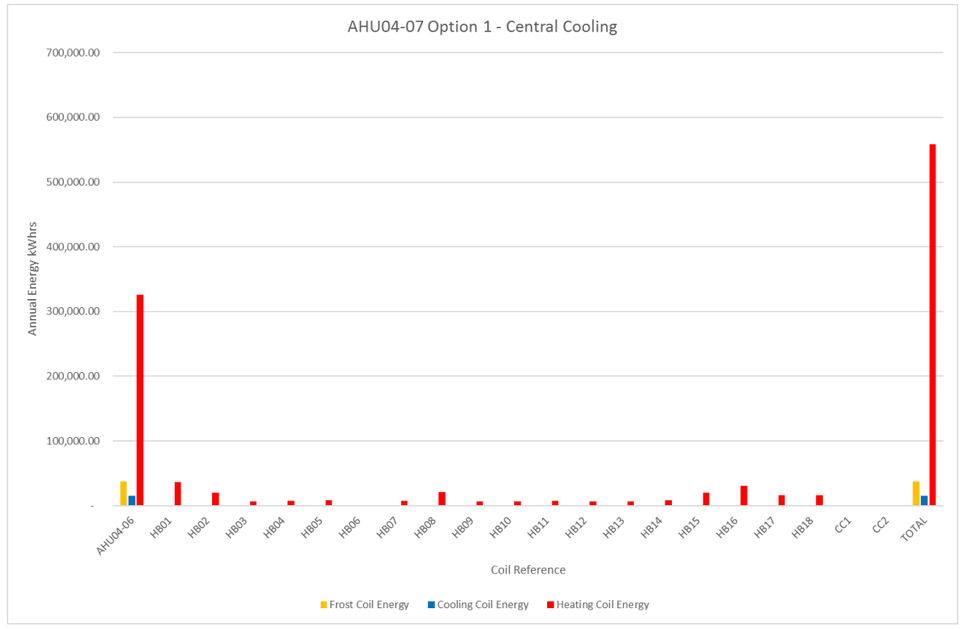
The graph below shows the annual energy that this option uses. A comparison between Option 1 & 2 is contained in section 10.1.6.

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.

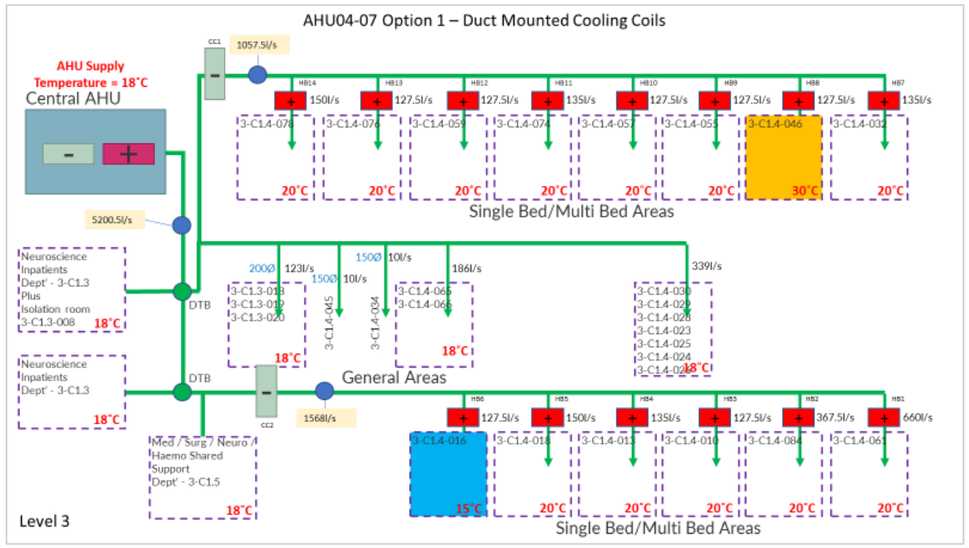


The graph below shows the annual energy that this option uses. A comparison between Option 1 & 2 is contained in section 10.1.7.

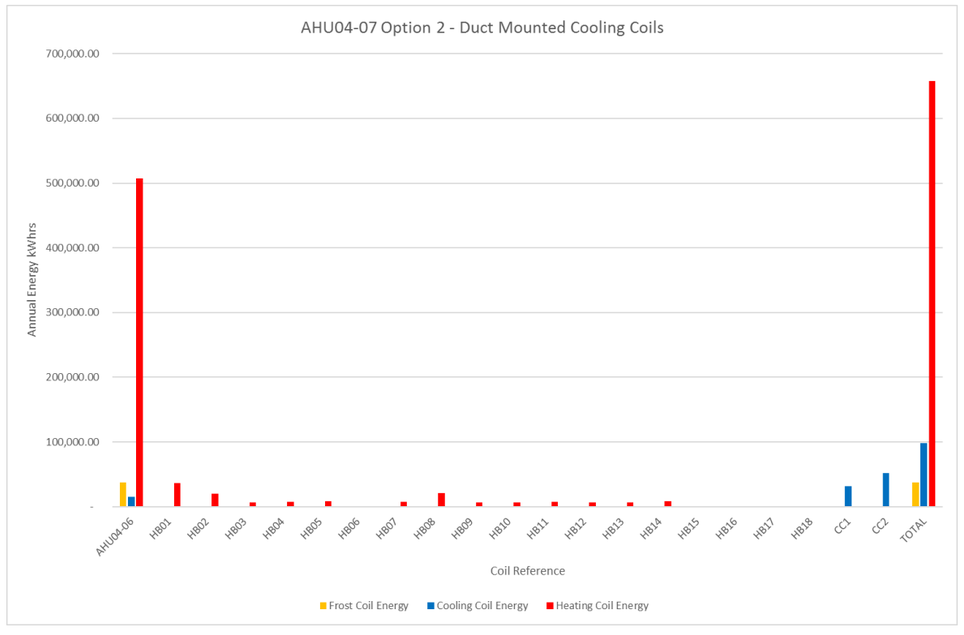


12.1.5 AHU04-07 Option 2 (Duct Mounted Cooling Coils) Energy Calculation

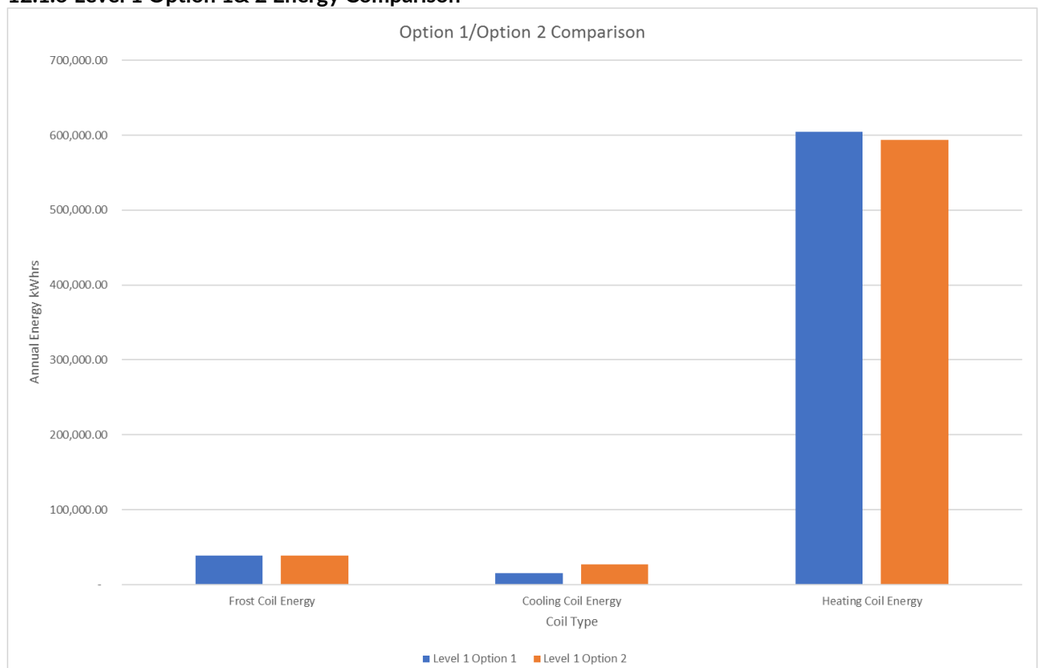
For Option 2 the central AHU will heat the air to 18deg C. This then requires 2No duct mounted cooling coils to be installed to lower the supply temperature to 15deg C to allow any single bed or multi bed room to be controlled to 18 deg C. The single bed and multi bed rooms not requiring the low supply 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

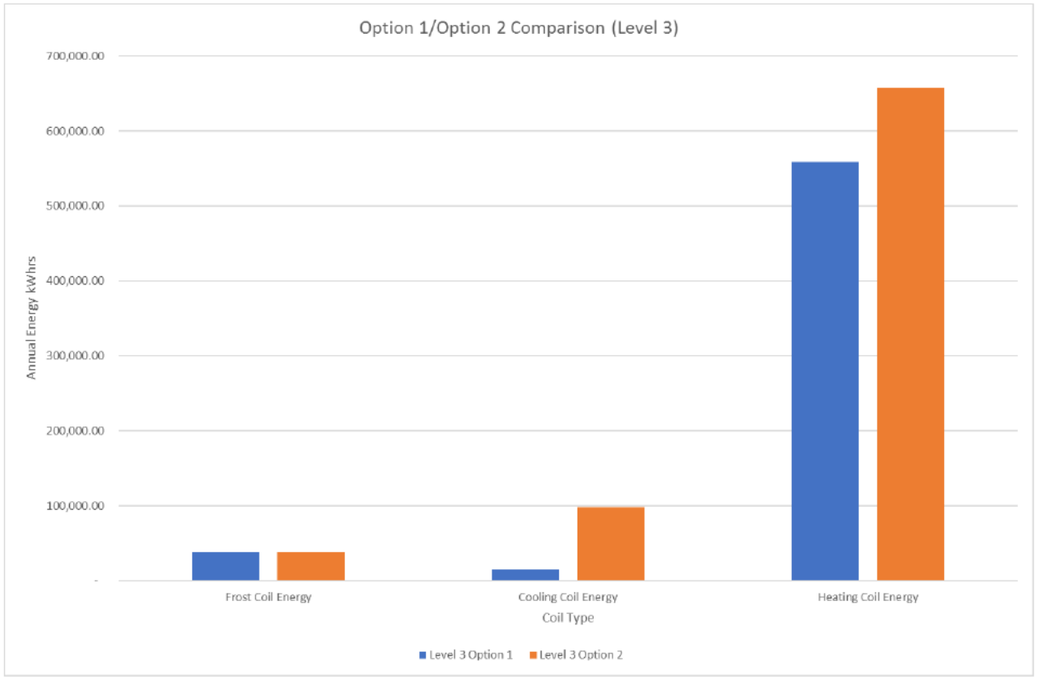
Option 2 – Duct Mounted Cooling

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, IHSL 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:	IHSL			
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

HOARE LEA

STRATIS VATIS
PRINCIPAL ENGINEER

[redacted]

HOARELEA.COM

4th Floor
58 Waterloo Street
Glasgow
G2 7DA
Scotland

Completion Certificate

To:	Imtech Engineering Services Central Ltd	Address:	G&H House, Hooton Street, Carlton Road, Nottingham, NG3 5GL
From:	Faithful + Gould	Address:	The Axis, 10 Holliday Street, Birmingham, B1 1TF
Project Name:	Royal Hospital for Children & Young People 50 Little France Crescent, Edinburgh, EH16 4SF	Project ID:	HVC 107
Completion Certificate No:	1	Date:	27/02/2021

Under clause 30.2:

The date of Completion for the whole of the *works* in relation to HVC 107 is: 27/02/2021.

Copy to: IHSL

Bouygues E&S Solutions Limited

NHS Lothian

Signed: Robert Eastham

SUPPLEMENTAL AGREEMENT NO. 2

between

LOTHIAN HEALTH BOARD

and

IHS LOTHIAN LIMITED

Supplemental Agreement Number 2 relating Ventilation Works in respect of the Pro ec Agreement for the provision of RHSC and DCN at Little France

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MACROBERTS LLP

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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" mea s a su tably qualified and experienced inspector who is independent rom and has no connecti n re ationship 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 schedul (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 Tar et Compl tion 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 o 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 *(Assignation),* 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 *(Assignation),* 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 perfo med at Project Co's 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 t e Project Agreement or within this Agreem nt 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 au horising 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 Da e), each validly execu ed by Projec 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 secu e the performance of the Ventilation Works Contractor the Project Manager and the Superv sor 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 Works 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 **Dates 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 adve se impact on he 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 n accordance with t e Project Agre ment 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 Venti ation 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 f 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 pe son engaged by he 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 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

(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) th Board acknowledg s and agrees hat 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 **Assignation and subcontracting**

8.5.1 **Assignation**

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 assignation in security by Project Co to the Senior Funders which may only be perfected by the Senior Funders (by way of assignation 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 assignation 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' pr fessional adv se s o insu ance 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 Boa d.

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 an /or other information shal 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 Boa d shall not entitle the Board to terminate this Agreement if, within ninety (90) Bus ness D ys 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 t 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 p ovisions of clauses 92 and 93 of the Ventilation Works Contract shall apply and t e Board shall pay roject 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 f this Agreement to the Board and Project Co shall and shall use reasonable endeavou s to secu e 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: [redacted]
A9674323D789472...
..... Authorised Signatory
Susan Goldsmith
..... Full Name
Edinburgh
at
on 5 aug 2020 2020

DocuSigned by: [redacted]
21F108B888BD405...
..... 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: [redacted]
7E3303D3505B492...
..... Director
Matthew Templeton
..... Full Name
at [redacted]
on 5 August 2020

DocuSigned by: [redacted]
228FBC590830448...
..... 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 Agr ement and as amended by the Boa d Change Not ce 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 amend ng he Projec 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 sh ll be amended to ead 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 a cident and emergen y 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

(1) IHS LOTHIAN LIMITED

(2) IMTECH ENGINEERING SERVICES CENTRAL LIMITED

AGREEMENT FOR

VENTILATION WORKS

BASED ON THE NEC4 ECC OPTION E AND ADDITIONAL CONDITIONS OF CONTRACT (OPTION Z)

Pinsent Masons

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 *Cont ac or* shall be regula ed by su h term 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 day
of 2020

..... Director/Company Secretary

..... Full Name

at
on the day
of 2020

SUBSCRIBED for and on behalf of
IMTECH ENGINEERING SERVICES CENTRAL LTD
by

..... Director/ Authorised Signatory

..... Full Name

at
on the day
of 2020

..... Director/Company Secretary/Authorised Signatory

..... Full Name

at
on the day
of 2020

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)

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: • "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 "*Client*" insert "(which expression shall include its successors in title and assignees)"
11.2	Add the following defined terms: "(35) Advance Design Works has the meaning given to it in the Subcontract Initial Engagement Letter. (36) Associated Client Company is any subsidiary of the *Client* or other company within the same group of companies as the *Client*. (37) Audit Scotland means the governmental body responsible for checking that public money is spent efficiently and effectively in Scotland. (38) Beneficiaries are each of: • any Associated Client Company; • the Board; (and "**Beneficiary**" is any one of them). (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) (40) Business Day is any day other than a Saturday, Sunday or a bank holiday in Scotland. (41) Certificate of Completion means the certificate in the form in Schedule Part 8 (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. (43) Commercially Sensitive Information means: • information about the *Contractor*'s processes, methodologies, working methods and information relating to the development of new processes

and methodologies which amount to a trade secret or which, if disclosed, could reasonably be considered to provide a commercial advantage to the *Contractor*'s competitors;

- the *Contractor*'s bank account information;
- breakdown of prices within the overall Fee; or
- information on the *Contractor*'s costing mechanisms including information obtained from the *Contractor* relating to risks related to the works and pricing of the same and cost information relating to third party contractors and any sub-contractors.

(44) Completion Criteria means the criteria contained in the Schedule Part 7.

(45) Confidential Information means:

(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;

(b) any Commercially Se sitive nformation.

(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 *works and* “Consent” is one of them).

(47) COVID-19 is the Corona Virus Disease 2019”

(48) A COVID-19 Trigger Event is any of the following events if caused or contributed to by the occurrence of COVID-19:

(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;

(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 *Client* 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 *Contractor* Providing the Works as envisaged at the Contract Date;

(c) an event including a change in the programming that delays or prevents the *Contractor* 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 *works*;

(d) the change to or the imposition of a new requirement for any licence or

consent required by the *Contractor* to Provide the Works which was not required at the Contract Date;

(e) a change unforeseeable at the Contract Date to the business or economic environment in which the *Contractor* operates which is not caused by one of the other COVID-19 Trigger Events in this definition.

(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 *Contractor* from time to time.

(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 Ac

(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 *works*.

(52) Guarantor has the meaning set out in clause 91.1.

(53) Hospital means Royal Hospital for Children & Young People (RHCYP) & Department of Clinical Neurosciences (DCN), Edinburgh.

(54) Human Resources are all persons involved in the management of this contract and in Providing the Works whether employed or engaged by the *Contractor*, any Subcontractor or otherwise.

(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 *Client* and the Board and notified to the Contractor from time to time.

(56) Information has the meaning under section 73 of the FOI(S)A.

(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 *sui generis* rights of extraction relating to databases, trade secrets and other confidential information or know-how.

(58) Law(s) means:

(a) any applicable statute or proclamation or any delegated or subordinate legislation;

(b) any enforceable community right within the meaning of section 2(1) of the European Communities Act 1972 as the same may be varied

amended, replaced or repealed following the exit of the United Kingdom from the European Union;

(c) any applicable guidance, direction or determination with which the Board, the *Client* or the *Contractor* 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 *Client* by the *Contractor*; and

(d) any applicable judgement of a relevant court of law which is binding precedent in Scotland,

in each case in force in Scotland.

(59) Longstop Date is the date falling 12 weeks following the Completion Date.

(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;

(61) Project Ag eement is the project agreement dated 12th and 13th February 2015 and entered int between the Board and the *Cl ent* as varied by Supplemental Agreement (No.1) and Supplemental Agreement (No.2).

(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).

(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.

(64) Reviewable Design Data has the meaning set out in clause 21A.1.

(65) Scottish Futures Trust means the executive non-departmental public body of the Scottish Government established with the aim of improving public infrastructure.

(66) Scottish Government means the devolved government for Scotland with responsibilities including the provision of healthcare to the people of Scotland.

(67) Senior Funders are any parties providing finance in relation to the Hospital.

(68) Service SA2 means the agreement which is supplemental to a contract for the provision of services in relation to the Hospital between the *Client* and the Service Provider.

(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.

(70) Subcontract Initial Engagement Letter means the initial engagement letter between the *Client* and the *Contractor* to carry out advance design works in relation to the *works* as amended and/or extended from time to time.

	(71) Supplemental Agreement (No.2) means the second supplemental agreement to the Project Agreement entered into between the Board and the *Client* in relation to the procurement of the *works*. (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. (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 *Contractor* from time to time."
12	**Interpretation and the law**
12.4	Before the full stop, insert: “and supersedes any pr or nego iations an agreements between the Parties (including, but not limited to the Subcontract Initial Engagement Letter) in connection with the *works*. 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.”
12.5	Insert a new clause as follows: “12.5 To the extent that any services or works relating to the *works* 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 *Contractor* confirms that it shall be deemed to have carried out such services or works subject to and in accordance with this contract.”
12.6	Insert a new clause as follows: “12.6 Without prejudice to clause 12.4, the *Contractor* 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 *Contractor* by or on behalf of the *Client* regarding the Site or the *works* 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 *Client* 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 *Client* has no liability (save in respect of any fraudulent misrepresentation by the *Client*) 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.”

12.7	Insert a new clause as follows: "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."
12.8	Insert a new clause as follows: "12.8 In this contract, unless specified otherwise, reference to days shall mean calendar days."
12.9	Insert a new clause as follows: "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 *Client* and the *Contractor*."
12.10	Insert a new clause as follows: "12.10 If any provision of this contract s all be ecla ed 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."
12.11	Insert a new clause as follows: "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."
13	**Communications**
13.1	At the end insert the following sentence: "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."
13.6	Insert "and the Board and the Independent Tester" at the end of the first sentence and at the end of the second sentence.

14	**The *Project Manager* and the *Supervisor***
14.1	Delete the existing text and replace with the following "No • communication (including instructions, the Defects Certificate or other certificates), • acceptance of a communication from the *Contractor*, • failure to withhold acceptance of, express disapproval of or otherwise approve, review or comment on a submission or the *works* carried out by the *Contractor* or • enquiry, inspection, test, review, comment, consent, decision, approval, sanction or acceptance of the *Contractor*'s work by the *Client*, the *Project Manager* or the *Supervisor* excludes, limits or otherwise diminishes or changes the *Contractor*'s liability under this contract, including the *Contractor*'s responsibility to Provide the Works, his liability for Defects and for the design. 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 "
15	**Early warning**
15.2	At the end of the sentence commencing "The *Project Manager* or the *Contractor* may instruct other people to attend…", insert: "provided that the *Client*, the Board and the Independent Tester shall be invited to and shall be entitled to attend every early warning meeting."
15.5	Insert a new clause: "15.5 The Early Warning Register does not allocate risk to anyone and/or change the rights and obligations of the parties."
16	**Contractor's Proposals**
16.3	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: "used for any other services or activities of the *Client* or Board or any Others, subject to where access can be provided in accordance with the access protocol contained within the Scope"
17	**Requirements for instructions**

17.1	Delete clause 17.1 and replace with the following: "(a) The *Contractor* examines the Scope and all other documents forming this contract and confirms to the *Client* that he is not aware of any ambiguity or inconsistency: (i) with the exception of Part A of the Scope, within; or (ii) between any of the contract documents which might adversely affect the carrying out of the *works*. (b) The *Project Manager* or the *Contractor* notifies the other and the *Client* and the Board as soon as either becomes aware of any such ambiguity or inconsistency: (i) other than Part A of the Scope, within; or (ii) between 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 *Project Manager* gives an instruction resolving the ambiguity or inconsistency, unless such instruction arises due to a change in law under X2, and afte th matter has been discussed at an early warning meeting."
2	**The *Contractor*'s main responsibilities**
20	**Providing the Works**
20.1	Delete the existing text and replace with the following "The *Contractor* 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 *works* will comply with each of: • the Scope, • the other provisions of this contract, • the Laws, • the Consents, • Good Industry Practice and • Supplemental Agreement (No.2) so that the various elements of the *works* are compatible and are properly co-ordinated and integrated with each other.
20.3	In the first line, after "*Project Manager*" insert "with copies of any such advice sent to the *Client* 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 *Client* and the Board on the same date".

21	**The *Contractor*'s design**
21.1	Delete the existing text and replace with: "21.1.1 The *Contractor* designs the whole of the *works*. The *Contractor* accepts 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*, including without limitation any and all design undertaken before or after the Contract Date; 21.1.2 The *Contractor* warrants and undertakes that once the *works* are completed they will meet any performance specification and/or requirements for the *works* set out in Part A of the Scope and without prejudice to this the *Contractor* warrants and undertakes that the design of the *works* (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 hose comprised in the *works*; 21.1.3 The *Contractor* 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 *Contractor* 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 21.1.4 The design of the *works* 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.*"*
21A	**Development of detailed design**
21A.1	Insert new clause 21A as follows: "21A.1 The *Client* and the *Contractor* acknowledge that elements of design of the *works* require review following the Contract Date as identified in the Scope ("**Reviewable Design Data**") and remain to be reviewed. 21A.2 The *Contractor* shall submit the Reviewable Design Data for approval by the *Client* and the Board in accordance with the Request for Information Protocol, and shall provide all such reasonable assistance as the *Client* or the Board may require in relation to the review and approval of the detailed designs pursuant to the Request for Information Protocol.
22	**Using the *Contractor*'s design**

22.1	Delete the existing text and replace with: "22.1 The *Contractor* shall (and shall procure that the owner who can grant the same shall): 22.1.1 make available to the *Client* and the Board without charge all data, materials and documents acquired or brought into existence in any manner whatsoever by the *Contractor* for the purposes of the *works* and which might reasonably be required by the *Client* 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 *works,* 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 22.1.2 make available to *Client* such data, materials and documents acquired or brought into existence by third parties for the purposes of the *works* as may reasonably be required by the *Client* and/or the Board for the purposes referred to in cl use 22.1 1. 22.2 The *Contractor* hereby grants (and shall procure that the owner who can grant the same shall grant) to the *Client* 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 *Contractor* for any purpose relating to the construction, installation, commissioning testing, completion, handback, maintenance, repair, renewal, replacement, reinstatement, of the *works,* 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. 22.3 The *Client* 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*. 22.4 The *Contractor* shall indemnify the *Client* 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 *Client* arising as a result of any infringement of any intellectual property rights of any third parties as a result of the *works*, the completed *works* 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.
24	**People**
24.1	After the first full stop insert: "The *Contractor* does not replace a key person unless the *Project Manager* agrees" and Before the last full stop insert: "or that his character or behaviour does not conform to the

	Client's policies or standards. The *Contractor* shall ensure that all persons employed in performing the *works* are properly trained, qualified and supervised."
24.2	Delete clause 24.2 and replace with: "The *Project Manager* may having stated his reasons, instruct the *Contractor* to remove any of the Human Resources. The *Contractor* then arranges that, after one (1) day, the Human Resources in question have no further connection with the *works*. The *Project Manager* may require the removal from Site of persons who are in the *Project Manager*'s 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 *Client* 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 *Client* or by O hers and whether on Site or the Working Areas or not, the *Contractor* sh ll: • 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 *works* with the carrying out and completion of the design and construction of such work so as to minimise interference, delay and disruption to the *works* 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: • 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 *Client* taking over any part of the *works* affected by those works."
26	**Subcontracting**
26.1	At the beginning insert: "The *Contractor* shall not place any sub-contracts or materials supply orders in connection with the *works* other than the appointment of Hoare Lea LLP (registered number OC407254) without first obtaining written consent from the *Client* (such consent not to unreasonably withheld or delayed)."
26.3	After the words "*Project Manager*" where they appear on line 2 and line 6 insert the words "and

	the *Client*". Delete the first two bullet points and the text of them and replace with: "the *Project Manager* and the *Client* have agreed that no submission is required." and Before the first remaining bullet point insert: "● they do not require the Subcontractor to maintain professional indemnity insurance at a level acceptable to the *Client* 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	Insert new clause: "26.5 The *Contractor* 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 *Client*'s prior written approval."
27	**Other responsibilities**
27.2	In the second bullet point after "the *Supervisor*" insert "the Board, the Ventilation Tester, the Fire Tester and the Independent Tester"
	After 27.4 insert the following new clauses: "27.5 The *Contractor* obtains all Consents. The *Contractor* supplies the *Client* with copies of all relevant documentation in a timely manner, and co-ordinating and managing interface issues affecting the *works* with Others. Compliance with this clause by the *Contractor* is not a compensation event. 27.6 The *Contractor* shall be a "Designer", the "Principal Designer" and the "Principal Contractor" under the CDM Regulations for the purposes of the *works*, and warrants that: • 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 *works* and with the *Client* 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

	Client; • take account of and/or apply the general principles of prevention as required by the CDM Regulations; and • shall provide to the *Client* and the Board: • 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 *Contractor* in its role as "Principal Designer" pursuant to the CDM Regulations in relation to the *works*.
28	Delete the title **"Assignment"** and replace with **"Assignation and collateral warranties"**
28	Insert a new clause 28.2 as follows: "28.2 Within fourteen (14) days of request from either the *Client* or the Project Manager, the *Contractor* delivers to the *Client* collateral warranties executed in a self proving manner (under the Requirements of Writing Scotland Act 1995 as the same may be amended, rep aced and/or supplemented from time o time from: • the *Contractor* 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 *Client*, such approval not to be unreasonably delayed or withheld, and the *Client* shall not be liable to make any payment under this contract until such collateral warranty is provided to the *Client*; and • using best endeavours to secure from any Subcontractor engaged by the *Contractor* in favour of the *Client* 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**
	Delete the existing clause 29 and insert the following: "29.1 The *Contractor* 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): • 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) and the *Contractor* 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 *Client* shall notify the *Contractor* in writing not less than five (5) Business Days prior to any intended

provision or publication of information pursuant to this Clause 29.1.

29.2

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 *Contractor* 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.

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 *Contractor*'s competitors which shall be kept confidential for five years from the ate on which the i formation is produced to the Board

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.

29.3 Clause 29.2(b) and (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 contract 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 contract or Supplemental Agreement (No.2) or in connection with a dispute between the *Client* and the Service Provider or any of its other 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 Board or the Senior Funders or the Board's or the Senior Funders' professional advisers or insurance advisers;

g) any disclosure by the Board or the *Client* 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;

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 disclosu e for the purpose of:

(i) the examination and certification of the Board's or the *Client*'s or the *Contractor*'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 29.3(d)) compliance with the FOI(S)A and the Environmental Information (Scotland) Regulations;

k) any disclosure to the extent required pursuant to Clause 29.1; or

l) any disclosure to the extent required pursuant to Clause 29B.2.

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.

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.

29.5 The *Contractor* shall not make use of this contract or any information issued or provided by or on behalf of the *Client* or the Board in connection with this contract otherwise than for the purpose of this contract, except with the written consent of the

	Client. 29.6 Where the *Contractor*, in carrying out its obligations under this contract, is provided with information relating to any of the *Client*'s 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 *Contractor* has obtained the prior written consent of that person and has obtained the prior written consent of the *Client*. 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 possess on, custody or control of a Subcontractor, are delivered up to the *Client*. 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. 29.9 The provisions of this clause 29 are without prejudice to the application of the Official Secrets Acts 1911 to 1989. 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 *Contractor* 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)."
29A	**Freedom of Information**
	Insert new clause 29A: "29A.1 The *Contractor* 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.

29A.2 Where the Board receives a Request for Information in relation to Information that the *Contractor* via the *Client* is holding on its behalf and which the Board does not hold itself the Board or the *Client* may refer to the *Contractor* such Request for Information and the *Contractor* shall:

a) provide the Board and the *Client* with a copy of all such Information in the form that the Board or the *Client* 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

b) provide all necessary assistance as reasonably requested by the Board or the *Client* 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.

29A.3 Following notification under Clause 29A.2, and up until such time as the *Contractor* has provided the Board and the *Client* with all the Information specified in Clause 29A.2(a), the *Contractor* 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 2004; and

b) whether Information is to be disclosed in response to a Request for Information, and

in no event shall the *Contractor* respond directly, or allow any Subcontractor to respond directly, to a Request for Information unless expressly authorised to do so by the Board.

29A.4 The *Contractor* 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 *Client* 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 *Client* for them to hold on behalf of the Board for the remainder of the term of the Project Agreement.

29A.5 The *Contractor* shall transfer to the *Client* any Request for Information received by the *Contractor* as soon as practicable and in any event within one (1) Business Days of receiving it.

29A.6 The *Contractor* 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.
	29A.7	In the event of a request from the Board pursuant to Clause 29A.2 the *Contractor* shall as soon as practicable, and in any event within three (3) Business Days of receipt of such request, inform the Board and the *Client* of the *Contractor*'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 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 *Client* in writing whether or not it still requires the *Client* to comply with the request and where it does requ re the *Client* to comply with the request the *Client* shall so inform the *Contractor* and the three (3) Business Days period fo 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 *Client* shall notify the *Contractor* of such additional days as soon as practicable after becoming aware of them and shall reimburse the *Contractor* for such costs as the *Contractor* 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.
	29A.8	The *Contractor* 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 *Client* or the *works*: a) in certain circumstances without consulting with the *Client* or the *Contractor*; or b) following consultation with the *Client* and having taken their views into account, provided always that where Clause 29A.8(a) above applies the *Client* shall where notified by the Board, in accordance with the recommendations of the Code, draw this to the attention of the *Contractor* prior to any disclosure.
	29A.9	In the event that the *Contractor* becomes subject to the Environmental Information

	(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 *Client* before disclosing information about it or the Board or any agreement entered into between the Board and the *Client* or the *Client* and the *Contractor* in relation to the Ventilation Works."
29B	**Information and Audit**
	Insert new clause 29B: "29B.1 The *Contractor* shall provide to the *Client* all information, documents, records and the like in the possession of, or available to, the *Contractor* (and to this end the *Contractor* shall use all reasonable endeavours to procure that all such items in the possession of any Subcontractor shall be available to it and the *Contractor* has included, or shall include, relevant terms in all subcontracts with the Subcontractors to this effect) as may be reasonably requested by the *Client* for any purpose in connection w h this contract. 29B.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 the *Contractor* (and the *Contractor* 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 *Contractor* to produce such oral or written explanations as he considers necessary. 29B.3 The *Contractor* shall provide and shall procure that its Subcontractors shall provide such information as the *Client* 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."
29C	**Data Protection**

	Insert new clause 29C: "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**"). 29C.2 The *Contractor* 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 *works*. 29C.3 The *Contractor* undertakes that, where it is required to process any personal data made availab e to it by or on behalf f the *Client*, it will act only on th instructions of the Client. 29C.4 The *Contractor* 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. 29C.5 The *Contractor* undertakes to allow the *Client* and the Board access to any relevant premises on reasonable notice to inspect the procedures described in 29C.2. 29C.5 The *Contractor* undertakes to notify the *Client* 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: (a) inform the *Client* 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 *Client* 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 *Client* informed shall continue until such actual or suspected, threatened or "near miss" personal data breach is fully rectified and/or is no longer threatened. 29C.6 The *Contractor* shall indemnify the *Client* on demand and keep the *Client* indemnified

	from and against all losses suffered or incurred by the *Client* arising out of or in connection with any claims and proceedings arising from any breach by the *Contractor* 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 *Project Manager* 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 *works* to be completed by the Completion Date if implemented; or • where in the opinion of the *Client* 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 *Contractor*'s obligation to provide and update the programme, the *Contractor* 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 *Client* and shall have due regard to any representations made by the *Client*, the Board and/or its representatives, the Service Provider, the Independent Tester or any of the consultants engaged by the *Client* in relation to the *works*."
33	**Access to and use of Site**
33.1	Delete text and replace with the following: “33.1 The *Contractor* acknowledges that it will not have exclusive access to the Site and/or the Working Areas. Insofar as the *Client* 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 *Contractor* which is necessary for the *works* in accordance with the access

	arrangements described in the access protocol contained within the Scope. Where the *Contractor* receives an instruction that access to and use of a part of the Site and/or the Working Areas required by the *Contractor* 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 *Contractor* 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 *Contractor* suffers a delay as a result of any unavailability in accordance with this clause 33.1, the *Contractor* may be entitled to a Compensation Event pursuant to clause 60.1(1), provided the *Contractor* has mitigated the extent of any such delay as far as possible."
35	**Take over**
35.3	Delete clause 35.3 and replace with the following: "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 *Project Manager* certifying that the whole of the works have achieved Completion in accordance w th th s contract an all of the C mpletion Criteria have been complied with;"
41	**Tests and Inspections**
41.3	Delete clause 41.3 and replace with the following: "41.3 The *Contractor*, the *Supervisor,* 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 *Contractor* informs the *Supervisor* 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 *Supervisor,* the Service Provider and the Independent Tester, the Board, the Ventilation Tester and the Fire Tester may watch any test done by the *Contractor*."
41.5	At the beginning of the clause delete "The *Supervisor* does" and insert "The *Supervisor*, the *Project Manager* and the Independent Tester do". In the first bullet point, delete "The *Supervisor* has" and insert "The *Supervisor* and the Independent Tester have"
41.8	Insert new clause as follows: "41.8 The *Contractor* and the *Supervisor* shall notify the *Client*, the Board the *Project Manager*, 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 *defect correction period* the Board, the Board's technical advisor the Senior Funders, the Senior Funders' technical advisor

	(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 *Contractor* and the *Supervisor* shall ensure that any reasonable and proper instructions or representations made by the *Client*, the Board and/or the Board's technical advisors or the Service Provider shall be taken into consideration."
41.6	After "incurred by the *Client*" insert "and/or the Board"
41.7	After "incurred by the *Client*" insert "and/or the Board"
44	**Correcting Defects**
44.2	Delete clause and replace with the following "44.2 The *Contractor* corrects a notified Defect before the end of the *defect correction period* (or such longer period as may be agreed by the Board and the *Client* 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 working reasonably required by the *Project Manager* and, in any event and without prejudice to the generality 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 *Project Manager*. The *defect correction period* begins at Completion for Defects notified before Completion and when the Defect is notified for other Defects."
44.2A	Insert new clause as follows: "44.2A In addition to its obligations under clause 44.2, during the *defect correction period*, the *Contractor* 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 *Contractor* does not take action to correct a critical defect within the required timescale the *Client* or the *Project Manager* shall instruct a third party to take action and the *Contractor* shall pay the cost of remediation by such third party. The *Client* shall take reasonable steps to ensure such costs are reasonably incurred and properly mitigated."
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 *Project Manager*, no change may be proposed without the *Project Manager* first obtaining the consent of the *Client* and the Board to the change."
45.2	After "consider the change, " in the first line, insert "and provided that the *Client* 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 *Client* 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 *Client* 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 "*Project Manager*", 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 "*Project Manager*" insert "with copies sent to the *Client* 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 *Client* and the Board on the ame 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 *Client* may deduct from any money due to the *Contractor* under this contract any sum due to the *Client* from the *Contractor* under this contract. The *Client* may deduct from any money due to the *Contractor* under this contract any sum required by any applicable Law to be deducted." 51.7 The *Contractor* allows the *Client,* the *Project Manager* and their respective agents at any reasonable times to inspect and take copies of, and extracts from, the *Contractor's* 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 *Client* 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

	"a change made in order to accommodate the *Contractor*'s method of working or" and in the original second bullet point delete "for his design".
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)	Delete "The *Client* or Others" and replace with "Subject to clause 25.4, the *Client* or Others". Delete the full stop and insert, not as a bullet point: "provided that where the Other in question is the Board, the *Contractor* notifies the *Client* and the Board, giving not less than 4 weeks notice, of when the Board is required to carry out any activities necessary for the *Contractor* to be able to carry out the *works* 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 *Contractor* does all that it reasonably can to co-ordinate the activities of that Other with the *works* so as to avoid any delay or disruption to the *works*."
60.1(7)	Delete and insert "Not Used"
60.1(13)	Replace "A *weather measurement* is recorded" with "Subject to clause 63.1A, a *weather measurement* is recorded"
60.1(19)	replace "An event" with: "Subject to clause 63.1A, an event".
60.1(22)	Insert a new clause 60.1(22) as follows: "A delay arising from a delay by the Board or the Client in reviewing the Reviewable Design Data".
60.1(23)	Insert a new clause 60.1(23) as follows: "A COVID-19 Trigger Event".
60.1(24)	Insert a new clause 60.1(24) as follows: "A notice is issued by the Board to the *Client* and the *Contractor* to stop the carrying out of the *works* pursuant to clause Z4.2".
60.1	At the end of the clause, insert the following new paragraph: "Notwithstanding anything to the contrary: • nothing is a compensation event to the extent that it arises from the breach, negligence, error, and/or default of the *Contractor* or any of its persons; and • the *Contractor* will only be entitled to a compensation event if the *Contractor* 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 *Contractor* 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 *Project Manager* shall not assess any compensation event notified after the relevant *defects date*. The *Contractor* 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 *defects date*.”
61.8	Insert new clause "Notwithstanding any other provision of this contract, the *Contractor* 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 fo any fai ure by the *Client* 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 "*Project Manager*" insert "after seeking approval from the *Client* and the Board". In the third line after “*Project Manager*” insert "with copies sent to the *Client* and the Board on the same date".
62.5	In the first line after "*Project Manager*" insert "after seeking approval from the *Client* 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 *Project Manager*’s assessments**
64.3	In the first line after “*Contractor*” insert “and the *Client* and the Board on the same date”
7	**Title**
70	**The *Client*’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 *Project Manager* is satisfied that title to it

	vests unconditionally in the *Contractor* and that unconditional title will transfer to the *Client* immediately on payment. 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 • the *Project Manager* is satisfied that title to it vests unconditionally in the *Contractor* and that unconditional title will transfer to the *Client* 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	After clause 83.1 insert the following clause: "83.1A The *Contractor* 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 ect to unlimited reins atements from the *starting date* 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. 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 *Contractor* immediately notifies the *Client* and the *Contractor* insures at the maximum level which is so available. The maintenance of (or failure to maintain) the insurances required by this contract does not relieve the *Contractor* of his other obligations and liabilities under this contract."
83.3	After "has been issued" insert: "and are: • without excesses save as agreed by the *Client*, • 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 o to the effect that an insured must discharge any liability before being entitled to recover from insurers or o 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 *Client*) against insurers."

<table>
<tr><td>84</td><td>Insurance policies</td></tr>
<tr><td>84.1</td><td>After “the starting date” insert “, otherwise as the Project Manager requires”.
In line 2 after “Project Manager” insert “with copies to the Client and the Board on the same date”</td></tr>
<tr><td>85</td><td>If the Contractor does not insure</td></tr>
<tr><td>85.1</td><td>after “insure if” insert:
“the Contractor does not maintain insurance as required by this contract or”.</td></tr>
<tr><td>90</td><td>Termination</td></tr>
<tr><td>90.2</td><td>In the first row of the Termination Table delete "R1-R15, R18 or R22" and insert "R1-R15, R18, R22 or R23".
Insert a new row in The Client terminating party section as follows:
<table>
<tr><th>Reason</th><th>Procedure</th><th>Amount Due</th></tr>
<tr><td>R24</td><td>P1 and P4 save where the Contractor 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 Contractor has failed to comply as provided for in clause 93.4, where A1 and A3 apply</td></tr>
</table></td></tr>
<tr><td>91</td><td>Reasons for termination</td></tr>
<tr><td>91.1</td><td>At the end of the first sentence, insert "and the Client may also terminate if the company providing the guarantee pursuant to clause X4 (the "Guarantor") has done one of the following or its equivalent.";
In the first bullet point after "other Party" insert "and/or the Guarantor"; and
In the second bullet point after "other Party" insert "and/or the Guarantor".</td></tr>
<tr><td>91.2</td><td>Delete clause and replace with:
“91.2 The Client may terminate if
• the Project Manager has notified that the Contractor has substantially failed to comply with his obligations in relation to the works 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 Contractor has not provided a guarantee which this contract requires</td></tr>
</table>

	(R12), or • the *Contractor* has assigned or charged any rights and benefits arising out of this contract (R12).
91.6	Insert the following paragraph at the end of clause "The *Contractor* does not terminate unless he has notified the *Project Manager* of his intention to do so and the *Project Manager* has not given an instruction allowing the *works* to re-start or start within four weeks of the notification."
91.9	Insert a new clause 91.9 as follows: "91.9 The *Client* may terminate if Completion does not occur by the Longstop Date (R23)."
91.10	"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)."
92	**Procedures on termination**
92.1	Delete clause and replace w th: "92.1 On termination, the *Client* may complete the *works* himself or employ other people to do so and may use any Plant and Materials to which he has title (P1)."
93	**Payment on termination**
93.1	Delete the second sub-bullet in the second main bullet in clause 93.1 and replace with: "● to which the *Client* has title and which the *Contractor* delivers to the Working Areas or to another location reasonably instructed by the *Project Manager*,".
93.2	Delete amount A3 in clause 93.2 and replace with: "A3 A deduction of the forecast of the additional cost to the *Client* and/or the Board of completing the whole of the *works* 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 *Client* and/or the Board as a result of the termination or the event giving rise to it."
93.3	Insert, as a new clause 93.3: "In the event of any termination, notwithstanding any other provision of the contract but save as provided for in clause 93 the *Client* shall not be liable for and the *Contractor* 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."
93.4	Insert, as new clause 93.4: "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 *Client's* employment under Supplemental Agreement (No.2) is that the *Contractor* has failed to comply with his obligations under this contract, the amount due on termination of the contract includes A1 and A3.

	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)	Insert the following after the third sentence: "The *Contractor* acknowledges and agrees that the *Client* 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 *Adjudicator*".
W2.3(11)	Delete clause and replace with: The *Adjudicator*'s decision under this contract or, in the event that the *Adjudicator* 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 *Adjudicator*'s decision is also binding on the Board unless and until revised by the *tribunal* and is enforceable as a matter of contractual obligation between the Parties and/or the Board and not as an arbitral award."
W2.4	Insert as new clause W2.4: "Where a dispute arises under Supplemental Agreement (No.2) between the Board and *Client* in relation to a decision made by the *Client,* the *Project Manager* or the *Supervisor* pursuant to this contract, including but not limited to: • 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; the *Contractor* 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."
PART Z3	**ADDITIONS AND AMENDMENTS TO SECONDARY OPTION CLAUSES**
Option X7	**Delay Damages**
X7.4	Insert a new clause as follows: "X7.4 If Completion has not occurred by the Longstop Date then whether or not delay damages have been paid and without affecting the *Contractor's* obligation to pay further delay damages the *Client* shall be entitled to terminate the *Contractor*'s 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."
Option X18	**Limitation of Liability**

X18.5	In the first bullet point after "Client's" insert "and/or the Board's" 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: "• liability for death or personal injury caused or contributed to by the *Contractor*, • liability in respect of the indemnities given by the *Contractor* 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 *Contractor*, and • liabilities of the *Contractor* (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	Delete " The final date for pa ment is fourt en (14) days after the date on which payment becomes due or a different period for payment if s ated 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".
PART Z4 –	**ADDITIONAL CLAUSES**
Z4.1	Insert the following clause: **"Z4.1 Advertising** In addition to its obligations under clause 27, the *Contractor* agrees not to use any trading relationship between the *Client*, its name and trading style or any registered or unregistered trade mark which the *Client* may use, for any marketing or advertising purposes, without first obtaining the *Client's* written authorisation. The terms and conditions of this clause shall survive any termination, cancellation or expiration of the Contract."
Z4.2	Insert the following clause: Z4.2 **Board's right to stop the carrying out of the *works*** Z4.2(1) The *Contractor* 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 *Client* to stop the relevant part or parts of the *works* and to allow the Board and/or its representatives to inspect the relevant part or parts of the *works* if the Board reasonably believes that: (i) the carrying out of the relevant part or parts of the *works* has or is likely to: (A) have a potentially adverse impact on the clinical services and/or

	operation of the Hospital and/or the Royal Infirmary Edinburgh; or (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 (ii) a Major Incident has occurred. Z4.2(2) In the event that the *Client* receives an instruction from the Board to stop the relevant part or parts of the *works* pursuant to clause Z4.2(1), the *Project Manager* notifies the *Contractor* and the *Contractor* immediately stops the relevant part or parts of the *works* until such time as the *Project Manager* 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 *Project Manager* confirms that the *Contractor* is able to re-start the relevant part or parts of the *works*.

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

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	W2
Secondary Options	X2,X4, X7, X18, Y(UK)2
The *works* are	Des gn, con truction and installation test ng commissioning and completion of new ventilation system and associated other works to serve Paediatric Critical Care and Haematology and Oncology areas on the 1st and 3rd floors respectively as further described in the Scope.

The *Client* is

Name	IHS LOTHIAN LIMITED
Address for communications	13 Queens Road Aberdeen AB15 4YL
Address for electronic communications	[redacted]

The *Project Manager* is

Name	Robert Eastham or such replacement person as the *Client* shall notify to the *Contractor*
Address for communications	The Axis 10 Holliday Street Birmingham West Midlands B1 1TF
Address for electronic communications	[redacted] or such alternative address as the *Client* shall notify to the *Contractor*

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~~		~~is~~	
~~The *period for reply* for~~		~~is~~	

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: 4 weeks

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

	condition to be met	Key date
(1)	The ventilation works shall be complete, tested and commissioned	25 January 2021
(2)		
(3)		

The *Contractor* prepares forecasts of the total Defined Cost for the whole of the *works* at intervals no longer than: 4 weeks

3 Time

The *starting date* is: 22 June 2020

The *access dates* are

	part of the Site	date
(1)	Pre surveys and design work	November 2019 on wards
~~(2)~~		
~~(3)~~		

The *Contractor* submits revised programmes at intervals no longer than: 4 weeks

If the *Client* has decided the completion *date* for the whole of the *works*

The *completion date* for the whole of the *works* is: 25 January 2021

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~~: ~~is~~:

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 in ury 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~~	
~~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~~	

Resolving and avoiding disputes

The *tribunal* is: Litigation

~~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): Stephen Kelly

Address for communications	Royal Hospital for Children & Young People (RHCYP) & Department of Clinical Neurosciences (DCN), Edinburgh, 9 Sciennes Road Edinburgh EH9 1LF
Address for electronic communications	[redacted]
Name (2)	Matthew Templeton
Address for communications	Dalmore Capital Limited Caledonian Exchange 19a Canning Street Edinburgh EH3 8EG
Address for electronic communications	[redacted]

The *Adjudicator* is

Name	Appointed by the *Adjudicator nominating body*
Address for ommunications	N/A
Address for electronic communications	N/A

The *Adjudicator nominating body* is	Royal Institution of Chartered Surveyors Scottish Branch

~~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)~~	~~N/A~~	~~N/A~~
~~(2)~~		
~~(3)~~		

~~(4)~~		

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 OptionX5~~ ~~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~~

~~The *Subcontractor undertaking to Others* are~~

~~works~~	~~provided to~~
~~N/A~~	

~~The *Subcontractor undertaking to the Client* are~~

~~works~~

~~N/A~~

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)

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 mat ers 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~~

~~*item*~~	~~description~~	~~amount per day~~
~~(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 21 (wenty 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~~

~~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

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

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	Imtech Engineering Services Central Ltd
Address for communications	G&H House Hooton Street Carlton Road Nottingham NG3 5GL
Address for electronic communications	[redacted]

The *fee percentage* is	18 %
The *working areas* are	See the Schedule Part 5

The *key persons* are

Name (1)	David Keenan
Job	Regional Director
Responsibilities	
Qualification	
Experience	35 years
Name (2)	Dom Gallagher
Job	Construction Lead
Responsibilities	
Qualifications	
Experience	37 years

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	Imtech Engineering Services Scotland The Hub, East Gateway Beancross Road Grangemouth FK3 8WH
Address for electronic communications	[redacted]
Name (2)	Mark Simpson

Address for communications	Hooton Street Carlton Road Nottingham NG3 5GL
Address for electronic communications	[redacted]

~~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

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

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

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

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

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

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 s not an original party to this Agreement or that no loss or a different loss has been suffered by such as ignee.

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 th equivale t rights in defence of liability as i 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 …….....

..... 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 …….....

PART B

Form of Subcontractor Collateral Warranty

CONSULTANT'S COLLATERAL WARRANTY

relating to a project at

ROYAL HOSPITAL FOR SICK CHILDREN & YOUNG PEOPLE + DCN

betw en

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 Heath 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 it 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 te ms

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 serv ce which the BRE recommend are not use 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 tak n place provided that all other requirements in this clause have been satisf ed:

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**][**IHS LOTHIAN LIMITED**] acting by:-)
)
)
)
)

Authorised Signatory…….....

Name printed: ……..……

Authorised Signatory……..……

Name printed: ……..……

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 a agre d 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 c ean and thoroughl 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 r move 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.

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 Pro edure e ther 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 sist.

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 th t the c aim has be n caused by (i) he pe formance 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 sha m tigate any Direct osses suffered by Projec 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 p yment of any such invoice within 7 days of receipt o 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 Supp ement l Agreement No 2 (as the same may be amended or adjusted i accordance with his 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 w l 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 e su e that the Faciliti s, the Ventilation Works Site and any site materials for use in he Vent ation Wor s are dequately prote ted 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

Schedule Part 4

The Service Contract Amendment Agreement

(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

Pinsent Masons

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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 contra t").

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 document is waived 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 Serv ces Cont act (as revised pursuant to this Agreement) to: (i) the amendments to the Project Agreemen made pursuant o 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 i required to pay the sum of £120,000 (exclusive of VAT) to the Service Provi er within 10 Busines Day of the las 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 f aud lently, or to any prov sion of this Agreement w ich 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

…… Fu 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

PART 2

VENTILATION WORKS CONTRACT

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***

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 he 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

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) : *1.0000*

Total Contract Term LCF Cost :	£2,063,338.80	Total Contract Term LCF Cost (current prices) :	£2,063,338.80
Annual LCF Cost :	£82,533.55	Annual LCF Cost (current prices) :	£82,533.55
Annual Service Cost :	£84,789.75	Annual Service Cost (current prices) :	£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) ☐

1st Authorisation to proceed with work:

Client signature: _____ Print name: _____ Date: _____ Email Attached: (Tick if applicable) ☐

~~2nd Authorisation to proceed with work:~~

Client signature: _____ Print name: _____ Date: _____ Email Attached: (Tick if applicable) ☐

Job completed and cleared to invoice:

Client signature: _____ Prin name _____ Date: _____ Email Attach d: (Tick if applicable) ☐

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%

CIBSE Ref.		Element		Quantity	Unit	Rate	Total	Life Expt ncy 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				

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	£81,00 .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				

			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	£42,00 .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

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 %	.16 %	1	-£6,608.00				
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	-£6,608.00				
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				

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	T tal Labour	Contractor Costs	Mark Up	Total Cont acto Costs	Con umable	M rk 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	0 3	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

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

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**

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
1 Substructure	1 - Substructure
2 SUPERSTRUCTURE	2 - SUPERSTRUCTURE
2.1 Frame	2.1 - Frame
2.2 Upper Floors	2.2 - Upper Floors
2.3 Roof	2.3 - Roof
2.4 Stairs and Ramps	2.4 - Stairs and Ramps
2.5 External Walls	2.5 - External Walls
2.6 Windows and External Doors	2.6 - Windows and External Doors
2.7 Internal Walls and Partitions	2.7 - Internal Walls and Partitions
2.8 Internal Doors	2.8 - Internal Doors
3 FINISHES	3 - FINISHES
3.1 Wall Finishes	3.1 - Wall Finishes
3.2 Floor Finishes	3.2 - Floor Finishes
3.3 Ceiling 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 - Sp cialist lighting
5.6	Space Heating and Air Conditioning	5.6 - Sp ce Heatin and Air Co ditioning
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	8.6 - External Drainage
8.7	External Services	8.7 - External Services
8.8	Minor Building works and Ancillary Buildings	8.8 - Minor Building works and Ancillary Buildings
	Sub-Total	- Sub-Total
9	VARIATIONS	9 - VARIATIONS
9.1	Variations Agreed with the Board 12/11/2014	9.1 - Variations Agreed with the Board 12/11/2014

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 or 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:

51.3.1is 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

51.3.2in relation to th Ventilation Works in the period prior to the twelfth annive sary 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	
Board Director	£131.25
Regional Director	£103.13
Contract Director	£93.75
General Manager	£89.06
Contract Manager	£79.69
Design Interface Manager	£76.88
Engineering / Estates Manager	£60.94
Graduate Manager	£51.56
Admin	£37.50

Schedule Part 5

Collateral Warranties

Part 1

Ventilation Works Contractor Collateral Warranty

Collateral warranty

AMONG

IHS LOTHIAN LIMITED

and

IMTECH ENGINEERING SERVICES CENTRAL LTD

and

LOTHIAN HEALTH BOARD

relating to the Design const uction an instal ation and complet on 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 omissi ns or incomplete work) in the Works for which the Contractor is responsible pursuant to he Contract (ereina ter 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 he Beneficiary (or i s 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

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 Heath 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 numbe 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. Eviden e of in urance w ll 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 assignations 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 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 hat such assignee is not an original party to his Agreem nt or that no loss or a different oss has been suffered by uch 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 Consulta t, such agreemen not to b unreasonab y withheld or delayed by either party, whereby the Benefic ary is sub tituted for the Client unde 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 wit in two Bu iness ays.

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 of 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 be 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 …….....

..... 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 …….....

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 Heath 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 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))).

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 '*Supervisor'* service under the NEC Engineering and Construction Contract and 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 C ent th Consultant an the Beneficiary. The Client, the Consultant, and the Beneficiary agree Ma Roberts LLP shal 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 from 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 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 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 fu ther covenants wi h 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 of 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 be 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 …….....

..... 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

CONSULTANT'S COLLATERAL WARRANTY

relating to a project at

ROYAL HOSPITAL FOR SICK CHILDREN & YOUNG

PEOPLE + DCN

between

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 Heath 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 it 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 h s pa d £1 to the C nsulta t as cons deration under this agr ement.

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 clau e **2**, the Consultant may:

(a) rely on any limi of iability or other te m of the Professional Appointm nt; 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 ac ordance with this c ause.

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 connectio with t is 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:-)

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 meanings given to them in Supplemental Agreement No.2. Any references to the Project Agreement shall b 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

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 d rect basis with insure s 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 notificati n of incidents to insurers and ensure the investigation of, and assist in the preparation of eports to the insurers and their loss adjusters on any incident l kely 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 hat the parties insured are to be considere as sepa ate and distinct entities and the word "the Insured" in the elevant Insurance Policy hal b 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

1.17.11 Loss minimisation

1.17.12 Testing/commissioning period clause

1.17.13 Plans and documents clause

1.17.14 Expediting expenses

1.17.15 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

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.

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 inva idate or render un nforceable 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.

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 appropr ate name yo and such other persons as are requi ed 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 acc rdance with our du y 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) co lating and presenting all informati n 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 futu e date be placed by ourselves r by other rokers.

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 to 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 shal be the ea lier 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.

Schedule Part 9

Board's Advisers' Design Assurance Statements

Executive Office
Gyle Square
1 South Gyle Crescent
EDINBURGH EH12 9EB
Telephone [redacted]
Fax [redacted]
www.nhsnss.org

NHS National Services Scotland

FAO: Brian Currie
NHS Lothian

Sent via email to [redacted]

Date 27th May 2020
Your Ref
Our Ref CS/GJ/MM

Enquiries to Susan Ferguson
Extension
Direct Line
Email [redacted]

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.

disability confident EMPLOYER

This letter is not an acceptance on our part of any design liability.

Yours Faithfully

[redacted]

On behalf of NHS National Services Scotland

COLIN SINCLAIR
Chief Executive

MOTT MACDONALD

Lothian Health Board
Waverlygate
2-4 Waterloo Place
Edinburgh
EH1 3EG

Our Reference
Advisory Services Statement

MML Advisory Services Statement

18 May 2020

Mott MacDonald
Ground Floor West
19A Canning Street
Edinburgh EH3 8EG
United Kingdom

T +44 (0)131 221 2300
mottmac.com

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

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
[redacted]

Turner Property Services Limited
t/a Turner Professional Engineering Services (TPES)
65 Craigton Road, Glasgow, G51 3EQ, United Kingdom
Tel: +44 (0)141 309 5530 | *Email:* info@turnerpes.co.uk

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 [redacted]

Eur Ing John M Rayner, BSc (Eng), CEng, FIHEEM, FCMI, MIMechE, MIET, MSVHSoc, TechIOSH

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Certificate Of Completion

Enve ope Id: 3C2B05B37E3645C18D91A3086C80DEBC
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Subject: P ease DocuS gn: RHSC Supp ementa Agreement No. 2 - Add t ona Vent at on Works.DOCX

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V v Cockburn [redacted] Secur ty Leve : Ema , Account Authent cat on (None)	DocuSigned by: [redacted] S gnature Adopt on: Pre-se ected Sty e [redacted]	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
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Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

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Ia n Graham [redacted] Secur ty Leve : Ema , Account Authent cat on (None) **Electronic Record and Signature Disclosure:** Not Offered v a DocuS gn	COPIED	Sent: 8/5/2020 9:48:23 AM V ewed: 8/5/2020 11:08:46 AM
Jenn fer McKay [redacted] Secur ty Leve : Ema , Account Authent cat on (None) **Electronic Record and Signature Disclosure:** Not Offered v a DocuS gn	COPIED	Sent: 8/5/2020 9:48:24 AM V ewed: 8/5/2020 10:50:29 AM
Margaret K nnes [redacted] Secur ty Leve : Ema , Account Authent cat on (None) **Electronic Record and Signature Disclosure:** Not Offered v a DocuS gn	COPIED	Sent: 8/5/2020 9:48:24 AM V ewed: 8/5/2020 10:48:17 AM
Phoebe H rst [redacted] Secur ty Leve : Ema , Account Authent cat on (None) **Electronic Record and Signature Disclosure:** Not Offered v a DocuS gn	COPIED	Sent: 8/5/2020 9:48:25 AM V ewed: 8/5/2020 9:51:00 AM

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PCP 4.32 Derogation Register

"2.7 Project Co shall comply with Section 3 (Boards Construction Requirements) of Schedule Part 6 (Construction Matters), subject to the agreed derogations as set out in sub-section 32 (derogations) of Section 4 (Project Co's Proposals) of Schedule Part 6 (Construction Matters)."

	Date	Revision	Issued by
IHSL-XX-XX-SH-001	16/01/2015	*Revision K* *Wording included in relation to the PA, see above sub heading.*	LE / IHSL

No.	Reference	Date Issued	Project Co. Signed	NHSL Signed	Revision/Brief Description/ Notes
001	IHSL-ACO-001	15/09/2014	13/11/2014	14/11/2014	03 Drop Seals -REWORDED AS AGREED BY NHSL
002	IHSL-ACO-002	15/09/2014	13/11/2014	14/11/2014	01 Screens in AC rated walls
003	IHSL-FIRE-001	05/09/2014	13/11/2014	14/11/2014	01 Lifts
004	IHSL-FIRE-002	05/09/2014	13/11/2014	10/11/2014	04 Department Adjacencies (Links to C30 - 051 Summary Item)
006	IHSL-FIRE-004	05/09/2014	13/11/2014	10/11/2014	04 Dampers to Ductwork REWORDED
007	IHSL-FIRE-005	05/09/2014	13/11/2014	14/11/2014	01 Adjacencies LINKS TO C30 (Summary 050)
008	IHSL-FIRE-006	05/09/2014	13/11/2014	14/11/2014	05 Atrium REDRAFTED 13/11/14
010	IHSL-FIRE-008	05/09/2014	13/11/2014	14/11/2014	02 Fire Alarm & Detection
011	IHSL-FIRE-009	05/09/2014	13/11/2014	14/11/2014	02 Fire Stopping
012	IHSL-FIRE-010	05/09/2014	13/11/2014	14/11/2014	01Compartmentation
013	IHSL-FIRE-011	05/09/2014	13/11/2014	14/11/2014	04 Escape Routes
014	IHSL-FIRE-012	05/09/2014	13/11/2014	14/11/2014	02 Temporary Waiting Spaces
015	IHSL-FIRE-013	05/09/2014	13/11/2014	14/11/2014	01 Fire Supression
017	IHSL-FIRE-015	05/09/2014	13/11/2014	14/11/2014	01 Fire Hazard Rooms
019	IHSL-MEP-001	05/09/2014	13/11/2014	14/11/2014	02 Fire Suppression REWORDING ACCEPTED
020	IHSL-MEP-002	05/09/2014	13/11/2014	14/11/2014	02 25% Cabling Capacity
021	IHSL-MEP-003	05/09/2014	13/11/2014	14/11/2014	03 Clinical Equipment Alarms-Rewording Accepted
023	IHSL-MEP-005	05/09/2014	13/11/2014	14/11/2014	01 DRAFT Routes through common services
027	IHSL-MEP-009	05/09/2014	13/11/2014	14/11/2014	01 Luminaire Colour/Temperature
028	IHSL-MEP-010	05/09/2014	13/11/2014	14/11/2014	01 Sprinkler Protection
029	IHSL-MEP-011	05/09/2014	13/11/2014	14/11/2014	03 Fibre Optic Cables
033	IHSL-MEP-015	05/09/2014	13/11/2014	14/11/2014	03 Environmental Matrix REWORDED 12.11.14
034	IHSL-MEP-016	05/09/2014	13/11/2014	14/11/2014	02 Sustainability
035	IHSL-MEP-017	05/09/2014	13/11/2014	14/11/2014	02 Mech Vent / Air Con
042	DER/Arch/02	FT	13/11/2014	14/11/2014	**Submitted C30** Single bedroom/ensuite layout HBN 23
044	DER/Arch/04	FT	13/11/2014	14/11/2014	**Submitted C30** Critical care layout HBN 57
046	DER/Arch/07	FT	13/11/2014	14/11/2014	**Submitted C30** Clinical support spaces layout HBN 00-03
048	DER/Arch/09	FT	13/11/2014	14/11/2014	**Submitted C30** Clinical support spaces layout HBN 00-04
051	DER/Arch/12	FT	13/11/2014	14/11/2014	**Submitted C30** Adult in-patient assisted shower rooms HBN 04-01
054	DER/Aco/01	FT	13/11/2014	14/11/2014	**Submitted C30** Ceilings
064	As/Hel/02	FT	13/11/2014	14/11/2014	**REV 01 15/10/14** Helicopter Weights
065	1	FT	13/11/2014	14/11/2014	**Submitted C30** VIE Equipment
067	3	FT	13/11/2014	14/11/2014	03 (Submitted C30) Blinds/Curtain/Shower Curtain Tracks- Clarification
079	18	FT	13/11/2014	14/11/2014	03 (Submitted C30) Planting Maturity REDRAFTED
082	23	FT	13/11/2014	14/11/2014	**Submitted C30** 25% extra capacity
089	33	FT	13/11/2014	14/11/2014	**Submitted C30** FFE to external works
098	IHSL-ARC-001	15/09/2014	13/11/2014	14/11/2014	01 Clinical Output Specifications 1/4
099	IHSL-ARC-002	15/09/2014	13/11/2014	14/11/2014	01 Single Bedroom Arrangement
100	IHSL-ARC-003	15/09/2014	13/11/2014	14/11/2014	01 Multibed Room Bed Spaces
101	IHSL-ARC-004	15/09/2014	13/11/2014	14/11/2014	02 Theatres Size WORDING AMENDED 07/11/14
102	IHSL-ARC-005	15/09/2014	13/11/2014	14/11/2014	01 Sanitary Spaces - Alternative Layout
103	IHSL-ARC-006	15/09/2014	13/11/2014	14/11/2014	01 Sanitary Spaces - Alternative Layout
104	IHSL-ARC-007	15/09/2014	13/11/2014	14/11/2014	01 Consult Exam Room Sizes
105	IHSL-ARC-008	15/09/2014	13/11/2014	14/11/2014	01 Treatment Room areas
106	IHSL-ARC-009	15/09/2014	13/11/2014	14/11/2014	01 Infection Control
107	IHSL-ARC-010	15/09/2014	13/11/2014	14/11/2014	01 100% Single Bedrooms
110	IHSL-ARC-013	16/09/2014	13/11/2014	14/11/2014	03 Assisted Shower toom to multi-bed rooms
111	IHSL-ARC-014	16/09/2014	13/11/2014	14/11/2014	01 Open Linen Bays
112	IHSL-ARC-015	16/09/2014	13/11/2014	14/11/2014	03 4 bed layout
113	IHSL-ARC-016	16/09/2014	13/11/2014	14/11/2014	01 Viewing Zones
114	IHSL-ARC-017	16/09/2014	13/11/2014	14/11/2014	02 Georgian wired glassPco revised confirmal on
115	IHSL-ARC-018	16/09/2014	13/11/2014	14/11/2014	01 Georgian Wired Glass
116	IHSL-ARC-019	16/09/2014	13/11/2014	14/11/2014	01 Vision Panels
117	IHSL-ARC-020	16/09/2014	13/11/2014	14/11/2014	03 Georgian wired glass REWORDED 07/11/14
118	IHSL-ARC-021	16/09/2014	13/11/2014	14/11/2014	01 Door widths
119	IHSL-ARC-022	16/09/2014	13/11/2014	14/11/2014	05 Extent of Shielding
120	IHSL-ARC-023	17/09/2014	13/11/2014	14/11/2014	01 Ironmongery
121	IHSL-ARC-024	17/09/2014	13/11/2014	14/11/2014	01 Equipment - Carcasses
122	IHSL-ARC-025	17/09/2014	13/11/2014	14/11/2014	01 Flexible Hoses-CAMHS
123	IHSL-ARC-026	17/09/2014	13/11/2014	14/11/2014	02 Anti- Ligature
124	IHSL-ARC-027	17/09/2014	13/11/2014	14/11/2014	01 Single Rooms - Bed Spacing 02 Proposal wording revised 22/09/14
125	IHSL-ARC-028	17/09/2014	13/11/2014	14/11/2014	04 Bed Spacing REWORDED
126	IHSL-ARC-029	17/09/2014	13/11/2014	14/11/2014	01 Single Room Accommodation
127	IHSL-ARC-030	17/09/2014	13/11/2014	14/11/2014	01 Car Parking
128	IHSL-ARC-031	17/09/2014	13/11/2014	14/11/2014	01 Drop Off
129	IHSL-ARC-032	17/09/2014	13/11/2014	14/11/2014	01 Building Envelope REDRAFTED 30/10/14
130	IHSL-ARC-033	17/09/2014	13/11/2014	14/11/2014	01 Corridor WidthsREDRAFTED 30/10/14
131	IHSL-ARC-034	17/09/2014	13/11/2014	10/11/2014	02 Windows redrafted 10.11.14
132	IHSL-ARC-035	17/09/2014	13/11/2014	14/11/2014	01 Flooring
133	IHSL-ARC-036	17/09/2014	13/11/2014	14/11/2014	02 Gas Cylinder Storage REWORDED
134	IHSL-ARC-037	17/09/2014	13/11/2014	14/11/2014	01 Heated External Spaces
135	IHSL-ARC-038	17/09/2014	13/11/2014	14/11/2014	01 Escalators
136	IHSL-ARC-039	22/09/2014	13/11/2014	14/11/2014	03 Handrails REVISED WORDING
137	IHSL-ARC-040	15/10/2014	13/11/2014	14/11/2014	01 Helipad Ramp Gradient
138	IHSL-MEP-023	04/11/2014	13/11/2014	10/11/2014	Fiscal Metering
139	IHSL-ARC-041	15/10/2014	13/11/2014	14/11/2014	01 Drainage Life Expectancy
140	IHSL-ARC-042	12/11/2014	13/11/2014	14/11/2014	01 Lift Door Widths
141	IHSL-ARC-001 (2)	12/11/2014	13/11/2014	14/11/2014	01 Clinical Output Specifications 2/4
142	IHSL-ARC-001 (3)	12/11/2014	13/11/2014	14/11/2014	01 Clinical Output Specifications 3/4
143	IHSL-ARC-001 (4)	12/11/2014	13/11/2014	14/11/2014	01 Clinical Output Specifications 4/4

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Derogation Request

Date	Notes	Reference
15/09/2014	*03 Drop Seals -REWORDED AS AGREED BY NHSL*	IHSL-ACO-001

BCR Clause

[copy text from BCR's / PA, include clause numbers]

In Scottish Health Technical Memorandum 08-01: Specialist services Acoustics (May 2011) it is stated that:

Doors
2.71 Doors are inevitably a weakness in a partition and will reduce the overall acoustic performance of most constructions.
2.72 Reasonable acoustic performance cannot be achieved without seals around the whole door perimeter, including threshold and meeting stiles. It is recognised that there can be significant restrictions on the use of door seals; therefore, doors should be sealed as far as practically possible.
2.73 Possible conflicts with the desired acoustic performance include opening force (including under emergency conditions), infection control, patient safety (for example if double-swing doors are required) and ventilation regimes. Designers should make an informed decision about the provision of door seals when the other restrictions are considered.

Relevant Regulation - HBN, SHTM, Building Regulations etc

[copy text from relevant docts, include clause numbers]

Scottish Health Technical Memorandum 08-01: Specialist services Acoustics (May 2011) - SHTM08-01.

Requirement

[summarise what is being asked for in the docts above]

Table 5 of SHTM08-01 - Matrix showing sound-insulation performance required (dB DnT,w), presents the installed sound-insulation performanced (DnT,w) required for different room types.

Derogation

[why derogation is required]

Due to infection control issues drop seals will only be used in the following rooms:

1. Sleep laboratory
2. Audiology rooms
3. Radio Lolipop Studio
4. Medical Resonance Imaging Rooms
5. Laboratory areas within Specialist Biochemistry Lab and Child Life & Health
6. Single isolation room within Clinical Research Facility
7. Testing rooms within Audiology
8. Plaster Suite within ED + RHSC Outpatients
9. Splinting/Casting Room within RHSC Therapies
10. Orthotics Workshop within RHSC OPD

As stated in 2.72 of SHTM08-01 reasonable acoustic performance cannot be achieved without seals around the whole door perimeter.

In terms of airborne sound insulation between adjacent rooms an indirect airborne transmission path occur through the doors of both rooms. The magnitude of this indirect airborne transmission path is essentially determined by: i) the performance of the

both rooms. The magnitude of this indirect airborne transmission path is essentially determined by: i) the performance of the doors, i.e. the magnitude will increase if the performance of the doors decrease (for ex. if seals are not provided around the all door perimeter) and ii) the location of the doors, i.e. the magnitude will increase if doors from both rooms are close to each other or if they are facing each other.

Therefore, derogation of the acoustical requirement regarding airborne sound insulation between rooms is needed (acoustical requirement stated on Table 5 of SHTM08-01) for:

2. All adjacent rooms that due to user requests have their doors close to each other (side by side) or facing each other.

3. All adjacent rooms that have doors, movable walls, gaps or any other system interconnecting each other.

Proposal

It is proposed that in cases where due to user requests adjacent room have their doors close to each other (side by side) or facing each other the requirements stated in Table 5 of SHTM08-01 should be decreased to 6dB.

It is proposed that in cases where due to user requests adjacent rooms are meant to be interconnect to each other by means of doors, movable walls, gaps or any other system, the requirements stated in Table 5 of SHTM08-01 should not be applied.

Reference Docts - Sketches, drawings, reference material extracts etc

[give all items a full ref code which can be tracked on Aconex]

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN INTEGRATED HEALTH SOLUTIONS RHSC + DCN Edinburgh	**Derogation Request**		
	Date	**Notes**	**Reference**
	15/09/2014	01 Screens in AC rated walls	IHSL-ACO-002

BCR Clause

[copy text from BCR's / PA, include clause numbers]

In Scottish Health Technical Memorandum 08-01: Specialist services Acoustics (May 2011) it is stated that:

2.67 Where observation windows are included between adjacent rooms, partitions (including the glass) should ideally achieve the target ratings given in Tables 4 and 5. However, it can be difficult to fit windows that meet the full acoustic specification into the width of partitions. In this case, as a minimum, the glazing configuration alone should achieve an Rw that is no more than 10 dB below that of the required Rw for the partition alone. This will reduce the sound insulation by an amount that depends on the size of the observation window in relation to the size of the partition.

Relevant Regulation - HBN, SHTM, Building Regulations etc

[copy text from relevant docts, include clause numbers]

Scottish Health Technical Memorandum 08-01: Specialist services Acoustics (May 2011) - SHTM08-01.

Requirement

[summarise what is being asked for in the docts above]

Table 5 of SHTM08-01, Matrix showing sound-insulation performance required (dB DnT,w), presents the installed sound-insulation performanced (DnT,w) required for different room types.

Derogation

[why derogation is required]

As stated in SHTM08-01 it can be difficult to fit windows that meet the full acoustic specification into the width of partitions, therefore in these cases a derogation of the acoustical requirement regarding airborne sound insulation between rooms is needed (acoustical requirement stated on Table 5 of SHTM08-01).

Proposal

[what is Project Co alternative Proposal]

It is proposed that in cases where observation windows are included between adjacent rooms, the glazing configuration alone should achieve an Rw 10 dB below that of the required Rw for the partition alone.

Reference Docts - Sketches, drawings, reference material extracts etc

[give all items a full ref code which can be tracked on Aconex]

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

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INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
05/09/2014	01 Lifts	IHSL-FIRE-001

BCR Clause

2.3 NHS Requirements
In addition to the standards listed in paragraph 2.4 of this Sub-Section C, unless the Board has expressed elsewhere in the Board's Construction Requirements, a specific and different requirement, the Facilities shall comply with but not be limited to the provisions of the NHS Requirements as the same may be amended from time to time:
i. Firecode
Project Co shall ensure the Facilities comply with the NHS Scotland Fire Safety Management - a suite of documents which explains the policy and technical guidance in fire precautions in hospitals and other healthcare premises, comprising the Health Facilities Scotland Fire Safety Policy, the Scottish Health Technical Memoranda (SHTM) and Scottish Fire Practice Notes (SFPN) which all comprise NHS Scotland Firecode, the Fire Safety Documentation Reference Guide and A Model Management Structure for Fire Safety.
Project Co shall prepare proposals in accordance with NHS Scotland Firecode to be submitted to the Board as Reviewable Design Data for review by the Board in accordance with Schedule Part 8 (Review Procedure) and clause 12.6 of the Project Agreement prior to the submission of the proposals for approval by the Relevant Authority including without limitation building control department.
In the event of a conflict between the requirements of the local building control officers and NHS Scotland Firecode the more onerous requirements shall take precedence. Project Co shall notify the Board as soon as such conflict is known or suspected and shall further advise the Board of Project Co's proposed relevant design solution as early as possible before formal submission for review by the Board. When the more onerous requirement is to be used the Board will have the right to decide what constitutes the more onerous requirement.
Any fire strategy which affects the Site will also have to have regard to, be compatible with and operate in conjunction with the fire strategy and procedures for the RIE Facilities and/or Retained Estate, as applicable.

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM 81 part 1 July 2009
5.19 Where vertical travel is a component of the escape arrangements and bed lifts are installed in the building, they should be escape bed lifts.

Requirement

The guidance within SHTM 81 part 1 recommends that bed lifts are designed as escape bed lifts however the guidance within SFPN 3 Escape Bed Lifts notes that provision should be sufficient.
4. Physical requirements for escape lifts
Escape lift provision
4.1 Sufficient escape lifts should be provided and sited appropriately to accord with the fire evacuation strategy for the premises, developed with full consideration
of the issues outlined in Section 3.
4.2 Where an escape lift is one of a group of lifts within one protected enclosure, all the lifts in the group should be escape lifts in accordance with the standards
specified in this SHTM.
4.3 Sufficient escape lifts should be provided, appropriately remote from each other so that should a fire affect one escape lift, sufficient escape lifts will remain
available for use to enable the organisation's fire evacuation strategy and procedures to be implemented.

Derogation

Not all bed lifts will be designed as escape bed lifts however a sufficient number of escape bed lifts will be provided.

Proposal

It is Project Co's intention to negotiate the number and location of lifts designed as escape bed lifts with the NHS. It is acknowledged that due to the management requirements for the use of lifts during evacuation only a limited number would be used at any one time and therefore providing a limited number is more practical.
It is noted that in England and Wales the applicable HTM guidance recommends a minimum of 2 escape bed lifts. RHSC + DCN will be provided with at least 2 escape bed lifts.

Reference Docts - Sketches, drawings, reference material extracts etc

See fire strategy WSP-SZ-XX-DC-572-500_03

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014

NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
05/09/2014	*04 Department Adjacencies (Links to C30 - 051 Summary Item)*	IHSL-FIRE-002

BCR Clause

2.3 NHS Requirements

In addition to the standards listed in paragraph 2.4 of this Sub-Section C, unless the Board has expressed elsewhere in the Board's Construction Requirements, a specific and different requirement, the Facilities shall comply with but not be limited to the provisions of the NHS Requirements as the same may be amended from time to time:

i. Firecode

Project Co shall ensure the Facilities comply with the NHS Scotland Fire Safety Management - a suite of documents which explains the policy and technical guidance in fire precautions in hospitals and other healthcare premises, comprising the Health Facilities Scotland Fire Safety Policy, the Scottish Health Technical Memoranda (SHTM) and Scottish Fire Practice Notes (SFPN) which all comprise NHS Scotland Firecode, the Fire Safety Documentation Reference Guide and A Model Management Structure for Fire Safety.

Project Co shall prepare proposals in accordance with NHS Scotland Firecode to be submitted to the Board as Reviewable Design Data for review by the Board in accordance with Schedule Part 8 (Review Procedure) and clause 12.6 of the Project Agreement prior to the submission of the proposals for approval by the Relevant Authority including without limitation building control department.

In the event of a conflict between the requirements of the local building control officers and NHS Scotland Firecode the more onerous requirements shall take precedence. Project Co shall notify the Board as soon as such conflict is known or suspected and shall further advise the Board of Project Co's proposed relevant design solution as early as possible before formal submission for review by the Board. When the more onerous requirement is to be used the Board will have the right to decide what constitutes the more onerous requirement.

Any fire strategy which affects the Site will also have to have regard to, be compatible with and operate in conjunction with the fire strategy and procedures for the RIE Facilities and/or Retained Estate, as applicable.

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM 81 part 1 July 2009

3.11 The departments in the following List A should:

never be directly below, nor directly adjoin, operating theatres, intensive therapy units or special care baby units; and be provided with a fire suppression system where they are directly below, or directly adjoin, any other hospital department to which patients have access.

List A
- Boiler House
- Central Stores
- Commercial enterprises
- Flammable stores
- Laundry
- Main electrical switchgear
- Main kitchens
- Refuse collection and incineration
- Works department

Other high hazard departments may be adjacent to very high dependency patient access areas if an automatic fire control system is installed in addition to fire resistant structural separation.

A hospital department in List B should be provided with an automatic fire suppression system where it is directly below, or directly adjoins, operating theatres, intensive therapy units, or special care baby units.

List B
- Central staff change
- Central sterile supplies
- Hospital sterilizing and disinfecting unit
- Health records
- Pathology
- Manufacturing pharmacy

('Non-domestic technical handbook'; 2008; Section 2; Annex B; paragraph 2.B.1.)

Requirement

The guidance recommends that certain departments are not located next to one another or are provided with sprinklers.

Derogation

Theatres will adjoin the atrium space and suppression is not proposed for the basement kitchen or plant areas.

Proposal

The theatres will be fire separated from the atrium space with medium duration and the basement kitchen and plant areas will be low risk.

Reference Docts - Sketches, drawings, reference material extracts etc

See fire strategy WSP-SZ-XX-DC-572-500_03 Appendix Design note 2 – department adjacencies

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	10/11/2014

A

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INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
05/09/2014	04 Dampers to Ductwork REWORDED	IHSL-FIRE-004

BCR Clause

2.3 NHS Requirements
In addition to the standards listed in paragraph 2.4 of this Sub-Section C, unless the Board has expressed elsewhere in the Board's Construction Requirements, a specific and different requirement, the Facilities shall comply with but not be limited to the provisions of the NHS Requirements as the same may be amended from time to time:
i. Firecode
Project Co shall ensure the Facilities comply with the NHS Scotland Fire Safety Management - a suite of documents which explains the policy and technical guidance in fire precautions in hospitals and other healthcare premises, comprising the Health Facilities Scotland Fire Safety Policy, the Scottish Health Technical Memoranda (SHTM) and Scottish Fire Practice Notes (SFPN) which all comprise NHS Scotland Firecode, the Fire Safety Documentation Reference Guide and A Model Management Structure for Fire Safety.
Project Co shall prepare proposals in accordance with NHS Scotland Firecode to be submitted to the Board as Reviewable Design Data for review by the Board in accordance with Schedule Part 8 (Review Procedure) and clause 12.6 of the Project Agreement prior to the submission of the proposals for approval by the Relevant Authority including without limitation building control department.
In the event of a conflict between the requirements of the local building control officers and NHS Scotland Firecode the more onerous requirements shall take precedence. Project Co shall notify the Board as soon as such conflict is known or suspected and shall further advise the Board of Project Co's proposed relevant design solution as early as possible before formal submission for review by the Board. When the more onerous requirement is to be used the Board will have the right to decide what constitutes the more onerous requirement. Any fire strategy which affects the Site will also have to have regard to, be compatible with and operate in conjunction with the fire strategy and procedures for the RIE Facilities and/or Retained Estate, as applicable.

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM 81 part 1 July 2009
6.8 Ductwork passing through a compartment or sub-compartment boundary must be provided with remotely resettable fire and smoke dampers operated by
smoke detection.

Requirement

Fire / smoke damper recommended to all compartment / sub-compartment walls.

Derogation

Derogation required since these areas would not benefit from fire / smoke dampers; fire only are considered more appropriate.
Dampers to ductwork between the following spaces shall operate on fire actuation only.
Dampers between plant spaces
Dampers within ductwork serving Intensive Treatment Areas

Proposal

It is proposed that within the above noted spaces that the guidance within BS9999 Clause 33.4 Method 1 is followed.
This method does not require the ductwork to provide any degree of fire resistance, since the fire is isolated in the compartment of origin by the automatic actuation of fire dampers within the ductwork system.
Fire dampers are therefore sited in the duct at the point where it penetrates a fire-separating element:
Fire Rated walls between noted spaces
Compartment floors between risers and noted spaces
Agreement is required to be reached with the Board and Boards Fire Officer, and the derogation is not approved by the Board until that agreement is obtained through design yet to be fully developed and presented through the RDD process.

Reference Docts - Sketches, drawings, reference material extracts etc

See fire strategy WSP-SZ-XX-DC-572-500_03 Appendix Design note1 damper actuation

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	10/11/2014

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RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
05/09/2014	01 Adjacencies LINKS TO C30 (Summary 050)	IHSL-FIRE-005

BCR Clause

2.3 NHS Requirements

In addition to the standards listed in paragraph 2.4 of this Sub-Section C, unless the Board has expressed elsewhere in the Board's Construction Requirements, a specific and different requirement, the Facilities shall comply with but not be limited to the provisions of the NHS Requirements as the same may be amended from time to time:

i. Firecode

Project Co shall ensure the Facilities comply with the NHS Scotland Fire Safety Management - a suite of documents which explains the policy and technical guidance in fire precautions in hospitals and other healthcare premises, comprising the Health Facilities Scotland Fire Safety Policy, the Scottish Health Technical Memoranda (SHTM) and Scottish Fire Practice Notes (SFPN) which all comprise NHS Scotland Firecode, the Fire Safety Documentation Reference Guide and A Model Management Structure for Fire Safety.

Project Co shall prepare proposals in accordance with NHS Scotland Firecode to be submitted to the Board as Reviewable Design Data for review by the Board in accordance with Schedule Part 8 (Review Procedure) and clause 12.6 of the Project Agreement prior to the submission of the proposals for approval by the Relevant Authority including without limitation building control department.

In the event of a conflict between the requirements of the local building control officers and NHS Scotland Firecode the more onerous requirements shall take precedence. Project Co shall notify the Board as soon as such conflict is known or suspected and shall further advise the Board of Project Co's proposed relevant design solution as early as possible before formal submission for review by the Board. When the more onerous requirement is to be used the Board will have the right to decide what constitutes the more onerous requirement.

Any fire strategy which affects the Site will also have to have regard to, be compatible with and operate in conjunction with the fire strategy and procedures for the RIE Facilities and/or Retained Estate, as applicable.

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM 81 part 3 April 2013

3.6 Departments that provide care for very high dependency patients should not be located adjacent to an atrium, nor should any part of the department or their

supporting facilities be located within the atrium.

Requirement

theatres not permitted next to atrium.

Derogation

High dependency areas (theatres) are located adjacent to the atria therefore a fire engineered approach has been taken to demonstrate that with the proposed level of fire protection in the atria and adjacent areas the functional requirements of the guidance will be achieved.

Proposal

During the reference design stage the adjacency of the theatres to the atrium was discussed with NHS Lothian fire officer. This adjacency still exists with the proposed design and the same mitigation principles are proposed:

Medium duration fire protection to walls of theatres adjacent to atrium,

Sprinkler protection to atrium,

Smoke control to atrium.

Reference Docts - Sketches, drawings, reference material extracts etc

See fire strategy WSP-SZ-XX-DC-572-500_03 Appendix Design note 10 atrium

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

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Derogation Request

Date	Notes	Reference
05/09/2014	*05 Atrium REDRAFTED 13/11/14*	IHSL-FIRE-006

BCR Clause

2.3 NHS Requirements

In addition to the standards listed in paragraph 2.4 of this Sub-Section C, unless the Board has expressed elsewhere in the Board's Construction Requirements, a specific and different requirement, the Facilities shall comply with but not be limited to the provisions of the NHS Requirements as the same may be amended from time to time:

i. Firecode

Project Co shall ensure the Facilities comply with the NHS Scotland Fire Safety Management - a suite of documents which explains the policy and technical guidance in fire precautions in hospitals and other healthcare premises, comprising the Health Facilities Scotland Fire Safety Policy, the Scottish Health Technical Memoranda (SHTM) and Scottish Fire Practice Notes (SFPN) which all comprise NHS Scotland Firecode, the Fire Safety Documentation Reference Guide and A Model Management Structure for Fire Safety.

Project Co shall prepare proposals in accordance with NHS Scotland Firecode to be submitted to the Board as Reviewable Design Data for review by the Board in accordance with Schedule Part 8 (Review Procedure) and clause 12.6 of the Project Agreement prior to the submission of the proposals for approval by the Relevant Authority including without limitation building control department.

In the event of a conflict between the requirements of the local building control officers and NHS Scotland Firecode the more onerous requirements shall take precedence. Project Co shall notify the Board as soon as such conflict is known or suspected and shall further advise the Board of Project Co's proposed relevant design solution as early as possible before formal submission for review by the Board. When the more onerous requirement is to be used the Board will have the right to decide what constitutes the more onerous requirement.

Any fire strategy which affects the Site will also have to have regard to, be compatible with and operate in conjunction with the fire strategy and procedures for the RIE Facilities and/or Retained Estate, as applicable.

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM 81 part 3 April 2013

3.48 An atrium should be enclosed to provide compartmentation between the atrium space and adjacent accommodation, with construction having a minimum

period of fire resistance of medium duration (60 minutes.) for integrity, insulation and load bearing capacity.

Requirement

Enclosing structure (including glazing) of atrium should be medium duration since access to adjoining areas is possible above the atrium base.

Derogation

Atrium glazing (with the exception of those to theatres) to be toughened glass in a suitable framing structure.

Proposal

It is proposed that the atrium enclosure walls meet the medium duration fire protection integrity and insulation. Calculations show that the smoke temperature will be significantly below 140°C therefore it is proposed that glazing within the atrium enclosure will be fixed lights of toughened glass in a suitable framing structure with the

exception of glazing serving the first storey theatre department. This area has an obvious higher patient dependency category therefore 60 / 60 glazing in a suitable framing will be provided to these areas. The glazing which will be used in the atrium has been confirmed by HLM as a choice of two. These options would be either:

- *Single glazed unit at least 12mm thick*
- *Double glazed unit at least 6mm and 4mm thick*

The above types of glass would fail at 470°C-600°C therefore flame impingement is not considered an issue.

This shall be further demonstrated by calculation during RDD. Agreement is required to be reached with the Board and Boards Fire Officer, and the derogation is not approved by the Board until that agreement is obtained through design yet to be fully developed and presented through the RDD process.

Reference Docts - Sketches, drawings, reference material extracts etc

See fire strategy WSP-SZ-XX-DC-572-500_03 Appendix Design note

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN INTEGRATED HEALTH SOLUTIONS	Derogation Request		
	Date	Notes	Reference
RHSC + DCN Edinburgh	05/09/2014	*02 Fire Alarm & Detection*	IHSL-FIRE-008

BCR Clause

2.3 NHS Requirements

In addition to the standards listed in paragraph 2.4 of this Sub-Section C, unless the Board has expressed elsewhere in the Board's Construction Requirements, a specific and different requirement, the Facilities shall comply with but not be limited to the provisions of the NHS Requirements as the same may be amended from time to time:

i. Firecode

Project Co shall ensure the Facilities comply with the NHS Scotland Fire Safety Management - a suite of documents which explains the policy and technical guidance in fire precautions in hospitals and other healthcare premises, comprising the Health Facilities Scotland Fire Safety Policy, the Scottish Health Technical Memoranda (SHTM) and Scottish Fire Practice Notes (SFPN) which all comprise NHS Scotland Firecode, the Fire Safety Documentation Reference Guide and A Model Management Structure for Fire Safety.

Project Co shall prepare proposals in accordance with NHS Scotland Firecode to be submitted to the Board as Reviewable Design Data for review by the Board in accordance with Schedule Part 8 (Review Procedure) and clause 12.6 of the Project Agreement prior to the submission of the proposals for approval by the Relevant Authority including without limitation building control department.

In the event of a conflict between the requirements of the local building control officers and NHS Scotland Firecode the more onerous requirements shall take precedence. Project Co shall notify the Board as soon as such conflict is known or suspected and shall further advise the Board of Project Co's proposed relevant design solution as early as possible before formal submission for review by the Board. When the more onerous requirement is to be used the Board will have the right to decide what constitutes the more onerous requirement.

Any fire strategy which affects the Site will also have to have regard to, be compatible with and operate in conjunction with the fire strategy and procedures for the RIE Facilities and/or Retained Estate, as applicable.

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM 82 Fire Alarm & Detection Systems April 2013

3.6 A Category L2 or L3 system should be provided for healthcare premises other than hospitals. A category L1 system should be provided throughout all parts of

hospital premises. However, detectors need not normally be provided in the following areas:

voids and roof spaces of any depth that contain only:

MICC wiring, or wiring clipped to a metal tray or within metal conduit or trunking;

non-combustible pipework and ducts;

metal or plastic pipes used for water supply or drainage.

bath/shower rooms;

toilets in staff areas;

small cupboards (less than 1m2);

operating theatres.

In any case the omission of detectors should be subject to a fire risk assessment taking into account the specific matters identified in paragraph 3.4.

Requirement

The guidance within SHTM 82 recommends that detection is provided within voids unless they only contain items as noted within the guidance.

Derogation

The recommended list of acceptable items within ceiling voids has been expanded upon to include further items that are considered to be of a similar acceptable risk level.

Proposal

Design Note 5 provides an explanation for the methodology to be adopted for the risk assessment of the void content and an overview of the types of items considered to be acceptable.

The items have been assessed on being an ignition source, their ignition potential and their flammability.

It is proposed to develop this process as part of the design development to risk assess the specified products and the quantity to be installed to establish the risk to patients.

Reference Docts - Sketches, drawings, reference material extracts etc

See fire strategy WSP-SZ-XX-DC-572-500_03 Appendix Design note 5 void detection

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
05/09/2014	*02 Fire Stopping*	IHSL-FIRE-009

BCR Clause

2.4 Minimum Design & Construction Standards

Project Co shall also ensure that the Facilities comply with Good Industry Practice, NHS Scotland requirements, relevant statutory requirements (including highways) and required consents including, but not limited to, the following as the same may be amended from time to time:

r) The Non-Domestic Technical Handbook 2011 to The Building (Scotland) Regulations 2004 and its amendments (note the current version is 2013 and this will be applicable to the project under Building Warrant application).

Relevant Regulation - HBN, SHTM, Building Regulations etc

2.1.14 Ventilation ductwork should be fire-stopped in accordance with BS 5588: Part 9: 1999. Section 6 of BS 5588: Part 9: 1999 provides guidance on design and construction including fire resisting enclosures, fire resisting ductwork and the use and activation of fire dampers.

Requirement

the recommendations within BS5588 refer to SHTM guidance (SHTM 81 and 82 are the relevant documents).

Derogation

Derogation required since these areas would not benefit from fire / smoke dampers; fire only are considered more appropriate.
Dampers to ductwork between the following spaces shall operate on fire actuation only.
Dampers between plant spaces
Dampers within ductwork serving Intensive Treatment Areas

Proposal

It is proposed that within the above noted spaces that the guidance within BS9999 Clause 33.4 Method 1 is followed.
This method does not require the ductwork to provide any degree of fire resistance, since the fire is isolated in the compartment of origin by the automatic actuation of fire dampers within the ductwork system.
Fire dampers are therefore sited in the duct at the point where it penetrates a fire-separating element:
Fire Rated walls between noted spaces
Compartment floors between risers and noted spaces

Reference Docts - Sketches, drawings, reference material extracts etc

See fire strategy WSP-SZ-XX-DC-572-500_03 Appendix Design note1 damper actuation

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
05/09/2014	01Compartmentation	IHSL-FIRE-010

BCR Clause

2.4 Minimum Design & Construction Standards

Project Co shall also ensure that the Facilities comply with Good Industry Practice, NHS Scotland requirements, relevant statutory requirements (including highways) and required consents including, but not limited to, the following as the same may be amended from time to time:

r) The Non-Domestic Technical Handbook 2011 to The Building (Scotland) Regulations 2004 and its amendments (note the current version is 2013 and this will be applicable to the project under Building Warrant application).

Relevant Regulation - HBN, SHTM, Building Regulations etc

2.1.14 Compartment walls and compartment floors (including a fire resisting ceiling) are intended to prevent fire passing from one compartment to another. Openings
and service penetrations through these walls or floors can compromise their effectiveness and should be kept to a minimum.

Requirement

Hospitals require compartment floors at each level (atrium passes through compartment floors).

Derogation

Derogation required for inclusion of atrium, (atrium to be designed using fire engineering).

Proposal

Atrium to follow appropriate fire engineering principles and guidance for atria design.

Reference Docts - Sketches, drawings, reference material extracts etc

See fire strategy WSP-SZ-XX-DC-572-500_03 Appendix Design note 10 atrium

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
05/09/2014	*04 Escape Routes*	IHSL-FIRE-011

BCR Clause

2.4 Minimum Design & Construction Standards
Project Co shall also ensure that the Facilities comply with Good Industry Practice, NHS Scotland requirements, relevant statutory requirements (including highways) and required consents including, but not limited to, the following as the same may be amended from time to time:
r) The Non-Domestic Technical Handbook 2011 to The Building (Scotland) Regulations 2004 and its amendments (note the current version is 2013 and this will be applicable to the project under Building Warrant application).

Relevant Regulation - HBN, SHTM, Building Regulations etc

2.9.12 Escape routes in residential buildings
In residential buildings occupants are particularly vulnerable to fire when asleep. Occupants may also be unfamiliar with their accommodation and escape routes.
Those occupants on the fire floor should be provided with the opportunity to reach a protected zone (or other escape route) in relative safety and as quickly as possible, therefore, the movement of fire and smoke to the escape route should be inhibited.
In a residential building, where any corridor escape route serves sleeping accommodation it should be constructed of walls providing a short fire resistance duration and any door in the wall should be a suitable self-closing fire door with a short fire resistance duration. However the fire door to the cleaners cupboard need not be self closing provided it is lockable.
This guidance may need to be adapted in a residential building used as a place of lawful detention due to the unique operational factors.
For additional guidance on residential care buildings and hospitals see annex 2A and 2B.

Requirement

Ward corridors are recommended to be short duration fire protection.

Derogation

Derogation is required since making all these walls / doors / glazing / peentrations fire rated reduces the day to day functionality of the spacesand creates a significant increase in cost / ongoing maintenance without improving fire safety.

Proposal

Project Co consider that the development of reduced patient numbers per room has a positive impact on limiting fire spread and ability to evacuate those at immediate risk within the room of fire origin.
Open Nightingale wards and multiple bed wards require a significantly greater evacuation time to move those at immediate risk of a fire within the room; the same principle also applies to bed bay wards and in each case no further division is required.

Reference Docts - Sketches, drawings, reference material extracts etc

See fire strategy WSP-SZ-XX-DC-572-500_03 Appendix Design note 8 residential corridors

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN INTEGRATED HEALTH SOLUTIONS RHSC + DCN Edinburgh	**Derogation Request**		
	Date	**Notes**	**Reference**
	05/09/2014	*02 Temporary Waiting Spaces*	IHSL-FIRE-012

BCR Clause

2.4 Minimum Design & Construction Standards

Project Co shall also ensure that the Facilities comply with Good Industry Practice, NHS Scotland requirements, relevant statutory requirements (including highways) and required consents including, but not limited to, the following as the same may be amended from time to time:

r) The Non-Domestic Technical Handbook 2011 to The Building (Scotland) Regulations 2004 and its amendments (note the current version is 2013 and this will be applicable to the project under Building Warrant application).

Relevant Regulation - HBN, SHTM, Building Regulations etc

2.9.30 Temporary waiting spaces

The speed of evacuation of occupants with sensory, cognitive and/or mobility impairments can be much slower than other building users. Therefore, a space

should be provided to allow them to wait temporarily, before completing their escape to a place of safety.

Requirement

Temporary waiting spaces required to stair enclosures.

Derogation

Evacuation within the clinical part of the buildingwill be managed by PHE; including those visiting/ working in the areawho require additional assistance with vertical movement therefore temporary waiting spaces are considered necessary within clinical areas.

Proposal

Parents, guardians or carers will remain with child (patient) during an incident and their evacuation will be managed by staff through PHE.

Others will be directed to adjoining compartments not affected by fire where stairs and lifts will remain in use.

The functionality of these vertical routes (lifts & stairs) during a fire incident is considered as adequate mitigation for non-provision of temporary waiting spaces within the stair enclosures.

Reference Docts - Sketches, drawings, reference material extracts etc

See fire strategy WSP-SZ-XX-DC-572-500_03 Appendix Design note 4 temporary waiting spaces

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN INTEGRATED HEALTH SOLUTIONS RHSC + DCN Edinburgh	**Derogation Request**		
	Date	**Notes**	**Reference**
	05/09/2014	01 Fire Supression	IHSL-FIRE-013

BCR Clause

2.4 Minimum Design & Construction Standards

Project Co shall also ensure that the Facilities comply with Good Industry Practice, NHS Scotland requirements, relevant statutory requirements (including highways) and required consents including, but not limited to, the following as the same may be amended from time to time:

r) The Non-Domestic Technical Handbook 2011 to The Building (Scotland) Regulations 2004 and its amendments (note the current version is 2013 and this will be applicable to the project under Building Warrant application).

Relevant Regulation - HBN, SHTM, Building Regulations etc

2.14.7 / 2.B.6

If a building is not fitted with an automatic fire suppression system, no point on any storey should be more than 45m from the nearest main outlet measured along an unobstructed route for laying a fire hose.

Requirement

Hose laying distances to be max. 45m from outlet.

Derogation

Small sections of the design at ground, first, second and third floors result in areas in excess of the 45m distance. The worst case scenario is 54m, 9m in excess of the guidance requirements.

The number of areas in which the hose laying distance exceeds 45m is negligible. All area in which non-compliance occurs are highlighted in Figure 14, Figure 16, Figure 15 and Figure 16 of the fire strategy document.

Proposal

Historically up until the issue of NDTH 2010, a hose laying length of 60m was permitted within buildings not fitted with an automatic fire suppression system. This change in guidance which resulted in reducing the hose laying length from 60m to 45m came following The Building Disaster Assessment Group research on behalf of the UK Government. This research was to assess the interaction between building design and the operational response of fire and rescue services.

Within this technical report the evaluation in reduction of fire hose laying lengths during fire fighting operations derived from the physiological demands on firefighters engaged in search and rescue and on the restrictions that may be imposed by their equipment.

In practice, attending Fire and Rescue Services appliances are fitted with hoses which are much longer than 45m this is to take account of when operating fire hoses within buildings the fire hoses have a tendency to "snake" when charged thus limiting their effective length. The marginal increase is not considered by Project Co to affect functionality of fire fighting operations.

Reference Docts - Sketches, drawings, reference material extracts etc

See fire strategy WSP-SZ-XX-DC-572-500_03 Appendix Design note 9 hose laying

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN INTEGRATED HEALTH SOLUTIONS	**Derogation Request**		
	Date	**Notes**	**Reference**
RHSC + DCN Edinburgh	05/09/2014	01 Fire Hazard Rooms	IHSL-FIRE-015

BCR Clause

2.4 Minimum Design & Construction Standards

Project Co shall also ensure that the Facilities comply with Good Industry Practice, NHS Scotland requirements, relevant statutory requirements (including highways) and required consents including, but not limited to, the following as the same may be amended from time to time:

r) The Non-Domestic Technical Handbook 2011 to The Building (Scotland) Regulations 2004 and its amendments (note the current version is 2013 and this will be applicable to the project under Building Warrant application).

Relevant Regulation - HBN, SHTM, Building Regulations etc

2.B.1

Fire hazard rooms

In order to contain a fire in its early stages, the listed rooms are considered to be hazardous and should be enclosed by walls providing a short fire resistance duration (see annex 2.D).

Requirement

Fire hazard rooms to be fire rated.

Derogation

Enclosure of individual fire hazard rooms can cause functionality / maintenance issues due to provision of fire rated walls and fire protection of services passing between adjoining rooms.

The provision of clusters will still ensure that fire and smoke are inhibited from spreading beyond the fire enclosure of origin until any occupants have had the time to leave that compartment and any fire containment measures have been initiated.

Proposal

Where two or more fire hazard room are adjacent, then the enclosure of the rooms (the cluster) will be treated as a fire hazard room.

Patient-access fire hazard rooms are not to be regarded as part of a cluster.

Reference Docts - Sketches, drawings, reference material extracts etc

See fire strategy WSP-SZ-XX-DC-572-500_03 Appendix Design note 11 clustering

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes MER	Reference
05/09/2014	02 Fire Suppression REWORDING ACCEPTED	IHSL-MEP-001

BCR Clause

PART 6 (CONSTRUCTION MATTERS)

SECTION 3 (BOARD'S CONSTRUCTION REQUIREMENTS)

Page 127, Item 8.10 Project Co to provide fire suppression systems in NHS Lothian Server rooms, IPS Room and main HV and LV switchrooms

Relevant Regulation - HBN, SHTM, Building Regulations etc

Not Applicable

Requirement

Project Co to provide fire suppression systems in NHS Lothian Server rooms, IPS Room and main HV and LV switchrooms

Derogation

IHSL Project Co Proposals (PCP) Section 4.12 Fire Strategy, developed for the project has a fire engineered solution that will provide gas suppression to the IT Server Room only . Other areas referenced in the BCR will not be provided with fire suppression systems.

Proposal

IHSL Project Co Proposals (PCP) Section 4.12 Fire Strategy, developed for the project has a fire engineered solution that will provide gas suppression to the IT Server Room only. The PS Room and main HV and LV switchrooms as ~~other areas~~ referenced in the BCR will not be provided with fire suppression systems noting that fire suppression will be provided for in therisk areas identified in the Fire Strategy such as the atrium, and local hood suppression to the basement kitchen.
Consideration of the type of electrical installation within the basement will be carried out to review the need for sprinklers (e.g. by the use of low hazard installations such as cast resin dry type or replacement of oil with Midel in transformers).

Reference Docts - Sketches, drawings, reference material extracts etc

Not Applicable

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes MER	Reference
05/09/2014	02 25% Cabling Capacity	IHSL-MEP-002

BCR Clause

PART 6 (CONSTRUCTION MATTERS)

SECTION 3 (BOARD'S CONSTRUCTION REQUIREMENTS)

Page 139, Item 9.6.1 All cabling installed shall allow for a minimum of 25% spare capacity.

Relevant Regulation - HBN, SHTM, Building Regulations etc

Not Applicable

Requirement

Cat6 Cabling to allow 25% spare capacity

Derogation

The Cat 6 cabling shall be installed to connect the various IT field device outlets with the local IT node room locations. As agreed with the NHS E Health at the ICT meeting workshops, see ICT Meeting Minutes 03 07 14 item 4.09, the provision of 25% spare capacity will be allowed in cabinets and containment systems, not loose cabling.

Proposal

As agreed with the NHS E Health at the ICT meeting workshops, see ICT Meeting Minutes 03 07 14 item 4.09, the provision of 25% spare capacity will be allowed in cabinets and containment systems, not loose cabling.

Reference Docts - Sketches, drawings, reference material extracts etc

Not Applicable

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes MER	Reference
05/09/2014	03 Clinical Equipment Alarms-Rewording Accepted	IHSL-MEP-003

BCR Clause

PART 6 (CONSTRUCTION MATTERS)
SECTION 3 (BOARD'S CONSTRUCTION REQUIREMENTS)
Page 144 Item 9.17.10 Clinical Equipment Alarms
Each ward drug fridge shall be alarmed to warn of common faults. The sounder alarm shall be located locally.

Relevant Regulation - HBN, SHTM, Building Regulations etc

Not Applicable.

Requirement

Each ward drug fridge shall be alarmed to warn of common faults. The sounder alarm shall be located locally.

Derogation

As agreed in the M&E Workshops, the Fridge alarms are by NHS Pharmacy not Project Co.

Proposal

Fridge alarms are by NHS Pharmacy not Project Co.
Project Co will provide local power and data outlets to the ward drug fridge locations. No connections to NHS Pharmacy alarm system.

Reference Docts - Sketches, drawings, reference material extracts etc

Not Applicable.

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes MER	Reference
05/09/2014	*01 DRAFT Routes through common services*	IHSL-MEP-005

BCR Clause

PART 6 (CONSTRUCTION MATTERS)
SECTION 3 (BOARD'S CONSTRUCTION REQUIREMENTS)
Page 128 Item 8.14
In order to minimise potential disruption to the Board due to maintenance of building services, Project Co shall where practicable route services through common spaces such as corridors and avoid through routing within department areas.

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM 2023 Access and Accomodation for Engineering Services.

Requirement

In order to minimise potential disruption to the Board due to maintenance of building services, Project Co shall where practicable route services through common spaces such as corridors and avoid through routing within department areas.

Derogation

Generally pipe work and electrical services will run in corridor zones, but due to structural restrictions and available ceiling void depth in certain area of the developing design (such as level 1 downstand beams) the ventilation ductwork will run above the following occupied rooms in the following rooms only:
G-I1-002, 003, 004, 005, 006, 007, 014
G-D5-002, 003, 004, 005, 006, 008, 009
G-D8-001, 002
G-K1-002, 003, 004, 005, 006, 007, 008, 010, 011, 012, 013, 015, 016, 017, 018, 019, 021, 022, 025, 026, 028
G-E1-003, 004, 007, 008, 012
G-D2-005, 006, 007, 008, 009, 010, 011, 012, 013, 014
G-D1-001, 003, 005, 006, 008, 010, 016, 021, 022, 023, 025, 026, 027, 028, 031, 032, 034, 035, 036, 037, 038, 039, 042
G-D10-001
In addition the Pneumatic Tube System will pass through the following rooms only:
Dirty Utility G-A1-007
Plant room 15 B-PLANT-015

Proposal

Generally pipe work and electrical services will run in corridor zones, but due to structural restrictions and available ceiling void depth in certain area of the developing design (such as level 1 downstand beams) the ventilation ductwork will run above the following occupied rooms in the following rooms only:
G-I1-002, 003, 004, 005, 006, 007, 014
G-D5-002, 003, 004, 005, 006, 008, 009
G-D8-001, 002
G-K1-002, 003, 004, 005, 006, 007, 008, 010, 011, 012, 013, 015, 016, 017, 018, 019, 021, 022, 025, 026, 028
G-E1-003, 004, 007, 008, 012
G-D2-005, 006, 007, 008, 009, 010, 011, 012, 013, 014
G-D1-001, 003, 005, 006, 008, 010, 016, 021, 022, 023, 025, 026, 027, 028, 031, 032, 034, 035, 036, 037, 038, 039, 042
G-D10-001
In addition the Pneumatic Tube System will pass through the following rooms only:
Dirty Utility G-A1-007
Plant room 15 B-PLANT-015

Reference Docts - Sketches, drawings, reference material extracts etc

Not Applicable.

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes MER	Reference
05/09/2014	01 Luminaire Colour/Temperature	IHSL-MEP-009

BCR Clause

PART 6 (CONSTRUCTION MATTERS)
SECTION 3 (BOARD'S CONSTRUCTION REQUIREMENTS)
Page 121 Item 8.8.5
Luminaires, their colour and material finish shall be selected to co-ordinate with the architectural intent throughout the circulation areas. Low wattage 2700K luminaires to be used in particular rooms shall be selected on their ability to create a calm and "homely" atmosphere. Project Co shall consider the inclusion of wall mounted luminaires and /or uplighters.
All lamps used in clinical areas shall have as a minimum a colour rendering capability of ≥ 85 CRI. For practical reasons consideration shall be given by Project Co to using the same luminaire in both clinical and non-clinical spaces within the same ward. A reading light with an on/off switch shall be provided at each bedhead location. Project Co shall provide an additional switch on the nurse call handset.

Relevant Regulation - HBN, SHTM, Building Regulations etc

BSEN12464-1/SLL Code For Lighting

Requirement

Luminaires, their colour and material finish shall be selected to co-ordinate with the architectural intent throughout the circulation areas. Low wattage 2700K luminaires to be used in particular rooms shall be selected on their ability to create a calm and "homely" atmosphere. Project Co shall consider the inclusion of wall mounted luminaires and /or uplighters.
All lamps used in clinical areas shall have as a minimum a colour rendering capability of ≥ 85 CRI. For practical reasons consideration shall be given by Project Co to using the same luminaire in both clinical and non-clinical spaces within the same ward. A reading light with an on/off switch shall be provided at each bedhead location. Project Co shall provide an additional switch on the nurse call handset.

Derogation

The specified 2700K colour temperature can refer to a tungsten source, the modern luminaires we will utilise have 3000K for a warm white lamp that still provides a 'homely' atmosphere and using compact fluorescent or LED energy efficient lamp.

Proposal

The specified 2700K colour temperature can refer to a tungsten source, the modern luminaires we will utilise have 3000K for a warm white lamp that still provides a 'homely' atmosphere and using compact fluorescent or LED energy efficient lamp.

Reference Docts - Sketches, drawings, reference material extracts etc

Not Applicable

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN INTEGRATED HEALTH SOLUTIONS	**Derogation Request**		
	Date	**Notes MER**	**Reference**
RHSC + DCN Edinburgh	05/09/2014	01 Sprinkler Protection	IHSL-MEP-010

BCR Clause

PART 6 (CONSTRUCTION MATTERS)
SECTION 3 (BOARD'S CONSTRUCTION REQUIREMENTS)
Page 126 item 8.10
Project Co shall provide sprinkler protection to those departments surrounding High Dependency departments (above, below and adjacent on the same level) as required by SHTM 82 Section 3

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM82

Requirement

Project Co shall provide sprinkler protection to those departments surrounding High Dependency departments (above, below and adjacent on the same level) as required by SHTM 82 Section 3.

Derogation

IHSL Project Co Proposals (PCP) Section 4.12 Fire Strategy, developed for the project has a fire engineered solution that will provide Sprinkler Protection for Atrium only. Other areas referenced in the SHTM 82 guidance will not be provided with sprinkler protection.

Proposal

IHSL Project Co Proposals (PCP) Section 4.12 Fire Strategy, developed for the project has a fire engineered solution that will provide Sprinkler Protection for Atrium only. Other areas referenced in the SHTM 82 guidance will not be provided with sprinkler protection.

Reference Docts - Sketches, drawings, reference material extracts etc

Not Applicable

Approvals

	Organisation	**Title**	**Signature**	**Date**
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes MER	Reference
05/09/2014	03 Fibre Optic Cables	IHSL-MEP-011

BCR Clause

PART 6 (CONSTRUCTION MATTERS)
SECTION 3 (BOARD'S CONSTRUCTION REQUIREMENTS)
Page 140 Item 9.11.1 & Appendix B 3.4
Project Co shall provide two 24 core single mode fibre optic cables (Topology: - Diverse Star; Type: - OS1 - 9 micron; Cores: - 24 for each type with 100% expansion capacity to be provided in the cable tray runs), from the NHS Lothian Server Room in the Facilities to the RIE Facilities, following independent routes for resilience. The connection will be to the Communications Rooms 1 and 2 in the RIE Facilities.
It is the Board's understanding that within the Old Dalkeith Road / Little France Crescent cable duct, cables belonging to providers BT (Route 1-NHS), THUS (Route 1 – N3)) and VIRGIN (University), run into the two RIE Facilities Communication Rooms. If the Board are correct then Project Co shall provide a second ICT connection route from the Facilities to the RIE Facilities within the Old Dalkeith Road / Little France Crescent cable duct, cables belonging to providers BT (Route 1-NHS), THUS (Route 1 – N3)) and VIRGIN (University), run into the two RIE Facilities Communication Rooms.
Project Co shall provide two 200 pair copper (minimum) multi-core cables following independent resilient routes to support back up telephones linked from the Facilities Server Rooms to the RIE Facilities PBX.

Relevant Regulation - HBN, SHTM, Building Regulations etc

Not Applicable

Requirement

Project Co shall provide two 48 core single mode fibre optic cables (Topology: - Diverse Star; Type: - OS1 - 9 micron; Cores: - 24 for each type with 100% expansion capacity to be provided in the cable tray runs), from the NHS Lothian Server Room in the Facilities to the RIE Facilities, following independent routes for resilience. The connection will be to the Communications Rooms 1 and 2 in the RIE Facilities.
It is the Board's understanding that within the Old Dalkeith Road / Little France Crescent cable duct, cables belonging to providers BT (Route 1-NHS), THUS (Route 1 – N3)) and VIRGIN (University), run into the two RIE Facilities Communication Rooms. If the Board are correct then Project Co shall provide a second ICT connection route from the Facilities to the RIE Facilities within the Old Dalkeith Road / Little France Crescent cable duct, cables belonging to providers BT (Route 1-NHS), THUS (Route 1 – N3)) and VIRGIN (University), run into the two RIE Facilities Communication Rooms.
Project Co shall provide two 200 pair copper (minimum) multi-core cables following independent resilient routes to support back up telephones linked from the Facilities Server Rooms to the RIE Facilities PBX.

Derogation

Project Co will provide two 48 core Fibre connections. One to Comms Room 1 via the upper floor link building and one to Comms Room 2 via the ground floor of the link building.
Project Co will provide cable ducts within the service strip to Old Dalkeith Road . Project Co will provide 200 pair copper to Comms Room 2 through the first floor void of the link building.
Project Co will provide 200 pair copper to Comms Room 1 through the ground floor void of the link building.

Proposal

Project Co will provide two 48 core Fibre connections. One to Comms Room 1 via the upper floor link building and one to Comms Room 2 via the ground floor of the link building.
Project Co will provide cable ducts within the service strip to Old Dalkeith Road . Project Co will provide 200 pair copper to Comms Room 2 through the first floor void of the link building.
Project Co will provide 200 pair copper to Comms Room 1 through the ground floor void of the link building.

Reference Docts - Sketches, drawings, reference material extracts etc

All as ehealth signed off drawings

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN INTEGRATED HEALTH SOLUTIONS RHSC + DCN Edinburgh	**Derogation Request**		
	Date	**Notes MER**	**Reference**
	05/09/2014	*03 Environmental Matrix REWORDED 12.11.14*	IHSL-MEP-015

BCR Clause

8 Mechanical & Electrical Engineering Requirements

Project Co shall provide the Works to comply with the Environmental Matrix

Relevant Regulation - HBN, SHTM, Building Regulations etc

Not Applicable

Requirement

8 Mechanical & Electrical Engineering Requirements

Project Co shall provide the Works to comply with the Environmental Matrix

Derogation

Anomalies within the environmental matrix have been reviewed and proposals incorporated within the room data sheets (refer to schedule for proposed variations).

Proposal

Anomalies within the environmental matrix have been reviewed and proposals incorporated within the room data sheets (refer to schedule for proposed variations).This shall be further developed in conjunction with the board on the basis of the schedule of comments contained in Section 5 (RDD) Part IV.

Reference Docts - Sketches, drawings, reference material extracts etc

Room Data Sheets

Approvals

	Organisation	**Title**	**Signature**	**Date**
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes MER	Reference
05/09/2014	*02 Sustainability*	IHSL-MEP-016

BCR Clause

5.25 Sustainability

Item n Part 6
The Board's target of utilising some 20% of renewable energy sources shall be achieved by Project Co.

Relevant Regulation - HBN, SHTM, Building Regulations etc

Not Applicable.

Requirement

5.25 Sustainability

Item n Part 6
The Board's target of utilising some 20% of renewable energy sources shall be achieved by Project Co.

Derogation

As detailed in C30 Part 6 section3 The gas CHP is LZC but not a renewable fuel.

Proposal

As detailed in C30 Part 6 section3 The gas CHP is LZC but not a renewable fuel.

Reference Docts - Sketches, drawings, reference material extracts etc

Refer to Enegy Centre Ground Floor Plan drawing reference WW-EC-00-PL-500-001

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

RHSC + DCN Edinburgh

Derogation Request

Date	Notes MER	Reference
05/09/2014	02 Mech Vent / Air Con	IHSL-MEP-017

BCR Clause

8.7.8 Mechanical Ventilation & Air Conditioning

Project Co shall incorporate provision to include humidification to the AHU plant at a future date.

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM03-01 - Ventilation for healthcare premises.

Requirement

8.7.8 Mechanical Ventilation & Air Conditioning

Project Co shall incorporate provision to include humidification to the AHU plant at a future date.

Derogation

As discussed and agreed during the various workshops and confirmed by the Board Humidity Conrol is not required. However Air Handling Units for Theatres, Critical Care and High Dependency Unit areas to be fitted with space for future humidification. (In compliance with SHTM03-01)

Proposal

As discussed and agreed during the various workshops and confirmed by the Board Humidity Conrol is not required. However Air Handling Units for Theatres, Critical Care and High Dependency Unit areas to be fitted with space for future humidification. (In compliance with SHTM03-01)

Reference Docts - Sketches, drawings, reference material extracts etc

Not Applicable.

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS
RHSC + DCN Edinburgh

Derogation Request

Date	Notes MER	Reference
04/11/2014	Fiscal Metering	IHSL-MEP-023

BCR Clause

8.7.1 Building Management Systems & Controls q) Application of energy metering, via the BMS, will allow Renewable Heat Incentive and energy saving schemes and to be implemented. This will require heat meters to be installed on each plate heat exchanger and heating circuit and connected into the BMS via MODBUS type interface. These meters may be used for fiscal purposes and would assist in providing information as to energy use.

Relevant Regulation - HBN, SHTM, Building Regulations etc

Not Applicable

Requirement

8.7.1 Building Management Systems & Controls q) Application of energy metering, via the BMS, will allow Renewable Heat Incentive and energy saving schemes and to be implemented. This will require heat meters to be installed on each plate heat exchanger and heating circuit and connected into the BMS via MODBUS type interface. These meters may be used for fiscal purposes and would assist in providing information as to energy use.

Derogation

The heat meters shall not be "fiscal" meters. However Utility company approved meters shall be provided to measure the output of the Photo Voltaic system.

Proposal

The heat meters shall not be "fiscal" meters. However Utility company approved meters shall be provided to measure the output of the Photo Voltaic system.

Reference Docts - Sketches, drawings, reference material extracts etc

Not Applicable

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	10/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
15/09/2014	01 Clinical Output Specifications 1/4	IHSL-ARC-001

BCR Clause

Section 3: Board's Construction Requirements
Sub-Section D - Specific Clinical Requirements clause 1.9 Design Guidance

Relevant Regulation - HBN, SHTM, Building Regulations etc

HBN 04-01

Requirement

Attention is drawn to the design guidance contained in the following documents:-HBN 04-01

Derogation

Delete reference to HBN 04-01 from clause 1.9 of the Clinical Output Based Specifications for the following departments:- A3, Q1, M1, I1, N1, L1, P1, L2, M3, M2, M4, N2, R2, and R1

Proposal

Clinicial output specs to be revised to account for anomalies.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
15/09/2014	01 Clinical Output Specifications 2/4	IHSL-ARC-001 (2)

BCR Clause

Section 3: Board's Construction Requirements
Sub-Section D - Specific Clinical Requirements clause 1.9 Design Guidance

Relevant Regulation - HBN, SHTM, Building Regulations etc

HBN 08

Requirement

Attention is drawn to the design guidance contained in the following documents:-HBN 08

Derogation

Delete reference to HBN 08 from clause 1.9 of the Clinical Output Based Specifications for the following departments:- M2

Proposal

SHPN 08 should substituted in clause 1.9 of the Clinical Output Based Specifications for the following departments:- M2

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
15/09/2014	01 Clinical Output Specifications 3/4	IHSL-ARC-001 (3)

BCR Clause

Section 3: Board's Construction Requirements
Sub-Section D - Specific Clinical Requirements clause 1.9 Design Guidance

Relevant Regulation - HBN, SHTM, Building Regulations etc

HBN 12

Requirement

Attention is drawn to the design guidance contained in the following documents:-HBN 12

Derogation

Delete reference to HBN 12 from clause 1.9 of the Clinical Output Based Specifications for the following departments:- D1, D5, M1, E1, D1, D7, D3, D4 and M2

Proposal

SHPN 12 should substituted in clause 1.9 of the Clinical Output Based Specifications for the following departments:- D1, D5, M1, E1, D1, D7, D3, D4, and M2.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
15/09/2014	01 Clinical Output Specifications 1/4	IHSL-ARC-001

BCR Clause

Section 3: Board's Construction Requirements
Sub-Section D - Specific Clinical Requirements clause 1.9 Design Guidance

Relevant Regulation - HBN, SHTM, Building Regulations etc

HBN 14

Requirement

Attention is drawn to the design guidance contained in the following documents:-HBN 14

Derogation

Delete reference to HBN 14 from clause 1.9 of the Clinical Output Based Specifications for the following departments:- A1,A2, F1, Q1, D1, D2, D5, M1, E1, L1, B1, H2, P1, D1, D7, D3, D4, L2, D9, C1.1, C1.2, C1.8, C1.3 and C1.4.

Proposal

HBN 14-01 should substituted in clause 1.9 of the Clinical Output Based Specifications for the following departments:- A1,A2, F1, Q1, D1, D2, D5, M1, E1, L1, B1, H2, P1, D1, D7, D3, D4, L2, D9, C1.1, C1.2, C1.8, C1.3 and C1.4.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN INTEGRATED HEALTH SOLUTIONS	Derogation Request		
	Date	Notes	Reference
RHSC + DCN Edinburgh	15/09/2014	01 Single Bedroom Arrangement	IHSL-ARC-002

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3ii, HBN

Relevant Regulation - HBN, SHTM, Building Regulations etc

HBN 23

Requirement

Hospital Accommodation for Children & Young People, Appendix 4 Sheet 1, shows a particular arrangement for a single bedroom with en-suite assisted shower room.

Derogation

Single bedroom layout shown in Appendix 4 sheet 1 not utilised

Proposal

Project Co propose a variant based on the HBN layout for the single bedroom but with an ensuite shower room design based on HBN 00-02 figure 60 proposal. This layout was signed off through the UGM process.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
15/09/2014	01 Multibed Room Bed Spaces	IHSL-ARC-003

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3ii, HBN

Relevant Regulation - HBN, SHTM, Building Regulations etc

HBN 23

Requirement

Clause 3.117 The minimum size of each bed space in a multi-bed room is 3.4 x 3.5 m (see HBN 4). Clause 3.148 Multi-bed rooms should also incorporate a dedicated play area. The area should be large enough to accommodate a children's play table and seating, storage cupboards and shelving. This area can either be located as in Appendix 4 Sheet 3 or in a bay window.

Derogation

Delete Clause 3.117. Omit dedicated play area and storage cupoboards required by clause 3.148.

Proposal

Project Co propose a room layout which is a cruciform arrangement which includes an ensuite shower room and separate assisted WC without a dedicated play area and storage cupboards.
Requirement for play area superceded by room layouts signed off through UGM process.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
15/09/2014	*02 Theatres Size WORDING AMENDED 07/11/14*	IHSL-ARC-004

BCR Clause

2.3 NHS Requirements

Relevant Regulation - HBN, SHTM, Building Regulations etc

HBN 26

Requirement

Facilities for Surgical Procedures: Vol 1, Operating Theatres, para 4.69 - A standard size of 55 sq.m.is recommended for all in-

Derogation

This HBN recommendation is based on providing maximum flexibility in use of theatres by opting for the largest space requirement for minimally invasive procedures. Project Co through design development with the agreement of the Board have reduced the size of two theatres in RHSC, one of which is used for day surgery and the other as a general theatre (including burns). This has enabled the introduction of a Preparation Room for the sixth RHSC theatre and four DCN Theatre suites.

Proposal

Theatre 6 (Day Surgery) 1-P-050 to be 47.5 sq.m. Theatre 5 (Burns) 1-P-140 to be 49.7 sq.m.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN INTEGRATED HEALTH SOLUTIONS RHSC + DCN Edinburgh	**Derogation Request**		
	Date	**Notes**	**Reference**
	15/09/2014	01 Sanitary Spaces - Alternative Layout	IHSL-ARC-005

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3ii, HBN

Relevant Regulation - HBN, SHTM, Building Regulations etc

HBN 00-02

Requirement

Core Elements: Sanitary Spaces,

Derogation

Proposal

Project Co Proposals adopt a variant design for the en-suite shower room and separate assisted WC for the childrens multi-bed rooms in A2 PARU, C1.8 Surgical Short Stay and C1.1 Medical In-patients.
This layout was signed off through the UGM process.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
15/09/2014	01 Sanitary Spaces - Alternative Layout	IHSL-ARC-006

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3ii, HBN

Relevant Regulation - HBN, SHTM, Building Regulations etc

HBN 00-02

Requirement

Core Elements: Sanitary Spaces,

Derogation

Proposal

Project Co Proposals adopt a variant design for the shared en-suite wet room and separate assisted WCs for the childrens multi-bed rooms in C1.2 Surgical Long Stay, and C1.3 Neuroscience In-patients wards.
This layout was signed off through the UGM process.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
15/09/2014	*01 Consult Exam Room Sizes*	IHSL-ARC-007

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3ii, HBN

Relevant Regulation - HBN, SHTM, Building Regulations etc

HBN 00-03

Requirement

Core Elements: Clinical and Clinical Support Spaces.

Derogation

Consulting/ Exam rooms do not meet the minimum area specified within the HBN - i.e. 16.0sqm.

Proposal

Project Co Proposals are for Clinical Rooms such as Consulting / Exam Rooms in M1 DCN Out Patients sized at 15.0 sq m.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
15/09/2014	*01 Treatment Room areas*	IHSL-ARC-008

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3ii, HBN

Relevant Regulation - HBN, SHTM, Building Regulations etc

HBN 00-03

Requirement

Core Elements: Clinical and Clinical Support Spaces,

Derogation

Consulting/ Exam rooms and Treatment Rooms do not meet the minimum area specified within the HBN - i.e. 16.0sqm and 16.5sqm respectively.

Proposal

Project Co Proposals are for generic Clinical Rooms such as Consulting / Exam Rooms and Treatment Rooms in D1 RHSC Out Patients sized at 15.5sqm and 16.0sqm respectively.
This proposal was signed off through the UGM process.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN INTEGRATED HEALTH SOLUTIONS	Derogation Request		
	Date	Notes	Reference
RHSC + DCN Edinburgh	15/09/2014	*01 Infection Control*	IHSL-ARC-009

BCR Clause
2.3 NHS Requirements
Relevant Regulation - HBN, SHTM, Building Regulations etc
HBN 00-09
Requirement
Infection Control in the Built Environment
Derogation
HBN / SHFN conflict
Proposal
Substitute HBN 00-09 with SHFN 30 Version 3
Reference Docts - Sketches, drawings, reference material extracts etc
Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
15/09/2014	*01 100% Single Bedrooms*	IHSL-ARC-010

BCR Clause

2.3 NHS Requirements

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHPN 04-01

Requirement

Adult In-Patient Facilities, Paragraph 1.5, requires all new build hospital to provide 100% single bedrooms.

Derogation

The building does not provide 100% single bedrooms.

Proposal

Project Co have accommodated the substitution of 2 x 4 bed rooms within L1- DCN Acute Care in lieu of 8 single bedrooms. This proposal was signed off through the UGM process.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN INTEGRATED HEALTH SOLUTIONS RHSC + DCN Edinburgh	**Derogation Request**		
	Date	**Notes**	**Reference**
	16/09/2014	03 Assisted Shower toom to multi-bed rooms	IHSL-ARC-013

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3ix, SHPN

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHPN 04-01

Requirement

Adult In-patient Facilities, Paragraph 3.17, recommends for multi-bed rooms the provision of an assisted shower room (withWC, shower and whb) and a separate semi-ambulant WC (with hand-rinse basin).

Derogation

A separate semi-ambulant WC will not be provided in DCN multi-bed rooms.

Proposal

Project Co will provide an assisted shower room (with WC, Shower & whb) and a staff base base (services only, to allow for the future wc installation) in line with the NHSL requirements. This proposal was signed off through the UGM process.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	**Title**	**Signature**	**Date**
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
16/09/2014	*01 Open Linen Bays*	IHSL-ARC-014

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3ix, SHPN

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHPN 04-01

Requirement

Adult In-patient Facilities, Paragraph 3.45, recommends that for infection control purposes linen should be kept in a closed store rather than on trolleys in an open bay.

Derogation

Linen will not be stored in closed bays.

Proposal

Project Co's proposals provides for open linen bays in line with NHSL requirements. Refer to project Co's Fire Strategy Proposals.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
16/09/2014	*03 4 bed layout*	IHSL-ARC-015

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3ix, SHPN

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHPN 04-01

Requirement

Adult In-patient Facilities, Appendix 1 Example bedroom layouts, figure 15, example layout for 4 bedded room, shows both the assisted shower room and the separate semi-ambulant WC located adjacent to the corridor wall.

Derogation

Project Co will not provide 4-bedded bays in line with figure 15.

Proposal

Project Co will provide a variant layout with the assisted shower room located on the outside wall and a staff base adjacent to the corridor wall at the entrance to the multi-bed room. This arrangement improves the visibility into and out of the room from the corridor while maintaining optimum natural light and external views. This proposal was signed off through the UGM process.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
16/09/2014	*01 Viewing Zones*	IHSL-ARC-016

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3v, HTM & SHTM

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM 55:2.18

Requirement

The ideal viewing zone and ranges of eye levels for all types of occupants is shown in Figure 2.

Derogation

The viewing zones may not be as illustration contained in clause 2.18, figure 2

Proposal

Size of windows/ elevational treatment is detailed in Project Co's building elevation drawings. Project Co's proposals are compliant with clause 5.12 of the BCRs re: day lighting/ cill levels.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
16/09/2014	02 Georgian wired glass Pco revised confirmation	IHSL-ARC-017

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3v, HTM & SHTM

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM 57: 2.8

Requirement

All glazing above 2,100mm, whether designated fire-resisting or not, should be glazed with 6mm Georgian wired or other fire-resisting glass to reduce the risk of breakage from raised temperatures in a fire.

Derogation

Georgian wired glass will not be used.
Glass above 2100mm will not be fire-resisting unless required by the fire strategy.

Proposal

Project Co shall not use georgian wired glass but shall use appropriately fire rated glass as required by the fire strategy and subject to full review and agreement with the Board.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
16/09/2014	*01 Georgian Wired Glass*	IHSL-ARC-018

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3v, HTM & SHTM

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM 57: 2.12

Requirement

Where fire-resisting glass is required, panes of Georgian safety wired glass should be used, except where 'small panes' of ordinary wired glass are permitted. In other cases the glass may also be required to possess insulating properties.

Derogation

Georgian wired glass will not be used

Proposal

Due to advances in glazing technology where fire resisting glass is required – Georgian safety wired glass need not be used.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

Comments [NHSL]

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
16/09/2014	*01 Vision Panels*	IHSL-ARC-019

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3v, HTM & SHTM

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM 57: 2.33

Requirement

Where through-vision is required for wheelchair users, the minimum zone of visibility should be between 500 mm and 1,500 mm from the finished floor level.

Derogation

Conflict between SHTM and BS8300. The viewing panel does not require to be continuous between 500 and 1500mm

Proposal

The vision panels as indicated in Project Co's Proposal's comply with BS8300 paragraph 6.4.3 and Figure 13.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

Comments [NHSL]

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
16/09/2014	*03 Georgian wired glass REWORDED 07/11/14*	IHSL-ARC-020

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3v, HTM & SHTM

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM 57: 2.64

Requirement

Generally, where glass panels are not more than 900 mm wide, 6 mm Georgian
wired safety glass, which gives both fire resistance and Class C impact performance to BS 6206:1981, should be used. It is available at a slight additional cost. For 'small panes', 6 mm 'ordinary' Georgian wired glass may be used.

Derogation

Georgian glass shall not be used however appropriate FR glass shall be used where required by the Fire Strategy.

Proposal

Due to advances in glazing technology where fire resisting glass is required – Georgian safety wired glass need not be used. Non-wired glass is a more contemporary look in keeping with modern hospital environment.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
16/09/2014	*01 Door widths*	IHSL-ARC-021

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3v, HTM & SHTM

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM 58: 2.10

Requirement

Door width requirements. Minimum width doors to multi bed areas and treatment areas to be min 1700mm.

Derogation

Conflict between SHTM and HBN. Multi bed areas and treatment areas not provided with 1700mm wide doors.

Proposal

Project Co will provide 1500mm wide doors to Multi-bed rooms and treatment rooms. 1500mm doorsets are consistent with HBN. Project Co will comply with HBN.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
16/09/2014	*05 Extent of Shielding*	IHSL-ARC-022

BCR Clause

5.14 Partitions
Project Co shall ensure partitions address special construction requirements including x-ray protection and gamma ray shielding i.e. concrete or lead. It is important that Project Co comply with the shielding requirements from the Board's Radiation Protection Advisor.
Partitions shall be designed to take account of following criteria:
a) Structural strength of overall partition, and adequacy of support for fittings, fixtures and equipment, both planned and future;
b) Sound reduction;
c) Fire resistance;
d) Moisture resistance;
e) Resistance to biological infection;
f) X-ray shielding;
g) Gamma ray shielding; and
h) Protection from damage.

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM 58: 2.49

Requirement

as above

Derogation

As agreed during the Capex discussion, Project Co shall be providing radiation protection as per the completed schedule by the Board RPA, for the avoidance of doubt any lead lined doors shall be instructed as a change by the Board, and Faraday cages shall be provided by the Board.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN INTEGRATED HEALTH SOLUTIONS RHSC + DCN Edinburgh	**Derogation Request**		
	Date	**Notes**	**Reference**
	17/09/2014	*01 Ironmongery*	IHSL-ARC-023

BCR Clause
2.3 NHS Requirements Sub-Section C, para 2.3v, HTM & SHTM
Relevant Regulation - HBN, SHTM, Building Regulations etc
SHTM 59
Requirement
Appendix: CL of latch spindle set at 800mm above FFL
Derogation
Door handles will not be provided at 800mm above FFL.
Proposal
Door spindle mounting height of 800mm above FFL considered too low. Lever handle heights will be consistant and compliant with BS8300 (900 and 1100mm)
Reference Docts - Sketches, drawings, reference material extracts etc
Approvals

	Organisation	**Title**	**Signature**	**Date**
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN INTEGRATED HEALTH SOLUTIONS RHSC + DCN Edinburgh	**Derogation Request**		
	Date	**Notes**	**Reference**
	17/09/2014	*01 Equipment - Carcasses*	IHSL-ARC-024

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3v, HTM & SHTM

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM 63: 2.7
SHTM 63: 3.37

Requirement

With the Corbel carcass type lower storage units are fitted 300 mm above floor level to permit the use of floor-cleaning machines and to reduce prolonged bending down.

Cantilever brackets may be used to support the 600 mm (as Figure 1) and 500 mm assemblies and the standing and sitting work-surface heights in each case.

Derogation

Units will not be mounted 300mm above floor.
Cantilever brackets will not be used.

Proposal

Base units will be floor mounted and not fitted 300mm above floor. Worktops will therefore be supported on base units.
This proposal was signed off through the UGM process.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	**Title**	**Signature**	**Date**
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN INTEGRATED HEALTH SOLUTIONS RHSC + DCN Edinburgh	**Derogation Request**		
	Date	**Notes**	**Reference**
	17/09/2014	*01 Flexible Hoses-CAMHS*	IHSL-ARC-025

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3v, HTM & SHTM

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM 64: 2.42

Requirement

Flexible hose to hand-held showerheads should be provided, and the design of the unit should be such that the head cannot become immersed in water, to accord with back-siphonage prevention requirements. It must be constrained to give a type AUK3 air gap above the spillover level of the bath or shower tray, and any other fluid Category 5 risk (for example a WC), by a robust means that cannot be removed without destroying the fitting.

Derogation

Flexible hoses will not be utlised in F1 CAMHS en-suites

Proposal

Anti Ligature showers with fixed heads will be utlised in F1 CAMHS

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	**Title**	**Signature**	**Date**
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
17/09/2014	02 Anti- Ligature	IHSL-ARC-026

BCR Clause

5.12 Windows
All windows and fittings shall be compliant with anti-ligature requirements.

Relevant Regulation - HBN, SHTM, Building Regulations etc

n/a

Requirement

All windows and fittings shall be compliant with anti-ligature requirements.

Derogation

As this is not a practical solution, the Board and IHSL have agreed the extent of anti-ligature provision and this is now identified on drawing HLM-SZ-00-PL-330-100 Rev 04 which will form part of the Part 4 Section 5 (RDD) Schedule Part 6 (Construction Matters) and associated comments.

Proposal

Reference Docts - Sketches, drawings, reference material extracts etc

as above

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

Comments [NHSL]

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
17/09/2014	01 Single Rooms - Bed Spacing 02 Proposal wording revised 22/09/14	IHSL-ARC-027

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3viii, Scottish Government Health Directorates Circulars (CEL and HDL)

Relevant Regulation - HBN, SHTM, Building Regulations etc

CEL 27 (2010)

Requirement

Provision of Single Room Accommodation and Bed Spacing - Para 5. Accordingly, the Chief Medical Officer has concluded that the guidance set out in the above CEL (CEL 48 2008) that there should be a presumption of 100% single rooms in future hospital developments, is confirmed as the policy for NHSScotland except for:

• existing accommodation which is being refurbished, where taking into account the constraints of the existing building, a minimum of 50% single room accommodation would be allowed but as close to 100% as possible would be expected; and

• in new developments where there are clinical reasons for not making 100% single room provision they should be clearly identified and articulated in the appropriate Business Case. However, each case would be subject to Scottish Government agreement as part of the Business Case approval process.

Derogation

The following wards / in-patient areas will be provided with less than 100% single rooms:- A2 PARU, B1 PICU,L1 DCN Acute Care, C1.1 Medical In-patients, C1.2 Surgical Long Stay, C1.3 Neurosciences In-patients, C1.4 Haematology & Oncology, C1.8 Surgical Short Stay and D9 Medical Day Care.

Proposal

Project Co have complied with the Boards Clinical Output Based Specifications for the following wards / in-patient areas which will be provided with approximate % single rooms as follows:- A2 (65%), B1(38%),L1(67%), C1.1(65%), C1.2 (47%), C1.3 (33%), C1.4 (67%), C1.8 (43%) and D9 (40%). Only F1 CAMHS and L2 DCN Adult In-Patients will have 100% single rooms. There are 149 single-bed rooms out of a total of 223 beds which is approximately 67% overall.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN INTEGRATED HEALTH SOLUTIONS	Derogation Request		
	Date	Notes	Reference
RHSC + DCN Edinburgh	17/09/2014	04 Bed Spacing REWORDED	IHSL-ARC-028

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3viii, Scottish Government Health Directorates Circulars (CEL and HDL)

Relevant Regulation - HBN, SHTM, Building Regulations etc

CEL 27 (2010)

Requirement

Provision of Single Room Accommodation and Bed Spacing - Para 6. In relation to the issue of bed spacing for multi-bedded rooms, the current advice remains unchanged. That is, taking account of ergonomic criteria, primarily the space required for patient handling and other activities which take place in the immediate vicinity of the bed, it is recognised that the minimum bed space should not be less than 3.6m (wide) x 3.7m (deep).

Derogation

The multi-bedded rooms in RHSC Wards A2, B1, C1.1, C1.2, C1.3, C1.8 do not comply with this as the beds are not laid out in a parrallel configuration with rectangular bed spaces.

Proposal

Project Co's proposals have adopted NHSL reference design generic room layout which is a cruciform (St Andrew's Cross)arrangement with only one bed on each of the four walls. This room type is proposed for the following RHSC Wards :- A2, B1, C1.1, C1.2, C1.3, C1.8which were signed off during the UGM process.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN INTEGRATED HEALTH SOLUTIONS	Derogation Request		
	Date	Notes	Reference
RHSC + DCN Edinburgh	17/09/2014	*01 Single Room Accommodation*	IHSL-ARC-029

BCR Clause
3.5.6 Single Room Accommodation
Relevant Regulation - HBN, SHTM, Building Regulations etc
Requirement
DCN and CAMHS will have 100% of inpatient spaces in single rooms.
Derogation
The building does not provide 100% single bedrooms to DCN.
Proposal
Project Co have accommodated the substitution of 2 x 4 bed rooms within L1- DCN Acute Care in lieu of 8 single bedrooms.
Reference Docts - Sketches, drawings, reference material extracts etc
Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN INTEGRATED HEALTH SOLUTIONS RHSC + DCN Edinburgh	**Derogation Request**		
	Date	**Notes**	**Reference**
	17/09/2014	01 Car Parking	IHSL-ARC-030

BCR Clause

3.9.2 Emergency Department Parking

Relevant Regulation - HBN, SHTM, Building Regulations etc

Requirement

Project Co shall provide as a minimum 24 free spaces for emergency visitors to the ED for the Facilities and the RIE Facilities. Of these spaces:
a) 50% must be of a size for disabled or parent and child parking, and marked as appropriate.
b) 50% must be non-disabled spaces for short term parking for emergency visitors to the ED facilities.

Derogation

Project Co propsoals do not provide 50% accessible spaces.

Proposal

Project co will provide 24 spaces at the ED entrance. 3no, of these spaces will sized as accessible spaces (14% of overall number) and appropriately marked in line with NHSL requirements.
This was agreed with NHSL during the pre-planning applciation dialogue process.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
17/09/2014	*01 Drop Off*	IHSL-ARC-031

BCR Clause

3.9.4 Drop-off / Pick-up Arrangements

Relevant Regulation - HBN, SHTM, Building Regulations etc

Requirement

Project Co shall provide designated, covered “drop-off / pick-up” area(s) directly adjacent to the principal entrances to the Facilities including the ED entrance. This shall allow direct access to the Facilities, for a wide range of vehicles including private cars, taxis, ambulances and patient transport vehicles. The design should discourage any other use other than dropoff in this area.

Derogation

Project Co are not providing cover to designated drop off / pick up areas

Proposal

Project Co will provide canopies to the main entrances at DCN, RHSC and Emergency Department ambulance drop off.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
17/09/2014	*01 Building Envelope REDRAFTED 30/10/14*	IHSL-ARC-032

BCR Clause

5.7 Building Envelope

Relevant Regulation - HBN, SHTM, Building Regulations etc

Requirement

d) Any cladding systems chosen for use on this Project shall be designed and constructed to resist silently, without detriment to the required performance or appearance, the action of the elements including wind, rain, hail, snow, ice, solar radiation, temperature changes, moisture movement, structural movements, construction tolerances, thermal movements, the internal environment of the buildings and dead or imposed loads.

Derogation

Not all cladding systems may be able to resist silently, the action of the elements. Those which posed a problem - ETFE roof and standing seam metal roof over clinical areas - have had additional treatment agreed. There shall be a rain suppressant membrane over the ETFE roof and an integral anti drumming membrane to the standing seam.

Proposal

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
17/09/2014	01 Corridor WidthsREDRAFTED 30/10/14	IHSL-ARC-033

BCR Clause

5.10 Corridor Widths and Heights

Relevant Regulation - HBN, SHTM, Building Regulations etc

Requirement

The hospital streets are to have a minimum unobstructed width of 3 metres.
Minimum widths and heights shall apply along the whole length of the corridor.

Derogation

Hospital street does not have an unobstructed width of 3m along its whole length.

Proposal

Localised widths below 3m will occur at agreed seating/ resting points for DCN patients along the Hospital Street as agreed with the Board.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN INTEGRATED HEALTH SOLUTIONS RHSC + DCN Edinburgh	**Derogation Request**		
	Date	**Notes**	**Reference**
	17/09/2014	*02 Windows redrafted 10.11.14*	IHSL-ARC-034

BCR Clause
5.12 Windows
Relevant Regulation - HBN, SHTM, Building Regulations etc
Requirement
Project Co shall ensure all windows required for ventilation shall be provided with controllable trickle ventilators within the head of the frame or with two stage key lockable handles giving 5 – 10mm ventilation gap.
Derogation
Project Co will not provide tricke vents to the head of all windows required for ventilation.
Proposal
Project Co will provide controllable trickle ventilators within window frames. Locations of vents within frames subject to appointment of specialist supplier/ manufacturer and also to Board agreement/sign off of sample/mock up of actual window system proposed.
Reference Docts - Sketches, drawings, reference material extracts etc
Approvals

	Organisation	**Title**	**Signature**	**Date**
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	10/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
17/09/2014	01 Flooring	IHSL-ARC-035

BCR Clause

5.13.2 Flooring

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHS Safety Action
Notice SAN(SC)05/08

Requirement

Project Co shall ensure that all entrances to the Facilities incorporate sufficient length of appropriate floor matting designed to remove contaminants including water, dirt and leaves from footwear, trolley wheels etc. A water evaporation system such as a hot air curtain shall be provided at each entrance.

Derogation

Project Co will not provide the recommended 6m of barrier matting at the ambulant emergency department entrance.

Proposal

Project Co will provide a maximum of 3.7m length barrier matting to the ambulant emergency department entrance due to limited entrance lobby depth.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
17/09/2014	02 Gas Cylinder Storage REWORDED	IHSL-ARC-036

BCR Clause

5.28 Storage of Gas Cylinders

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM 2023

Requirement

Project Co shall ensure that all gas cylinders, whether they are connected to external supplies or not, are stored in accordance with SHTM 2023.

Derogation

Gas cyclinder storage does not comply with SHTM 2023

Proposal

A number of gas cylinder stores are located within departments and not on external walls in accordance with NHSL requirements as per user request during UGM and subsequent sign off. This relates only to a number of gas cylinder stores where no external wall is present.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
17/09/2014	01 Heated External Spaces	IHSL-ARC-037

BCR Clause

7.2 Therapy Gardens

Relevant Regulation - HBN, SHTM, Building Regulations etc

Requirement

Attention shall also be paid to providing covered / heated areas to allow the external environment to be enjoyed in different weather conditions.

Derogation

Project Co's Proposals do not include heated areas externally.

Proposal

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
17/09/2014	*01 Escalators*	IHSL-ARC-038

BCR Clause

8.8.12 Escalators

Relevant Regulation - HBN, SHTM, Building Regulations etc

Requirement

Where Project Co provides escalators within the buildings they shall adhere to the requirements of all relevant British Standards and in particular with BS EN 115 Safety of escalators and moving walks.

Derogation

No escalators are provided as part of Project Co's Proposals

Proposal

No escalators are provided as part of Project Co's Proposals as accepted by the Board.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
22/09/2014	*03 Handrails REVISED WORDING*	IHSL-ARC-039

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3ii, HBN

Relevant Regulation - HBN, SHTM, Building Regulations etc

HBN 00-04

Requirement

Core Elements: Circulation & Communication Spaces

7.10 The top of the handrail should be:
• 900–1000 mm above the surface of a ramp, ramp landing or pitch line of a flight of steps or along a corridor;
• 900–1100 mm from the surface of a stair
landing.

7.11 A second lower rail at a height of 600 mm should be provided in corridors, stairs and landings in children's healthcare facilities and on ramps (for wheelchair users). They should also be provided on
stairs and landings in healthcare premises where there are likely to be a significant number of semi- ambulant users.

Derogation

Project Co shall provide 2 handrails to stairs.

Proposal

Project Co shall provide 2 handrails to stairs per NHSL request.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
15/10/2014	01 Helipad Ramp Gradient	IHSL-ARC-040

BCR Clause

2.3 NHS Requirements

Relevant Regulation - HBN, SHTM, Building Regulations etc

HTM 15-03

Requirement

Ramp gradient suggested at 1:20.

Derogation

Project Co propose a ramp gradient of 1:12 for the patient helipad access. Patient transfers times would be improved by adopting the design proposal as this would substantially decrease the travel distance from the helipad to the hot core lift thus improving patient care. A ramp of similar gradient was inspected (at the New Southern General Hospital, Glasgow) by the NHSL team including Jon McCormack and Mark Dunn of the helicopter operations team on 30th June 2014 and no issues with the ramp gradient were noted. Further discussed at meeting 15.10.14.

Proposal

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
31/10/2014	01 Drainage Life Expectancy	IHSL-ARC-041

BCR Clause

Section 5. General Construction Requirements 5.1 d

Relevant Regulation - HBN, SHTM, Building Regulations etc

N/A

Requirement

Life expectancy of drainage and below ground civil engineering infrastructure - 70 years

Derogation

To reduce the requirement period from 70 years to 50 years

Proposal

Project Co are unable to source a material supply for drainage pipework and fittings whose manufacturer is prepared to provide a warranty on their products for a 70 year period. Project Co therefore propose to offer a specification compliant product with a 50 year life expectancy

Reference Docts - Sketches, drawings, reference material extracts etc

Marley Products BBA certificate

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014
NHSL				

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
12/11/2014	01 Lift Door Widths	IHSL-ARC-042

BCR Clause

5.18 Any passenger or bed / passenger lifts required for vertical transportation shall have a minimum clear entrance of 1300 mm.

Relevant Regulation - HBN, SHTM, Building Regulations etc

n/a

Requirement

As noted above

Derogation

Not all lift doors provide 1300mm clear.

Proposal

1275kg capacity lifts provide 1100mm clear door widths. This is as agreed and detailed in PCP 4.15 Vertical Transportation.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
12/11/2014	01 (Submitted C30) Single bedroom/ensuite layout HBN 23	DER Arch 02

BCR Clause

HBN 23

Relevant Regulation - HBN, SHTM, Building Regulations etc

Requirement

Hospital Accommodation for Children & Young People, Appendix 4 Sheet 1, shows a particular arrangement for a single bedroom with en-suite assisted shower room

Derogation

Ignore single bedroom layout shown in Appendix 4 sheet 1.

Proposal

Project Co propose a variant based on the HBN layout for the single bedroom but with an ensuite shower room design based on HBN 00-02 figure 60 proposal. This layout was signed off through the UGM process.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
12/11/2014	(Submitted C30) Critical care layout HBN 57	DER Arch 04

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3ii, HBN

Relevant Regulation - HBN, SHTM, Building Regulations etc

Requirement

Derogation

Proposal

HBN 57 Facilities for Critical Care: This document is referred to in the Clinical OBS for B1 Critical Care, PICU, HDU and NICU. We have based our design on your reference design and HBN 04-02 Critical Care Units

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
12/11/2014	Submitted C30) Clinical support spaces layout HBN 00-03	DER Arch 07

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3ii, HBN

Relevant Regulation - HBN, SHTM, Building Regulations etc

Requirement

The HBN requirement is 16.0sq m for clinical rooms.

Derogation

Rooms shall be provided at less than the required area.

Proposal

HBN 00-03 Core Elements: Clinical and Clinical Support Spaces, we propose to adopt your reference design for Clinical Rooms such as Consulting / Exam Rooms in a number of departments which are scheduled at 15.5 sq m and drawn at 15.0 sq m. The HBN equivalent is 16.0sq m.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
	Submitted C30 Clinical support spaces layout HBN 00-04	DER Arch 09

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3ii, HBN

Relevant Regulation - HBN, SHTM, Building Regulations etc

Requirement

Derogation

Some department corridors may result in reduced compliancy in terms of clear widths.

Proposal

HBN 00-04 Core Elements: Circulation & Communication Spaces, minimum corridor widths were adopted in line with the reference design and then were fully reviewed during the UGM process. Final setting out will be provided during the RDD process to confirm.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

Comments [NHSL]

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
	Submitted C30 Adult in-patient assisted shower rooms HBN 04-01	DER Arch 12

BCR Clause

2.3 NHS Requirements
Sub-Section C, para 2.3ii, HBN

Relevant Regulation - HBN, SHTM, Building Regulations etc

Requirement

Derogation

Proposal

SHPN 04-01 Adut In-patient Facilities, Paragraph 3.17, recommends for multi-bed rooms the provision of an assited shower room (withWC, shower and whb) and a separate semi-ambulant WC (with hand-rinse basin). We have provided a separate accessible WC (with hand-rinse basin) in lieu of the semi-anmbulant WC in line with the NHSL requirements.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

Comments [NHSL]

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
12/11/2014	Submitted C30 Ceilings	DER/Aco/01

BCR Clause

2.7

Relevant Regulation - HBN, SHTM, Building Regulations etc

SHTM 08-01

Requirement

Derogation

Proposal

SHTM 08-01 Ceilings - We would suggest that there may be a conflict between SHTM 08-01 - Acoustics and any infection control requirements.SHTM 08-01 notes that room acoustics are to be considered:It recommends that all rooms be treated with acoustically absorptive surfaces with exception for acoustically non-important rooms (such as store rooms) and rooms where there are over-riding factors such as cleaning, infection control, patient safety, and clinical and maintenance requirements.2.106 Sound-absorbent treatment should be provided in all areas (including all corridors), except acoustically unimportant rooms (for example storerooms etc), where cleaning, infection-control, patient-safety, clinical and maintenance requirements allow. (underlined by me). 2.110 Acoustically-absorbent materials should have a minimum absorption area equivalent to a Class C absorber (as defined in BS EN ISO 11654:1997) covering at least 80% of the area of the floor, in addition to the absorption that may be provided by the building materials normally used. If a Class A or B absorbent material is used, less surface area is needed. (See Appendix B for an example of how to calculate the absorption area required for materials with different absorption class.) In rooms / corridors / streets provided with lay in grid tiles Clause 2.110 is achieved by the specification of tiles (Armstrong Bioguard Acoustic would suffice). However the following rooms may have solid plasterboard ceilings (which do not provide the sound-absorbent requirements as Clause 2.110) but due to infection control issues may not require additional absorption:

- Theatre suites
- Isolation rooms and lobbies
- Interventional Radiology / Cardiac Cath Lab
- Food preparation areas
- Decontamination suite
- Treatment rooms
- Plaster rooms
- DCFP
- Operating Theatres

- Anaesthetic Rooms
- Prep Rooms
- Scrub
- Interventional Radiology
- DCFP(We believe that this covers all clinical areas)

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
15/10/2014	*Rev 02 07/11/14 Helicopter Weights*	As/Hel/02

BCR Clause

Relevant Regulation - HBN, SHTM, Building Regulations etc

Requirement

Derogation

Proposal

As noted in PCP appendix A it has been established that the Sikorsky S92 does not have a current approved vertical procedure for operations in PC1 to allow it to operate from an elevated helipad. There are no initiatives to establish one. The design weight of the helicopter has been agreed as AW189 operating at a gross weight of 8.3t.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
13/11/2014	*01 Submitted C30 VIE Equipment*	1

BCR Clause

Relevant Regulation - HBN, SHTM, Building Regulations etc

Requirement

Derogation

Proposal

IHSL have assumed that the provision of VIE Equipment (Oxygen Tanks/Evaporators/control panels and the like) will be provided by the Boards chosen supplier. IHSL have allowed for a suitable base, security fencing, gates etc to allow the installation by others (final details to be confirmed).

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
12/11/2014	*03 (Submitted C30) Blinds/Curtain/Shower Curtain Tracks- C*	3

BCR Clause

5.16.2 Blinds & Curtains

Relevant Regulation - HBN, SHTM, Building Regulations etc

Requirement

Derogation

BCR's do not clearly state where curtains are required, the matter was clarified below.

Proposal

IHSL have allowed either Blinds or Curtain tracks to windows and shower cubicles within the facility. No provision for any curtains have been included.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
12/11/2014	03 (Submitted C30) Planting Maturity REDRAFTED	18

BCR Clause

7.1 Landscaping Requirements

Relevant Regulation - HBN, SHTM, Building Regulations etc

Requirement

The soft landscaping shall be easy to maintain, and plants and shrubs shall reach a state of maturity within three years of Actual Completion Date.

Derogation

The Boards requirement that external planting should reach full maturity within 3 years of PC of the construction contract may not be achievable in all instances.

Proposal

Project Co shall continue to monitor against programme/planting season and advise the Board accordingly. Project co shall use reasonable endeavours to meet the requirements.

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
12/11/2014	01 (Submitted C30) 25% extra capacity	23

BCR Clause

8.7.10 Medical Gases, 8.7.13 Non-Medical Gases, 8.8.1 Main and Sub-Main Distribution, 8.8.2 Standby Generation, 8.13 Services Capacity Reserve, 8.14 Service Routes, 9.6.1 Cabling & 9.7 NHS Lothian Server and NHS Lothian Node Rooms

Relevant Regulation - HBN, SHTM, Building Regulations etc

Requirement

Derogation

25% increased capacity for future services installations within services voids/ risers; this has been provided where possible but may not be available in all risers/ service voids due to the space constraints of the building footprint/ storey heights.

Proposal

Project Co shall continue to review during the RDD process in conjunction with the Board

Reference Docts - Sketches, drawings, reference material extracts etc

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

IHS LOTHIAN
INTEGRATED HEALTH SOLUTIONS

RHSC + DCN Edinburgh

Derogation Request

Date	Notes	Reference
12/11/2014	02 (Submitted C30) FFE to external works	33

BCR Clause

7 External Works

Relevant Regulation - HBN, SHTM, Building Regulations etc

Requirement

Hard and soft landscaping - FF&E

Derogation

Cost allowances for external works FF&E

Proposal

FF&E to External Works - Project Co have indicated within the drawings / plans the position of FF&E within the external works. The specifications for the FF&E items will be within the cost allowances contained within the Cost Plan. For clarity, project Cowill provide the requisite external FF&E in the positions indicated on the drawings / plans but within the constraints of the cost allowances within the Cost Plan.

Reference Docts - Sketches, drawings, reference material extracts etc

HLM External Works Drawings - Hard & Soft Landscaping

Approvals

	Organisation	Title	Signature	Date
Project Co	BMCE	Design Manager	Liane Edwards-Scott	11/11/2014
	BMCE	Commercial	Graham Coupe	13/11/2014
	BYES	FM	Panya Upama	13/11/2014
NHSL			Brian Currie	14/11/2014

MULTIPLEX RHSC & DCN Edinburgh

Indicate Project

17183: RHSC & DCN

Authorities

D Pike/ S Jackson / G Coupe / G Wallace / J Ballantyne

Instruction Raised By: David Wilson

SUB-CONTRACTOR / CONSULTANT :	MER	**DATE:**	16/10/19
SUB-CONTRACTOR / CONSULTANT : AGREEMENT NUMBER	17183/ **031**	**ACONEX SUBJECT:**	Post Final Account Instruction: AHU Upgrades
		ACONEX REFERENCE:	

CONTRACTOR'S INSTRUCTION (CI):

***DESCRIPTION**

Carry out the upgrades to the AHUs based on the Qnis Scope of work document and the bench mark AHU02-06.

Works to be co-ordinated with **Keith McIntee**

***Related EWN Number or Attach (if any)**

***TIME/COST/QUALITY IMPACT**

Time – As per agreed programme of approximately 16 weeks

Cost – As per the Qnis quotation

Quality – As per the scope of works document and the benchmark unit (AHU02-06)

MULTIPLEX RHSC & DCN Edinburgh

REQUESTED BY -			
Signed by Project Manager (Level 2 in accordance with PAM Delegated Authorities)			
REQUESTED BY: [redacted] (Signed)	D Pike NAME	Date:	16/10/19
COUNTERSIGNED FOR APPROVAL:			
Signed by Commercial Manager (Level 2 in accordance with PAM Delegated Authorities)			
REQUESTED BY: (Signed)	Graham Coupe (Level 3) **NAME**	Date:	

PAM DELEGATED AUTHORITIES				
		Signature		Date
Project Director	Level 4	[redacted]	D.PIKE	16/10/19
Project Commercial Director	Level 4	[redacted]	G.WALLACE	17/10/19
Commercial Director - Projects	Level 5		D.MCFARLANE	
Executive Director	Level 6		J.BALLANTYNE	
UK Commercial Director / CFO	Level 7		P. MAGUIRE	
Managing Director	Level 8		R.BALLINGALL	

Unit 5 Park West Drive
Parkwest
Dublin
D12
[redacted]

Mr. Vent

Chilled Beams Grilles/Diffusers Radiant Panels Attenuation Dampers Coils VAVs FCUs AHUs

Quotation

Customer – Mercury
Quotation Date – 22/10/19
Quote number: - 10/020
Project Name – RHSC Edinburgh

With regards to the requested works to be carried out on the Air Handling Units on the RHSC Edinburgh project please see our quote below for the requested works to be carried out on the remaining AHUs- 34no in total.

- **Scope of Works- as per approved benchmark AHU 02-06-** Any po received is issued on the basis that AHU 02 06 benchmark is approved and accepted in full by Mercury Engineering and forms the benchmark for all remaining AHUs. Any additional works not mentioned below are excluded.

Inverters-where required

- Relocate the inverters out of the airstream to agreed position on external of AHU.
- Carry out point to point continuity testing of power and control cables upon re-installation.
- Restart AHU, spin over fans and check communication from inverter to keypads.

Cable Enclosure system

- Supply and installation of cable enclosure system manufactured from Aluzinc AZ185 c/w gasket seals. (AHU panels are manufactured from same Aluzinc material).
- The enclosure system will be installed over the existing main cable runs and lighting cables and containment.
- Cable enclosure system will be as per approved AHU 02 06. Any instruction or po received is issued on the basis that AHU 02 06 benchmark is approved and accepted in full and forms the benchmark for all remaining AHUs.
- QA sheet to be issued for each AHU upon completion and to be signed by Mercury as accepted before progressing to next AHU

The AHU is to be handed over to us and the condition of AHU will be recorded at the time of handover with any defects or issues found being reported promptly to Mercury. Upon completion of the works the AHU will be handed back to Mercury. All works will be carried out under our standard Terms & Conditions attached an in-line with the manufacturers' recommendations.

Labour Cost-no mark up on any labour	
20no Ahus with no inverters 2 men 1 week per AHU £2,500.00	£50,000.00
14no Ahus with inverters 3 men 1 week per AHU £3,350.00	£46,900.00
Materials Cost as per below BOQ including carriage to site(cost no mark up) -	£34,000.00
Total	£130,900.00
Total PO value required	£130,900.00
Revised total quote value	£91,100.00

Materials
Trunking- U shape-15mm turnout - AluZinc
50mm wide x 25mm deep x 180m
80mm wide x 25mm deep x 600m
80mm wide x 75mm deep x 150m
100mm wide x 100mm deep x 150m
100mm wide x 200mm deep x 150m
30mm x 30mm with turnout 15mm- 450m in 1 m length.
30no sheets of 500mmx500mm
Lengths of angle-15mmx15mm angle-300m make in 2m lengths
Internal boxes- c/w 15mm turnout and sealed corners
300mmx150mmx150mm deep- 30no
200mmx200mmx120mm deep- 30no
150mmx150mmx120mm deep- 30no
150mmx100mmx120mm deep- 30no
PG Glands 25mm,32mm,40mm c/w pre-cut holes on 100mm x 100mm plates- 120 no of each size(360no in total)
175m of power cable- Sandometal to advise on Sizes
175m of control cable- Sandometal to advise on Sizes
200m of 6mm earth cable for bonding
60 x 3m lengths of slotted uni strut
50 x uni strut feet
300 x10mm zebs
300x6mm Zebs
600 10mmx40mm bolts and nuts
600 6mmx 25mm bolts and nuts
300 x Square plate washers
150x L plates
150x T plates
600 10+6mm washers
600 white uni strut caps
30000 tech screws
300 cutting discs
1200 6mmx4mm eye hole lugs
120 rolls of gasket seal foam foam

Notes:

- Cleaning and hygiene certification of unit is excluded.
- Any commissioning other than the QA checks noted above, any airside or waterside balancing and any airflow testing is excluded.
- All access equipment, scaffolding or any site-specific access platforms are excluded.
- The above works are based on full uninterrupted days with working hours of 8am to 5.30pm Mon-Fri. Any delays caused to these works due to reasons outside of our control will incur standing charges of £65 per hour per operative.

VALIDITY: 30 days from the date of this quote

INSTALLATION: Goods are to be installed in line with manufacturers installation guidelines and requirements. Failure to install to the manufacturers the guidelines and requirements will result in the product not performing to the selected characteristics of the product and may invalidate the warranty. Where goods are installed in a noncompliant way Mr Vent Ltd will not accept any responsibility for non-performance of the product

Best Regards
Andrew O'Connor
Dublin office: [redacted]

Unit 5 Park West Drive
Parkwest
Dublin
D12
[redacted]

Mr. Vent

Chilled Beams Grilles/Diffusers Radiant Panels Attenuation Dampers Coils VAVs FCUs AHUs

Terms and Conditions of Sale

1. Definitions

In these Conditions of Sale "the Seller" means Mr Vent Limited, "Order Acknowledgement" means the Seller's Order Acknowledgement, "the Buyer" means the person, firm or company by whom an order is given to the Seller and "the Goods" means the goods which are the subject of the Order Acknowledgement

2. Orders/Acceptance

a. All orders received from the Buyer must be in writing and are subject to acceptance by the Seller by its issue of a written Order Acknowledgement.
b. Catalogues, price l sts, advertisements and other published information are only indications of the types of Goods available and shall not form part of the Contract for Supply or any other contract with the Buyer nor be considered a collateral warranty or a representation inducing the same.
c. Contracts for Supply are not subject to cancellation except upon:
i. the written approval of the Seller; and
ii. The payment of a fair and equitable charge to the Seller based upon the actual cost and loss of profit incurred by the Seller in respect of the Contract for Supply to the date cancellation s received and approved.

3. Specifications

Where the Buyer has requested the Seller to the manufacture any Goods to its own design or specification:
a. the Seller shall not be liable for any defects in Goods, or any loss or damage arising from the Goods resulting from inaccurate or incomplete informat on, drawings or instructions supplied by the Buyer; and
b. the Buyer will indemnify the Seller from and against all actions, claims, liabilities, costs and expenses incurred by the Seller as a result of any such infringement, or any such inaccurate or incomplete information, drawings or instructions as aforesaid.
The Seller shall have the right to make any alteration or improvement in the design of the Goods without notice to the Buyer provided the Goods are not being manufactured to the Buyer's specification.

4. Prices

a. The Price for the Goods shall be as set out in the Order Acknowledgement, except as otherwise provided for herein.
b. The Seller reserves the right by written notice given to the Buyer before delivery of the Goods to vary the price of the Goods if:
i. after the date of the Order Acknowledgement there is any increase or decrease in the Seller's general price list in respect of the same or similar descriptions of Goods; or
ii. any alteration in design of the Goods is made with the same agreement or at the request of the Buyer; or
iii. there is any suspension of or hindrance to work as a result of the Buyers instructions or its failure to give instructions or;
iv. There is any clerical or stenographic error as to the price or its calculation in the Order Acknowledgement.

5. Taxes

All customs and excise duties import and/or export duties and all other taxes, tariffs and surcharges of any nature whatsoever now or hereafter levied or imposed in any country or territory either directly or indirectly in respect to the sale, supply, delivery or use of the Goods shall be borne by the Buyer and except as stated in the Order Acknowledgement are addit onal to the price therein stated.

6. Payment Terms

a. except as otherwise specified in the Order Acknowledgment or this Condition payment for the Goods shall be due in full in euro within 30 days of the date when the Sellers invoice is issued
b. The Seller's invoice may be issued at any time after the Goods are dispatched or collected.
c. in the event of any payments becoming overdue the Seller:
i. shall be entitled to cancel any allowance or discount given to the Buyer n respect of the Goods and to charge interest at the rate of 1.5% per month and proportionately for any lesser period calculated from the date when the payment becomes due (whether or not demanded) until the overdue amounts are paid and to be indemnified all its legal and other cost losses and expenses related to any actual or threatened legal proceedings for collection; and
ii. reserves the right to suspend further deliveries and/or to cancel allowance of further credit and/or to require cash on delivery and the Seller shall have the same rights if it, at its discretion at any time, considers the financial considers the financial circumstances of the Buyer have ceased to justify the terms allowed.

7. Deliveries

a. Unless otherwise expressly provided in the Order Acknowledgement, all sales are ex works and delivery of the Goods to the carrier shall constitute delivery thereof to the Buyer, and thereafter the Goods shall be at the Buyers risk. Any claim for shortage or damage occurring after such delivery or for transportation overcharges should be directed by the Buyer in writing to the carrier and copied to the Seller within ten days of delivery.
b. Any period or date for delivery stated in the Contract for Supply or elsewhere is the Seller's best estimate when stated but is not a contractual commitment. Should the Seller's estimate prove inaccurate the Seller shall use its best endeavours to notify the Buyer of the re-scheduled date for delivery at the earliest reasonable opportunity.
c. The Seller cannot accept any responsibility for any penalties incurred by the Buyer, due to delivery of the Goods being made outside the agreed or specified period

8. Retention of Title

No property in or title to the Goods shall pass to the Buyer until their full price has been duly paid in cash to the Seller. Failure to pay the purchase price when due shall, without prejudice to any other remedies the Seller may have, entitle the Seller to repossess the Goods or so much thereof as the Seller may determine from any premises where they may be or to which they may be attached. For the purpose of repossessing the Goods or any part thereof the Buyer shall permit the Seller its employees or agents to enter upon such premises and the buyer shall pay to the Seller Vendor the cost of removal and transport of the Goods or any part thereof. Nothing in this Condition shall confer any right on the Buyer to return any of the Goods or to refuse or delay payment therefor.

9. Warranty

a. The Seller warrants the Goods against defects in design, materials and workmanship which become apparent within 18 months of the date of shipment from the factory to the Buyer, or 12 months from the date of startup – whichever may occur first ("the Warranty Period").
b. The Seller's obligation under this warranty is limited to repairing or replacing defective parts at its option supplying on an exchange bas s replacements for any defective Goods or part or parts thereof and making good any defect or defects in the Goods which may develop under normal and proper use within the Warranty Period.
c. In the event of the Buyer becoming aware of a defect in the Goods during the Warranty Period the Buyer shall promptly supply the Seller with written particulars of such defect, use its best endeavours to provide all information and particulars necessary to enable the Seller or its agents to verify the notified particulars and to ascertain the nature and cause of the defect claimed and shall afford the Seller and or its agents full and proper access and facilities therefor and for making good the defect.
d. Our liability does not include the cost of replacement refrigerant nor any labour charges for replacement of parts, adjustments, repairs, or any work done outside our facility. Any parts supplied shall be ex works from the factory of origin.
e. The above warranty shall not apply to any defect in the Goods where such defect is caused in whole or in part by the installat on, storage, use, maintenance or repair of the Goods in a manner reasonably considered by the Seller to be improper or by any other act of the Buyer or any third party.
f. The above warranty provisions do not apply to any Goods where it is impracticable or unsafe for the Seller to comply with the same.
g. The Seller shall be under no liability whatsoever to repair, replace or make good any loss which results from defects caused by wear and tear, lack of regular maintenance, accident, neglect, misuse, dampness, abnormal temperature or other conditions or circumstances beyond the Seller's control.
h. Nothing in the above warranty provisions shall impose any liability or obligation upon the Seller if the Seller has not received payment in full for the Goods.

10. Limitation of Liability

a. The Seller does not seek to exclude or restrict any legal liability it may have for death or personal injury resulting from the negligence of the Seller, its employees, agents or sub-contractors.
b. Subject as aforesaid the Buyer shall be entitled to the benefit of the aforementioned warranty which is given in lieu of and replaces, excludes and extinguishes all and every condition or warranty whatsoever whether expressed or implied by Statute, Common Lau, trade usage, custom or otherwise.
c. Notwithstanding the exclusion of any warranty as to fitness for the purpose contained in these Conditions, as a separate condition the Buyer agrees that in circumstances where the Seller relies on the skill of the Buyer to judge whether the Goods are fit for the purpose for which they are being purchased or provided the Seller shall accept no liability whatsoever with regards to that judgement and accordingly it shall be the responsibility of the Buyer to determine the suitability of the Goods for their intended purpose and their compliance with applicable laws, regulations, codes and standards and the Buyer assumes all risks pertaining thereto.
d. The Seller shall not be liable in respect of any loss or damage of whatsoever kind or howsoever caused, whether by reason of the negligence of the Seller or otherwise to premises or other physical property. In the event of legal liability being established the Seller shall not be liable to pay damages from the aforesaid loss or damage.
e. Save as expressly provided in the Contract for Supply the Seller shall in no circumstances be liable for economic or other consequential or indirect loss or damage of the Buyer and in the event of legal liability being established the Seller shall not be liable to pay damages arising from the aforementioned loss.
f. If, notwithstanding the foregoing the Seller shall in any circumstances whatsoever be held legally liable and obliged to pay damages to the Buyer then the Buyer's sole rights of redress aga nst the Seller shall be limited to a claim or claims for damages the total amount of which shall in no circumstances exceed the amount received by the Seller for the defective Goods or, as the case may be, the part thereof proved to be defective.

11. Insurance

These Conditions contain exclusions of liability on the part of the Seller. The price for the Goods in the Contract for Supply has been calculated and agreed on the basis that the seller so excludes its liability and the Seller recommends that the Buyer ensures that such insurance cover as the Buyer may require in relation to the Contract for Supply and matters related thereto is effected such as to include, without prejudice to the generality of the foregoing:
a. damage to phys cal property of any kind; and
b. economic and other consequential or indirect loss or damage. The Buyer therefore acknowledges and accepts that it is reasonable for the Seller to limit its legal liability and its liabilities to pay damages as set out in these Conditions.

12. Force Majeure

The Seller shall not be liable under the Contract for Supply wherever and to the extent that the fulfilment of its obligations is prevented, frustrated, impeded and/or delayed as a consequence of any "force majeure" and/or any circumstances whatever and howsoever arising beyond its reasonable control. The Seller accordingly reserves the right to allocate as the Seller may think fit its available goods and resources between customers with whom the Seller has contractual obligations in respect thereof and shall not be obliged to purchase goods from third parties nor sub-contract services to make good such shortages.

13. Health and Safety

The Buyer agrees to pay due regard to any information or advice relating to the use of the Goods which are furnished to it whether by the Seller or on its behalf and that it will take all necessary steps with a view to ensuring that the Goods will be safe and without risk to health when used.

14. Assignment

The Buyer shall not assign or otherwise transfer all or any of its rights, interests or obligations under the Contract for Supply without the prior consent of the Seller.

15. Waiver

The rights of the Seller shall not be prejudiced or restricted by any indulgence or forbearance extended to the Buyer and no waiver of any breach shall operate as a waiver of any subsequent breach.

16. **Governing Law**
The proper law of the Contract for Supply is the law of Ireland and the Contract for Supply shall for all purposes be governed and construed and enforced and performed in accordance with the laws of Ireland and the Seller hereby expressly submits to the jurisdiction of the Irish Courts.

17. **Headings**
The headings of these Conditions do not form part of the Conditions and shall not affect the interpretation thereof.

18. **Installation**
Goods are to be installed in line with manufacturers installation guidelines and requirements. Failure to install to the manufacturers the guidelines and requirements will result in the product not performing to the selected characteristics of the product and may invalidate the warranty. Where goods are installed in a noncompliant way Q-n s will not accept any responsibility for non-performance of the product.

Scope of works 14th October 2019

Inverters

- Remove Inverters from inside the AHU and mount on the external of the AHU in agreed position with Mercury.
- Installation of isolators
- Re-route the associated inverter cabling or install new cabling where required and terminate on inverter at new location.
- Carry out continuity testing of new inverter/cable terminations. Upon satisfactory continuity testing, ensure all AHU access panels/doors are closed, remove isolator lock and turn power on to the unit.
- Run the fans via the inverters in hand-mode and check functionality is ok.
- Once the above inverter works are complete and satisfactory, turn power off and lock-off the isolator again.

Alu-zinc Cable enclosure system

- Cable enclosure system manufactured from Aluzinc AZ185 c/w gasket seals
- Cut each length of Alu-zinc top-hat to exact dimension to suit each AHU section using a hack-saw and file edges to a smooth finish
- Fit Gasket Seal to both sides of Aluzinc and fix to AHU using tec-screws ensuring that all main runs of existing cable and plastic trunking are encased
- Each Loom of cable connections will also be encased by a section of Alu-zinc c/w gasket seals
- Individual cables and smaller run-outs of cable will not be encased by the Alu-zinc top-hat system.
- The Alu-zinc cable enclosure system shall be continuous and sealed from end to end
- Continuity and Insulation resistance Testing to all power cabling (including earthing of containment) to be carried out
- Electrical warning labeling to be added to all cable management trunking

Non-return dampers

- Faulty/broken blades on the non-return dampers to be repaired by AHU technician where required.

Filters

- G4- install securing spacer to the filter frame
- F7-install gasket seal to filter frame on one side

Motorised Dampers- (work by Schneider)

- Motorised dampers to be changed to spring close (work by Schneider)

Upon completion of the above works, check that all materials and or tools have been removed from each section of the AHU and that all access doors and panels are closed.

Remove the isolator lock and leave AHU in “hand-mode” for hand over to Mercury.

The AHU will then be offered to Mercury for inspection and approval and a QA Checklist to be provided for each AHU on completion

From: Graham, Iain
To: Executive, Chief; Campbell, Jacquie
Cc: Currie, Brian
Subject: FW: RHSC / DCN edinburgh
Date: 03 July 2019 11:42:19

Tim, Jacquie,

Notes from HFS and HPS as requested.

(it was developed from my initial contemporaneous notes)

Iain

Iain F Graham
Director of Capital Planning and Projects
NHS Lothian
Waverley Gate
2-4 Waterloo Place
Edinburgh
EH1 3EG
[redacted]
[redacted]

From: MCLAUGHLAN, Edward (NHS NATIONAL SERVICES SCOTLAND)
[redacted]
Sent: 03 July 2019 11:35
To: Graham, Iain
Cc: Morrison Alan (SCOTTISH GOVERNMENT HEALTH & SOCIAL CARE DIRECTORATE); STORRAR, Ian (NHS NATIONAL SERVICES SCOTLAND); RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Subject: RE: RHSC / DCN edinburgh

Colleagues

Modified version of our discussion notes as agreed below.

[redacted]

Eddie McLaughlan
Assistant Director
Engineering, Environment and Decontamination
Health Facilities Scotland
Procurement, Commissioning and Facilities
NHS National Services Scotland
3rd Floor, Meridian Court
5 Cadogan Street
Glasgow
G2 6QE
[redacted]
www.hfs.scot.nhs.uk

In a meeting convened on 3 July 2019, to consider the risks associated with the move of ICU to new RHCYP the following issues were raised.

- Major concerns raised about the risk of doing the permanent solution with patients in situ.
- Concern about impact on national capacity if beds are taken out during works.
- The level of duct replacement works – based on experiences, sceptical about timeframes and suggestions of simplicity by the contractor.
- Need to be convinced that proposed permanent solution is deliverable.
- Design, buildability, maintenance, cost certainty and timescale of proposed permanent solution.
- Some information from contractor is verbal and firm detail is awaited.
- Other concerns / assurances needed from the contractor:
  Heat levels
  Humidity levels
  Noise at outlets, diffusers
  Pressure regime during works being maintained
  Fire damper implications
  Changing frequency implications for filtration needs to be upped to ensure that the ACH is maintained.
  Working practices whilst the building is occupied to be demonstrated (all documentation including method statements and HAI SCRIBE).

Safer for patients to stay put – contingency required if permanent solution doesn't work.

Unknowns

- The safety implications of running the facility with 4 air changes rather than 10.
- Risks of modifying the building whilst occupied.
- The safety of the environment in which the patients are currently occupied.
- Viability of proposed permanent solution.

Consensus view

Given the information available, the consensus was that, with unknown risks associated with moving patients and then modifying the ventilation of the building, combined with the 'believed safe' environment of the current facility, the safety of patients might be better served by

delaying the move and modifying the ventilation in the new building, before moving patients.

Meeting participants
Iain Graham NHSL
Alan Morrison SG
Beata Burkinshaw SG
Eddie McLaughlan HFS
Ian Storrar HFS
Lisa Ritchie HPS
Part by phone Tim Davison NHSL Jacquie Campbell NHSL

SCOTTISH HOSPITALS INQUIRY

Witness Statement
of
Alan Morrison
In response to a Rule 8 Request dated 3 March 2022

11 April 2022

Professional Background

1. My name is Alan Morrison. My date of birth is [redacted]. I am 51 years old.

2. I am a civil servant employed by the Scottish Government as the Interim Deputy Director of Health Infrastructure. I have held this role since March 2020. My background is in accountancy and I have a professional accountancy qualification from the Chartered Institute of Public Finance and Accountancy which I obtained in 1998.

3. I provided a witness statement to the Inquiry on 11 April 2022 in response to a Rule 8 Request dated 10 February 2022 ("my First Statement"). This witness statement is presented in response to a Rule 8 Request dated 3 March 2022, in particular, questions 5.17 and 5.18 of that request as well as provision of evidence related to the NHSScotland Design Assurance Process ("NDAP"). The evidence provided in this witness statement supplements the evidence I provided in my First Statement.

The Use of the NPD Model in Scotland

4. In or around 2005 the Scottish Futures Trust ("SFT") developed the Non-Profit Distributing ("NPD") model as a replacement to the traditional Private Finance Initiative ("PFI") model then in use in capital infrastructure projects involving Public Private

Partnership ("PPP") i.e. those projects involving a collaboration between the public and private sectors.

5. I understand that the Inquiry is interested in whether the NPD model is still used for public sector capital projects. It is not. The Scottish Government has replaced the NPD model with the Mutual Investment Model ('MIM'), but it has not been used by the health portfolio for any project to date (and there are no immediate plans to use this option).

6. Eurostat, an organisation within the European Union that collects and collates statistical information related to member states, requires member states to compile specified statistical returns (accounts) on the basis of the European System of Accounts ("ESA"). ESA contains the rules and procedures for the compilation of national and regional accounts used by member states. It is an internationally compatible accounting framework that provides for the systematic and detailed description of an economy. The current version of ESA is ESA 2010. Since September 2014 (the effective date of ESA 2010), Scotland's economic statistics have been compiled in accordance with ESA 2010.

7. The Office for National Statistics ("ONS") is responsible for assessing public bodies and public transactions against ESA rules in order to determine how the bodies and transactions are to be treated in Statistical National Accounts (used to provide a simple and understandable description of production, income, consumption and accumulation of wealth across the UK). In July 2015, ONS published its assessment of a PPP project using an NPD model: the Aberdeen Western Peripheral Route ("AWPR")[1]. The assessment concluded, applying ESA 2010, that the Scottish Government had economic ownership of the asset. The ONS' assessment of AWPR as a public project (as opposed to a PPP project) resulted in a charge being made to the Scottish Government's Capital Departmental Expenditure Limit ("SGDEL") such that the value of the private investment is lost. The ONS' assessment of AWPR applies to all projects utilising the NPD Model.

1 https://www.ons.gov.uk/file?uri=%2Feconomy%2Fnationalaccounts%2Fuksectoraccounts%2Fdatasets%2Fpublicsectorclassificationguide%2Fseptember2015/publicsectorclassificationguidelatest_tcm77-418156.xls - Open file – click on 'historic updates' and the first line gives the rationale of the ONS

8. The purpose of PPP is to inject additional private finance into public projects (i.e. to share the capital burden across the public and private sectors). If that sharing of capital burden is lost (in real terms) by subsequent charges against SGDEL then that value (or part thereof) is lost. The ONS' assessment of AWPR means that it is no longer economically viable to use the NPD model in Scottish Capital Projects.

9. The United Kingdom's withdrawal from the European Union has not affected the ONS' use of ESA 2010 when preparing Statistical National Accounts.

NHSScotland Design Assurance Process

10. NDAP has formed part of the business case review process, undertaken by the Capital Investment Group ("CIG") since June 2010 (see NHS CEL 19 (2010) – Bundle 4, document 9, p.99). NDAP has been incorporated within the Scottish Capital Investment Manual ("SCIM") (Bundle 3, volume 2, document 33, p.120) since 1 July 2010.

11. The broad purpose of NDAP is to promote design quality and the service outcomes realised through good design. NDAP considers healthcare specific design as well as general good practice in design.

12. As I describe at paragraphs 19 to 32 of my First Statement, a business case is reviewed by CIG at a number of distinct stages. NDAP commences at Initial Agreement stage with the development of design standards that are used to provide the key criteria for future NDAP review. Thereafter, formal NDAP reports will be submitted to CIG prior to consideration of the Outline and Full Business Cases. Interim NDAP reports/responses may also be submitted to CIG (on request) at strategic design stages.

13. NDAP is undertaken by Health Facilities Scotland ("HFS") and Architecture and Design Scotland ("ADS"). HFS and ADS are best placed to describe the technical detail of the review they undertake. The outcomes of HFS and ADS' reviews are reported to CIG; and SCIM is clear that "*CIG approval is conditional on the level of support verified in the formal NDAP report sent at OBC or FBC submission*."

14. As I discussed at paragraph 13 above, HFS and ADS are best placed to discuss the technical detail of NDAP reviews. That said, and in so far as may be relevant to the Inquiry's terms of reference, the NDAP guidance contained in SCIM makes clear that it is for the health board to demonstrate compliance with "design guidance" and to list any derogations. Accordingly, there is an expectation that the health board will flag any known derogation from technical standards applicable to the project being delivered.

15. On 5 July 2019 I emailed Susan Grant of HFS in relation to NDAP. Susan responded to my email later that same afternoon (Bundle 3, volume 3, document 78, p.1,309). The purpose of my email was to better understand whether NDAP should have identified the problem with the ventilation system (at RHCYP) which had recently been discovered. If the answer was 'no, NDAP does not get into that level of detail', we would need to consider what we would have to put in place to identify issues before they became a problem. If the answer was 'yes, it should have spotted the problem', then we would need to consider why it did not and what we would need to change about the process. Susan's response was to explain that because NDAP is "*only a proportionate review*" she could not guarantee the process would detect problems (such as arose at RHCYP) in future projects. As I explained at paragraph 13 above, HFS and ADS are best placed to explain the technical details NDAP reviews, including what is meant by "*proportionate review*".

16. Susan's email was informative to the work undertaken in relation to the creation of NHSScotland Assure ("NHSSA"). I explain at paragraphs 48 to 56 of my First Statement, the Key Stage Assurance Review that is now undertaken by NHSSA.

17. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Appendix A

Professor Fiona C McQueen CBE BA DMS MBA RGN

Career History

I have recently retired from my full time nursing career and am currently creating a portfolio career that gives me the opportunity to utilise my leadership skills across the wider public sector.

Chair Ayrshire College Board April 2022 – present

The College Sector has a key role to play in improving lives of individuals as well as broader communities. I provide leadership for the Board of Ayrshire College to ensure, through effective governance and leadership there is an appropriate skills provision to support local, regional and national economic development and growth and local citizens have access to a skills based education that will support them into employment and prosperity.

Vice Chair of Drug Deaths Taskforce January – July 2022 (fixed term). The Minister for Drugs invited me to be Vice Chair of the taskforce. This was a challenging piece of work however working in partnership with the Chair the report was produced within the timescale required by the Minister (that had triggered the resignation of the previous Chair and Vice Chair of the Taskforce). In particular I took a leadership role in ensuring the voice of people with Lived and Living experience was heard and was woven into the report, by ***working collaboratively and collectively*** across sectors. I have also identified the opportunity to support people who use drugs into education/skills based training and subsequently into employment.

Scottish Police Authority Member April 2021- present. As an authority member I have had the opportunity to explore how Police Scotland are demonstrating improvements across staff health and wellbeing, taking a human rights-based approach to people in detention, and meeting equality requirements with pace. I Chair the People Committee where I can seek ***assurance and good governance*** around workforce and Equality and Diversity.

Chief Nursing Officer Scottish Government (November 2014-April 2021) Provided advice to Ministers on Nursing & Midwifery, Hospital Acquired Infections and latterly on matters related to the COVID pandemic. ***Through my strategic leadership***, I created a framework for widening access to nursing by opening up a number of routes, including access via Scottish Colleges which contributes to stabilising the workforce as well as improving opportunities for social care staff and reducing inequalities; created a ***strategic*** and systematic approach to new roles for nurses and midwives improving performance of the NHS and maintaining service delivery by providing an appropriately educated and trained workforce.

Executive Nurse Director (NHS Ayrshire & Arran 2002 – November 2014). In this role I provided ***strategic leadership*** to improve patient care and reduce mortality and morbidity by:

- Providing clinical leadership to ensure safe, effective, person centred care was delivered for every person, every time based on ***collective and collaborative working.***
- Ensuring appropriate levels of education and training was provided for the professions, as well as ensuring a safe and effective learning environment for undergraduates through close links with UWS at all levels, both strategic and operational as well as Ayrshire College.
- Providing leadership for clinical and care ***governance and assurance*** which improved outcomes for the people of Ayrshire, including a root and branch review of mental health services.

Previous Positions

- Executive Nurse Director - NHS Ayrshire & Arran Acute Hospitals Trust - 1998-2002
- Executive Nurse Director - Hairmyres and Stonehouse Hospitals NHS Trust - 1993-1998
- Assistant Chief Area Nursing Officer – Lanarkshire Health Board – 1989-1993
- Various Clinical Posts in Glasgow and Lanarkshire – 1982-1989

Education

- BA Degree in Nursing Studies & Registered Nurse - Glasgow College of Technology 1982
- Diploma in Management Studies (Distinction) – Glasgow College 1989
- Masters Degree in Business Administration – Glasgow Caledonian University 1996

Commissioning management

Commissioning Code M (2022)

Commissioning management

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Foreword

It has been almost 20 years since CIBSE first published Commissioning Code M and it is a testament to the original author and steering group that the document remained relevant for so long. This edition remains true to the aim of the original Code, which was to set out steps for commissioning building services in a proper and timely manner.

This updated edition of Code M has, however, been completely rewritten to reflect best practice and encompass the whole commissioning management process, from project inception, through completion and beyond.

The purpose of the Code is not to describe in detail how to commission individual systems, but to provide a clear and consistent framework for managing the process – and, in doing so, avoid the need to repeat management guidance in the CIBSE Commissioning Codes for individual systems.

In the age of smart technologies, this updated Code considers the growing interdependence between allied building systems and services and the need for more integrated system testing. This is becoming particularly important, as we collect more and more data to enhance performance and improve wellbeing. The Code also reflects the increasingly significant role of commissioning, beyond optimising performance, as we focus on climate change, carbon mitigation, energy reduction and net zero.

Furthermore, we cannot ignore the Grenfell Tower tragedy, which resulted in greater emphasis on legislation, the 'golden thread' and the Building Safety Act. Commissioning has a major role to play in delivering safe and effective functioning buildings, as recognised by the long-standing requirement for commissioning in the Building Regulations

This updated Code is the result of collaboration between CIBSE and the Commissioning Specialists Association (CSA). As chair of the steering group, I would like to thank everyone involved in preparing this publication – the content has been vigorously debated and challenged by a dedicated team of highly qualified, competent professionals from across the industry.

I strongly recommend the adoption of the principles within this Code, as they will help us all deliver safer, greener, higher-performing buildings and assets.

Ted Pilbeam
Chair, Commissioning Code M Steering Committee

Author

Glenn Hawkins (Clear Construction)

Commissioning Code M Steering Group

Ted Pilbeam (VolkerFitzpatrick) (chair); Roger Carlin (Ashford Environmental Services Ltd.) (vice chair); George Adams (SPIE); Tony Anderson (H&V Commissioning Services Ltd.); Neil Burdess (Baynards); John Harrison (Mill Valley Engineering Ltd.); David Hodge (Canary Wharf Contractors Ltd.); Paul McSoley (Mace Group); Adam Muggleton (AESG); Lee Pantry (Crown House Technologies); Joe Pitt (HDR); Dave Stephens (East London NHS Foundation Trust); Neil Smith (VolkerFitzpatrick); Hayden Youngs (Media Control Management)

Peer reviewers

Mark Berry (Norton Rose Fulbright); David Bleicher (BSRIA); David Green (Integral Group); Andy Knellar (Sygna); Nick Mead (Laing O'Rourke MEICA Technical Team)

CIBSE Technical Director

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1 Introduction

Buildings and engineering systems need to be safely delivered within specific cost, time and build-quality parameters. They also need to be operationally ready at handover; perform to meet the specified needs of the people that use, manage, operate and maintain them; and function safely and efficiently in the long term.

In a world of accelerating technological advancement, increasing building complexity, tightening regulatory constraints, growing consumer demand for quality, surging environmental consciousness, and an urgent need to de-carbonise buildings, commissioning is one of the most important ways to achieve these outcomes.

The purpose of commissioning management is to ensure that commissioning is correctly executed — and that people, businesses, society, and the environment all benefit as a result.

The original version of this Code was produced in 2003. This updated document is intended to better represent the modern perception of what commissioning is and to reflect current commissioning management best practices.

1.1 Scope

This Code provides an overview of the management arrangements required to deliver buildings and engineering systems which are commissioned in a way that meets statutory regulations and project-specific design, specification, programme and cost requirements.

It is applicable to all types of active systems, both building services and architectural. The guidance also extends beyond the commissioning of individual systems to consider the operational interfaces and interdependencies between systems that enable a building to perform in the way that it is designed.

The guidance is intended to be applicable to new-build, reconstruction, refurbishment or re-use projects. The principles outlined can be applied to any type of building, large or small, simple or complex.

1.2 Purpose

The Code is intended to be a benchmark for quality and provide a basis for professional management of the commissioning process. It can be used as:

- a means of understanding what the overall commissioning process looks like
- a guide to best practice for commissioning management
- a tool to help define commissioning management procedures
- a basis for commissioning management scope of works and professional appointments
- a reference for project team members to enable commissioning to be carried out collaboratively.

This Code establishes what to do at the different stages of a project but is not prescriptive about how to do it. It does not offer technical guidance about different building services systems or other building elements that need to be commissioned or the rigour and effort required to commission them. These criteria will be project-specific.

Detailed technical commissioning guidance for different building services systems is contained in CIBSE Commissioning Codes and in publications by the Commissioning Specialists' Association (CSA), Building Services Research and Information Association (BSRIA), The Building Engineering Services Association (BESA) and the British Standards Institution (BSI). Please refer to the Bibliography for details of these documents.

2 Legislation

Building work is covered by several aspects of legislation. In the UK, the technical requirements are primarily set out in the Building Act 1984 as amended by the Building Act 2022, the Building Regulations made under that Act, and certain additional regulations originally derived from the European Union.

The Building Safety Act 2022 was enacted at the end of April 2022. It makes significant changes to the Building Act 1984 and to the competence required of practitioners undertaking building work. However, the structure of the technical regulations set out in the Building Regulations is not changed significantly by the Building Safety Act.

The legal term 'building work' includes erecting or extending a building, providing or extending a controlled service or fitting in or in connection with a building, and the material alteration of a building or a controlled service or fitting. Accordingly, the works typically required to be carried out on projects, and to which this Code applies, will be covered by legislation concerning building work and construction projects. The formal legal definition of building work is set out in Regulation 3 (1) of the Building Regulations 2010.

The UK is one country made up of four nations, each with its own legal provisions. Construction project teams in the UK therefore need to understand the regulatory framework that applies to the specific location of their works. This same principle applies to projects outside of the UK. Users of this Code will also need to be aware of changing regulatory requirements when using it.

Please refer to the CIBSE website for information about UK Legislation[1].

2.1 The Building Regulations 2010

The Building Regulations 2010 are intended to secure the health, safety, welfare and convenience of persons in or about buildings.

Schedule 1 to the Building Regulations contains a number of Parts (A to H, J to M, O to S), which set minimum standards for structural and fire safety, energy efficiency, ventilation, accessibility, water use, overheating, security and other characteristics. The Parts of Schedule 1 are statements of functional requirements setting out what must be achieved. For each Part there is statutory guidance set out in the Approved Document or Documents for that Part, which give guidance on meeting the functional requirements in common building types.

Regulation 44 and Regulation 44Z, introduced in the 2021 amendments to the Building Regulations, explicitly require fixed building services to be commissioned in accordance with a procedure approved by the Secretary of State. They also set out requirements for the provision of information for the commissioning of the fixed building services in accordance with the approved procedure.

It is important to note that commissioning is a requirement of the Regulations and is not just a piece of guidance in an Approved Document. The Approved Documents provide additional guidance about commissioning and reference this CIBSE Commissioning Code.

2.2 The Construction (Design and Management) Regulations 2015

This Statutory Instrument is intended to protect persons from health and safety risks arising from construction work, and consequently commissioning work, through the establishment of a systematic framework for management of those risks.

The Regulations establish the responsibilities of key dutyholders such as client organisations, principal designers, main contractors and subcontractors.

[1] https://www.cibse.org/knowledge-research/knowledge-portal/legislation-recent-changes-to-law (accessed 1.06.22)

2.3 The Building Safety Act 2022

The Building Safety Act 2022 represents the biggest change in the regulation of the UK built environment in a generation and will apply to both existing and new buildings. Noteworthy considerations relating to commissioning include:

- The creation of a new role of Building Safety Regulator, embedded within the Health and Safety Executive (HSE), whose key objectives will be overseeing the safety and performance of all buildings and leading the delivery of the new regime for high-rise and other 'in scope' buildings.
- A revision of the regulatory framework for construction products.
- The creation of new dutyholder roles to be imposed on clients, designers and contractors, aimed at ensuring compliance with the Building Regulations.
- Three new overarching stop-go 'gateways' will form part of the new regime governing how higher risk buildings are planned, designed and constructed and how any major renovations are undertaken; evidence of compliance must be produced before a project can move into the next phase.
- The information and documents required through the gateways will form part of the 'golden thread' of building safety information. It will be the responsibility of the dutyholders and those responsible for a building to put in place the correct systems, processes and procedures to ensure that the 'golden thread' is updated and maintained.

2.4 Other legislation

A list of other legislation that relates to commissioning is contained in section 10.1 of this Code.

3 What is commissioning?

Commissioning is a process of assuring that a project is planned, programmed, costed, designed, installed, tested and fine-tuned, so it meets specified performance requirements.

This performance relates to individual systems and to the operational interfaces and interdependencies between systems that enable a building to perform as designed.

Commissioning starts during the preparation and briefing stage of a project and continues into a building's operational life. Commissioning management is based on the following principles:

- define what performance outcomes need to be achieved at the start of a project
- establish a plan of action to achieve these outcomes
- continuously verify and record that all decisions made, and all actions taken, are enabling these outcomes to be achieved.

Commissioning is a collaborative endeavour that requires ownership and accountability on both the client and delivery sides of a project. Success is dependent on having a shared understanding of what the overall commissioning process looks like. Commissioning also needs skill, care and discipline to do what is required at each stage before progressing to the next.

Figure 1 provides a commissioning logic diagram for a construction project. It is composed of 25 activities that take the project team on a logical journey through the commissioning activities at different stages of a project.

The matrix in Appendix A illustrates how the responsibilities for commissioning can be assigned to different members of the project team for the activities shown in the logic diagram.

The diagram in Appendix B places these activities at different stages of a project, in accordance with the Royal Institute of British Architects (RIBA) Plan of Work.

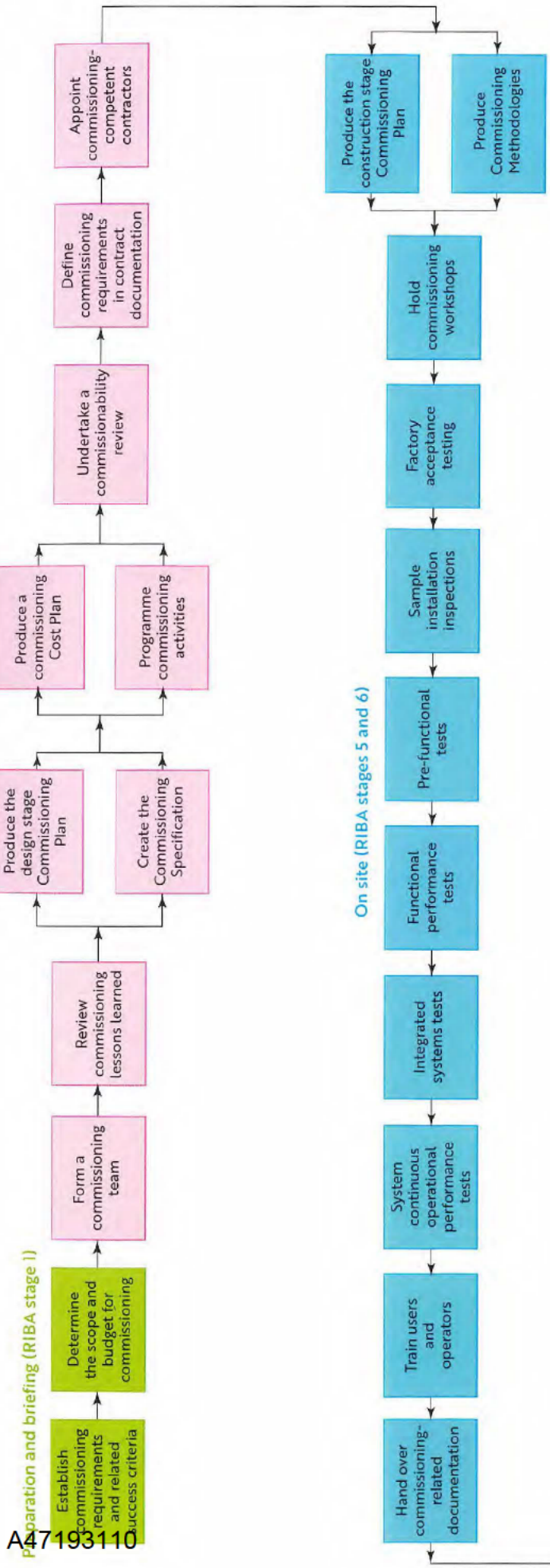


Figure 1 A commissioning process for a project

4 Commissioning management

4.1 What is commissioning management?

Commissioning management is the planning, monitoring and control of all aspects of commissioning and the engagement of all those involved in it, to achieve the specified outcomes. It requires a combination of technical expertise, management process knowledge and leadership skills.

In the context of this Code, commissioning management is a team endeavour in which a competent individual or company leads the management of the overall commissioning process on a project. The term commissioning manager (CxM) has been adopted in this Code for the competent entity that fulfils this role.

The lead management effort provided by the CxM needs to be coordinated with the management effort provided by other parties to execute their commissioning responsibilities to the specified requirements.

The commissioning management procedures used, and the level of effort required, need to be appropriate and proportionate to the project being delivered. There also needs to be a single point of accountability for commissioning management on a project.

The matrix in Appendix A illustrates how the responsibilities for commissioning activities can be assigned to different members of the project team.

4.2 The commissioning manager (CxM)

This Code is based on best practice and the presupposition that the appointment of the commissioning manager (CxM) needs to be considered at the beginning of the design stage.

When appointed, the CxM will lead the commissioning process, providing confidence to the client that a competent resource is being dedicated to this important aspect of project delivery. The CxM has unique insight into building systems performance, so can therefore provide accurate recommendations to the client about the performance of commissioned systems.

The contractual relationship of the CxM is vitally important because it will define their authority and responsibility. It will also impact the timing of the CxM appointment. When combined, these factors greatly influence the CxM's ability to help deliver the required project outcomes through correctly executed commissioning.

Two examples of common contractual relationship and communication routes for a CxM are shown in Figure 2. The first is when the CxM is appointed by the client as an independent objective advocate, and the second is when the CxM is in contract with the main contractor.

The CxM must be competent to perform the lead commissioning role. Other parties must also be competent to manage and execute their commissioning responsibilities, such as a building services contractor performing site-based tests or a building services design consultant producing a Commissioning Specification.

This competency of the CxM needs to be evidenced through a combination of qualifications, experience, knowledge, and skills. Their practical experience needs to relate to the commissioning of similar projects to the one for which they are being considered. Their knowledge needs to encompass matters such as the logical sequencing of commissioning activities, testing procedures for individual systems and overall buildings, required durations for these procedures, and the design and specification requirements of commissioning. They also need to understand and acknowledge the limitations of their experience and expertise.

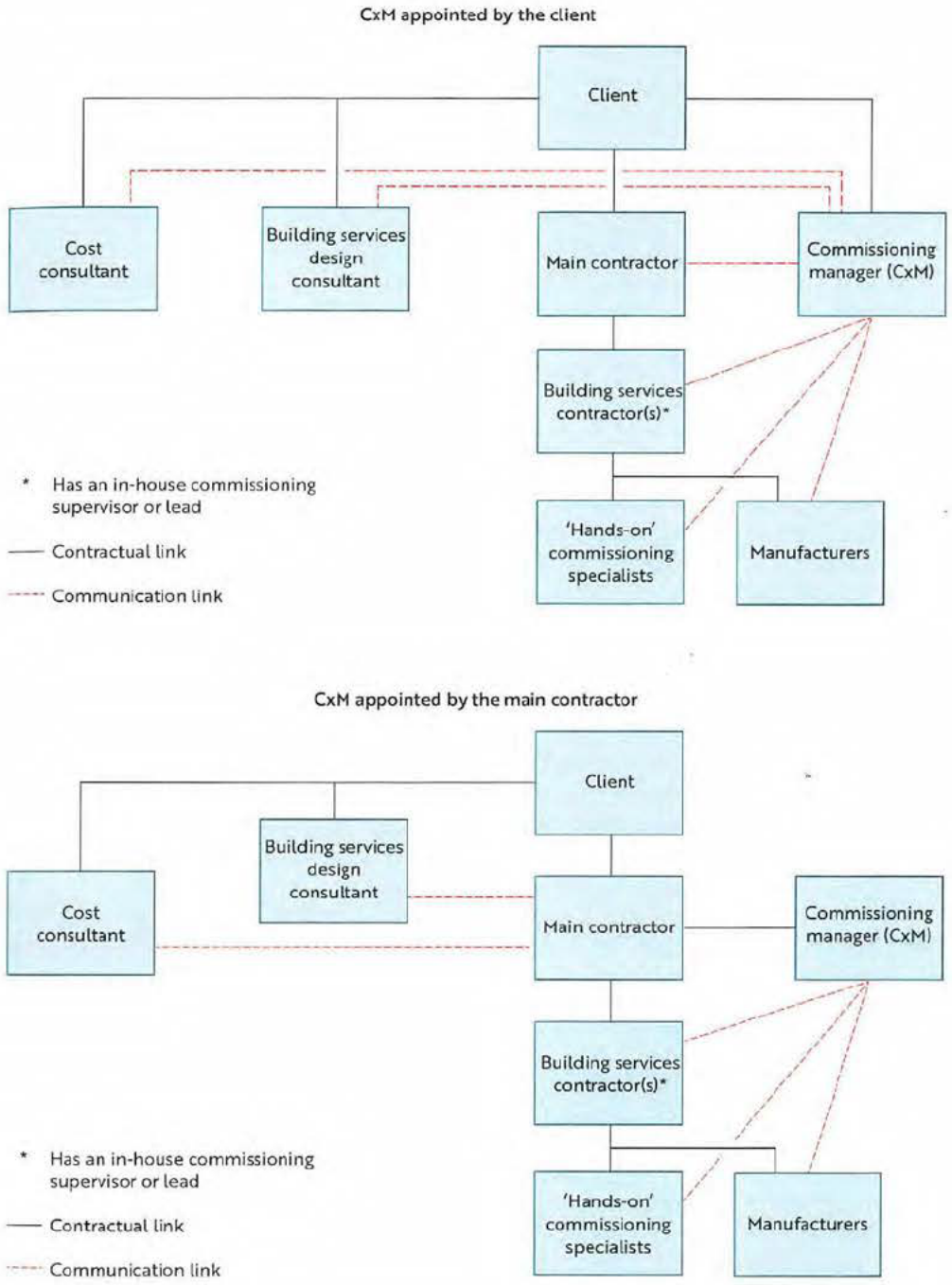


Figure 2 Contractual and communication routes for a commissioning manager (CxM) appointed by the client and appointed by the main contractor

The role of the CxM at the head of the commissioning team also requires pragmatic leadership skills, effective communication skills, strong resource planning and administration skills, and effective writing skills to produce documents such as the Commissioning Plan and assorted commissioning-related reports.

Commissioning management software platforms are commonly used to streamline and digitise the commissioning workflow on projects. Increasingly, competence in the use of software specifically designed to manage commissioning is also a fundamental requirement for a CxM.

The Commissioning Specialists' Association (CSA) has the following grading system for commissioning managers, which can be used to find appropriate accredited competence for projects of varying sizes and complexities:

- CSA commissioning manager (CxM1)
- CSA senior commissioning manager (CxM2)
- CSA project commissioning manager (CxM3).

Further information about this professional accreditation system and the criteria required to achieve each grade, can be obtained from the CSA[2].

ASHRAE also has a building commissioning professional certification programme (BXCP) which can be considered when evaluating competence for the CxM role. Information about this qualification can be acquired at the ASHRAE website[3].

Other professional registrations, such as Engineering Technician (EngTech), Incorporated Engineer (IEng) or Chartered Engineer (CEng) meet globally recognised professional standards. People with these accreditations may also be able to perform the CxM role on a project, provided they have the appropriate experience, knowledge, and skills. Information about these qualifications is available from the Engineering Council[4].

4.3 Commissioning administration

Each of the commissioning activities described in this Code require specific management resource from the commissioning manager (CxM) and the other parties involved in them.

There are also a set of commissioning administration activities that are common to all project stages, and which are part of the CxM's duties. These include:

- preparing, chairing and producing minutes of commissioning team meetings
- monitoring actual versus planned progress of commissioning activities
- maintaining a commissioning issues and resolutions log
- producing commissioning progress reports
- integrating new individuals into the commissioning team
- reporting items that may affect the life safety and other legislative performance requirements of the project.

As required by their contract documents, different parties involved with commissioning need to participate in, or provide information for, the execution of the above administrative activities. Digital technologies such as BIM models, document management systems and RFID asset tagging are increasingly being used to help achieve this within a Common Data Environment (CDE) on projects.

[2] https://www.csa.org.uk (accessed 6.06.22)

[3] https://www.ashrae.org (accessed 6.06.22)

[4] https://www.engc.org.uk (accessed 6.06.22)

5 The preparation and briefing stage

It is important that commissioning is considered early in the project lifecycle. This chapter of the Code provides an overview of the following preparation and briefing stage commissioning activities.

This Code proposes that, in accordance with best practice, the appointment of a commissioning manager (CxM) needs to be considered at the beginning of the design stage. If the parties involved during the preparation and briefing stage do not have the competency to undertake the commissioning activities prior to the design stage, then a CxM can be invited to assist on a short- term, fee-based appointment.

An example of how responsibilities for these activities can be assigned is provided in Appendix A.

5.1 Establish commissioning requirements and related success criteria

The Project Brief forms the basis from which all project delivery work, including commissioning, is executed. Required performance outcomes must be defined in the Project Brief, so it is clear what commissioning needs to achieve. These quantifiable and measurable success criteria fall into three categories:

- *Functionality and effectiveness*: e.g. occupancy criteria, indoor environmental criteria, sprinkler, fire detection and alarm and smoke control classifications, air change rates, water outlet temperatures, building envelope permeability, system resilience and redundancy criteria, power quality, harmonic distortion, vibration levels, safety and security performance, and occupant satisfaction.
- *Environmental*: e.g. energy use, water consumption, CO_2 emissions, BREEAM, NABERS or LEED rating.
- *Economic*: e.g. construction cost, utilities costs, operation and maintenance costs, revenue generation.

In setting the purpose, requirements and constraints for a scheme, the Project Brief needs to establish commissioning as a key means of achieving the required project outcomes. It also needs to describe what digital project protocols commissioning work must conform with, such as the level of building information modelling (BIM) and the Construction Operations Building Information Exchange (COBie) data that will need to be entered.

The Project Brief must be developed with significant client stakeholder input and ultimate approval.

5.2 Determine the commissioning scope and budget

The commissioning scope identifies the building systems to be commissioned, describes the commissioning activities that need to take place and establishes the standard of commissioning required.

A properly defined scope that considers the size, scale, type and complexity of a building will enable a budget for commissioning works to be established. Consideration must be given to ensure that money is assigned to all phases of a scheme, so it can be translated into a cost plan for commissioning during the design stage. It is intended that the scope and budget for commissioning be based on the process laid out within this Code.

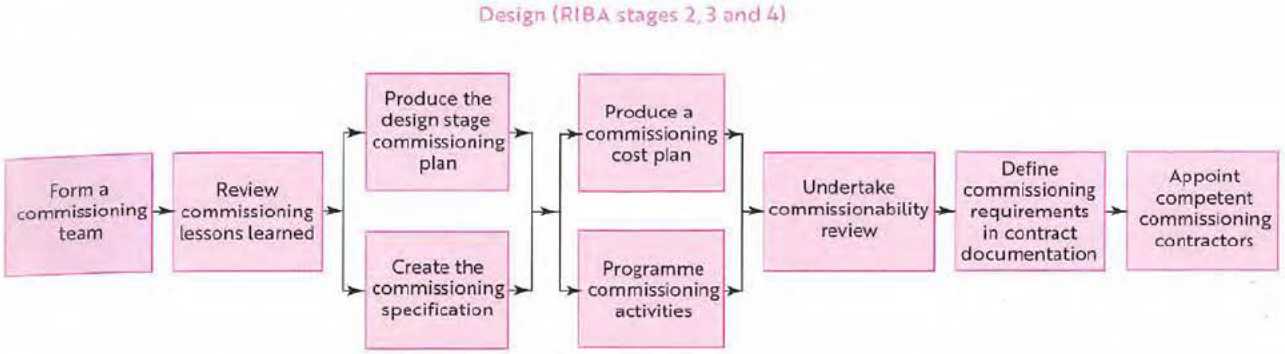
An appropriate commissioning scope will also enable commissioning activities and responsibilities to be defined in the contracts of the different parties appointed to the project.

The Royal Institute of British Architects (RIBA) and the Chartered Institute of Building (CIOB), state that a Project Execution Plan (PEP) is the principal document for describing the approach to managing a project. It covers matters such as compliance requirements, project organisation, management procedures, information systems, and how specialist project delivery activities are to be undertaken. Commissioning needs to be a key part of the content of this important document.

6 The design stage

Commissioning involves activities that take place during the design stage of a project and this principle is consistent with this Code.

This chapter of the Code provides an overview of the following design stage commissioning activities.



An example of how responsibilities for these activities can be assigned is provided in Appendix A.

6.1 Form a commissioning team

The commissioning team is a group of professionals representing different organisations, whose coordinated actions are responsible for implementing the commissioning process.

This Code recommends that the commissioning team, led by a commissioning manager (CxM), should be formed during the design stage. As appropriate to the size and complexity of the project being undertaken, this team can include representatives from the client, the lead project management organisation, the building services design consultant, the main contractor, building services contractors and manufacturers. Each party will be integrated into the commissioning team upon their appointment at the different stages of a project.

Responsibilities for commissioning team members need to be defined. A matrix such as that shown in Appendix A can be used for this purpose. Individual commissioning team members must have the authority and competence to act on behalf of the organisation that they represent.

6.2 Review commissioning lessons learned

This Code considers it best practice to use feedback from earlier projects to inform the way commissioning is set up and executed. The objective of this exercise is to identify successes and areas for improvement and apply them to the commissioning of the project to be undertaken.

A variety of commissioning-related criteria can be examined during this review, including:

- the scope and logic of commissioning
- the division of commissioning responsibilities
- how much was spent on commissioning and what it was spent on
- the timing and duration of commissioning activities
- interfaces and interdependencies between systems
- whether the project was delivered on time or not
- the impact of value engineering on commissioning
- the commissioning competency of project team members
- the quality of commissioning documentation

- digital tools used to execute commissioning works
- the performance of buildings in use
- end user and operator feedback.

This Code considers it best practice to produce a report providing the key findings, conclusions and recommendations from this exercise and then disseminate it to the project team.

6.3 Produce the design-stage Commissioning Plan

The Commissioning Plan describes the commissioning process for a project and establishes how it needs to be executed and documented. It is an organisational and managerial document, rather than a technical one.

As a minimum, it is proposed that the structure and content of a Commissioning Plan shall be as follows:

(1) *Introduction*: the purpose of the document and a general summary of its contents.

(2) *General project information*: an overview of the project, the organisations involved and how it is to be delivered.

(3) *Commissioning scope*: a description of the building services systems and other building elements to be commissioned on the project.

(4) *Commissioning process*: a description of the project-specific commissioning tasks to be executed at the different stages of project delivery.

(5) *Commissioning team*: a list of commissioning team members, with information such as who they work for, what their role is, and their contact details. An organogram for commissioning.

(6) *Commissioning roles and responsibilities*: the allocation of roles and responsibilities for different members of the project team, in accordance with the activities established in item (4) above.

(7) *Communication and documentation requirements*: a description of the communication protocols, digital technologies, reporting frequencies and documents to be used to execute commissioning on the project.

(8) *Commissioning schedule*: an overview of the sequence of commissioning events and associated dates and durations.

(9) *Appendices*: any reference material that supports the main body of the document.

The Commissioning Plan must be produced by a competent commissioning management professional. All information in the document needs to be project-specific, following and supplementing primary design, commercial and programme information. If the client has specific commissioning procedures that need to be complied with, this must be incorporated into the Commissioning Plan. The document needs to be updated as the project progresses and details emerge relating to the design, specification, programme, participating companies and test procedures, for example.

The design-stage Commissioning Plan needs to be part of the tender documentation that is issued to the main contractor. This will help ensure that they are aware of the commissioning process and its associated requirements before entering into contract.

With input from the main contractor and its key building services subcontractors and suppliers, the document will evolve into a construction-stage Commissioning Plan prior to commissioning activities commencing on site.

In accordance with the Building Regulations 2010, the Commissioning Plan needs to be issued to the Building Control Body (BCB), so it can check that commissioning is being done as the work proceeds.

6.4 Create the Commissioning Specification

Whilst the Commissioning Plan is primarily an organisational and managerial document, the principal objective of the Commissioning Specification is to define the technical requirements with which commissioning works need to be accomplished.

Defining and then following the technical commissioning scope is a critical factor for success in meeting the performance objectives of any project. Whilst this is of importance for all aspects of building performance, it is crucially important for life safety and business-critical systems.

The production of the Commissioning Specification is typically the responsibility of the building services design consultant. This Code recommends that this key document be produced with specialist input from a competent commissioning management professional. All information in the specification needs to be project-specific.

The Commissioning Specification must not focus just on individual building services systems. It must also contain project-specific content about validation procedures such as smoke extract and control tests, fire alarm cause-and-effect tests, integrated systems tests (ISTs) and, where applicable, factory acceptance tests (FATs), system continuous operational performance tests (SCOP tests) and seasonal testing. Building elements whose performance needs to be validated, such as active façades and automatically-openable doors, windows and vents, also need to be covered in the Commissioning Specification.

During the design stage, an evaluation of operational energy use is recommended, utilising an appropriate methodology such as CIBSE TM54: *Evaluating operational energy use at the design stage* (2022). Once a building is in use, it is important to measure actual energy use, investigate the causes between expected and realised consumption, report back to the designer, and use the findings to improve building performance. This post-handover validation and fine-tuning work needs to be reflected in the Commissioning Specification.

The Commissioning Specification plays an important role in defining witnessing and final sign-off requirements for different stakeholders such as the commissioning manager, the building services design consultant and the building control officer. This presence at specific events validates that commissioning work is executed correctly and that records presented accurately reflect the work carried out. Witnessing needs to be appropriate to the size and complexity of a project, the importance of each individual system to life safety, business continuity and overall building operation, and the particulars of the project contract.

As a minimum, it is proposed that the structure and content of a Commissioning Specification shall be as follows:

(1) *Introduction*: the objective of the document and an overview of its contents.

(2) *General project information*: a summary the project, who is involved and how it is to be delivered.

(3) *Commissioning scope*: a description of the active systems, both building services and architectural, to be commissioned on the project.

(4) *General commissioning requirements*: information about the commissioning logic for the project, notification, sampling, witnessing and approval requirements, competence of personnel, instrumentation, commissioning records, training requirements and resolution of non-compliance.

(5) *Technical requirements for commissioning*: detailed descriptions of procedures, pass/fail criteria and performance tolerances for on-site and off-site testing relating to individual systems, central plant, meters, control software and graphical user interfaces (GUIs), and activities such as fire alarm cause-and-effect tests, ISTs, SCOP tests and seasonal testing.

(6) *Definitions and naming conventions.*

(7) *Applicable standards and guidance.*

(8) *Related project documents.*

6.5 Produce a Commissioning Cost Plan

The commissioning process needs to be supported by adequate and transparent expenditure. The project Cost Plan must therefore show how money will be spent on commissioning, both its management and the physical hands-on work associated with it. This is the responsibility of whichever cost consultant is working on behalf of the client.

This Code recommends that this crucial cost planning activity is undertaken with specialist input from a competent commissioning management professional to describe commissioning activities and detail the types of manpower and other costs associated with them. In addition to activities that take place on site such as testing and witnessing, this expenditure needs to encompass design-stage commissioning activities, off-site testing and in-use stage commissioning activities. These can then be validated as clearly itemised commissioning costs during the appointment of the project's contractors.

Costs can be allocated by project stage, by commissioning activity, and by company. The *New Rules of Measurement* (NRM) (RICS, 2021) provide a structure for allocating commissioning costs to specific building services systems and other elements of a building that need to be commissioned, if this level of detail is appropriate.

The Commissioning Plan, Commissioning Specification and the Commissioning Programme need to inform this cost planning activity because they establish what needs to be done; how it needs to be done; who needs to do it; what resources are required; and when it needs to done.

Once the commissioning expenditure is established, it must only be adjusted after having fully evaluated what the consequences will be. Any unjustified reductions will mean that the needs of the commissioning process will be lost, diluted or compromised.

6.6 Programme commissioning activities

The programming of commissioning requires an understanding of overall project commissioning scope and logic, the detailed sequences of specific commissioning works and the time required to execute commissioning activities to the required standard. In addition to hands-on commissioning works, programmes also need to make appropriate provision for the production, review and acceptance of commissioning documentation.

High level project programming work must account for commissioning. This can be achieved by incorporating primary commissioning activities, such as those proposed in the commissioning process diagram in Figure 1 and assigning appropriate durations to them.

More detailed commissioning logic diagrams and programmes can then be produced for specific elements and systems, as well as procedures such as integrated systems tests (ISTs), system continuous operational performance (SCOP) tests and seasonal tests. As required, these will incorporate validation activities such as demonstrations and witnessing.

Commissioning activities are inextricably linked to other aspects of project delivery such as design, procurement, construction, handover and occupation. Commissioning must therefore be programmed so that it is coordinated with, and linked to, these other activities. This particularly applies to the installation of building services and to structural and architectural construction works, where changes in sequence, or delays in completion, often negatively impact on commissioning works.

This Code considers it best practice that a programme incorporating commissioning activities will be part of the tender documentation issued to the main contractor. The main construction programme then produced by the appointed main contractor needs to be logic-linked to the project's commissioning programme.

The commissioning team, of which the client and main contractor are key members, must protect the commissioning logic and time allocated for the execution of all commissioning

activities. Illogical sequencing and unreasonable compression of timeframes will negatively affect the quality of commissioning work.

6.7 Undertake a commissionability review

Project design documentation needs to be reviewed to ensure that a building and the diverse range of systems in it will be commissionable when work starts on site.

This is not just a review of schematic drawings, layout drawings or a geometric BIM model. Other design deliverables that relate to commissioning, such as specifications, the life safety philosophy, standard operating procedures and description of operations documents also need to be considered for review.

This review is intended to focus only on the commissionability of the overall building and the individual building services systems and other functional building elements in it. It is not a verification of first-principle design calculations, a detailed approval process for drawings, nor a forensic examination of specifications to check regulatory compliance.

The reviewer(s) need to be independent from the people that produced the design. They also need the right competency to perform this important commissioning-focused task, obtaining expert assistance if required. A workshop format can be used to facilitate the important interaction between the reviewer and the designer.

A quality-based sampling methodology can be employed for this independent review process. This strategy uses the reviewer's expertise and experience to select a small, focused, meaningful sample of commissioning-related design information for initial review. A decision about how extensive the commissionability review needs to be can then be based on the findings of this initial review.

This Code considers it best practice to issue a formal commissionability review report and to track each issue identified. This will act as a record of the observations made and the responses of the designer to them. To facilitate this collaboration, aimed at resolving each issue, the wording used by all parties needs to be clear and respectful.

It is important to understand that the commissioning-focused design review does not transfer design liability from the design consultant to the reviewing organisation.

6.8 Define commissioning requirements in contract documentation

The main contractor and its building services subcontractors are key to the success of commissioning on any project. The documentation that is used to appoint them must therefore provide a clear description of the project's commissioning requirements and the role these organisations need to play in meeting them.

This need can be satisfied by integrating documentation that is already in place on the project into the tender information that is issued, such as the Commissioning Plan, the Commissioning Specification, and commissioning-related cost and programming information.

In addition to incorporating high quality commissioning-related content in the tender documentation, the issuing organisation has a professional obligation to explain it and respond to questions raised. The contractors must not be left to understand commissioning requirements in isolation.

With a collaborative approach of this nature, an agreed way forward can be established for the execution of commissioning activities that are to follow.

6.9 Appoint commissioning-competent contractors

The commissioning responsibilities of the main contractor and its building services subcontractors are wide-ranging and crucially important. They can encompass lead or support roles in activities as diverse as work programming, document production, quality control of installation work, flushing and cleaning of pipework, pre-functional testing, functional performance tests, integrated systems tests, SCOP tests, witnessing, training and project reviews.

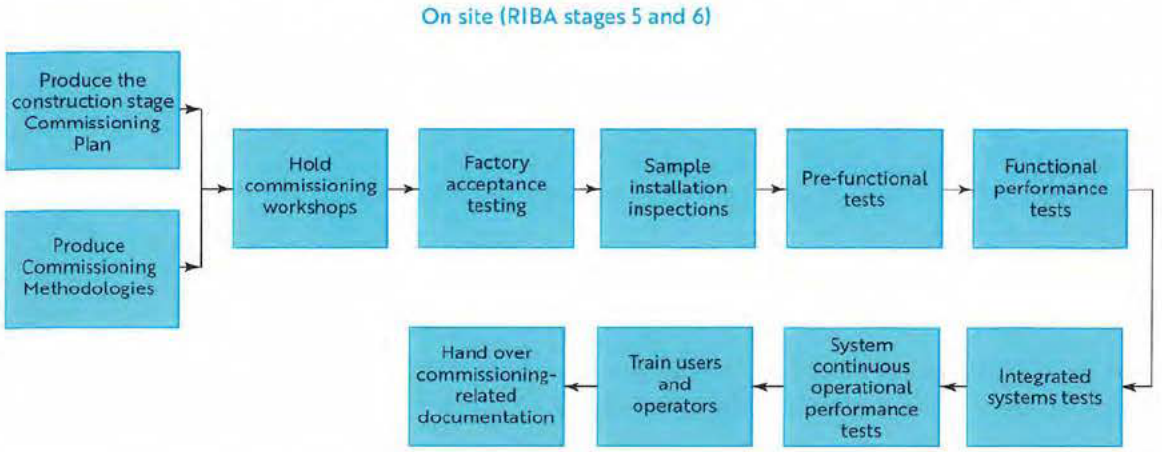
They must have the competency and resources to fulfil their commissioning-related obligations. This required capability needs to relate to the type of building that is being delivered, the types of building services systems and other functional elements in it, and the specific commissioning procedures that will be needed to deliver the project.

The appointing organisation needs to do their due diligence by validating the types of projects the tenderers have worked on, their commissioning track record on these projects, what their commissioning supply chain looks like and what specific commissioning competency their people have.

A competent commissioning management professional, if working as an independent advocate of the client, can provide valuable input to this commissioning activity.

7 The on-site stage

This chapter of the document provides an overview of the following on-site stage commissioning activities. An illustration of how responsibilities for these activities can be assigned is provided in Appendix A.



Competence, discipline and clarity are key requirements for the successful execution of the site-based stage of commissioning. In particular, the logical journey from factory acceptance testing through to system continuous operational performance tests needs to be carefully managed.

This step-by-step process will typically focus on individual elements and systems, before considering the operational interfaces and interdependencies between systems, and then overall building performance. This Code proposes that moving logically from one step in the sequence to the next needs to be conditional on the validation of work that has been undertaken. Within this process, each party responsible for commissioning works will submit a record providing evidence of activities performed or stating results achieved. These records will then need to be reviewed and accepted.

Witnessing by competent personnel, which validates that commissioning work is executed correctly and that records presented accurately reflect the work carried out, is an essential part of this process. This important personal observation of commissioning events helps assure that specified requirements have been fulfilled. It also ensures that there is a shared understanding that the production of commissioning evidence is not just a paper-based administrative exercise.

As outlined in the preceding chapter of this Code, the extent of, division of responsibilities for, timing and duration of witnessing and sign-off activities needs to be established during the design stage. There also needs to be a shared understanding of what information witnessing parties need to be furnished with before they attend an event and how far in advance they require it. This can include:

- details of the activity to be witnessed
- the methodology for the activity
- records, such as test results
- acceptable variance of witnessed results from those recorded
- details of equipment used
- calibration certificates for equipment used.

7.1 Produce the construction-stage Commissioning Plan

The Commissioning Plan describes the commissioning process for a project and establishes the way in which it will be managed.

By incorporating any new or revised information relating to matters such as design, specification, programme, participating companies, responsibilities, or procedures, the design-stage Commissioning Plan will evolve to become the construction-stage Commissioning Plan.

A competent commissioning management professional needs to lead the production of this document, with input from other parties such as the main contractor and its key building services subcontractors. The Commissioning Plan can then evolve into the Project Commissioning Report at handover.

7.2 Produce Commissioning Methodologies

Whilst the Commissioning Plan establishes the framework for successful management of commissioning, Commissioning Methodologies provide the detailed information about how on-site stage commissioning works will be prepared, executed and documented.

Separate methodologies are required for different active systems, both building services and architectural, and for distinct elements such central plant and meters. Methodologies also need to be produced for integrated systems tests (ISTs) and system continuous operational performance tests (SCOP tests). These procedures need to be project-specific and commissioning activity-specific. For example, a chilled water system will require different Commissioning Methodology documents for pipework pressure testing, flushing and cleaning, management of water quality, and balancing of flowrates.

Particular care needs to be taken when commissioning procedures such as the testing of fire-detection and alarm, stairwell pressurisation or smoke extract systems are reliant on architectural work being complete and correct.

Each methodology needs to be produced by the organisation that is responsible for performing the commissioning activity, in direct response to the Commissioning Specification. The commissioning manager (CxM) will typically be responsible for reviewing and accepting the methodologies produced by others and for producing methodologies for activities such as ISTs and SCOP tests.

Whilst these Commissioning Methodologies need to consider risks and safe working practices, their principal focus must be the procedure that will be used to confirm that the specified commissioning requirements of the project have been met. Their content therefore needs to be configured accordingly. The organisations producing these documents must also avoid loading them with irrelevant manufacturers' information.

As a minimum, it is proposed that the structure and content of a Commissioning Methodology shall be as follows:

(1) *Introduction*: the purpose of the document and a general summary of its contents.

(2) *System description*: project-specific details of the system to be commissioned.

(3) *Preparation requirements*: a list or description of constraints interfaces and dependencies such as installation approved, doors hung, ceilings complete, fuel tank filled, temporary load bank installed.

(4) *Commissioning procedure*: a full step-by-step description of the commissioning activity to be undertaken with associated pass/fail criteria and tolerances. References to associated material in the Appendices of the methodology.

(5) *Roles and responsibilities*: a description of who will be involved in the activity and what their role will be.

(6) *Instrumentation to be used*: details of the type, manufacturer and model of instrumentation for specific activities.

(7) *Reference documents*: a list of industry standards and codes of practice, related specification clauses, drawings or description-of-operations documents.

(8) *Appendices*: marked-up drawings, manufacturer's technical information, cause-and-effect matrices, test scripts, checklists and test sheets, environmental, health and safety (EHS) risk assessment, calibration certificates.

7.3 Hold commissioning workshops

The objective of this activity is for the commissioning team to develop a shared understanding of how the on-site stage of commissioning will be executed — what needs to be done; when it needs to be done; how it needs to be done; who needs to do it; what records need to be produced; and how commissioning will be coordinated with construction works.

Matters that need to be considered include work sequences, activity durations, roles and responsibilities, interfaces between different companies, approval protocols, meeting arrangements, and documentation requirements. Large or complex projects can require multiple workshops that focus on particular systems, certain areas or phases of a project, or specific on-site commissioning procedures.

This Code considers it best practice that a competent commissioning management professional will be responsible for the preparation and facilitation of these workshops, and the authoring and dissemination of the reports from them.

7.4 Factory acceptance testing

This off-site testing can form an important part of a project's quality assurance and risk management procedures. It can encompass testing of modular building elements, primary building services plant such as chillers, transformers, control panels and standby generators, type-testing of elements such as fan coil units, and proving of software programmes and graphical user interfaces.

To satisfy the factory acceptance testing requirements of a project, there needs to be a shared understanding of the following:

- a list of every item that needs to undergo a test
- the locations of the tests
- the programme for the tests
- clear division of roles and responsibilities for the tests
- approved methodologies for the tests
- an appropriate budget for the tests
- the reporting requirements of the tests
- procedures in the event of non-compliance.

In response to the specified requirements for factory acceptance tests (FATs), this Code proposes that the commissioning manager (CxM) will be responsible for scheduling the tests, coordinating the input from different members of the commissioning team and directing their execution.

Specific manufacturers will produce the methodology documents for the FATs. They will also produce the test reports that act as evidence of compliance with required performance. Both types of document need to be issued, reviewed and approved in the specified manner.

Any issues found during the FATs which are carried over to the construction site need to be tracked and closed out by the commissioning team.

7.5 Sample installation inspections

Within the on-site stage of commissioning, the installation of building services systems is of crucial importance, but is commonly problematic. Issues can relate to work being incomplete, incorrect, inaccurate, damaged, inaccessible or unidentified.

To avoid a negative impact on subsequent on-site commissioning activities, installation work must be complete, carried out with adequate and proper materials and workmanship, and be accessible for commissioning purposes. The installation work also needs to be executed within the timeframe provided in the project programme.

Commissioning does not replace the process of quality assurance, which needs to be carried out during manufacture and construction as part of normal, good engineering practice. However, installation verifications led by the commissioning manager (CxM) can help confirm that systems are ready to advance to the next stage of the on-site commissioning process. A quality-based sampling methodology can be employed for this important activity. This strategy uses the CxM's expertise and experience to select a small, yet focused, sample of installation works for inspection. A decision about how extensive this inspection regime needs to be can then be based on the findings of the initial sample.

If a record has been submitted by an installing contractor as evidence of compliant work completion, this Code considers it best practice to have this evidence in-hand whilst conducting the physical inspection. This will help validate that the documentary evidence matches what is observed on site.

If issues with installation work are identified during this inspection activity, it is the responsibility of the main contractor and its subcontractors to resolve them before progressing to the next on-site commissioning stage: pre-functional testing.

7.6 Pre-functional tests

This is a transitionary commissioning stage between installation completion and the functional performance testing of a system. Historically, this stage has often been referred to as pre-commissioning and/or static testing.

Activities at this stage include pressure testing of pipework, air leakage testing of ductwork, flushing and cleaning of closed water systems, initiation of water treatment regimes, and dead and live testing of electrical, communication, security and control systems. It also encompasses the setting-to-work of systems involving activities such as energisation, starting and running fans or pumps, and setting-up safety cut-outs, interlocks and alarms. As systems are set to work, working practices must be adopted that maintain high standards of health and safety.

The testing and other hands-on commissioning activities at this stage are the responsibility of the specialist subcontractors, as is the production and submission of the required records. The responsibilities of the commissioning manager (CxM) typically include coordination of the work programme, organisation of witnessing and the review and acceptance of records.

7.7 Functional performance tests

The principal objective of this stage is to validate the performance of individual building services systems in their own right, discrete from other systems.

This stage also involves simulated tests that prove the interfaces between systems, as a pre-cursor to the physical validation of interfaces and interdependencies during ISTs. For example, when commissioning a lift, an alarm signal from the fire and detection alarm system will be simulated and the response of the lift checked to ensure it meets the specified requirements. At the end of this stage each system needs to be safely operating autonomously in different specified modes of operation.

The tests at this stage are the responsibility of the specialist subcontractors, as is the production and submission of the required test records. The main contractor also plays an important role in facilitating these tests by ensuring that all building-related pre-requisites are in place. The responsibilities of the commissioning manager (CxM) typically include coordination of the work programme, organisation of witnessing, and the review and acceptance of test records.

7.8 Integrated systems tests (ISTs)

The purpose of these test procedures is to validate that the operational interfaces and interdependencies between systems are in accordance with the specified requirements. They involve the joining together of two or more autonomous systems.

These tests encompass cause-and-effect tests on fire detection and alarm systems and the systems that interface with them, such as lifts, air conditioning, emergency lighting, access control, sprinklers, fire shutters, smoke extract and stairwell pressurisation.

This stage also involves test scenarios involving failures of different building services equipment, proving of functional interconnectivity between systems, mimicking of operational maintenance events, partial system or building failures, and complete building power failures which are often referred to as black building tests.

In response to the specified requirements for integrated systems tests (ISTs), this Code considers it best practice that the commissioning manager (CxM) will be responsible for scheduling the tests, coordinating the input from different members of the commissioning team, producing the Commissioning Methodologies for them and directing their execution.

Other commissioning team members need to fulfil their contractual obligations for the execution of these tests, as directed by the CxM.

7.9 System continuous operational performance (SCOP) tests

A SCOP test sets a system or a building into automatic control for a defined period, such as seven or 14 days. It is a project-specific procedure unique to the constructed asset and the external environment at the time of the test.

During this period of automatic building operation, performance criteria such as temperature, humidity, air quality, air pressure differences, noise levels or vibration levels are continuously monitored to prove that they can be maintained within specified tolerances. If defined performance criteria are not maintained during a SCOP test, it is common for the specification to state that the SCOP test must recommence.

Temporary heat loads are commonly required for a SCOP test, to mimic the heat generated by people or equipment. People can also be requested to mimic standard operating procedures such as entering and leaving a laboratory room or operating theatre from an adjacent corridor. There may also be a requirement to install a temporary data logging system that will produce a set of evidence that can be compared to the building's own building management system (BMS).

In response to the specified requirements for SCOP tests, this Code considers it best practice that the commissioning manager (CxM) will be responsible for scheduling the tests, coordinating the input from other members of the commissioning team, producing the Commissioning Methodologies for them and directing their execution. The CxM will also produce the test reports that act as evidence of compliance with required performance and issue them in the specified manner.

Other commissioning team members need to fulfil their contractual obligations for the execution of these tests, as directed by the CxM.

7.10 Train users and operators

At handover, users and operators need to be able to take safe and effective ownership of active systems — both building services and architectural. The training, familiarisation and demonstration delivered by the construction project team is key to making this happen.

The responsibility for the preparation and delivery of the training typically rests with the specialist subcontractors and manufacturers. The client has responsibility to ensure that its people participate in the training that is being delivered and are competent to do so.

The commissioning manager's (CxM's) responsibilities typically involve scheduling the training that has been specified, producing attendance registers and checking that training has been delivered.

7.11 Hand over commissioning-related documentation

Handover information provides a record of what has taken place on a project; is required to allow a building to legally enter its in-use stage; and enables a building to be used, operated and maintained.

Examples of handover information include operating and maintenance (O&M) manuals, record drawings, an asset information model, an asset register, a construction health and safety file, a building user guide, and a building log book.

Commissioning-related documentation such as certificates of statutory compliance, commissioning records and a Project Commissioning Report must be integrated into the set of handover document in the specified manner.

This Code considers it best practice that the commissioning manager (CxM) will produce a Project Commissioning Report. The CxM will also typically be responsible for the review and acceptance of the commissioning records created by others. In accordance with the specified requirements, this commissioning-related material will be issued to whomever is leading the production of the handover information. This can be the author of the operating and maintenance (O&M) manuals or the person responsible for the asset information model (AIM), for example.

8 The in-use stage

This chapter of the Code provides an overview of the following in-use stage commissioning activities.

An example of how responsibilities for these activities can be assigned is provided Appendix A.

8.1 Review commissioning of the project

This review needs to consider the project's commissioning activities, the outcomes related to commissioning, and the closing-out of outstanding items on the commissioning issues and resolutions log. The sequence of activities contained in the commissioning process diagram in Figure 1 can provide the structure for this important task.

This Code proposes that the commissioning manager (CxM) will prepare this activity, lead its execution, produce the lessons learned report from it, and issue it in the specified manner. As a minimum, a 'lessons learned' section must be included in the final Project Commissioning Report. Other members of the project team need to participate in the review and must commit to it with positive intent.

In reviewing the commissioning of the project, it is important to include the areas for improvement, as well as the successes.

8.2 Fine tuning and seasonal testing

This Code considers it best practice to undertake a programme of post-occupancy fine-tuning and seasonal testing. This is key to the delivery of specified performance outcomes, such as operational energy use.

The fine-tuning programme can be composed of a series of reviews of the building management system (BMS) and elements such as meters, with associated troubleshooting and corrective measures.

Seasonal testing is the performance evaluation of a building and its engineering services under full load conditions during peak heating and cooling seasons, as well as part-load conditions in spring and autumn.

This work will require collaboration between the commissioning team and the facilities management provider for the asset. This Code proposes that the commissioning manager (CxM) will prepare this activity, lead its execution, produce the report from it, and issue it in the specified manner. Other parties need to fulfil their obligations for the execution of this work, as directed by the CxM.

In accordance with requirements established during the preparation and briefing stage of a project, both the fine-tuning and seasonal testing may be part of an ongoing commissioning effort that continues through the operational life of a building. This ongoing commissioning can be in response to statutory compliance requirements, alterations to systems, building refurbishments and reconfigurations, or reviews of building performance.

8.3 Post-project review

The principal focus of this activity is how a building and the active systems within it perform in-use, comparing actual operational performance and functionality against the design intent. This Code recommends that this activity should take place no sooner than 12 months after occupancy.

The collection of performance data needs to focus on the success criteria that were established for the project during the preparation and brief stage. This can include matters such as base build energy consumption, water consumption, indoor environmental performance, or system downtime. The methodology employed should also be in direct response to the requirements defined at the outset of the project.

The review also needs to encompass feedback from users and operators to understand what works and what does not, what they like and what they do not. This subjective data can then be compared to the objective performance data relating to the building and its different active systems, both building services and architectural.

A competent entity needs to lead this activity, facilitating input from design, construction and commissioning professionals, the facilities management provider and end-users. This lead entity will also be responsible for the production of the report associated with this work and its dissemination in the specified manner.

9 Definitions

acceptance

A formal action, taken by a person with appropriate authority, to declare that some aspect of the project meets defined requirements, thus permitting subsequent activities to proceed.

acceptance criteria

Performance requirements or essential conditions that are to be achieved before project deliverables are accepted.

accountability

The acknowledgement and assumption of responsibility for actions, decisions, and their consequences.

assure

Give confidence to, confirm, encourage.

Building Control Body (BCB)

A local authority building control department or an approved inspector. Also known as the Authority Having Jurisdiction (AHJ).

building information modelling (BIM)

The use of a shared digital representation of a built asset to facilitate design, construction, commissioning and operation processes to form a reliable basis for decisions.

Construction Operations Building Information Exchange (COBie)

A non-proprietary data format for the publication of a subset of building information models (BIM) focused on delivering asset data as distinct from geometric information.

commissionability

The ability of a system, or interdependent systems, to be commissioned satisfactorily in accordance with specified requirements.

commissioning

A process of assuring that a project is planned, programmed, costed, designed, installed, tested, and fine-tuned so it meets specified performance requirements.

commissioning issues and resolutions log

A formal and ongoing record of problems or concerns and their resolutions that have been compiled by members of the commissioning team during the course of the commissioning process.

commissioning management

The planning, monitoring and control of all aspects of commissioning and the engagement of all those involved in it, to achieve the specified outcomes.

Commissioning Manager (CxM)

The entity that leads the management of the commissioning process on a project.

Commissioning Methodology

A project-specific document that details how an on-site commissioning procedure will be executed and documented.

Commissioning Plan

A document that describes the commissioning process for a project and defines the way in which it will be managed.

Commissioning Specification

A detailed description of the commissioning work to be done on a project, with references to drawings, schedules, and relevant codes, manuals, guides and standards.

commissioning team

A group of project stakeholders, whose coordinated actions are responsible for implementing the commissioning process.

common data environment (CDE)

The agreed source of information for any given project or asset, for collecting, managing and disseminating each information container through a managed process. A CDE workflow describes the processes to be used.

competence

The combination of skills, knowledge, experience and behaviours that enable a person to undertake responsibilities and perform activities to a recognised standard on a regular basis.

Competent Person

Someone who has sufficient training and experience or knowledge and other qualities that allow them to assist you properly.

conformity

Fulfilment of a requirement.

data

Facts about an object.

document

Information and the medium on which it is contained.

defect

Nonconformity related to an intended or specified use.

dutyholder

The key roles (whether fulfilled by individuals or organisations) that are assigned specific responsibilities at particular phases of the building lifecycle, as defined in legislation.

engagement

Involvement in, and contribution to, activities to achieve shared objectives.

factory acceptance test (FAT)

Equipment testing undertaken at the manufacturer's factory, or an accredited third party test facility, to validate that performance under load complies with specified requirements.

fine tuning

Local adjustment to the system where usage and system proving have shown such a need. This may also include the reassessment of control set points and values to achieve optimum performance.

functional performance test (FPT)

A site-based test activity which validates that a system's performance is in accordance with specified requirements. An FPT is project-specific and system-specific.

golden thread

The (digital by default) record of prescribed documents and building information needed to ensure that the original design intent and any subsequent changes to the building are captured, preserved and used to support safety improvements throughout the building lifecycle.

information

Meaningful data.

inspection

Determination of conformity to specified requirements.

installation

A system placed in position as required by the design or specification. The action or act of installing something.

installation verification

Observations or inspections that confirm the system or component has been installed in accordance with the contract documents and to industry accepted best practices.

integrated systems test (IST)

A procedure that entails performance testing of multiple integrated systems to verify proper functional interfaces between systems, within the whole building context.

lessons learned workshop

A workshop conducted to discuss and document project successes and identify opportunities for improvements for future projects.

life safety systems

Any interior building element designed to protect, and evacuate where necessary, the building population in emergencies, including fires and earthquakes, and less critical events, such as power failures.

management

The application of skill and care in the manipulation, use, treatment or control of things or persons.

monitoring

Determining the status of a system, a process , a product, a service , or an activity.

operationally ready

A state in which a building or engineering system is physically complete, functions as specified, has its asset documentation in place, and people have been trained to take safe and effective ownership of it.

outcomes

Quantitative and measurable targets, by which a project can be assessed, and its success tested throughout the design, delivery and post-occupancy stages.

performance

A measurable result.

performance test

The process of verifying that a material, product, assembly, or system meets defined performance criteria. The methods and conditions under which performance is verified are described in one or more test protocols.

pre-functional test (PFT)

A site-based procedure which validates that equipment and systems are connected and operational, and confirms their state of readiness for functional performance testing.

procedure

A specified way to carry out an activity or a process.

process

A set of interrelated or interacting activities that use inputs to deliver an intended result.

project

A unique process, consisting of a set of coordinated and controlled activities with start and finish dates, undertaken to achieve an objective conforming to specific requirements, including the constraints of time, cost and resources.

Project Brief

A statement that describes the purpose, cost, time and performance requirements/constraints for a project.

Project Commissioning Report

A document describing the commissioning process for a project and presenting its results, conclusions and recommendations. It is commonly developed from the Commissioning Plan.

Project Execution Plan (PEP)

A plan for carrying out a project, to meet specific objectives, that is prepared by or for the project manager. In some instances, this is also known as the Project Management Plan (PMP).

quality

The degree to which a set of inherent characteristics of an object fulfils requirements.

quality assurance

Planned and systematic actions necessary to provide adequate confidence that a process, measurement or service satisfies given requirements for quality.

quality-based sampling

A process for evaluating a subset (sample) of the total population. The sample is based upon a known or estimated probability distribution of expected values.

record

A document stating results achieved or providing evidence of activities performed.

requirement

A need or expectation that is stated, generally implied or obligatory.

review

Determination of the suitability, adequacy or effectiveness of an object to achieve established objectives.

risk

Uncertain event or set of events with a potential positive or negative impact. The effect of uncertainty.

setting to work

The process of setting a static system into operation.

stakeholder

Person, group or organization that has interests in, or can affect, be affected by, or perceive itself to be affected by a decision or activity.

success

Achievement of an objective.

system continuous operational performance (SCOP) test

A test procedure in which a system or a building is put into automatic control for a defined time period, during which specific performance criteria are continuously monitored to prove that they can be maintained within specified tolerances.

testing

The measurement and recording of system parameters to assess specification compliance.

tolerance

Permissible deviation from a specified design requirement.

validation

Confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled.

witness

A person present at an event and able to provide information about it from personal observation.

work package

Group of related activities and deliverables within a work breakdown structure with a defined scope, timescale, cost and a single person accountable for it.

10 Bibliography

10.1 Legislation

A selection of legislation that relates to the commissioning of active systems, both building services and architectural, is shown below. Please refer to the official home of UK Legislation for more information (https://www.legislation.gov.uk).

- The Building Regulations 2010
- The Building Safety Act 2022
- The Management of Health and Safety at Work Regulations 1999
- The Construction (Design and Management) Regulations 2015
- The Electricity at Work Regulations 1989
- The Control of Substances Hazardous to Health Regulations 1994
- The Provision and Use of Work Equipment Regulations 1998
- The Pressure Systems Safety Regulations 2000
- The Gas Safety (Installation and Use) Regulations 1998
- The Water Supply (Water Fittings) Regulations 1999
- The Personal Protective Equipment at Work Regulations 1992
- The Confined Spaces Regulations 1997
- The Work at Height Regulations 2005

10.2 Technical commissioning publications

CIBSE publications

For details, refer to the CIBSE website (https://www.cibse.org/knowledge-research/knowledge-resources/engineering-guidance)

CIBSE Commissioning Codes:

- Code A: *Air distribution systems*
- Code B: *Boilers*
- Code C: *Automatic controls*
- Code L: *Lighting*
- Code R: *Refrigerating systems*
- Code W: *Water distribution systems*

Commissioning Specialists' Association (CSA) publications

A selection of CSA documents is shown below. For more information please refer to the CSA website (https://www.csa.org.uk).

- *Commissioning Engineers Compendium*

CSA Guidance Notes:

- GN 1: *White water balancing*
- GN 2: *Constant flow regulators*
- GN 3: *Variable volume water systems*
- GN 4: *Bacteria within closed circuit pipework systems*
- GN 5: *Site safety for commissioning engineers*

- GN 8: *Inverter drives for fans and pumps*
- GN 12: *Deaeration in hot water services systems*
- GN 13: *Volume flow rate measurement by non-invasive meters*

CSA Technical Memorandums:

- TM 1: *Standard Commissioning Procedures*
- TM 2: *Trouble shooting for air distribution systems*
- TM 5: *Adverse effects of air and dirt in water systems*
- TM 7: *Commissioning of steam systems*
- TM 9: *Water treatment and The Commissioning Engineer*

BSRIA documents

A selection of BSRIA publications is shown below. Please refer to the BSRIA website for more information (https://www.bsria.com/uk/information-training/bookshop).

- BG 50/2021: *Water Treatment for Closed Heating and Cooling Systems*

BSRIA Commissioning Guides:

- BG 29/2021: *Pre-Commission Cleaning of Pipework Systems* (6th edition)
- BG 49/2015: *Commissioning Air Systems*
- BG 2/2010: *Commissioning Water Systems*
- BG 44/2013: *Seasonal Commissioning*

Building Engineering Services Association (BESA) publications

A selection of BESA documents is shown below. Please refer to the BESA website for more information (https://www.thebesa.com).

- DW/143: *Guide to Good Practice – Ductwork Air Leakage Testing*
- DW/172: *Specification for Kitchen Ventilation*
- TR19: *Guide to Good Practice – Internal Cleanliness of Ventilation Systems*
- TR6: *Guide to Good Practice – Site pressure testing of pipework*
- TR40: *A Guide to Good Practice for Local Exhaust Ventilation*

Health and Safety Executive (HSE) guidance

A selection of HSE documents is shown below. Please refer to the HSE website for more information (https://www.hse.gov.uk)

- HSG274: *Legionnaires' Disease. Technical Guidance*
- ACOP L8: *Legionnaires' disease. The control of legionella bacteria in water systems. Approved Code of Practice and guidance*

10.3 Commissioning management and project management publications

ASHRAE publications

For details, refer to the ASHRAE website (https://www.ashrae.org).

- ASHRAE Guideline 0-2019: *The Commissioning Process*
- ANSI ASHRAE IES Standard 202-2018: *Commissioning Process for Buildings and Systems*
- *Commissioning Stakeholders Guide*

BSRIA publication

Please refer to the BSRIA website for more information (https://www.bsria.com/uk/information-training/bookshop).

- BG11/2010: *Commissioning Job Book – A framework for managing the commissioning process*

Chartered Institute of Building (CIOB) publication

For details, refer to the CIOB website (https://www.ciobacademy.org/publications).

- *Code of Practice for Project Management for Construction and Development* (6th edition, 2022)

Royal Institute of British Architects (RIBA) publication

For details, refer to the RIBA website (https://www.architecture.com).

- *RIBA Job Book* (2020)

Royal Institution of Chartered Surveyors (RICS) publications

For details, refer to the RICS website (https://www.rics.org/uk/upholding-professional-standards/sector-standards/construction/nrm).

- NRM 1: *New Rules of Measurement. Order of cost estimating and cost planning for capital building works* (2021)
- NRM 2: *New Rules of Measurement. Detailed measurement for building works* (2021)

BSI publications

For details, refer to the BSI website (https://shop.bsigroup.com).

- BS 6079:2019 *Project management. Principles and guidance for the management of projects*
- BS 8536-1:2015 *Briefing for design and construction. Code of practice for facilities management* (buildings infrastructure)
- BS EN ISO 9000:2015 *Quality management systems. Fundamentals and vocabulary*
- BS EN ISO 19650-1: 2018 *Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM). Information management using building information modelling – Concepts and principles*
- BS EN ISO 19650-2 2018 *Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM). Information management using building information modelling – Delivery phase of the assets*

10.4 British Standards with commissioning guidance

A selection of the British Standards that relate to the commissioning of building services systems is shown below. Please refer to the BSI website (https://shop.bsigroup.com).

- BS 5839-1:2017 *Fire detection and fire alarm systems for buildings – Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises*
- BS 5839-6:2019+A1:2020 *Fire detection and fire alarm systems for buildings – Code of practice for the design, installation, commissioning and maintenance of fire detection and fire alarm systems in domestic premises*
- BS 5839-8:2013 *Fire detection and fire alarm systems for buildings – Code of practice for the design, installation, commissioning and maintenance of voice alarm systems*

- BS 5839-9:2021 *Fire detection and fire alarm systems for buildings — Code of practice for the design, installation, commissioning and maintenance of emergency voice communication systems*
- BS 7346-8:2013 *Components for smoke control systems — Code of practice for planning, design, installation, commissioning and maintenance*
- BS 7593:2019 *Code of practice for the preparation, commissioning and maintenance of domestic central heating and cooling water systems*
- BS 7671:2018+A2:2022 *Requirements for Electrical Installations. IET Wiring Regulations*
- BS 8418:2021 *Design, installation, commissioning and maintenance of detector-activated video surveillance systems (VSS). Code of practice*
- BS 8558:2015 *Guide to the design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages. Complementary guidance to BS EN 806*
- BS 8629:2019 *Code of practice for the design, installation, commissioning and maintenance of evacuation alert systems for use by fire and rescue services in buildings containing flats*
- BS ISO 19455-1:2019 *Planning for functional performance testing for building commissioning — Secondary hydronic pump, system and associated controls*
- 21/30403065 DC: *BS 8644-1. Digital management of fire safety information — Part 1. Design, construction, handover, asset management and emergency response. Code of practice* (currently in draft stage)

10.5 Other commissioning-related guidance

- Better Buildings Partnership: *Design for Performance. A new approach to deliver energy efficient offices* (2019) (available at https://www.betterbuildingspartnership.co.uk/design-performance-new-approach-delivering-energy-efficient-offices-uk)
- BSRIA Guide BG 79/2020: *Handover Information and O&M Manuals*
- BSRIA Guide BG 74/2019: *Success Criteria for Soft Landings Projects*
- BSRIA Guide BG 54/2018: *Soft Landings Framework 2018*
- CIBSE Guide M: *Maintenance engineering and management* (2022)
- CIBSE TM54: *Evaluating operational energy use at the design stage* (2022)
- *RIBA Plan for Use Guide* (2021) (available at https://www.architecture.com/knowledge-and-resources/resources-landing-page/plan-for-use-guide)
- *RIBA Sustainable Outcomes Guide* (2019) (available at https://www.architecture.com/knowledge-and-resources/resources-landing-page/sustainable-outcomes-guide)
- Health and Safety Executive HSE L153: *Managing health and safety in construction* (2015 (available at https://books.hse.gov.uk/gempdf/L153.pdf)
- NHS Health Technical Memoranda (HTM) (available at https://www.england.nhs.uk/estates/health-technical-memoranda)

Appendix A: Example activities and responsibilities matrix for commissioning

Assumptions made for the population of this example matrix:

(1) The activities and responsibilities matrix contains the 25 activities that form the commissioning process described in this Code. These activities take place from the Preparation and Brief stage (RIBA Stage 1) to the In-use stage (RIBA Stage 7).

(2) The 25 activities appear in the matrix in the order that they appear in the logic diagram for the commissioning process in Figure 1.

(3) The client appoints the commissioning manager (CxM) during the Concept Design Stage (RIBA Stage 2) of the project.

(4) The client/client's representative is a senior representative from within the client organisation, or a third party project management organisation acting on behalf of the client.

(5) The building services design consultant is in contract with the client.

(6) The main contractor is appointed at the start of the Technical Design stage (RIBA Stage 4) of the project and the main contractor appoints the building services contractor.

(7) All commissioning documents referred to in the activities and responsibilities matrix are project-specific.

(8) Commissioning documents will be uploaded to, and disseminated via, whatever document management system is in place, in the specified manner.

(9) People undertaking any commissioning activity are competent to do so.

(10) Commissioning administration activities (as outlined in section 4.3 of this Code) are common to all project stages and are not included in the activities and responsibilities in this matrix, e.g. commissioning team meetings, tracking of commissioning works, production of commissioning progress reports and maintenance of a commissioning issues and resolutions log.

(11) The activity descriptions contained in the activities and responsibilities matrix need to be read in the context of phrases such as: 'in accordance with the specified requirements', 'for compliance with project requirements' or 'in accordance with the contract documents'.

(12) The headline words used at the top of each box in the matrix have the following meanings:

- *Responsible*: performs the activity
- *Accountable*: ultimate responsibility for actions, decisions, and their consequences
- *Supportive*: assists with the execution of an activity
- *Consulted*: provides professional advice for an activity
- *Informed*: provided with information from an activity

Activity number	Commissioning activity description	Responsibilities					
		Commissioning manager (CxM)	Client/client's representative (CL)	Building services design consultant (BSD)	Main contractor (MC)	Building services contractor (BSC)	Other company
1	Establish commissioning requirements and related success criteria	Consulted A CxM can be invited to assist the client with this activity on a short-term, fee-based appointment – before the permanent appointment of the CxM during the design stage	Responsible Accountable Produce a Project Brief that defines required performance outcomes and establishes commissioning as a key means of achieving these outcomes	Supportive Assist with the production of the Project Brief			
2	Determine the commissioning scope and budget	Consulted A CxM can be invited to assist the client with this activity on a short-term, fee-based appointment – before the permanent appointment of the CxM during the design stage	Responsible Accountable Identify the building systems to be commissioned, describe the commissioning activities that need to take place and establish the standard of commissioning required Assign an appropriate budget for commissioning Ensure that commissioning forms a key part of the Project Execution Plan (PEP) Include commissioning-related requirements in the contracts of all relevant consultants and contractors	Supportive Assist with scoping of, and budgeting for, commissioning			Supportive *Cost consultant* (CC) Assist with scoping of, and budgeting for, commissioning
3	Form a commissioning team	Responsible Respond to the Request for Proposal (RfP) for a CxM service and enter into contract with the client Integrate members into the commissioning team and run a kick-off meeting Initiate commissioning administration and lead it throughout the project	Accountable Issue a Request for Proposal (RfP) for the appointment of a commissioning manager (CxM) Appoint the CxM Provide a member for the commissioning team	Supportive Provide a member for the commissioning team	Supportive Provide a member for the commissioning team – when appointed at RIBA Stage 4	Supportive Provide a member for the commissioning team – when appointed at RIBA Stage 4	Supportive *Facilities management provider* (FM) Provide a member for the commissioning team *Equipment manufacturers* (EM) Provide a member for the commissioning team – when appointed at RIBA Stage 4
4	Review commissioning lessons learned	Responsible Accountable Organise and lead the lessons learned review Produce the lessons learned report(s)	Supportive Assist with the lessons learned review	Supportive Assist with the lessons learned review	Informed Provided with a copy of the lessons learned report – during appointment at RIBA Stage 4	Informed Provided with a copy of the lessons learned report – during appointment at RIBA Stage 4	Supportive *Cost consultant (CC)* and *facilities management provider* (FM) Assist with the lessons learned review

Activity number	Commissioning activity description	Responsibilities					
		Commissioning manager (CxM)	Client/client's representative (CL)	Building services design consultant (BSD)	Main contractor (MC)	Building services contractor (BSC)	Other company
5	Produce the design-stage Commissioning Plan	Responsible Author the design-stage Commissioning Plan	Accountable Review and accept the Commissioning Plan	Supportive Assist with the production of the Commissioning Plan	Informed Provided with a copy of the Commissioning Plan – during appointment at RIBA Stage 4	Informed Provided with a copy of the Commissioning Plan – during appointment at RIBA Stage 4	
6	Create the Commissioning Specification	Consulted Assist with the production of the Commissioning Specification	Accountable Review and accept the Commissioning Specification	Responsible Produce the Commissioning Specification	Informed Provided with a copy of the Commissioning Specification - during appointment at RIBA Stage 4	Informed Provided with a copy of the Commissioning Specification - during appointment at RIBA Stage 4	
7	Produce a commissioning Cost Plan	Consulted Assist with the integration of commissioning-related content into the Cost Plan	Accountable Accept the Cost Plan with integrated commissioning content	Supportive Assist with the integration of commissioning-related content into the Cost Plan	Informed Provided with a copy of the Cost Plan – during appointment at RIBA Stage 4	Informed Provided with a copy of the Cost Plan – during appointment at RIBA Stage 4	Responsible *Cost consultant* (CC) Integrate commissioning costs into the project Cost Plan
8	Programme commissioning activities	Responsible Produce a commissioning logic diagram for the project Produce a detailed commissioning programme that is coordinated with, and linked to, the master project programme	Accountable Accept the commissioning logic diagram and commissioning programme Integrate commissioning into the master project programme with appropriate durations and logic links		Informed Provided with commissioning logic diagram and programme – during appointment at RIBA Stage 4 Supportive Once appointed, integrate commissioning into the master construction programme with appropriate durations and logic links	Informed Provided with commissioning logic diagram and programme – during appointment at RIBA Stage 4 Supportive Once appointed, schedule and coordinate commissioning activities with the MC and CxM	
9	Undertake a commissionability review	Responsible Perform the commissioning-focused design review, obtaining specialist advice where needed Produce a design review report Close-out all findings of the review with the BSD	Accountable Accept the commissioning-focused design review report issued by the CxM Accept any agreed changes following the design review	Supportive Formally respond to the commissioning-focused design review report issued by the CxM Implement agreed changes to design documentation	Informed Provided with a copy of the design review report - during appointment at RIBA Stage 4	Informed Provided with a copy of the design review report – during appointment at RIBA Stage 4	Supportive *Cost consultant* (CC) Ensure any agreed changes are integrated into the project Cost Plan

Activity number	Commissioning activity description	Responsibilities					
		Commissioning manager (CxM)	Client/client's representative (CL)	Building services design consultant (BSD)	Main contractor (MC)	Building services contractor (BSC)	Other company
10	Define commissioning requirements in contract documentation	Consulted Provide specialist input to the integration of commissioning-related content in the tender documentation Assist with the explanation of commissioning requirements during the tender period and the resolution of queries raised by the MC	Responsible Accountable Produce tender documentation that clearly defines the project's commissioning requirements Explain the commissioning requirements during the tender process and resolve any queries raised by the MC	Supportive Assist with the integration of commissioning-related content into the tender documentation	Supportive Review the commissioning-related content in the tender documentation Issue queries and resolve them with to the CL	Supportive Assist the MC with the review of commissioning-related content in the tender documentation Assist the MC with the issue and resolution of queries	Supportive *Cost consultant* (CC) Ensure clear commissioning-related cost information is integrated into the tender documentation
11	Appoint commissioning-competent contractors	Consulted Provide specialist input to the assessment of the commissioning competence of the tendering main contractors and their building services supply chains	Responsible Accountable Appoint a main contractor that, with its building services supply chain, has with the required commissioning competence	Supportive Assist with the review of the commissioning competence of the tendering main contractors	Supportive Provide clear information to the client about commissioning competence during the tender period	Supportive Assist the MC with the provision of clear information about commissioning competence during the tender period	
12	Produce the construction-stage Commissioning Plan	Responsible Produce the construction-stage Commissioning Plan	Accountable Review and accept the construction-stage Commissioning Plan	Consulted Provide specialist input to the production of the updated Commissioning Plan	Supportive Assist with the production of the updated Commissioning Plan	Supportive Assist with the production of the updated Commissioning Plan	
13	Produce Commissioning Methodologies	Supportive Guide the production of Commissioning Methodologies Accountable Lead the review and acceptance of Commissioning Methodologies		Consulted Provide specialist input to the production of the Commissioning Methodologies Provide specialist input to the review and acceptance of Commissioning Methodologies	Supportive Assist with the production of the Commissioning Methodologies	Responsible Produce Commissioning Methodologies, in accordance with the format and content required by the CxM Address comments made by the CxM about Commissioning Methodologies before proceeding with commissioning works	Responsible *Equipment manufacturers* (EM) Produce Commissioning Methodologies, in accordance with the format and content required by the CxM Address comments made by the CxM about Commissioning Methodologies before proceeding with commissioning works

Activity number	Commissioning activity description	Responsibilities					
		Commissioning manager (CxM)	Client/client's representative (CL)	Building services design consultant (BSD)	Main contractor (MC)	Building services contractor (BSC)	Other company
14	Hold commissioning workshops	Responsible Organise and lead the commissioning workshop(s) Produce the workshop report(s)	Supportive Participate in the commissioning workshop(s) Accountable Review and accept the workshop report(s)	Supportive Participate in the commissioning workshop(s)	Supportive Participate in the commissioning workshop(s)	Supportive Participate in the commissioning workshop(s)	Supportive *Equipment manufacturers* (EM) Participate in the commissioning workshop(s)
15	Factory acceptance testing	Responsible Schedule the factory acceptance tests (FATs) Coordinate all participation in the FATs Guide the production of FAT Methodologies Lead the review and acceptance of each FAT Methodology Direct each factory acceptance test (FAT) Lead the review and acceptance of each FAT Report	Informed Provided with a copies of FAT reports	Supportive Witness factory acceptance tests (FATs) on behalf of the client Assist with the review and acceptance of each FAT Methodology Assist with the review and acceptance of each FAT Report	Accountable Monitor the programme of factory acceptance tests (FATs) Final acceptance of FAT reports	Supportive Attend factory acceptance tests (FATs) on behalf of the main contractor and witness tests	Responsible *Equipment manufacturers* (EM) Agree the factory acceptance test (FAT) schedule with the CxM Produce the FAT Methodologies, in accordance with the format and content required by the CxM Address CxM's comments about the FAT Methodology before proceeding with the FAT Execute the factory acceptance test (FAT) Undertake remedial works in the event of non-compliance Produce the factory acceptance test (FAT) report
16	Sample installation inspections	Responsible Lead sample inspections of installation work that relates to subsequent on-site commissioning activities Produce sampling installation inspection reports	Informed Provided with copies sampling installation inspection reports	Consulted Accompany the CxM during the sampling inspection work and provide specialist technical input	Accountable Monitor progress of installation works Offer installed work to the CxM for inspection Accompany the CxM during the sampling inspection work Review and accept the sampling installation inspection reports issued by the CxM Coordinate all required remedial works	Supportive Produce records of completed installation works Inform the main contractor that work is available for inspection Accompany the CxM during the sampling inspection work Undertake all remedial works before proceeding with pre-functional tests (PFTs)	Supportive *Equipment manufacturers* (EM) Produce a record of completion of installation work Inform the main contractor that work is available for inspections Accompany the CxM during the sampling inspection work Undertake all remedial works before proceeding with pre-functional tests (PFTs)

Activity number	Commissioning activity description	Responsibilities					
		Commissioning manager (CxM)	Client/client's representative (CL)	Building services design consultant (BSD)	Main contractor (MC)	Building services contractor (BSC)	Other company
17	Pre-functional tests (PFTs)	Supportive Review, coordinate and confirm each BSC's and EM's programme of work Witness tests, as required Coordinate the review and acceptance of test records	Informed Provided with copies of PFT records	Supportive Witness tests, as required Assist with the review and acceptance of test records	Accountable Agree the programme of work for pre-functional tests (PFTs) with the CxM Monitor progress of the PFTs Coordinate all required deficiency resolution and re-testing Final acceptance of test records	Responsible Execute the pre-functional tests (PFTs) Resolve deficiencies and perform re-testing as necessary Submit test records to the CxM	Responsible *Equipment manufacturers* (EM) Execute Site Acceptance Tests (SATs) Resolve deficiencies and perform re-testing as necessary Submit test records to the CxM
18	Functional performance tests (FPTs)	Responsible Review, coordinate and confirm each BSC's and EM's programme of work Witness FPTs, as required Coordinate all 3rd party involvement in statutory demonstrations Coordinate the review and acceptance of test records	Informed Provided with copies of FPT records	Supportive Witness FPTs, as required Assist with the review and acceptance of test records	Accountable Agree the programme of work for functional performance tests (FPTs) with the CxM Monitor progress of the FPTs Coordinate all required deficiency resolution and re-testing Accept test records	Responsible Execute the functional performance tests (FPTs) Resolve deficiencies and perform re-testing as necessary Submit test records to the CxM	Supportive *Equipment manufacturers* (EM) Assist the BSC with the execution of functional performance tests (FPTs)
19	Integrated systems tests (ISTs)	Responsible Produce the work programme for ISTs Coordinate all participation in the ISTs Produce the Commissioning Methodologies for ISTs Lead the execution of the ISTs Produce reports for the ISTs	Informed Provided with a copies of IST records	Supportive Witness the integrated systems tests (ISTs) on behalf of the client	Accountable Review, coordinate and confirm the programme of work for the ISTs with the CxM Monitor progress of the ISTs Assist with the execution of the ISTs Witness the integrated systems tests (ISTs) Accept the IST Commissioning Methodologies issued by the CxM Accept the IST reports issued by the CxM	Supportive Assist the CxM with production of the IST Commissioning Methodologies Provide all materials, equipment and manpower to execute the ISTs under the leadership of the CxM Provide all required information to enable the CxM to produce the IST test reports Resolve deficiencies and perform re-testing, as necessary	Supportive *Equipment manufacturers* (EM) Assist the CxM with production of the IST Commissioning Methodologies Support the execution of the ISTs, under the leadership of the CxM Help resolve deficiencies and re-testing, as necessary

Activity number	Commissioning activity description	Responsibilities					
		Commissioning manager (CxM)	Client/client's representative (CL)	Building services design consultant (BSD)	Main contractor (MC)	Building services contractor (BSC)	Other company
20	System continuous operational performance (SCOP) tests	Responsible Produce the work programme for the SCOP tests Coordinate all participation in the SCOP tests Produce the Commissioning Methodology for SCOP tests Lead the execution of the SCOP tests Produce the report for the SCOP tests Upload the SCOP test report to the document management system	Informed Provided with a copies of SCOP test records	Supportive Witness the SCOP tests on behalf of the client	Accountable Review, coordinate and confirm the programme of work for the SCOP tests with the CxM Monitor progress of the SCOP tests Assist with the execution of the SCOP tests Witness the SCOP tests Accept the Commissioning Methodology for the SCOP tests issued by the CxM Accept the SCOP tests report issued by the CxM	Supportive Provide all materials, equipment, and manpower to execute the SCOP tests under the leadership of the CxM Provide all required information to enable the CxM to produce the SCOP test report Resolve deficiencies and perform re-testing as necessary	
21	Train users and operators	Supportive Coordinate and schedule training with the CL, BSC and OEMs Produce attendance registers for each training event Check that each training event has taken place and produce a summary report	Supportive Accept the training schedule produced by the CxM Ensure client-side personnel participate in the training	Supportive Assist the MC with the review and accept training materials produced by the BSC and EM	Accountable Review coordinate and confirm the training programme with the CxM Review and accept training materials produced by the BSC and EM Monitor progress of the training Coordinate all client-side participation in all training Accept the training records issued by the CxM	Responsible Develop and deliver training, familiarisation and demonstration Produce a record of attendance for each training event	Responsible *Equipment manufacturers* (EM) Assist the BSC with the development and delivery of training about specific equipment
22	Hand over commissioning-related documentation	Responsible Produce a final project Commissioning Report Issue commissioning-related handover information to other parties, e.g. the author of the O&M manuals and the asset information model (AIM) content creator	Informed Provided with commissioning-related handover documentation		Accountable Monitor progress of the handing-over of commissioning-related documentation Accept the final project Commissioning Report and all other commissioning-related documentation	Responsible Develop Operating and Maintenance (O&M) manuals for building services Ensure all commissioning records have been submitted	Supportive Asset information model (AIM) content creator Integrate commissioning-related documentation into the model

Activity number	Commissioning activity description	Responsibilities					
		Commissioning manager (CxM)	Client/client's representative (CL)	Building services design consultant (BSD)	Main contractor (MC)	Building services contractor (BSC)	Other company
23	Review commissioning of the project	Responsible Prepare and lead a lessons learned workshop Produce the workshop report	Supportive Participate in the lessons learned workshop	Supportive Participate in the lessons learned workshop	Accountable Schedule a lessons learned workshop Review and accept the workshop report produced by the CxM Supportive Participate in the lessons learned workshop	Supportive Participate in the lessons learned workshop	Supportive *Facilities management provider* (FM) Participate in the lessons learned workshop *Manufacturers* Participate in the lessons learned workshop
24	Fine tuning and seasonal testing	Responsible Prepare the work programme for the fine tuning and seasonal testing Coordinate all participation in this work Produce the Methodologies for fine tuning and seasonal testing Direct the fine tuning and seasonal testing Produce the reports for this work	Informed Provided with a copy of the fine tuning and seasonal testing reports	Consulted Provide specialist input to the production of the fine tuning and seasonal testing methodologies	Accountable Review, coordinate and confirm the programme of work for fine tuning and seasonal testing tests with the CxM Monitor progress of the fine tuning and seasonal testing Review and accept the methodologies and reports for the fine tuning and seasonal testing	Responsible Perform the fine tuning and seasonal testing work, as directed by the CxM and in collaboration with facilities management provider (FM)	Supportive *Facilities management provider* (FM) Assist the CxM and BSC with fine tuning and seasonal testing
25	Post-project review	Responsible Perform a post-project review Produce the review report	Supportive Participate in the post-project review Ensure client-side personnel are available for consultation Informed Provided with a copy of the post-project review report	Consulted Provide specialist input to the post-project review	Accountable Coordinate and confirm the programme of work for the post-project review with the CxM Coordinate all participation in this work Review and accept the post-project review report Supportive Participate in the post-project review	Supportive Participate in the post-project review	Supportive *Facilities management provider* (FM) Participate in the post-project review

Appendix B: Commissioning activities at the different stages of the RIBA Plan of Work

The RIBA Plan of Work organises the process of briefing, designing, delivering, maintaining, operating and using a building into eight stages. It is a framework for all disciplines on construction projects and should be used solely as guidance for the preparation of detailed professional services and building contracts.

	0 Strategic Definition	1 Preparation and Briefing	2 Concept Design	3 Spatial Coordination	4 Technical Design	5 Manufacturing and Construction	6 Handover	7 Use
	← Projects span from Stage 1 to Stage 6; the outcome of Stage 0 may be the decision to initiate a project and Stage 7 covers the ongoing use of the building. →							
Stage Outcome at the end of the stage	The best means of achieving the **Client Requirements** confirmed If the outcome determines that a building is the best means of achieving the **Client Requirements**, the client proceeds to Stage 1	**Project Brief** approved by the client and confirmed that it can be accommodated on the site	**Architectural Concept** approved by the client and aligned to the **Project Brief** The brief remains "live" during Stage 2 and is derogated in response to the **Architectural Concept**	Architectural and engineering information **Spatially Coordinated**	All design information required to manufacture and construct the project completed Stage 4 will overlap with Stage 5 on most projects	Manufacturing, construction and **Commissioning** completed There is no design work in Stage 5 other than responding to **Site Queries**	Building handed over, **Aftercare** initiated and **Building Contract** concluded	Building used, operated and maintained efficiently Stage 7 starts concurrently with Stage 6 and lasts for the life of the building
CIBSE Commissioning Tasks		Establish **commissioning requirements** and related **success criteria** Determine the **scope and budget** for commissioning	Form a **Commissioning Team** Review **commissioning lessons learned** Produce the **Design Stage Commissioning Plan**	Create the **Commissioning Specification** Produce a **Commissioning Cost Plan** **Programme commissioning** activities	Undertake a **Commissionability Review** Define **Commissioning Requirements** in **contract documentation** Appoint **commissioning-competent Contractors**	Produce the **Construction Stage Commissioning Plan** Produce **Commissioning Methodologies** Hold **commissioning workshops** Carry out **factory acceptance testing** Carry out **sample installation inspections** Carry out: • **pre-functional tests** • **functional performance tests** • **integrated system tests** • **SCOP tests** **Training** of users and operators Hand over **commissioning-related documentation**	**Review commissioning** of the project	Carry out **fine tuning** and **seasonal testing** Undertake a **post-project review**

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Commissioning management

The Chartered Institution of Building Services Engineers
222 Balham High Road, London SW12 9BS
+44 (0)20 8675 5211
www.cibse.org

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SCOTTISH HOSPITALS INQUIRY

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Bundle 13 – Miscellaneous

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