SCOTTISH HOSPITALS INQUIRY

Hearing Commencing
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Bundle 11 – Provisional Position Papers

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Provisional Position Paper 6

The commissioning and validation process utilised for the Royal Hospital for Children and Young People and Department for Clinical Neurosciences

Purpose of the Paper

This Provisional Position Paper (PPP) has been produced to assist the Chair in addressing the Terms of Reference. It outlines the Inquiry team's current understanding of the process utilised to commission and validate the ventilation systems for the Royal Hospital for Children and Young People and the Department for Clinical Neurosciences (RHCYP/DCN).

Specifically, this PPP is concerned with the commissioning and validation of the Critical Care areas of the RHCYP/DCN. The Inquiry team understand that test results produced for the Critical Care department by IOM Consulting Ltd (IOM) were among the factors that informed the decision to delay opening the hospital.

In due course, the Chair is likely to be invited by the Inquiry Team to make findings in fact based on the content of this paper. It is open to any Core Participant, or indeed any other person holding relevant information, to seek to correct and/or contradict it by way of response to this paper. In considering those responses, and in taking forward its investigations, it is therefore possible that the Inquiry's understanding of matters set out in the paper may change, and so the position set out in this paper at this point remains provisional.

If it is the case that the Inquiry's understanding does change significantly, a revised edition of this paper may be published in due course.

While it is possible that the matters covered in this paper will be touched upon to a greater or lesser extent at a subsequent hearing held by the Inquiry – something that may also change the Inquiry's understanding of matters – this is not guaranteed, and if parties wish to address the issues dealt with in this paper, they are invited to do so now. If they do not do so, as noted above, the Chair is likely to be invited by the Inquiry Team to make findings in fact based on the content of this paper.

All responses to this paper received by the Inquiry will be published on its website as soon as possible after the deadline for responses has passed.

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1. Introduction

1.1 The purpose of issuing this PPP is to set out the Inquiry team's provisional understanding of the process utilised to commission and validate the ventilation systems for the RHCYP/DCN. In particular, this PPP is concerned with how, during the lifecycle of the RHCYP/DCN project, the Board of NHS Lothian (NHSL) secured assurance and supporting evidence that:

- All necessary inspection and testing of the ventilation equipment had taken place;
- All key ventilation systems had been completed and functioned in accordance with contractual specifications and other applicable regulations, recommendations, guidance and good practice; and,
- Adequate information and training were provided to allow end-users effectively to operate and maintain key ventilation systems.

1.2 This PPP will address these matters with specific reference to the Critical Care areas of the RHCYP/DCN. The Inquiry team understand that test results produced for the Critical Care department by IOM were among the factors that informed the decision to delay opening the hospital.

1.3 The terms of this PPP reflect the Inquiry team's current understanding of the evidence it has available to it. If CPs, or any other party holding relevant information, wish to dispute, or supplement, what appears in the PPP, the Inquiry team invites them to do so.

1.4 Section 2 of this PPP identifies the project's contractual provisions relating to commissioning and validation. Section 3 provides a comparison of these provisions with the relevant terms in commissioning and validation guidance. Section 4 provides an overview of the commissioning and validation procedure utilised for the Critical Care areas of the RHCYP/DCN. Section 5 narrates the Inquiry team's understanding

of how test results for the Critical Care areas produced by IOM informed the decision to delay opening the hospital. Section 6 sets out the Inquiry team's provisional conclusions from the evidence set out in Sections 2 to 5. Section 7 sets out specific questions for CPs and requests for documents.

2. Contractual provisions for ventilation commissioning and validation

2.1 Contractual provisions for ventilation commissioning

2.1.1 On 12 and 13 February 2015, a Project Agreement was signed between the Board of NHSL and IHS Lothian (IHSL). IHSL were referred to in the Project Agreement as “Project Co”.

2.1.2 Schedule Part 6, Section 3 of the Project Agreement set out the Board’s Construction Requirements (BCRs). Paragraph 3.6.3 of the BCRs provided:

> “As part of the commissioning process, Project Co shall be responsible for demonstrating compliance with the requirements included within the Room Data Sheets.
>
> “For the avoidance of doubt, Project Co shall provide mechanical ventilation, comfort cooling and air conditioning to suit the functional requirements of each of the rooms in the Facilities. Irrespective of the ventilation requirements in Room Data Sheets, where rooms are clearly intended to be occupied and / or become internal spaces during design development and natural ventilation is not possible, mechanical ventilation and / or extract ventilation shall be provided as appropriate to suit the function of the space.”

2.1.3 The Inquiry team understand from the quoted section of the BCRs that the mechanical ventilation requirements in the Room Data Sheets were not to be used as part of the commissioning process. Rather, Project Co were to demonstrate compliance with the ‘functional requirements’ of the rooms. At this stage it is not clear from the contract what the functional requirements were in relation to ventilation. It is

also not clear where the functional requirements sit in relation to the terms of the contract quoted below. The Inquiry team invite CPs to assist on these points.

2.1.4 Paragraph 8 of the BCRs: 'Mechanical & Electrical Engineering Requirements', provided the following:

> "8.15 Commissioning and Testing
>
> "All buildings, services and equipment shall be commissioned by Project Co to ensure that all they [sic] are compliant with the quality and performance specifications, including manufacturer's recommendations, and that all systems operate to the Board's satisfaction.
>
> "Project Co shall as a minimum commission the Facilities in accordance with the 'Guidance to Engineering Commissioning' published by The Institute of Hospital Engineers (1995)."
>
> "…Project Co shall provide a comprehensive set of operation and Maintenance Manuals (in hard and electronic forms) for all installed and commissioned equipment…in accordance with the requirements in Clauses 17.18 (As built specification) and 18 (Post Completion Commissioning) of the Project Agreement.
>
> "Project Co shall provide such staff training as is deemed necessary by the Board details of training proposed shall 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 (Board's design approval) of the Project Agreement."

2.1.5 Clause 18 of the Project Agreement was titled 'Post Completion Commissioning'. Among other things under this clause (at clause 18.5), Project Co were to provide the Board with an 'operation and maintenance manual'. This was to

be in sufficient detail to allow the Board to plan for the safe and efficient operation of the facilities.

2.1.6 A final draft operation and maintenance manual was to be delivered on or before the day the Certificate of Practical Completion was issued by the IT. The principal version of the manual was to be delivered within the next 10 business days. The Certificate of Practical Completion for the RHCYP/DCN was issued on 22 February 2019.

2.1.7 The Certificate of Practical Completion was issued on the same date a 'Settlement Agreement and Supplemental Agreement' ("the Settlement Agreement") was signed between the Board of NHSL and IHSL. Although the Settlement Agreement created categories of work that were still to be completed as at 22 February 2019, and provided alternative deadlines for the operation and maintenance manuals relating to those works, the Inquiry team do not believe those manuals to be relevant to this PPP.

2.1.8 Schedule Part 10 of the Project Agreement included 'Completion Criteria' for the project. Under the heading 'Works Inspection, Testing and Acceptance Activities' the following text appeared:

> "2.1 Completion Criteria
> Project Co shall demonstrate that the following criteria (the "Completion Criteria") has been achieved:"
>
> "…2.1.4 All mechanical and electrical Plant and systems shall be tested, commissioned and operate satisfactorily in accordance with the specified design criteria, any manufacturers' operating requirements and the Room Data Sheets."

2.1.9 It is not clear to the Inquiry team how this provision was to be read with paragraph 3.6.3 of the BCRs, and exactly what this meant for the mechanical ventilation design criteria. The Inquiry team invite CPs to assist on this point.

2.1.10 Paragraph 4 of Schedule Part 10, 'Indicative Testing and Commissioning Documentation', provided a list of indicative test documentation expected to be provided to the Independent Tester (IT) as part of the Completion Criteria. This documentation included: "Air distribution systems in accordance with CIBSE [Chartered Institution of Building Services Engineers] Commissioning Code A". CIBSE Commissioning Code A is discussed at Section 3 of this PPP.

2.1.11 Clause 15.1 of the Project Agreement provided that the parties had: "appointed a suitably qualified and experienced consultant to act as the Independent Tester…upon the terms of the Independent Tester Contract."

2.1.12 The Independent Tester Contract was set out at Schedule Part 13 of the Project Agreement. Clause 2.1 of the Contract specifically provided that Project Co and the Board of NHSL jointly appointed the IT. Under Clause 2.2, the IT was to provide their services: "independently, fairly and impartially to and as between Project Co and the Board".

2.1.13 Among other things, the Contract provided that the IT was to:

- Undertake regular inspections during the testing and commissioning of the facilities, identifying any work that was not compliant with the BCRs, Project Co's Proposals, the Approved Reviewable Design Data (Approved RDD) and/or the Completion Criteria;
- issue a Certificate of Practical Completion;
- inspect and comment as required on the testing and commissioning as required by the Completion Process;
- Review the written Mechanical and Electrical engineering services testing and commissioning procedure;

- Undertake selective witnessing of the Mechanical and Electrical services testing and commissioning. It was anticipated this would apply to approximately 50% of the testing;
- Review 100% of all Mechanical and Electrical services test results.

2.1.14 Clause 17.12 of the Project Agreement provided that the IT was to issue a Certificate of Practical Completion to the Board and Project Co when he was satisfied that the facilities were complete in accordance with the Completion Criteria.

2.1.15 As discussed above, the Completion Criteria included the provision that all mechanical and electrical systems would operate satisfactorily in accordance with the Room Data Sheets”. It is not currently clear how that provision was to be read with paragraph 3.6.3 of the BCRs.

2.1.16 Clause 18.4 of the Project Agreement provided: “On the completion of Project Co’s Post-Completion Commissioning and the Board’s Post Completion Commissioning the Independent Tester shall issue the Commissioning Completion Certificate.”

2.2 **Contractual provisions for ventilation validation**

2.2.1 The Inquiry team have been unable to locate any specific contractual provisions for the validation of ventilation equipment in the RHCYP/DCN contract documents. It is not known if this reflected standard or accepted practice at the time.

3. Comparison of contractual provisions with guidance relating to ventilation commissioning and validation

3.1 Introduction

3.1.1 The Inquiry team acknowledge that the guidance referred to below was not written with privately financed or Non-Profit Distribution (NPD) projects, such as the RHCYP/DCN, in mind. It is therefore understood that aspects of the RHCYP/DCN contract will naturally diverge from that guidance.

3.1.2 However, with the exception of the Scottish Capital Investment Manual (SCIM) guidance on commissioning, the guidance discussed in this paper is that which is referred to in the RHCYP/DCN contract documents. Furthermore, as far as the Inquiry team are aware, this guidance formed best practice for commissioning and validation both at the time these activities were carried out at the RHCYP/DCN, and at the time of writing.

3.1.3 On the basis that the guidance discussed below formed best practice for all aspects of commissioning and validation, the Inquiry team understand it to be relevant in two senses. Firstly, it sets out the minimum standards by which ventilation equipment at the RHCYP/DCN was to be commissioned and validated. Secondly, it sets out the best practice relevant to all parties involved in the project, including NHSL. It is however acknowledged that, so far as the Inquiry team are aware, there was no actual provision for parties other than Project Co to adhere to the guidance set out below.

3.2 The definition and purpose of commissioning

3.2.1 Commissioning guidance referenced in the contract documents included the 'Guidance to Engineering Commissioning' published by The Institute of Hospital Engineering,[1] and ‘CIBSE Commissioning Code A: Air Distribution Systems’.

3.2.2 These guidance documents define commissioning in similar terms, as the advancement of an installation from static completion to full and satisfactory operation, complying fully with its design intent.

3.2.3 Scottish Health Technical Memorandum (SHTM) 03-01: ‘Ventilation for Healthcare Premises Part A – Design and validation’ is guidance also referred to in the contract, albeit as a design reference document as opposed to a commissioning document.

3.2.4 The version of this guidance that applied during the construction of the RHCYP/DCN was Version 2.0 dated February 2014. Unless otherwise specified, this is the version of SHTM 03-01 discussed in this PPP.

3.2.5 SHTM 03-01 is included here as it discusses commissioning, applies specifically to healthcare ventilation, and was published more recently than the guidance outlined above. The following definition of commissioning is provided: “Commissioning is the process of advancing a system from physical completion to an operating condition.” While this accords with the definition set out above, a later paragraph appears to widen the scope of commissioning when it states that: “The objective of commissioning is to ensure that the necessary performance and safety requirements are met.” While it is unclear what is meant by ‘safety requirements’, this could be read as overlapping with the Inquiry team’s understanding of validation, set out in paragraph 3.6.6 of this PPP.[2]

[1] In 1996 The Institute of Hospital Engineering became The Institute of Healthcare Engineering and Estate Management (IHEEM).
[2] In oral evidence provided to the Inquiry in May 2022, one of the Inquiry’s ventilation experts, Andy Poplett, was asked about the standard against which works should be checked during commissioning

3.2.6 SCIM guidance relating to commissioning is not referenced in the RHCYP/DCN contract documents, however that guidance is discussed here as it is described as setting out best practice principles for all investment projects.

3.2.7 The SCIM guidance described 'technical commissioning' as: "bringing the mechanical and electrical services and equipment in the building into use". This paragraph continued: "It will be the task of the contractor/design team to ensure that all services and equipment provided under the contract are operating according to the contract specification and be consistent with the user requirements in the Commissioning Master Plan." 'Commissioning Master Plan' (CMP) is not defined in the guidance, but the stated purpose of the CMP is to:

- "Identify key dates/phases for occupying or bringing the facility into use.
- Identify key tasks, targets and responsibilities.
- Identify a critical path for an integrated transfer of operations, addressing clinical need and functional interdependencies.
- Identify key briefing, design and construction interfaces.
- Identify key dates for selecting and ordering equipment.
- Identify any closures, security arrangements, site disposals, if relevant.
- Ensure that there is little or no disruption to patient services."

It is not clear to the Inquiry team what is meant by 'user requirements in the Commissioning Master Plan' and how this was to interact with the provision that equipment should perform to the contract specification.

3.2.8 The Inquiry team understand from the above paragraphs that the essential purpose of ventilation commissioning is to verify that the equipment is capable of delivering the performance criteria required by the design. Accordingly, it is understood that ventilation commissioning is not ordinarily concerned with verifying performance criteria against healthcare guidance, although this may be included

and validation. Mr Poplett advised: "It should be checked against the HTM, the design intent and the actual performance and contract." A transcript of Mr. Poplett's evidence can be found here: Transcript - Andrew Poplett - 10.05.2022 | Hospitals Inquiry. The quote just given can be found at pg 60.

within the scope of meeting the ‘safety requirements’ referenced in SHTM 03-01 or the ‘user requirements’ referenced in SCIM.[3]

3.2.9 The Introduction to the 'Guidance to Engineering Commissioning' states:

> “this document has been produced to define and prescribe the responsibilities appropriate to participants to the contract, the responsibilities which devolve onto design engineers to provide the necessary facilities within a design to enable commissioning to be properly completed, and finally to describe the recommended practical procedures for completing the on-site commissioning prior to handover or practical completion of engineering installations provided under main or sub-contracts.”

3.2.10 Paragraph 3.5 of the Guidance is titled ‘The Designer’s Role’. This paragraph includes the following text:

> “The design conditions required in various rooms and departments should be presented in the form of Room Data Sheets and Equipment Schedules, which should then form the basis of the commissioning data. The sheets should always contain such information as temperature, humidity, air change rate, noise levels, personnel and equipment loading, and any special room conditions such as pressure differentials with surrounding areas and filtration levels.
>
> “This information is not only essential for the design but also to form the basis on which the Commissioning Engineer must formulate his own test programme and assessment of results.
>
> “…It must be remembered that the purpose of testing and commissioning is to demonstrate that the installed plant and equipment complies with the requirements of the Design Intention Specification.”

[3] See footnote 2 above.

3.2.11 As discussed at paragraph 2.1.3 of this PPP, the BCRs appears to provide that Room Data Sheets were not to be used as part of the commissioning process. At this stage it is not clear what the requirements were in relation to ventilation, how these were presented, or whether this would be seen to comply with the Guidance. The Inquiry team invite CPs to assist on these points.

3.2.12 Nonetheless, in that the BCRs provide for the commissioning phase to verify equipment performance against a contractual standard, they appear to be consistent with the purpose of ventilation commissioning set out in the Guidance. The position under the Guidance therefore appears to align with that set out in the contract.

3.3 The ‘Guidance to Engineering Commissioning’

3.3.1 Paragraph 6 of the 'Guidance to Engineering Commissioning' is titled ‘Commissioning Programme’. This includes the text:

> “Commissioning should always be completed prior to the issue of a Certificate of Practical Completion”.

3.3.2 The Project Agreement provided that the IT was to issue a Certificate of Practical Completion when he was satisfied that the facilities were complete in accordance with the Completion Criteria. The Completion Criteria included the provision that all mechanical and electrical systems would be tested, commissioned and operate satisfactorily in accordance with the specified design criteria and the Room Data Sheets. The position under the Guidance therefore appears to align with that set out in the contract.

3.3.3 Paragraph 6 of the Guidance also includes the following text:

> “It is essential that the Works Staff of the user authority should be involved in the final witnessing and demonstration as part of the familiarisation process.”

'Works Staff' is not defined in the Guidance, however, from the context in which the term is used, it is understood to mean the party responsible for ongoing maintenance of the equipment.

3.3.4 The Inquiry team understand from the Services Contract dated 13 February 2015 between IHSL and Bouygues E&S FM UK Limited (BYES) that BYES were appointed to provide ongoing operation and maintenance of the equipment. BYES are therefore understood to be the 'Works Staff' for the RHCYP/DCN project.

3.3.5 At Schedule Part 5 of the Services Contract, paragraph 2.12: 'Commissioning, Testing and User Training', it is stated that:

> "Training is required to occur well in advance of building handover, during the testing and commissioning (T&C) phases. Bouygues E&S's operational staff will, following the T&C and on receiving the appropriate training will themselves, in the presence of the subcontractors, operate plant/equipment, carry out functional checks and test for alarm conditions till they are satisfied and confident for the handover.
>
> "The procurement contract, as necessary, should allow for training of key personnel on-site to acquaint them with the local environment. Certification of individual should be one of the training requirements to satisfy client and Bouygues E&S quality assurance requirements.
>
> "Full training needs to form part of the build costs package for ALL elements including M&E, fabric and external (e.g., BMS, Fire Alarm, Intruder Detection, CCTV, lifts passengers realise, Fagade panels /render, windows, doors, drainage, interceptors, etc).
>
> "All mechanical and electrical installations will be fully commissioned, tested in service and witnessed by appointed Bouygues E&S staff, test certificates and O&M manuals provided and FM staff trained and at operational condition prior

to handover from construction colleagues in order to achieve and demonstrate design performance."

3.3.6 The Inquiry team understand from the above that BYES were to witness the commissioning of all mechanical and electrical installations. The position under the Guidance therefore appears to align with that set out in the contract.

3.3.7 Paragraph 7 of the Guidance is titled 'Commissioning Reports'. The paragraph states:

> "At the conclusion of the commissioning process, commissioning reports should be prepared for record purposes and future reference and possible inclusion in software programs. The preparation of commissioning reports should be the responsibility of either the Project Engineer or the Client's Commissioning Advisor and these reports should form part of the documents handed to the user at the conclusion of the contract.
>
> "…Commissioning reports should report factually on the results achieved compared with the design duties. They should identify any particular problems which may require further work to meet user requirements.
>
> "It must be appreciated that it is not the responsibility of any of the Contractors to prepare commissioning reports for general issue although it is known that some contractors prepare their own internal reports."

3.3.8 The Guidance defines the Project Engineer as the person nominated by the Client to monitor the installation of the engineering services related to a project. The Client's Commissioning Adviser was defined as the person nominated by the Client or the Client Body to advise whether the installation met the specified requirements.

3.3.9 For the RHCYP/DCN project, the Inquiry team understand that the responsibilities of 'Project Engineer' and 'Client's Commissioning Adviser', as defined

above, fell to the IT. It is understood that this was not entirely in accordance with the Guidance, as the IT acted on behalf of Project Co and the Board of NHSL. However, the Inquiry team acknowledge that the Guidance was not written with privately financed or NPD projects, where an IT is typically appointed, in mind.

3.3.10 Although not specifically referred to in the project documents as guidance for commissioning, SHTM 03-01 is also of note in referring to commissioning reports. SHTM 03-01 states:

> "Following commissioning and/or validation a full report detailing the findings should be produced. The system will only be acceptable to the client if at the time of validation it is considered fit for purpose and will only require routine maintenance in order to remain so for its projected life.
>
> "The report shall conclude with a clear statement as to whether the ventilation system achieved or did not achieve the required standard. A copy of the report should be lodged with the following groups:
>
> - the user department;
> - infection control (where required);
> - estates and facilities."

3.3.11 The Inquiry team are not aware of any provision in the RHCYP/DCN contract documents reflecting this recommendation.

3.3.12 Part II of the 'Guidance to Engineering Commissioning' provides:

> "The purpose of Part II of this manual is to establish, and conform to, a systematic set of procedures which must be followed in the testing, balancing, adjusting and setting to work of all mechanical and electrical services, equipment and systems installed as part of the contract.

> "The procedures outlined are applicable to the final examination, setting to work and commissioning of all air, hydraulic and electrical services installed."

3.3.13 At Paragraph 20.3: 'Aspects of Commissioning – Ventilation Systems', Part II of the guidance goes on to state:

> "…Design Requirements
>
> "The designers attention is drawn to the requirements of the CIBSE Commissioning Code, Series A, Air Distribution. The data given in the following paragraphs is a summary of the major points of this guide but it is not comprehensive; it is intended to provide an aide memoire only."

3.3.14 The Inquiry team understand from the above that CIBSE Commissioning Code A is considered to be a 'systematic set of procedures which must be followed' when commissioning ventilation systems.

3.4 **CIBSE Commissioning Code A**

3.4.1 According to CIBSE Commissioning Code A, the Code sets out generally to inform on 'what should be done', whereas manuals published by the Building Services Research and Information Association (BSRIA) inform on 'how it should be done'.

3.4.2 The Inquiry team understand from CIBSE Commissioning Code A that an essential factor of ventilation commissioning is measuring air volume flow rates and comparing these with the flow rates required by the design.[4]

3.4.3 CIBSE Commissioning Code A goes on to discuss pressure differentials. The Code sets out a procedure suggested as suitable for the commissioning of typical

[4] In oral evidence provided to the Inquiry in May 2022, Mr Poplett advised that volume flow rates are required to calculate air changes per hour. See pg 17 of the transcript of Mr. Poplett's evidence.

ventilation systems designed to produce pressure regimes within a space. Once certain mechanical operations have been completed, this procedure includes the following steps:

> "Measure and record the pressure differentials between all adjacent spaces using a suitable instrument and compare the measurements with the specified design requirements.
>
> "At this stage the results obtained should be submitted to the designer or accepting authority.
>
> "…Once acceptable conditions are obtained, it is imperative to record final balance figures including air volume flow rates and pressure differentials. These should also be verified by the accepting authority."

3.4.4 The RHCYP/DCN contract does not include provisions relating to the specifics of how ventilation commissioning should be carried out. For example, no detail is provided with respect to how air volume flow rates or air pressure differentials should be measured and/or compared with the design specification. However, as part of a provision to supply documentation to the IT, the Project Agreement included an expectation that Project Co would provide commissioning documentation in accordance CIBSE Commissioning Code A. The Inquiry therefore understand that the contract expected commissioning to be carried out in a way that reflected the specifics of 'what should be done' in the Code. The contract therefore appears to align with the detail of the Code set out above.

3.4.5 Section A5 of the Code outlines recommendations concerning witnessing. According to the Code, the objective of the witnessing stage is to enable the witnessing authority to establish a level of confidence in the commissioning results being presented. The Code provides that, unless the designer has specifically called for all commissioning aspects to be witnessed, an assessment of a proportion of results should satisfy this requirement.

3.4.6 As discussed above, the Services Contract between IHSL and BYES intended that BYES were to witness the commissioning of all mechanical and electrical installations. The IT contract also provided that the IT would undertake selective witnessing of the Mechanical and Electrical services testing and commissioning. It was anticipated this would apply to approximately 50% of the testing. The position under the Code therefore appears to align with that set out in the contract.

3.4.7 The Code states that: “appropriate documentation should be provided by the commissioning specialist for the witnessing authority to countersign to confirm details of the tests observed and that the results are within the specified tolerances. When the documentation is completed, the system can be deemed to be commissioned in accordance with this Code.”

3.4.8 The IT contract provided that the IT would review 100% of all Mechanical and Electrical services test results. This is understood to include all the ventilation commissioning test results. The position under the Code therefore appears to align with that set out in the contract.

3.5 **SCIM ‘Commissioning Process’**

3.5.1 Paragraph 4.15 of the SCIM guidance, ‘Site Visits and Training’, provided: “As the facility comes closer to completion, site visits for staff training and familiarisation should be organised by the [Client’s] Commissioning team well in advance with the contractor and PM [Project Manager]… The run up to Handover is often frenetic and has many competing priorities; however the importance of on-site operational and maintenance training and documentation cannot be underestimated. A facility handover cannot occur without fit-for-purpose and safe operation”.

3.5.2 Paragraph 4.16 of SCIM, ‘Technical Commissioning’, elaborated:

> "It will be the responsibility of the Project Manager to ensure that the contractor draws up a full programme of technical training and demonstrations... Dates and times of these will be agreed with the Commissioning Manager, who will arrange for the relevant personnel from the users of the facility to be in attendance, so that they can understand how the facility/ equipment operates.
>
> "It will be the responsibility of the contractor, under the terms of the contract, to ensure that all technical manuals, Health & Safety, CDM [Construction Design Management] and literature relating to the operation and maintenance of the facility, equipment and plant are passed to the Commissioning manager for review, then final submission, to the format and timetable agreed in the Commissioning Master Plan. User manuals, in 'non technical speak', are required to support staff to use the facility safely and effectively. The Project Manager must ensure that this is done."

3.5.3 Paragraph 8.15 of the BCRs stated: "Project Co shall provide such staff training as is deemed necessary by the Board details of training proposed shall be submitted to the Board as Reviewable Design Data".

3.5.4 As discussed at paragraphs 3.3.5 and 3.3.6 of this paper, the Services Contract between IHSL and BYES also intended that BYES would be trained to use the equipment during the testing and commissioning phase prior to handover.

3.5.5 Under Clause 18 of the Project Agreement, Project Co were also to provide the Board with an operation and maintenance manual in sufficient detail to allow the Board to plan for the safe and efficient operation of the facilities.

3.5.6 A final draft operation and maintenance manual was to be delivered on or before the day the Certificate of Practical Completion was issued by the IT. The principal version of the manual was to be delivered within the next 10 business days. The position under the SCIM guidance therefore appears to align with that set out in the contract.

3.6 **The definition and purpose of validation**

3.6.1 The Inquiry team are currently unaware of any guidance specifically referenced in the RHCYP/DCN contract for validating the ventilation equipment. The only guidance known to be relevant to validation is SHTM 03-01 Part A. SHTM 03-01 is referenced throughout the contract documents for the project, but only in relation to the design, installation, cleaning, and infection prevention and control aspects of the ventilation systems.

3.6.2 In the absence of specific evidence as to contractual provisions, the Inquiry has had regard to SHTM 03-01 Part A. As the preface to that document makes clear, the purpose of the SHTMs is: "give comprehensive advice and guidance on the design, installation and operation of specialised building and engineering technology used in the delivery of healthcare…Healthcare providers have a duty of care to ensure that appropriate engineering governance arrangements are in place and are managed effectively. The Engineering Scottish Health Technical Memorandum series provides best practice engineering standards and policy to enable management of this duty of care."

3.6.3 The SHTM defines validation as:

> "A process of proving that the system is fit for purpose and achieves the operating performance originally specified. It will normally be a condition of contract that 'The system will be acceptable to the client if at the time of validation it is considered fit for purpose and will only require routine maintenance in order to remain so for its projected life.'"

3.6.4 To the best of the Inquiry team's knowledge, the contract for the RHCYP/DCN project did not contain such a clause nor any clause relating to the validation of ventilation systems. No further comparison can be made between validation guidance and the contract, as the Inquiry team have been unable to locate any contract provisions for the validation of ventilation equipment.

3.6.5 The SHTM continued by stating:

"Validation differs from commissioning in that its purpose is to look at the complete installation from air intake to extract discharge and assess its fitness for purpose as a whole. This involves examining the fabric of the building being served by the system and inspecting the ventilation equipment fitted as well as measuring the actual ventilation performance."

3.6.6 The Inquiry team understand from the above paragraphs that the essential purpose of ventilation validation is to verify that the system as a whole is fit for purpose. This is understood to mean that validation is, at least to some extent, concerned with verifying equipment performance criteria against healthcare guidance.

3.7 SHTM 03-01

3.7.1 At paragraph 1.39, SHTM 03-01 discusses the design and validation process, with specific reference to a 'specialised ventilation system'. At paragraph 7.2, the SHTM includes the text:

"The following departments will require a degree of specialised ventilation.

"...critical areas and high dependency units of any type"

3.7.2 Paragraph 7.4 of SHTM 03-01 stated:

"It is not possible within this existing document to give definitive guidance for every healthcare specific ventilation application. Additional detailed guidance may be issued in due course in the form of supplements."

The Inquiry team are not aware of any detailed supplement relating to Critical Care areas that (i) existed at the time the RHCYP/DCN was constructed, or that (ii) exists at the time of writing.

3.7.3 Section 8 of SHTM 03-01 is titled 'Validation of specialised ventilation systems'. When defining validation, this section stated:

> "It is unlikely that 'in house' staff will possess the knowledge or equipment necessary to validate critical ventilation systems such as those serving operating suites, pharmacy clean rooms and local exhaust ventilation systems. Validation of these systems should therefore be carried out by a suitably qualified independent Authorised Person appointed by the NHS Board. It is anticipated that training in the validation of specialised healthcare ventilation systems for independent Authorised Persons will become available during the life of this SHTM."

3.7.4 SHTM 03-01 continues to discuss validation in greater detail, but only in relation to Ultra Clean Ventilation (UCV) suites.

3.7.5 The Inquiry team understand from the information set out above that, so far as there was any validation guidance or best practice available at the time the RHCYP/DCN was constructed, all areas within a hospital requiring specialised ventilation were recommended for validation by an independent party appointed by the Health Board. The areas requiring specialised ventilation included Critical Care areas.

3.7.6 It is of note that the updated version of SHTM 03-01 Part A (Interim Version 3, dated February 2022) amends this position to provide that: "All new and refurbished ventilation systems should be independently validated prior to acceptance by the client."

3.7.7 From the information set out above, and evidence heard by the Inquiry,[5] the Inquiry team understand that activities to validate ventilation equipment would be expected to identify the types of divergences between performance criteria and healthcare guidance that IOM identified immediately prior to the scheduled opening of the RHCYP/DCN in July 2019. IOM's involvement in the project is discussed more fully at Section 5 of this PPP.

[5] See footnote 2 and pg 60 of the transcript of Mr. Poplett's evidence.

4. Overview of the ventilation commissioning and validation procedure for Critical Care

4.1 **Table 1**

4.1.1 Table 1 below sets out an overview of the commissioning and validation process for the Critical Care bedrooms at the RHCYP/DCN. Table 1 sets out the following information:

- the ventilation equipment relevant to each area;
- what party commissioned/validated the relevant area prior to IOM's involvement in the project;
- what party witnessed/approved this commissioning/validation; and
- the dates these activities occurred.

4.1.2 Table 1 is followed by a fuller discussion of its contents. Section 5 of this PPP narrates the Inquiry team's understanding of how test results produced by IOM for these Critical Care areas informed the decision to delay opening the hospital.

Table 1

Location	Room Reference	Room Number	Relevant Equipment	Commissioned By/On	Witnessed By/On	Approved By/On	Validated By/On
Critical Care	HDU 4 bed bay	1-B1-009	Air Handling Unit (AHU) 04-06	H&V Commissioning Ltd (H&V) AHU Extract: 24/10/18 AHU Supply: 30/10/18 No Room Pressure Differentials (RPD)	Witnessing pages blank.	AHU approved by Arcadis: 18/02/19	No record
Critical Care	HDU 4 bed bay	1-B1-031	AHU 04-06	H&V Same commissioning documents as above	As above	As above	No record
Critical Care	HDU 4 bed bay	1-B1-063	AHU 04-06	H&V Same commissioning documents as above	As above	As above	No record
Critical Care	HDU single bed cubicle	1-B1-037	AHU 04-06	H&V Same commissioning documents as above	As above	As above	No record

Critical Care	NNU 3 cot bay	1-B1-065	AHU 04-06	H&V Same commissioning documents as above	As above	As above	No record
Critical Care	NNU single cot cubicle	1-B1-075	AHU 04-06	H&V Same commissioning documents as above	As above	As above	No record
Critical Care	Single bedroom	1-B1-020	AHU 04-06	H&V Same commissioning documents as above	As above	As above	No record
Critical Care	Single bedroom	1-B1-021	AHU 04-06	H&V Same commissioning documents as above	As above	As above	No record

Critical Care	Single bed isolation room	1-B1-016	AHU 04-06 & Isolation Extract Fan (IEF) 06	H&V Same commissioning documents as above. IEF commissioned 06/06/18.	Witnessing pages blank for AHU. IEF witnessed by NHSL, BYES: 02/08/18	As above for AHU. IEF approved by Arcadis: 09/11/18	Validator(s) to be confirmed. See footnote. Validation approved on 06/06/19 by Multiplex (MPX), Mercury and Arcadis. [6]
Critical Care	Single bed isolation room	1-B1-017	AHU 04-06 & IEF05	H&V Same commissioning documents as above. IEF commissioned on 03/07/2018.	Witnessing pages blank for AHU. IEF witnessed by NHSL & BYES on 02/08/18	As above for AHU. No record of IEF approval.	Validator(s) to be confirmed. See footnote. Validation approved on 06/06/19 by Multiplex (MPX), Mercury and Arcadis. [7]

[6] See para 4.2.44 of this PPP.
[7] See para 4.2.44 of this PPP.

Critical Care	Single bed isolation room	1-B1-026	AHU 04-06 & IEF04	H&V Same commissioning documents as above. IEF commissioned on 16/02/2018.	Witnessing pages blank for AHU. IEF witnessed by NHSL & BYES on 02/08/18	As above for AHU. No record of IEF approval.	Validator(s) to be confirmed. See footnote. Validation approved on 06/06/19 by Multiplex (MPX), Mercury and Arcadis. [8]
Critical Care	Single bed isolation room	1-B1-036	AHU 04-06 & IEF03	H&V Same commissioning documents as above. IEF commissioned on 16/02/18	Witnessing pages blank for AHU. IEF witnessed by Mercury and MPX on 14/06/18	As above for AHU. No record of IEF approval.	Validator(s) to be confirmed. See footnote. Validation approved on 06/06/19 by Multiplex (MPX), Mercury and Arcadis. [9]

[8] See para 4.2.44 of this PPP.
[9] See para 4.2.44 of this PPP.

4.2 **Further discussion on Table 1**

4.2.1 The Project Agreement provided for Project Co to produce Room Data Sheets for all rooms and areas in the hospital including the data contained in an ‘Environmental Matrix’.

4.2.2 The Environmental Matrix included environmental information relevant to the ventilation of different spaces in the hospital. Such information included the type of ventilation serving a space, the number of air changes per hour provided, and the air pressure differentials between spaces.

4.2.3 Previous PPPs have been produced setting out the Inquiry team’s understanding of how an earlier version of this Environmental Matrix was shared with prospective tenderers during the procurement process for the RHCYP/DCN project.

4.2.4 At this stage the Inquiry team believe that the Environmental Matrix shared with tenderers specified environmental information that was potentially inconsistent with published guidance, namely SHTM 03-01 – which outlines ventilation requirements in a hospital.

4.2.5 The exact purpose and status of the Environmental Matrix shared with tenderers is still unclear. These matters were explored in greater detail at the hearing in April 2023 and the findings of the Inquiry will follow in due course.

4.2.6 The Environmental Matrix was defined in the Project Agreement as setting out the: “room environmental condition requirements of the Board required within each department / unit / space / area…(as varied, amended or supplemented from time to time…)”.

4.2.7 The Environmental Matrix was included in the Project Agreement as Reviewable Design Data (RDD). This meant the terms of the Environmental Matrix were not fully agreed between the parties when the Project Agreement was signed in

February 2015, and that the document was subject to further review and approval by IHSL and the Board of NHSL.

4.2.8 The development of the Environmental Matrix as RDD is addressed in a separate PPP by the Inquiry team. For the purposes of this PPP, it is understood that the Environmental Matrix was to be finalised before Room Data Sheets were submitted as RDD. As far as the Inquiry team are aware, no final Room Data Sheets were produced for the project, and the majority of the final environmental information agreed by NHSL and Project Co was contained in Version 11 of the Environmental Matrix, dated 25 October 2017.

4.2.9 While the Environmental Matrix was being developed as RDD, the Board of NHSL and IHSL became engaged in a design dispute involving the design of the ventilation to some four-bed rooms in the hospital. Evidence indicates this related to differing interpretations of the pressure regime requirements for the four-bed rooms.

4.2.10 In late 2017 and early 2018, the Board of NHSL also identified further aspects of the ventilation design that were potentially non-compliant with SHTM 03-01. The resolution to these matters and the four-bed ventilation dispute was eventually agreed between the parties in the Settlement Agreement dated 22 February 2019. It does not appear that an updated version of the Environmental Matrix was produced to incorporate these resolutions.

4.2.11 Therefore, for the purposes of this PPP, it appears to the Inquiry team that the final contractual specification for ventilation at the RHCYP/DCN was constituted of:

- the environmental information in Version 11 of the Environmental Matrix dated 25 October 2017; as amended by
- the environmental information agreed by the Settlement Agreement dated 22 February 2019.

4.2.12 In light of the Inquiry team not having seen any final Room Data Sheets for the project, and the view that the most up-to-date environmental information for the project comes from version 11 of the Environmental Matrix read in conjunction with the Technical Schedule in Settlement Agreement 1, it is not clear to the Inquiry team how paragraph 3.6.3 of the BCRs applied to the project in practice. The Inquiry team invite CPs to assist on this point.

4.2.13 Furthermore, paragraph 3.6.3 of the BCRs goes on to state that the mechanical ventilation requirements in the Room Data Sheets were not to be used as part of the commissioning process. Rather, Project Co were to demonstrate compliance with the 'functional requirements' of the rooms. While this provided for the commissioning phase to verify equipment performance against a contractual standard, which appears to be consistent with the purpose of ventilation commissioning set out in the Guidance, it is not clear what design conditions the mechanical ventilation systems were to actually meet during commissioning. The Inquiry team invite CPs to assist on this point.

4.2.14 The air change rates and room pressure differentials of each Critical Care bedroom were dictated by the Air Handling Unit (AHU) serving that room. In certain bedrooms noted in Table 1, the air change rate and room pressure differentials were also dictated by separate Isolation Extract Fans (IEFs).

4.2.15 Each AHU and IEF was commissioned by H&V Commissioning Ltd (H&V).

4.2.16 The Critical Care bedrooms were all served by AHU 04-06. That AHU was commissioned on 24 and 30 October 2018. The separate IEFs were commissioned between February and July 2018. However it appears the Settlement Agreement of 22 February 2019 finalised the specification for these rooms, and required an alteration to the design of the four-bed rooms. It is therefore not clear to the Inquiry team how the earlier commissioning sits in relation to the later agreed specification. The Inquiry team invite CPs to assist on this point.

4.2.17 The Project Agreement provided that the IT was to issue a Certificate of Practical Completion when he was satisfied that the facilities were complete in accordance with the Completion Criteria. The Completion Criteria included the provision that all mechanical and electrical plant and systems would be tested, commissioned and operate satisfactorily in accordance with the specified design criteria and the Room Data Sheets. These provisions were in accordance with the recommendations in the 'Guidance to Engineering Commissioning'.

4.2.18 However, in practice, the Certificate of Practical Completion for the RHCYP/DCN was issued on 22 February 2019. This was the same date the Settlement Agreement referred to above was signed. It therefore appears to the Inquiry team that the commissioning of the ventilation equipment cannot have been completed prior to the Certificate of Practical Completion being issued. This is because the specifications against which certain equipment was to be verified were signed off on the same day the Certificate was issued. Accordingly it appears that, in practice, the Certificate of Practical Completion was not issued in accordance with the Guidance, however the Inquiry team invite CPs to assist on this point.

4.2.19 Under the Project Agreement, the IT was also to issue a Commissioning Completion Certificate on the completion of Project Co's Post-Completion Commissioning and the Board's Post Completion Commissioning. The Commissioning Completion Certificate for the RHCYP/DCN was issued on 22 February 2019, the same date the Settlement Agreement referred to above was signed.

4.2.20 The Settlement Agreement included a 'Joint Completion Programme' setting out a timetable for the commissioning tasks still to be completed as at 22 February 2019. It therefore appears to the Inquiry team that, in practice, the commissioning of the ventilation equipment cannot have been completed prior to the Commissioning Completion Certificate being issued, however the Inquiry team invite CPs to assist on this point.

4.2.21 Project Co were expected to provide commissioning documentation to the IT in accordance CIBSE Commissioning Code A. Where pressure differentials between areas are intended by a ventilation design, CIBSE Commissioning Code A recommends measuring and recording these between all adjacent spaces, and comparing the measurements with the specified design requirements. The Code states that, once acceptable conditions are obtained, it is imperative to record final balance figures including air volume flow rates and pressure differentials. These should then be verified by the accepting authority.

4.2.22 Although ventilation supply and extract data for the AHU and IEFs was measured and recorded, it does not appear the same was done for room pressure differential data. As far as the Inquiry team understand, room pressure differentials were only recorded by H&V for the AHUs that served operating theatres. It appears that no room pressure differentials were recorded, witnessed or approved for the rooms in Table 1. This was despite the design for these areas having pressure requirements relative to adjacent spaces. In practice it therefore appears that the provisions set out in the above paragraph were not achieved, however, the Inquiry team invite CPs to assist on this point.

4.2.23 The IT contract provided for the IT to review 100% of all Mechanical and Electrical services test results. This was in alignment with the recommendation in CIBSE Commissioning Code A that commissioning documentation should be provided for the witnessing authority to countersign to confirm test results. On the basis that no room pressure differentials were recorded, witnessed or approved for the rooms in Table 1, it appears to the Inquiry team that these terms of the contract and the Code were not met. It is not known why the IT did not request this data. It is also not clear why the IT issued the Certificate of Practical Completion without this data being measured and approved. The Inquiry team invite CPs to assist on this point.

4.2.24 The 'Guidance to Engineering Commissioning' provided that commissioning reports should be prepared at the conclusion of the commissioning process by the

person monitoring the installation of the engineering services, or the person advising whether the installation met the specified requirements. For the RHCYP/DCN project, the Inquiry team understand that these responsibilities fell to the IT. The only commissioning documentation seen by the Inquiry team was produced by H&V. It is understood this was then approved by the IT. It is not known if this process reflects standard or accepted practice.

4.2.25 SHTM 03-01 recommended that, following commissioning and/or validation, a full report detailing the findings should be shared with infection control (where required). The Inquiry team are not aware of any provision in the RHCYP/DCN contract documents reflecting this recommendation, however the Inquiry team are aware that in practice a ‘Theatre Ventilation Validation Checklist’ for one of the operating theatres at the hospital was shared with infection control prior to IOM’s involvement with the project. This is discussed at Section 5 of this PPP.

4.2.26 The commissioning test reports for AHU 04-06 were approved by Arcadis, the IT, on 18 February 2019. On the basis the commissioning reports show that tests for AHU 04-06 were not witnessed, it is not known why the IT approved these reports. It is also not clear why the IT issued the Certificate of Practical Completion on this basis.

4.2.27 The Inquiry team cannot locate commissioning test report approval for any of the IEFs other than for IEF06, which was approved by Arcadis on 9 November 2018. On the basis that these reports were not approved, it is not known why the IT did not request the outstanding information for approval or why the Certificate of Practical Completion was issued without this information being approved.

4.2.28 The Inquiry team understand that measuring air volume flow rates and comparing these with the flow rates required by the design is a crucial aspect of commissioning, as evidenced by CIBSE Commissioning Code A, SHTM 03-01 and

evidence heard by the Inquiry. The Inquiry team also understand that volume flow rates are required to calculate air changes per hour.[10]

4.2.29 Irrespective of the purpose of commissioning to verify equipment performance against design criteria, the Inquiry team therefore understand that the commissioning phase may have offered an opportunity for the parties involved in commissioning to have sight of design and performance criteria that was later identified by IOM as diverging from healthcare guidance.

4.2.30 It is not clear what individual(s) reviewed test results on behalf of the IT for the rooms in Table 1. The Inquiry team invite CPs to assist on this point. An 'Independent Tester Services' proposal seen by the Inquiry team names John Edwards as having the appropriate capacity to deliver the IT services in relation to Mechanical & Electrical engineering. The proposal also states that Mr. Edwards is a qualified Authorising Engineer for ventilation services. The Inquiry team therefore understand that the IT may have possessed a certain level of awareness and expertise with respect to HTM and SHTM standards. The Inquiry team accordingly understand that this may have offered the IT a greater opportunity to identify design and performance criteria that diverged from healthcare guidance.

4.2.31 The Services Contract between IHSL and BYES intended that all mechanical and electrical installations would be fully witnessed by BYES. The IT contract also provided that the IT would undertake selective witnessing of the Mechanical and Electrical services testing and commissioning. It was anticipated this would apply to approximately 50% of the testing. These provisions complied with recommendations in CIBSE Commissioning Code A. However in practice it does not appear that commissioning tests for AHU 04-06 were witnessed. Although the IT does not appear to have witnessed the testing for AHU 04-06, it is not known whether the IT otherwise complied with the witnessing provision in the IT contract. Commissioning tests for the IEFs were witnessed.

[10] See pg 17 of the transcript of Mr. Poplett's evidence and Health Facilities Scotland, 'Scottish Health Technical Memorandum 03-01 Ventilation for healthcare premises Part A – Design and validation', (February 2014), para 8.33.

4.2.32 Paragraph 8.15 of the BCRs stated: “Project Co shall provide such staff training as is deemed necessary by the Board details of training proposed shall be submitted to the Board as Reviewable Design Data”. This provision facilitated the recommendation in SCIM commissioning guidance that staff training and familiarisation should be organised prior to handover.

4.2.33 The Inquiry team have not been able to locate the ‘details of training proposed’ that this paragraph of the BCRs provided to be submitted as RDD. However, the Inquiry team have had sight of a letter dated 1 April 2019 from the Board of NHSL to Gordon James of Health Facilities Scotland (HFS).

4.2.34 The letter indicates it was written in response to a letter from HFS dated 8 March 2019. That letter of 8 March stated:

> “We have been learning lessons from projects over the past few years, relating to the implications for safety and efficacy of engineering systems, of failure to ensure thorough discharge of client duties in construction projects. In response to recent issues where the financial and safety issues for the service have been very significant, Scottish Government has asked that we seek assurances about the management of projects in progress and those which have been recently completed, and provide a report for the Director for Health Finance.
>
> …
>
> Lessons learned from recent projects:
>
> - Water systems contaminated by bacteria during construction and not managed suitably after being filled, allowing biofilm to grow, incurring costs and management resource for the life of the system.
> - Pre commissioning checks not fully carried out, recorded and handed over, allowing shortcomings to pass unchallenged.
> - Commissioning of services not carried out properly leading to maintenance, energy and rectification costs over the life of the systems,

equipment (thermostatic valves and taps, controls etc) not set up and set to work prior to handover.

- Safe access not provided for maintenance and replacement of services in accordance with legal requirements, entailing health and safety risks for staff and contractors over the life of the building.
- Routine maintenance not implemented, entailing deterioration of safety critical systems and health and safety risks for staff, patients and visitors, as well as increased running costs.

It has become clear that, although much of the above is the responsibility of the contractor, the management of the contractor and any supervisory contractor by the client is essential to ensure the desired quality of the completed project. It proves complex and costly, or impractical to pursue the contractor for rectification if the client role has not been adequately discharged.

Can you therefore please provide evidence of:

…

4. How the Board is assured that its staff and appropriate contractors are adequately trained to ensure engineering systems are managed and operated competently"

4.2.35 In response to this request, NHSL's letter of 1 April provided:

"…IHSL are contractually obliged to provide sufficient staff with the requisite level of skill and experience for the provision of the maintenance and operation of the Engineering Systems.

"The Board is entitled to review training records and training programs at its discretion and has undertaken this exercise in preparation for the handover of the facilities... NHSL has reviewed the training records to check that appropriate training and certification is in place."

> "…The wider clinical staffing of the hospital has been provided with familiarization training of the site including the user interfaces for engineering systems where appropriate to their roles. Additional guidance on these user interfaces is being included in the Building User Guide for the hospital."

4.2.36 Emails from July 2019 also indicate that NHSL were asked to provide certain documentation to NHS National Services Scotland (NHS NSS). These emails date from after the decision was taken to delay opening the RHCYP/DCN.

4.2.37 An 'NSS Schedule Tracker' attached to one of these emails sets out that 'formal training records for all NHSL and FM [Facilities Management] Contractor staff' were requested by NHS NSS. A comment for this entry on the schedule reads:
"… awaiting information. Training given by MPX [Multiplex] to BYES and to NHS by either MPX or BYES."

4.2.38 The Inquiry team understand from the information set out in paragraphs above that:

- BYES were appointed to provide ongoing operation and maintenance of the equipment.
- BYES were trained to operate and maintain the equipment while witnessing equipment tests during the commissioning phase;
- training was subsequently given to NHSL by BYES or MPX;
- NHSL secured assurance that adequate operation and maintenance training were provided by reviewing 'training records' provided by Project Co;
- NHSL were satisfied from these reviews that the appropriate training and certification was in place; and,
- wider clinical staffing of the hospital were provided with familiarization training for engineering systems where this was appropriate to their roles.

4.2.39 In light of the understanding that BYES did not witness the commissioning of AHU 04-06, the Inquiry team are consequently of the understanding that no party

may have been trained to operate and maintain this equipment. Accordingly, the Inquiry team understand that the staff training recommendation in SCIM commissioning guidance may not have been achieved with respect to AHU 04-06, however the Inquiry team would invite the assistance of CPs on these points.

4.2.40 Under Clause 18 of the Project Agreement, Project Co were to provide the Board with an 'operation and maintenance manual'. This was to be in sufficient detail to allow the Board to plan for the safe and efficient operation of the facilities.

4.2.41 A final draft operation and maintenance manual was to be delivered on or before the day the Certificate of Practical Completion was issued by the IT. The principal version of the manual was to be delivered within the next 10 business days. These provisions aligned with the recommendation made in SCIM commissioning guidance that operation and maintenance manuals should be provided by the contractor for review, then final submission, to the client.

4.2.42 The Inquiry team have not been able to locate the final draft or principal operation and maintenance manuals for the project referenced in Clause 18.5. However Multiplex have submitted files to the Inquiry that include 'O&M [Operation & Maintenance] manuals' for specific items of ventilation equipment. These include manuals for AHUs and fans, ostensibly dating to January 2017 and May 2018 respectively.

4.2.43 With respect to the ventilation equipment, it is not currently clear whether these are all the required manuals for operation and maintenance. It is also not clear if/when these manuals were submitted to NHSL and approved. It is therefore not clear whether recommendations made in SCIM guidance were met. The Inquiry team invite CPs to assist on this point.

4.2.44 Documents headed with the Multiplex logo and titled 'Isolation Room Ventilation Validation Checklist' have been seen by the Inquiry team for each of the single bed isolation rooms in Table 1. These documents conclude with the statement:

“Isolation Room validated in accordance with SHPN [Scottish Health Planning Note] 04 Supplement 1”.

4.2.45 SHPN 04 Supplement 1 provides guidance on the facilities required for isolating patients on acute general wards. The guidance includes an Appendix titled ‘Acceptance testing of isolation suite’. That Appendix includes the following text:

> “System operating standard
>
> The suite will be considered fit for purpose if, with the ventilation system operating and all doors closed, the following parameters are achieved:
>
> • a positive pressure of between 10 and 12 Pascals between the entry lobby and the corridor;
> • the patient’s room has an air change rate of at least 10 per hour;
> • the en-suite room is at a negative pressure with respect to the patient’s room;
> • a failure of either the supply or extract fan will be indicated at a designated nurse station and the estates department.”

4.2.46 SHPN 04 Supplement 1 is therefore understood to be concerned with measuring equipment performance against healthcare guidance. Validating in accordance with SHPN 04 Supplement 1 would therefore accord with the Inquiry team’s understanding of validation set out at paragraph 3.6.6 of this PPP.

4.2.47 The ‘Isolation Room Ventilation Validation Checklist’ documents contain air change rate and room pressure differential data that was approved by Multiplex, Mercury and Arcadis on 6 June 2019. Mercury were a sub-contractor of Multiplex for the Mechanical, Electrical & Public Health Services at the RHCYP/DCN. It is not clear from the face of the documents whether Multiplex, Mercury and Arcadis were the parties that carried out the validation of these areas, or whether they approved the validation carried out by another party. In these documents an H&V engineer is

named as providing the filtration data, and an RSK Environment Ltd Director is named as providing the air permeability results, but no other parties are named. A 'Method Statement for H&V Commissioning Services Ltd' regarding 'Validation of Theatre Suites & Isolation Rooms' has been seen by the Inquiry team. This document features the text: "All validation detail and pass criteria set out in afore mentioned documents SHTM 03-01 & SHPN 04 supplement 1". This document may suggest that H&V provided the validation, as well as the commissioning, of these rooms. The Inquiry team invite CPs to assist on this point.

4.2.48 The Inquiry team have seen 'Validation Reports' produced by Medical Air Technology Ltd (MAT) for each of the hospital's UCV theatres. Each report states that it: "defines those tests which are to be carried out in order to verify that the installed UCV System performs in accordance with the requirements of SHTM 03-01". The reports are dated 26 October 2018, predating IOM's involvement in the project, and conclude with a 'Certificate of Practical Completion' that indicates MAT were employed by Mercury. The reports were approved by Multiplex and Mercury on 29 October 2018. It is not clear to the Inquiry team why these areas were earmarked for validation. The Inquiry team invite CPs to assist on this point.

4.2.49 It does not appear that the remaining bedrooms in Critical Care were validated, independently or otherwise, prior to IOM's involvement in the project. The involvement of IOM is discussed in Section 5 of this PPP below.

4.2.50 The letter from HFS to NHSL dated 8 March 2019, and referred to at paragraph 4.2.34 of this PPP, also included the following request:

> "Can you therefore please provide evidence of:
> …
> 3. How the Board is assured that the engineering systems are commissioned, validated and set to work to ensure safety, quality and compliance"

4.2.51 NHSL's response of 1 April 2019 provided:

“The Project Agreement including the BCRs are explicit in the need for the engineering systems to be commissioned and validated with respect to safety, quality and compliance. Over and above this core requirement, additional measures have also been implemented including;

The role of the Independent Tester is key to this process. They were required to review 100% of the engineering systems commissioning testing certification for compliance, over and above this, they were required to actually witness first hand 25% percent of the tests, targeting critical systems.

We enclose screenshots of sample lists of certification which was produced by IHSL for the Independent Tester for the purposes of issuing a Certificate of Practical Completion. We also enclose copies of the certificates for specific examples enclosed. As you will see, there is a comprehensive suite of testing and commissioning documentation all of which has been approved and / or signed off by the Independent Tester as appropriate.

In addition, during the commissioning phase of the project, the Board's project team with the support of Mott MacDonald also witnessed selective commissioning and testing of specific areas / systems in the Facilities.

The Board's Project Team also reviewed the commissioning risk assessments and method statements relative to compliance with guidance.”

5. Post-contractual completion events

5.1 On 4 January 2019, NHSL's Head of Commissioning Jackie Sansbury emailed David Wilson, Commissioning Manager for Multiplex. NHSL's Commissioning Manager Ronnie Henderson and the RHCYP/DCN Project Director, Brian Currie were included among the recipients. The email stated:

> "please see the requirements from Dr Inverarity the head virologist for NHS Lothian regarding theatre verification. We insist that the requirements of SHTM 03-01 be met in that Infection Control required a formal validation summary report (and not a collection of documents with uninterpreted particle count and pressure). The non-negotiable expectation from SHTM 03-01."

This text is followed by the following excerpts taken from SHTM 03-01:

> "Ventilation system commissioning/validation report
> 8.64 Following commissioning and/or validation a full report detailing the findings should be produced. The system will only be acceptable to the client if at the time of validation it is considered fit for purpose and will only require routine maintenance in order to remain so for its projected life.
> 8.65 The report shall conclude with a clear statement as to whether the ventilation system achieved or did not achieve the required standard. A copy of the report should be lodged with the following groups:
>
> - the user department;
> - infection control (where required);
> - estates and facilities.
>
> and UCV validation report
> 8.173 A validation a full report detailing the findings should be produced. The report shall conclude with a clear statement as to whether the UCV theatre suite achieved or did not achieve the standard set out above.

8.174 A copy of the report should be lodged with the following groups:

- operating department;
- infection control;
- estates and facilities.”

5.2 On 9 January 2019, Ms Sansbury emailed NHSL’s lead infection control doctor, Donald Inverarity, and lead HAI [Healthcare Associated Infection] Scribe advisor, Sarah Jane Sutherland. The email read: “Dear both, re theatre validation. Please see attached the sheet Multiplex intends to complete fro [sic] the theatres. Does this cover all you need?”

5.3 Ms Sutherland responded:

“I have had a look at which guidance relates to Ventilation and note that there is specific guidance within SHTM 03-01 ‘Ventilation within Healthcare premises’ Part A – Design and Validation which outlines the validation and commissioning process (section 8) – I have attached a copy. The contractor/project team should therefore refer to this document to ensure that all the requirements have been met as outlined in the guidance.”

5.4 Mr. Inverarity responded:

“Yes I agree, Jackie the validation report should demonstrate that all aspects of SHTM 03-01 have been addressed. This is a much wider exercise than only addressing infection control issues or air testing. The company that performs the validation is expected by SHTM 03-01 (and us) to produce an easy to read succinct report that outlines which aspects have passed or failed, what snagging issues have been identified and how they have been corrected. There is a recent example of such a report from the commissioning of the new theatres at SJH [St. John’s Hospital] a couple of years ago.”

5.5 Mr Henderson, who had been cc'd to this conversation, then advised:

> "MPX will by handover have carried out all the tests and validation required in the SHTM and will record that they have done so on the master sheet Jackie attached. These results and any commentary will be available as part of the O & M manual, this is in line with all projects carried out in NHSL. This will not be in the form of a specific report. Should we wish to have the validation done independently this can be arranged after handover at a cost to NHSL, however it is worth noting that the company NHSL usually employs to do validation checks of this type is the company carrying out the commissioning on behalf of Multiplex. Happy to meet and discuss so that we can be reassured what is being done meets our needs."

5.6 On 25 January 2019, the Director-General Health & Social Care and Chief Executive sent a letter to NHS Chief Executives. The letter stated:

> "Following…the ongoing incident at the Queen Elizabeth University Hospital (QEUH), 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 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…Friday 1 February."

The Inquiry team have not been able to locate NHSL's response to this request. However, a letter of 31 January from IHSL to Brian Currie responds to the terms of the 25 January letter, confirming that: "all ventilation systems have been designed, installed and commissioned in line with SHTM-03-01 as required". The response does detail the derogations from SHTM 03-01.

5.7 On 11 March 2019 Judith Mackay, Director of Communications, Engagement and Public Affairs for NHSL emailed the project team in anticipation of "questions from the media today about the formal involvement of Infection Control expertise in the design of RHCYP / DCN in the wake of criticisms about the apparent lack of documented evidence of their involvement in the design / commissioning / handover of QEUH".

5.8 Brian Currie responded to this email outlining the involvement of Infection prevention and control (IPC) throughout the project. On 12 March the IPC team's Head of Service, Fiona Cameron, responded directly to Mr Currie:

> "I agree we did have involvement and a dedicate person i.e. our HAI SCRIBE lead involved. However as per communications with Alex [Prof. Alex McMahon, NHSL's Executive Director for Nursing, Midwifery and Allied Healthcare Professionals] IPC were not involved in handover as per SCRIBE guidance recommendations. I cannot reliably say if all our recommendations were accepted".

5.9 That email goes on to raise specific concerns about ventilation:

> "I am aware as a result of the cancelled FOI there was discussion re air exchanges rates perhaps being suboptimal in clinical areas and we don't know what the outcome of that report was. The HAI SCRIBE documents or

minutes of your project meetings should be able to confirm. Another example IPCT can only assume the building engineer who accepted the building on behalf of NHS Lothian saw evidence of theatre validation See p114-124 of SHTM 03-01. IPC to the best of my knowledge have not seen a validation report (section 8.64-8.65 of SHTM 03-01). The validation/commissioning report should be a clearly understood document that outlines that the theatre is working optimally, not just engineering data, which allows us to have confidence in the efficiency of theatre ventilation and would go some way to provide the board with a level of assurance."

The Inquiry team have not been able to identify the "cancelled FOI" referenced by Ms Cameron in her email.

5.10 On 13 March 2019 Donald Inverarity, in an email to Prof. McMahon, adds:

"Although given assurances that pre hand over there would be validation performed on all theatre ventilation, as ICD [Infection Control Doctor] I've never seen any of these validation reports and neither have any of my consultant microbiologist colleagues albeit we were given a tour of the ventilation system and theatres as they were being built. […]

I also mention to you the paediatric isolation rooms which are designed as positive pressure ultraclean rooms with HEPA filtered air and yet the windows open to the outside unfiltered Edinburgh air defeating the purpose of the room. I don't know if any corrective action has taken place regarding this design flaw which was identified by Lindsay, Ewan Olsen and myself when we were invited to review the design of the room and its ventilation pre handover".

5.11 Regarding theatre ventilation validation, Mr Currie wrote:

"Theatre ventilation commissioning, include cascade and UCV validation took place between October 2018 and February 2019 and all certificates and

> reports have been examined and verified by Arcadis as Independent Tester…"

5.12 Mr Inverarity commented on the response from Mr Currie in an email to Prof. McMahon on 15 March:

> "I'm glad there is an independent validation of these results although when the new theatres were commissioned at [St Johns Hospital] in 2017 we were issued with a clear validation report that assured us all was well and functional (attached as an example of the sort of document we were hoping to receive). This is in line with SHTM 03-01 where it states the IPCT can legitimately request the validation report when a theatre is commissioned. I've pasted the relevant section from SHTM 03-01 below":

5.13 Mr Inverarity did not address the issue of air change rates in clinical areas or the "cancelled FOI" any further and concluded the email with:

> "I've spoken with Sarah Sutherland this afternoon and both of us would welcome the opportunity to assist with a walk round as news that the commissioning was complete and the building was now accepted by NHS Lothian had been a surprise to us both".

5.14 On 20 March 2019, an IPC site visit was attended by Mr Henderson, Ms Sutherland and Mr Inverarity. A later email discussing this site visit stated that Mr Henderson and Janice McKenzie [NHSL's Clinical Director]: "felt that the walkround had been arranged specifically to address concerns over water safety and ventilation issues post press articles about QEUH." The email also stated: "Theatre validation was discussed and DI [Donald Inverarity] agreed to forward report from St John's for reference" and that: "RH [Ronnie Henderson] explained the commissioning and validation that had taken place for both isolation rooms and theatres and that records were available on the project data storage system…RH explained that both isolation and theatre validation would be re done once construction works were completed."

5.15 On 27 March, plans were made for the completion of the Stage 4 HAI Scribe review. An email from Donald Inverarity to Sarah Jane Sutherland stated:

> "Hi Sarah,
>
> As part of this can you ensure that for all the isolation rooms in the new building that we are provided with details of the air pressures in the room and anteroom or corridor and ensure that there has been some assessment of air flows and pressures in the room and anteroom, particularly when doors are open. I had been speaking to some of the ID consultants at QEUH and the Glasgow children's hospital yesterday and they explained that all their isolation rooms were being refitted as the original design didn't seem to provide appropriate pressures and air flows when the rooms were occupied".

5.16 Responding to this point, Ronnie Henderson wrote:

> "The system has been designed to ensure the correct airflows and pressures are present at all times however this will need to be confirmed during final commissioning and validation post completion of the works we viewed and discussed last week. If required I can provide the design information that we have available."

5.17 On 10 May 2019 Mr Henderson sent an email to Mr Inverarity attaching a sample 'Theatre Ventilation Validation Checklist' for one of the operating theatres at the hospital. The email stated:

> "Multiplex have provided us with their validation report for Theatre 30 as an example of what they intend to provide for each individual theatre. You will note it differs from the example you sent from St Johns although there is a declaration that it conforms. I can confirm that these have been reviewed and signed off by the independent tester which provides us with reassurance of

compliance. If however you have any doubts or concerns, happy to discuss with a view to appointing someone from outwith the project to give an additional layer of assurance if required."

5.18 Although the attachment to this email is titled 'Theatre Ventilation Validation Checklist', the document relates mostly to commissioning data. The only references to validation are a section headed 'UCV Canopy' which features the entry: "UCV Commissioned & Validated N/A" and a statement reading: "The theatre suite ventilation system has been commissioned and validated in accordance with the required regulations and has achieved the required standard."

5.19 Mr Inverarity's response to this email stated:

"The Multiplex document doesn't indicate what size the theatres are, what the air pressures are in the theatre areas (anaesthetic room, prep area, theatre etc) or what number of air changes per hour are achieved and neither does it mention what, if any, microbiological assessment of air quality has been performed (that box is blank so I'm presuming none has been performed). Although you are being assured that it 'conforms' it isn't explicitly stated what standard it 'conforms' to –presumably SHTM 03-01 ? The statement: 'The theatre suite ventilation system has been commissioned and validated in accordance with the required regulations and has achieved the required standard.' might be factually correct but there is nothing to back it up and it tells us absolutely nothing about how the theatre performs at baseline. It is essentially asking us to taking everything on trust that its all okay. That makes me a little uncomfortable in the current political climate of scrutiny. Does it achieve the required standard with a wide safety margin or did it barely achieve it empty without any operations in progress? At validation the report should tell us at baseline how it actually 'performs' so that if there are problems in the future we have some baseline parameters of air pressures and air changes per hour to compare it against. I see that 'all test documentation is located on Zutec.' I don't know what Zutec is or whether

anyone in NHS Lothian has access to that information so essentially I can't provide any assurance to myself or NHS Lothian by assessing it myself. But in my role as infection control doctor I shouldn't need to go to source documents and extract that information to interrogate and interpret it myself, it should be clearly and explicitly included in the validation report."

5.20 On 13 May 2019, Mr Henderson provided the following response:

"As you know through our previous discussions it is neither our desire nor intention to provide something you are not 100% happy to accept as a suitable record or report. It is true to say that all the relevant information is available on the project data management system 'Zutec', I will ask our AE [Authorising Engineer] (ventilation) to review and independently validate and to provide the type of report you expect. For completeness, I do think it would be beneficial for yourself to view the kind of records held on the Zutec system and I would be happy to demonstrate this say during a one hour session."

5.21 As will be discussed below, the Inquiry team understand that the AE Mr Henderson was referring to in this email was Turner Professional Engineering Services (Turner).

5.22 At an NHSL Programme Board Meeting of 13 May 2019, at which Mr. Henderson was present, it was confirmed that: "RHCYP will open on 9th July 2019 at 08.00hrs, when the existing department will close." The minutes from that meeting do not reflect any discussion of concerns relating to the validation of ventilation equipment.

5.23 On 17 May 2019, Lindsay Guthrie, NHSL's Lead Nurse for IPC, emailed Mr Henderson. The email included the following text:

"I discussed with Donald [Inverarity] the further ventilation validation programme you have arranged for next Friday 24th May. I understand this to

be 1) for theatres, cleaning all ducts, rebalancing and checking pressure cascades, and will not include further UCV testing); and 2) for isolation rooms repeat all commissioning and validation tests

"We do think that it would be useful to have independent validation by an authorising engineer, recognising there is a cost associated with this."

5.24 The same day, Mr Henderson emailed Jamie Minhinnick, an Authorising Engineer at Turner. The email stated:

"We are closing in on the final move date for the new RHCYP & DCN hospital in Edinburgh and the contractor is about to redo validation and commissioning of some ventilation systems. Can I ask the following:

1. Would you be able to come to site on 24/5 to jointly witness the re-validation of Isolation suites, if so I will confirm time and arrangements on Monday after a meeting with the construction commissioning manager.
2. Similarly our Infection Control Team are keen that that the theatres are independently validated and a report produced declaring fitness for purpose, is this a service you can provide/arrange"

5.25 On 20 May, Mr Minhinnick responded:

"I'm afraid I am not available on the 24/5 to witness the isolation rooms. I will speak to my colleagues to see if someone is available.

We do not offer an airflow measurement survey for independent validation. This should be arranged through your verification/validation contractor who will produce a report on the system which I/we can witness and cross reference against the design criteria.

> It is very important at this stage that all commissioning data is made available to your independent validation engineers. All critical systems (as detailed in section 4 of SHTM 03/01 Pt B) should be validated as fit for purpose and to set verification criteria moving forward not just theatres. You should also pass any agreed derogations with regards to ventilation systems to the engineers. Without this, they will be measured against the SHTM03/01 criteria and not the design (which can often be very different)."

5.26 In this email Mr. Minhinnick recommends that NHSL independently validate all critical ventilation systems at the RHCYP/DCN. This appears to reflect the recommendation of SHTM 03-01 discussed at paragraph 3.7.5 of this PPP. A colleague of Mr Minhinnick, Authorising Engineer John Rayner, responded to this email shortly afterward: "I'm afraid that my diary is almost completely full for the next 9 weeks and so I cannot make this last minute commitment for next week."

5.27 Later the same day, Ian Storrar, Head of Engineering at HFS, recommended that Mr Henderson contact BSRAI regarding theatre ventilation verification. On 28 May, Mr Henderson emailed BSRAI. The email included the following text:

> "As part of the initial validation and verification of the various ventilation systems in the new RHCYP/DCN hospital in Edinburgh we require to independently validate our critical systems including theatres and isolation suites as well as radiology areas, is this something you can provide.
>
> Please note there are 10 individual operating theatres and 19 isolation rooms as well as an angiography procedures room and intra-operative MRI
>
> If possible I would like to arrange for this to be done quickly as we are in the process of gearing up to equip these areas for opening which is scheduled for early July."

5.28 In this email Mr. Henderson describes a requirement on NHSL to independently validate all critical ventilation systems at the RHCYP/DCN. This appears to be in response to Mr. Minhinnick's email of 20 May. It is not clear to the Inquiry team why NHSL's references to validation prior to Mr Minhinnick's email are only in relation to theatres and isolation rooms. It is also not clear why NHSL instructed an independent validator in the manner and timeframe set out in these paragraphs. The Inquiry team invite CPs to assist on these points.

5.29 On 30 May, BSRAI advised Mr. Henderson they could not assist. Later that same day, Mr. Henderson emailed IOM. The email included the following text:

> "As discussed we are looking for independent validation to SHTM 03-01 of 10 theatres (7 of which are UCV but can also be used as conventional), 19 isolation rooms, 1 angiography procedures room, 1 intra-operative MRI, and ITU/HDU/NNU. There are also 3 standard MRI's, & 2 CT's, which are non interventional, if these are required under 03-01.
>
> "Due to the large volume I will forward all relevant drawings tomorrow and look to set up an introduction and planning meeting for early next week with a view to carrying the validation out week beginning 17/6."

5.30 IOM's validation commenced on 17 June 2019. The RHCYP/DCN was scheduled to open on 9 July 2019. It is not known whether independent validation at this stage of a project reflects standard or accepted practice.

5.31 An 'RHSC & DCN – Steering Group' meeting note of 24 June 2019 featured the following entry:

> "Critical Ventilation Systems – Independent validation
>
> - The verification process has highlighted some real concerns with certain areas not achieving the required air changes
> - A separate workstream will look at these questions

- ***Critical to opening***"

5.32 On 4 July 2019 the decision was taken by Jeane Freeman, the then Cabinet Secretary for Health and Sport, to delay opening the hospital. The Inquiry team understand that test results for the Critical Care department produced by IOM were among the factors that informed this decision. This is, however, subject to further investigation.

5.33 The Inquiry hold 24 'Services Reports' produced by IOM prior to 4 July 2019. At this stage it is not clear if these form the entirety of IOM reports predating that day. The Inquiry team invite CPs to assist on this point.

5.34 Each report indicates that IOM were instructed to validate the hospital's critical ventilation systems on behalf of NHS Lothian. The 'Executive Summary' of each IOM report features the text:

> "SHTM 03-01 requires that critical ventilation systems are validated against design/SHTM standards and that any inability to achieve the recommended standards is classed as a failure."
>
> "This summary highlights where standards have or have not been achieved and is expanded upon in the relevant 'Results' sections."

5.35 The 24 IOM reports investigated 37 areas of the hospital, ranging from UCV theatres to single and four-bed bays in the High Dependency Unit (HDU), isolation suites, recovery rooms and rooms within the neonatal unit. If the 24 IOM reports form the entirety of reports predating 4 July 2019, it is not clear to the Inquiry team why these 37 areas were selected for assessment. The Inquiry team invite CPs to assist on this point.

5.36 Among other things, IOM tested these 37 areas with respect to air change rates and pressure differentials. Of the 37 areas known to the Inquiry team to have

been surveyed, 23 failed to achieve the air change rate and/or pressure differential standards recommended by SHTM 03-01. Of the 23 areas that failed, seven were in Critical Care.

6. Provisional conclusions

6.1 As outlined in the opening pages, this PPP sets out the Inquiry team's initial understanding of the commissioning and validation procedure for the Critical Care areas of the RHCYP/DCN. It is provisional in nature. This PPP does not constitute the findings of the Chair of the Inquiry. It is open to any CP to provide information to assist the Inquiry team and/or contradict the contents of the paper.

6.2 The Inquiry team are of the provisional understanding that:

6.2.1 The Project Agreement provided for Project Co to, as a minimum, commission the facilities in accordance with the 'Guidance to Engineering Commissioning'.[11] The Inquiry team understand that Guidance to outline best practice for all aspects of commissioning. It is therefore understood to be relevant to all parties involved in the project, including NHSL. It is however acknowledged that, so far as the Inquiry team are aware, there was no actual provision for parties other than Project Co to adhere to that Guidance.[12]

6.2.2 That Guidance states that Room Data Sheets should form the basis of commissioning data.[13] The Project Agreement provided for Project Co to commission the systems to comply with the Room Data Sheets.[14] The Room Data Sheets were to include the data contained in the Environmental Matrix.[15] The Inquiry team have not seen any Environmental Matrix or Room Data Sheets post-dating the Settlement Agreement of 22 February 2019, which appears to have effectively finalised the final contractual specification for ventilation.[16]

[11] See para 2.1.4 of this PPP.
[12] See paras 3.1.2 & 3.1.3 of this PPP.
[13] See para 3.2.10 of this PPP.
[14] See para 2.1.2 of this PPP.
[15] See para 4.2.1 of this PPP.
[16] See para 4.2.11 of this PPP.

6.2.3 The Project Agreement also specified that, irrespective of the requirements in the Room Data Sheets, Project Co were to provide mechanical ventilation to suit the functional requirements of each of the rooms.[17] It is therefore not known what the RHCYP/DCN contract intended to be used as the basis of commissioning data for mechanical ventilation. It is also not known what was used as the basis of this commissioning data in practice. The Inquiry team invite CPs to assist on this point.

6.2.4 The essential purpose of ventilation commissioning is to verify that the equipment is capable of delivering the performance criteria required by the design. Ventilation commissioning is not ordinarily concerned with verifying performance criteria against healthcare guidance, although this may be included within the scope of meeting the 'safety requirements' referenced in SHTM 03-01 or the 'user requirements' referenced in SCIM.[18]

6.2.5 The air change rate and room pressure differentials of each area were dictated by the AHU serving that area.[19]

6.2.6 In certain areas noted in Table 1, the air change rate and room pressure differentials were also dictated by a separate IEF.[20]

6.2.7 Each AHU and IEF was commissioned by H&V .[21]

6.2.8 The ventilation equipment relevant to the rooms in Table 1 was commissioned between February and October 2018.[22] However it appears the Settlement Agreement of 22 February 2019 finalised the specification for these rooms, and required an alteration to the design of the four-bed rooms.[23] It is therefore not clear to the Inquiry team how the earlier commissioning sits in relation to the later agreed specification. The Inquiry team invite CPs to assist on this point.

[17] See para 2.1.2 of this PPP.
[18] See para 3.2.8 of this PPP.
[19] See para 4.2.14 of this PPP.
[20] See para 4.2.14 of this PPP.
[21] See para 4.2.15 of this PPP.
[22] See para 4.2.16 of this PPP.
[23] See para 4.2.10 of this PPP.

6.2.9 The 'Guidance to Engineering Commissioning' also states that commissioning should always be completed prior to the issue of a Certificate of Practical Completion.[24] This recommendation appears to have been reflected in the RHCYP/DCN contract.[25] However in practice it appears the Certificate of Practical Completion for the RHCYP/DCN was issued before commissioning of the ventilation systems can have been completed.[26] The Inquiry team invite CPs to assist on this point.

6.2.10 That Guidance also states that 'Works Staff' should be involved in the final witnessing and demonstration as part of the familiarisation process.[27] This recommendation was reflected in the Services Contract between IHSL and BYES, who are understood to be the 'Works Staff' for the RHCYP/DCN project.[28] However in practice it does not appear that any parties witnessed the commissioning of the AHU relevant to the rooms in Table 1.[29] The Inquiry team invite CPs to assist on this point.

6.2.11 That Guidance also appears to describe CIBSE Commissioning Code A as setting out the 'systematic set of procedures which must be followed' when commissioning ventilation systems.[30]

6.2.12 As part of a provision to supply documentation to the IT, the Project Agreement included an expectation that Project Co would provide commissioning documentation in accordance CIBSE Commissioning Code A.[31] The Inquiry therefore understand that the contract expected commissioning to be carried out in a way that reflected the specifics of 'what should be done' in the Code. The contract therefore appears to align with the detail of the Code.

[24] See para 3.3.1 of this PPP.
[25] See paras 2.1.14 & 2.1.15 of this PPP.
[26] See para 4.2.18 of this PPP.
[27] See para 3.3.3 of this PPP.
[28] See para 3.3.4 of this PPP.
[29] See Table 1 of this PPP.
[30] See paras 3.3.12 & 3.3.13 of this PPP.
[31] See para 2.1.10 of this PPP.

6.2.13 The Inquiry team understand that measuring air volume flow rates and comparing these with the flow rates required by the design is a crucial aspect of commissioning, as evidenced by CIBSE Commissioning Code A, SHTM03-01 and evidence heard by the Inquiry. The Inquiry team also understand that volume flow rates are required to calculate air changes per hour.[32]

6.2.14 Irrespective of the purpose of commissioning to verify equipment performance against design criteria, the Inquiry team therefore understand that the commissioning phase may have offered an opportunity for the parties involved in commissioning to have sight of design and performance criteria that was later identified by IOM as diverging from healthcare guidance.

6.2.15 It is not clear what individual(s) reviewed test results on behalf of the IT for the rooms in Table 1. The Inquiry team invite CPs to assist on this point. An 'Independent Tester Services' proposal seen by the Inquiry team names John Edwards has having the appropriate capacity to deliver the IT services in relation to Mechanical & Electrical engineering. The proposal also states that Mr. Edwards is a qualified Authorising Engineer for ventilation services. The Inquiry team therefore understand that the IT may have possessed a certain level of awareness and expertise with respect to HTM and SHTM standards. The Inquiry team accordingly understand that this may have offered the IT a greater opportunity to identify design and performance criteria that diverged from healthcare guidance.

6.2.16 Where pressure differentials between areas are intended by a ventilation design, CIBSE Commissioning Code A recommends measuring and recording these between all adjacent spaces, and comparing the measurements with the specified design requirements. The Code states that, once acceptable conditions are obtained, it is imperative to record final balance figures including air volume flow

[32] See pg 17 of the transcript of Mr. Poplett's evidence and Health Facilities Scotland, 'Scottish Health Technical Memorandum 03-01 Ventilation for healthcare premises Part A – Design and validation', (February 2014), para 8.33.

rates and pressure differentials. These should then be verified by the accepting authority.[33]

6.2.17 Although the RHCYP/DCN contract appears to include a provision expecting the detail above to be followed,[34] in practice it appears that no room pressure differentials were recorded, witnessed or approved for the rooms in Table 1.[35] This was despite the design for these areas having pressure requirements relative to adjacent spaces. The Inquiry team invite CPs to assist on this point.

6.2.18 Under the IT Contract, the IT was to review 100% of all Mechanical and Electrical services test results. This is understood to include all the ventilation commissioning test results.[36] It is also understood to align with recommendations in CIBSE Commissioning Code A.[37]

6.2.19 Under the IT contract, the IT was also to issue a Certificate of Practical Completion to the Board and Project Co when he was satisfied that the facilities were complete in accordance with the Completion Criteria.[38]

6.2.20 The Completion Criteria included the provision that all mechanical and electrical plant and systems shall be tested, commissioned and operate satisfactorily in accordance with the specified design criteria and the Room Data Sheets.[39] This too is understood to align with recommendations in CIBSE Commissioning Code A.[40]

6.2.21 In practice it appears the IT issued the Certificate of Practical Completion without room pressure differential data being measured and approved for the rooms in Table 1.[41] This was despite the design for these areas having pressure

[33] See para 3.4.3 of this PPP.
[34] See paras 2.1.10 & 3.4.4 of this PPP.
[35] See Table 1 of this PPP.
[36] See para 2.1.13 of this PPP.
[37] See para 3.4.7 of this PPP.
[38] See para 2.1.14 of this PPP.
[39] See para 2.1.8 of this PPP.
[40] See para 3.4.7 of this PPP.
[41] See Table 1 of this PPP.

requirements relative to adjacent spaces. It is not known why this happened. The Inquiry team invite CPs to assist on this point..

6.2.22 Under the IT contract, the IT was also to issue a Commissioning Completion Certificate on the completion of Project Co's Post-Completion Commissioning and the Board's Post Completion Commissioning.[42] It appears the Commissioning Completion Certificate for the RHCYP/DCN project was issued before commissioning was completed.[43] The Inquiry team invite CPs to assist on this point.

6.2.23 The commissioning of each AHU and IEF by H&V included 'testing and balancing' of these systems. This included measuring air volumes and air velocities. As discussed above, the Inquiry team understand this may have offered an opportunity for the parties involved in commissioning to have sight of air change per hour data that was later identified by IOM as diverging from healthcare guidance.

6.2.24 CIBSE Commissioning Code A provided that, unless the designer specifically called for all commissioning aspects to be witnessed, an assessment of a proportion of results should enable the witnessing authority to establish a level of confidence in the commissioning results being presented.[44] The IT contract envisaged that the IT would witness approximately 50% of the tests for Mechanical and Electrical services such as ventilation systems.[45] However in practice the commissioning of the AHU relevant to the rooms in Table 1 does not appear to have been witnessed.[46] Although the IT does not appear to have witnessed the testing for AHU 04-06, it is not known whether the IT otherwise complied with the witnessing provision in the IT contract.

6.2.25 The Project Agreement provided for Project Co to produce a final draft 'operation and maintenance manual' for the project on or before the day the

[42] See para 2.1.16 of this PPP.
[43] See paras 4.2.19 & 4.2.20 of this PPP.
[44] See para 3.4.5 of this PPP.
[45] See para 2.1.13 of this PPP.
[46] See Table 1 of this PPP.

Certificate of Practical Completion was issued by the IT. The principal version was to be delivered within the next 10 business days. This was to be in sufficient detail to allow the Board to plan for the safe and efficient operation of the facilities.[47] These provisions aligned with recommendations made in SCIM commissioning guidance for contractors to provide operation and maintenance manuals to the client.[48]

6.2.26 The Inquiry team have not been able to locate any final draft or principal operation and maintenance manual for the project. However operation & maintenance manuals for AHUs and fans have been reviewed.

6.2.27 It is not clear if these manuals fulfilled the terms of the Project Agreement for provision of an operation and maintenance manual. It is also not clear if/when these manuals were submitted to NHSL and approved. It is therefore not clear whether the recommendations of the SCIM commissioning guidance were met. The Inquiry team invite CPs to assist on these points.[49]

6.2.28 BYES were trained to operate and maintain the equipment while witnessing equipment tests.[50] Training was subsequently given to NHSL by BYES or Multiplex.[51] For the AHU outlined in Table 1, it does not appear that any equipment tests were witnessed.[52] It is therefore understood that no party was trained to operate and maintain this equipment. It therefore appears that the recommendation in SCIM commissioning guidance, that a facility handover cannot occur without fit-for-purpose and safe operation training,[53] was not met with respect to the AHU in Table 1. The Inquiry team invite CPs to assist on this point.

6.2.29 NHSL secured assurance that adequate operation and maintenance training were provided by reviewing ‘training records’ provided by Project Co. NHSL

[47] See paras 2.1.5 & 2.1.6 of this PPP.
[48] See para 3.5.2 of this PPP
[49] See paras 4.2.42 & 4.2.43 of this PPP.
[50] See para 3.3.5 of this PPP.
[51] See para 4.2.37 of this PPP.
[52] See Table 1 of this PPP.
[53] See para 3.5.1 of this PPP.

were satisfied from these reviews that the appropriate training and certification was in place.[54]

6.2.30 The IT contract provided for the IT to review 100% of all Mechanical and Electrical services test results. This was in alignment with the recommendation in CIBSE Commissioning Code A that commissioning documentation should be provided for the witnessing authority to countersign to confirm test results.[55] The IT approved the AHU commissioning reports for the areas in Table 1.[56] On the basis the commissioning reports show that tests for AHU 04-06 were not witnessed, it is not known why the IT approved these reports. It is also not clear why the IT issued the Certificate of Practical Completion on this basis. The Inquiry team invite CPs to assist on this point.

6.2.31 The Inquiry team also cannot locate commissioning test report approval for any of the IEFs other than for IEF06. On the basis that these reports were not approved, it is not known why the IT did not request the outstanding information for approval or why the Certificate of Practical Completion was issued without this information being approved. The Inquiry team invite CPs to assist on this point.

6.2.32 The essential purpose of ventilation validation is to verify that the system as a whole is fit for purpose. This is understood to mean that validation is, at least in part, concerned with verifying equipment performance criteria against healthcare guidance.[57]

6.2.33 The Inquiry team have been unable to locate any specific provisions for the validation of ventilation equipment in the RHCYP/DCN contract documents. It is not known if this reflected standard or accepted practice at the time the relevant contracts were signed.[58]

[54] See paras 4.2.35 of this PPP.
[55] See para 6.2.18 of this PPP.
[56] See Table 1 of this PPP.
[57] See para 3.6.6 of this PPP.
[58] See para 3.6.1 of this PPP.

6.2.34 In the absence of any contractual provisions, it is assumed that the version of SHTM 03-01 that applied during the construction of the RHCYP/DCN outlined best practice for validation at the time.[59]

6.2.35 That version of SHTM 03-01 recommended that all areas within a hospital requiring specialised ventilation should be validated by an independent party appointed by the Health Board.[60] The areas requiring specialised ventilation included Critical Care areas.[61]

6.2.36 The Inquiry team have seen documents headed with the Multiplex logo, which indicate that single bed isolation rooms were validated on 6 June 2019 and signed off by Multiplex, Mercury and Arcadis.[62] It is not clear from the face of these documents who carried out the validation in relation to the air change rate and room pressure differential data for these spaces. A 'Method Statement for H&V Commissioning Services Ltd' regarding 'Validation of Theatre Suites & Isolation Rooms' has been seen by the Inquiry team, which may suggest that H&V provided the validation, as well as the commissioning, of these rooms. The Inquiry team invite CPs to assist on this point.

6.2.37 It is not clear at this stage why the single bed isolation rooms in Table 1 were validated on 6 June 2019. The Inquiry team invite CPs to assist on this point.

6.2.38 The Inquiry team are aware that UCV theatres at the hospital were validated by MAT on 26 October 2018.[63] This validation was carried out to verify that the installed system performed in accordance with SHTM 03-01. Validation reports produced by MAT were approved by Multiplex and Mercury on 29 October 2018. It is not clear to the Inquiry team why these areas were earmarked for validation prior to IOM's involvement in the project. The Inquiry team invite CPs to assist on this point.

[59] See para 3.6.2 of this PPP.
[60] See para 3.7.3 of this PPP.
[61] See para 3.7.1 of this PPP.
[62] See paras 4.2.44 & 4.2.47 of this PPP.
[63] See para 4.2.48 of this PPP.

6.2.39 The remaining Critical Care areas in Table 1 do not appear to have been validated, independently or otherwise, prior to IOM's involvement in the project.[64] It is not clear why these areas were not included in the validation that appears to have occurred prior to IOM's involvement. The Inquiry team invite CPs to assist on this point.

6.2.40 In March 2019 HFS requested evidence from NHSL as to how the Board was assured that engineering systems including ventilation had been commissioned and validated to ensure safety, quality and compliance. NHSL responded that, among other things, this assurance had been provided by the provisions of the BCRs, the involvement of the IT, and the suite of testing and commissioning documentation approved by the IT.[65]

6.2.41 The Inquiry team are aware that a 'Theatre Ventilation Validation Checklist' for one of the operating theatres at the hospital was shared with infection control prior to IOM's involvement with the project.[66]

6.2.42 On 30 May 2019, IOM were instructed to independently validate the hospital's critical ventilation systems on behalf of NHSL. This step appears to have been taken in response to a recommendation from NHSL's infection prevention control team, after concerns were raised in relation to the 'Theatre Ventilation Validation Checklist' referenced above.[67]

6.2.43 IOM's validation commenced on 17 June 2019. The RHCYP/DCN was scheduled to open on 9 July 2019. It is not known whether independent validation at this stage of a project reflects standard or accepted practice.[68]

6.2.44 In an email to BSRAI, NHSL's Commissioning Manager Ronnie Henderson described a requirement on NHSL to independently validate critical ventilation

[64] See Table 1 of this PPP.
[65] See paras 4.2.50 and 4.2.51 of this PPP.
[66] See para 5.17 of this PPP.
[67] See paras 5.17-5.29 of this PPP.
[68] See para 5.30 of this PPP.

systems at the RHCYP/DCN. This appears to reflect a recommendation in SHTM 03-01, ostensibly brought to Mr Henderson's attention by Authorising Engineer Mr Minhinnick in an email of 20 May 2019.[69] It is not clear to the Inquiry team why NHSL's references to validation prior to Mr Minhinnick's involvement are only in relation to theatres and isolation rooms. It is also not clear why NHSL instructed an independent validator in the manner and timeframe set out in this PPP. The Inquiry team invite CPs to assist on these points.

6.2.45 IOM's validation activities included surveying UCV theatres, single and four-bed bays in HDU, isolation suites, recovery rooms and rooms within the neonatal unit.[70] It is not clear why these specific areas were highlighted for assessment. The Inquiry team invite CPs to assist on this point.

6.2.46 Of the 37 areas known to have been surveyed by IOM, 23 failed to achieve the air change rate and/or pressure differential standards recommended by SHTM 03-01. Of these 23 areas, seven were in Critical Care.[71]

6.2.47 Test results for the Critical Care department produced by IOM were among the factors that informed the decision to delay opening the hospital.[72]

6.2.48 It is possible that, if independent validation had been carried out sooner than June 2019, divergences between the performance of the ventilation equipment in Critical Care and the recommended standards in SHTM 03-01 would have been detected earlier.

[69] See paras 5.25 to 5.28 of this PPP.
[70] See para 5.35 of this PPP.
[71] See para 5.36 of this PPP.
[72] See para 5.32 of this PPP.

7. Questions & requests for documents

7.1 Do you agree with the provisional conclusions of this paper? If not please provide correction or clarification.

7.2 Are you able to provide the following documentation:

- Room pressure differential test data, and IT approval of this, for AHU 04-06 and IEF03 – IEF06;
- Any documentation illustrating that commissioning tests for AHU 04-06 were witnessed; and;
- IT approval of commissioning tests for IEF03 – IEF05.

7.3 If applicable, please explain why room pressure differential tests were not conducted for AHU 04-06 and IEF03 - IEF06, and why commissioning tests for AHU 04-06 were not witnessed.

7.4 If room pressure differential tests were not conducted for AHU 04-06, why did the IT issue a Certificate of Practical Completion and Commissioning Completion Certificate?

7.5 If commissioning tests for AHU 04-06 were not witnessed, why did the IT approve the commissioning reports for AHU 04-06?

7.6 If no Room Data Sheets were produced reflecting the final agreed environmental information, how did paragraph 3.6.3 of the BCRs apply to the project?

7.7 With respect to paragraph 3.6.3 of the BCRs, what did the Board intend to be used as the basis for the 'functional requirements' of mechanical ventilation?

7.8 Why were the Certificate of Practical Completion and Commissioning Completion Certificate issued on 22 February 2019, when the commissioning and validation process was not yet complete?

7.9 Prior to IOM involvement, why was validation planned and/or sought for some areas such as single bed isolation rooms and UCV theatres, and not for others?

7.10 Why did NHSL not instruct an independent validation of the RHCYP/DCN's critical care ventilation systems before a recommendation to do so was made by the infection prevention and control team on 17 May 2019?

7.11 With respect to performance parameters, was the ventilation equipment serving critical care commissioned against a standard other than SHTM 03-01? If so, what was this standard?

7.12 With respect to performance parameters, was the ventilation equipment serving critical care validated against a standard other than SHTM 03-01? If so, what was this standard?

7.13 The Inquiry hold IOM surveys predating 4 July 2019 for the following rooms: 1-B1-009, 1-B1-031, 1-B1-063, 1-B1-037, 1-B1-065, 1-B1-075, 1-B1-016. Please provide any remaining IOM surveys conducted for the Critical Care department prior to 4 July 2019 and which were available at the time the decision was taken to delay the opening of the hospital.

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Provisional Position Paper 7

Non-ventilation issues with the potential to adversely impact on patient safety and care at the RHCYP + DCN; and remedial works to resolve them

Purpose of the Paper

This Provisional Position Paper sets out the Inquiry's understanding of issues with key building systems, aside from the ventilation system, that could have the potential to adversely impact on patient safety and care and which arose in the construction of the Royal Hospital for Children and Young Persons and the Department of Clinical Neurosciences (RHCYP/ DCN). The paper also outlines the Inquiry team's understanding of actions that have been taken to remedy these issues.

It follows on from an earlier version of this paper that was published on the Inquiry's website and distributed to relevant core participants. Comments were provided by NHS Lothian, NHS NSS, IHS Lothian Limited, Multiplex Construction Europe Limited and TUV SUD Limited.

The Inquiry has carefully considered the comments received, together with the supporting material submitted and other material held by it. It has reviewed and revised the Provisional Position Paper accordingly to produce this updated version.

As a result, the views expressed in this version of the paper are firmer than those set out in the previous one. It follows that the Chair will be invited by the Inquiry Team to make findings in fact based on the content of this paper. However, while the views may be firmer, that should not be equated with "final". The Inquiry's investigations are not yet concluded and, at the time of publication, there is to be a hearing dealing with matters arising in relation to the Royal Hospital for Children and Young Persons/ Department of Clinical Neurosciences commencing on 26 February 2024. Evidence at that hearing and submissions made following it (as well as any other evidence received) may require the Inquiry to reconsider matters set out in this paper. Nonetheless, in the absence of such evidence or submissions, it is likely that the contents of this paper will be used as a basis for the Inquiry's report.

Readers of this paper should note that section 2 of the Inquiries Act 2005 provides that an inquiry is not to rule on, and has no power to determine, any person's civil or criminal liability. Accordingly, in the context of the Scottish Hospitals Inquiry's investigations into the matters falling within its remit in relation to the Royal Hospital

for Children and Young Persons, the issue of any liability arising under the Project Agreement is not a question for the Inquiry to rule on or determine and nothing in this Paper should be taken as doing so.

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Glossary

ac/hr	air changes per hour (air change rate for ventilation)
ACOP L8	Approved Code of Practice dealing with the risk of Legionnaires disease issued by the Health and Safety Executive, enforceable under the Health and Safety at Work Act 1974
AE	Authorising Engineer
AHU	Air Handling Unit
ARHAI	Antimicrobial Resistance and Healthcare Associated Infection Service, Scotland
BAU	Business as Usual
BYES	Bouygues Energies & Services FM UK Limited, the facilities management contractor appointed by IHSL
CAMHS	Child and Adult Mental Health Service
COSHH	Control of Substances Hazardous to Health Regulations 2002
DCN	Department of Clinical Neurosciences
DSSR	Engineering Consultants
ED	Emergency Department
ESG	Executive Steering Group
FM	Facilities Management
H&S	Health and Safety
HAI or HCAI	Healthcare Associated Infection
HAI-Scribe	Healthcare Associate Infection Systems for Controlling Risk in the Built Environment
HCID	High Consequence Infectious Diseases
HEPA filter	High Efficiency Particulate Air filter
HFS	Health Facilities Scotland (part of NHS National Services Scotland)
HIIAT	Hospital Infection Incident Assessment Tool
HPS	Health Protection Scotland (part of NHS National Services Scotland)
HV/LV	High voltage/low voltage
HVC	High Value Change

IHSL	Integrated Health Solutions, Lothian, the Project Company or private partner to NHSL with whom NHSL contracted to deliver the new hospital.
IMT	Incident Management Team
IOM	Institute for Occupational Medicine, third party validators for ventilation
IPCT	Infection Prevention and Control
IPCT	Infection Prevention and Control Team
LVC	Low Value Change
OB	Oversight Board
NHSL	National Health Service Lothian
NHS NSS	National Health Service National Services Scotland
MM	Mott MacDonald Limited, NHSL's technical advisors
MPX	Brookfield Multiplex Construction Europe Limited, the construction contractor appointed by IHSL
MVC	Medium Value Change
NIPCM	National Infection Prevention and Control Manual
Project Agreement	the agreement between NHSL and IHSL dated 12 and 13 February 2015 for the design, build, finance and maintenance of the new RHCYP building at Little France.
RAG	**R**ed **A**mber **G**reen risk rating
RHCYP	Royal Hospital for Children and Young People (name given to the new children's hospital)
SA1	Settlement and Supplementary Agreement No.1
SA2	Project Agreement Supplementary Agreement No. 2
SBAR	Situation, Background, Analysis and Recommendation
SG	Scottish Government
SHTM	Scottish Health Technical Memorandum
SHPN	Scottish Health Planning Note
TUV SUD	TUV SUD Limited (trading as Wallace Whittle) – the building services engineer appointed as a sub-contractor by MPX
WSG	Water Solutions Group

WSP	Water Safety Plan
QEUH	Queen Elizabeth University Hospital

1. Introduction

1.1 Terms of reference

1.1.1 Included in the terms of reference of the Inquiry is:

> 1. To examine the issues in relation to adequacy of ventilation, water contamination and other matters adversely impacting on patient safety and care which arose in the construction…of the RHCYP/DCN; and to identify whether and to what extent these issues were contributed to by key building systems which were defective in the sense of:
>
> A. Not achieving the outcomes or being capable of the function or purpose for which they were intended;
> B. Not conforming to relevant statutory regulation and other applicable recommendations, guidance, and good practice.
>
> And,
>
> 7. To examine what actions have been taken to remedy defects and the extent to which they have been adequate and effective.

1.1.2 In July 2019, after concerns were raised about the ventilation system in Critical Care areas of the Royal Hospital for Children and Young People (RHCYP), a decision was made to delay opening the hospital until it was confirmed safe for patients. Thus, there was effectively an opportunity to remedy any potential 'defects' or issues in building systems before they could have an adverse impact on patient safety and care.

1.1.3 The focus of this paper is to consider whether issues identified with building systems prior to opening were resolved before the hospital opened. Any references to 'defects' and 'non-compliances' in this paper are taken from contemporaneous sources and are not intended by the Inquiry to be references to whether or not the contractual requirements under the Project Agreement were met. Rather, the paper is concerned with systems that are or may have been "defective" in the sense that

the term is used in Term of Reference 1 (with Term of Reference 7's reference to "defects" being interpreted accordingly).

1.1.4 An adverse impact on patient safety and care as referred to in Term of Reference 1 is understood fairly broadly in this paper to include

- an increase in the risk of healthcare associated infection (HAI)
- an increased risk of interruption of clinical services
- an increased risk of patient injury

1.2 **Identification of issues**

1.2.1 In the lead up to the date originally fixed for the opening of the hospital, and in the months following the decision to delay opening the hospital, NHS Lothian (NHSL), the Scottish Government (SG) and National Services Scotland (NHS NSS) commissioned various reports which, taken together, assessed the safety of building systems, and whether they were fit for purpose.

1.2.2 Some of these reports were undertaken as part of the normal course of preparing for hospital opening. Other reports were commissioned either by NHSL or by the Scottish Government in response to the escalation of concerns regarding the safety of building systems not just at the RHCYP but at the Queen Elizabeth University Hospital (QEUH) in Glasgow where there were incidents of infection. A brief summary of these reports can be found in Appendix A.

1.2.3 The reports identified a number of potential issues, some of which had the potential to impact on patient safety and care. Excluding concerns regarding the ventilation system, they included:

- Water contamination (limited to specific components of the water system) which increased the risk of HAI
- Non-compliant shower hose lengths and use of retaining rings, and concerns about water management, including water temperature control, which increased the risk of contamination of the system and HAI.
- Concerns about management structure, appropriate personnel and assurance processes which increased overall risk to patient safety and care.

- Electrical installation that created ligature risks for patients in the child and adult mental health service (CAMHS)
- Other Health and Safety concerns such as fire safety

1.2.4 The issues varied in significance. NHS NSS categorised the issues they raised in their review in terms of their priority:

1. Significant – Concerns requiring immediate attention, no adherence with guidance (none identified)
2. Major - Absence of key controls, major deviations from guidance (shower hose lengths, electrical installation)
3. Moderate – Not all control procedures working effectively, elements of noncompliance with guidance (water document management system, water management and contamination; electrical management and assurance, fire doors)
4. Minor – Minor control procedures lacking or improvement identified based on emerging practice (management structure and reporting processes, plumbing systems)
5. Observation and improvement activity (fire safety)

1.2.5 The NHS NSS review, which drew on the findings of other reports and investigations and followed months of working with NHSL and third parties, found no significant priority issues. Four major issues were found, three of these had the potential to impact on patient safety and care and are discussed further in the body of this paper. All issues, whether major or simply an area for improvement or ‘enhancement’, were recorded in action logs which were used to track progress and note evidence of completion.

1.2.6 Some other issues or concerns emerged at a later date, during the course of preparing to open the hospital. These include faulty window restrictors and concerns about cladding which introduced general Health and Safety risks, and issues with drainage which could introduce contamination and increased risk of HAI.

1.2.7 Some Core Participants do not agree that all of the issues identified by NHS NSS and others in the course of 2019 were in fact issues. In some specific cases,

the particular aspects of building systems that NHS NSS raised concerns about may have reflected a solution previously agreed upon between NHSL, IHSL and contractors.

1.3 **Action to remedy issues with building systems**

1.3.1 The remainder of this paper provides an overview of the actions taken to remedy issues, and the governance, management and assurance processes put in place.

2. Governance, management and assurance from July 2019 to April 2021

2.1 **Overview**

2.1.1 This section considers the governance, management and assurance processes put in place after the Cabinet Secretary decided to delay opening the hospital following the discovery of potential issues with the ventilation system.

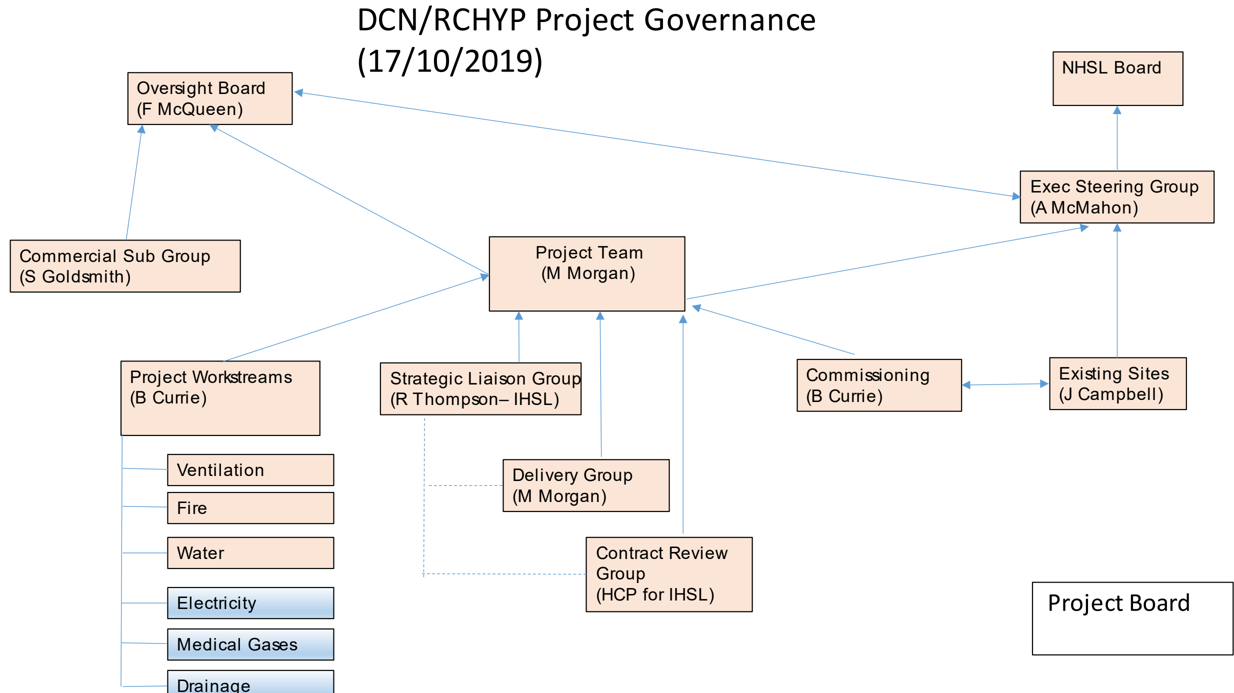
2.1.2 On 8 July 2019 NHSL convened an Incident Management Team (IMT), to be chaired by Susan Goldsmith, Director of Finance NHSL. This was renamed the Executive Steering Group (ESG) on 26 August 2019, with Alex McMahon (Executive Nurse Director) as chair. The ESG's remit was to "provide a forum for NHS 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."

2.1.3 An Oversight Board (OB) was set up in August 2019 to support NHS Lothian in delivering the new hospital. The OB co-ordinated advice and provided assurance to Scottish Ministers on the work and the readiness of the new facilities to open, providing an additional layer of assurance. On 13 September 2019 Mary Morgan, Director of Strategy, Performance and Service Transformation NHS NSS, was appointed Senior Programme Director to lead this work, reporting to Scottish Government. Membership of the OB included representatives from Scottish Government, NHS Lothian, Scottish Futures Trust, and NHS NSS/HFS, with IHSL in attendance "on an 'as required' basis".

2.1.4 IHSL did not attend any meetings of the OB. From February 2019 through to August 2019 IHSL reported to NHSL through the Joint Steering Group. The Joint Steering Group was established in accordance with the Settlement and Supplementary Agreement No.1 (SA1) to provide a mechanism at senior level to monitor the progress of the Post Completion Works, to escalate any operational issues and then latterly to escalate any further issues for commissioning of the RCHP/DCN until completion of the Post-Completion Works. From late 2019, the Joint Steering Group continued as the Liaison Group. This was also described as the 'Strategic Liaison Group'.

2.1.5 Brian Currie, the Project Director (NHSL), led a number of workstreams set up to resolve the issues identified with ventilation, water, electrical installation, fire safety and management and assurance. The issues were recorded in separate action logs created by Mott MacDonald. Ronnie Henderson (Commissioning Manager for Hard FM) managed these. IHSL/MPX contributed their responses and NSS HFS had sight of them in their support/assurance role.

Extract from “Project Governance and meetings October 2019” slidepack



2.1.6 With respect to the above governance arrangements and workstreams, NHSL has provided the Inquiry with:

- The papers and minutes of the IMT /ESG from its inception in 2019 to the final meeting on 8 March 2021. In addition to minutes of meetings this includes:
    - a regular Senior Programme Director’s Report with updated action logs, dashboard and programme risks
    - regular updates on NHS Lothian’s response to the NHS NSS review, showing progress to close out actions recommended by NHS NSS
    - papers by the Infection Prevention and Control team, including risk assessments of proposals to resolve issues
    - reports from consultants providing assessments, advice, technical assurance and third party validation
    - Change Notices for works to be undertaken
    - designs and proposals, and documents relating to design assurance

  - other evidence used to close out issues, obtained from MPX, BYES and others.

- The papers and minutes of the OB from its inception in 2019 to its closure in April 2019, similar to the above but with less consideration of operational issues.
- Separate action logs showing the progress of ventilation, water safety, fire safety, electrical and other workstreams. Minutes of workstream meetings.
- Correspondence of Ronnie Henderson (Commissioning Manager - Hard FM, NHSL) Brian Currie (Project Director, NHSL), Iain Graham (Director of Capital Planning and Projects) and others with members of the Infection Prevention and Control Team, NHSL's technical advisors Mott MacDonald, NHS NSS, MPX, BYES and others showing discussion and debate on key issues, agreements and disagreements on actions to take, confirmation of actions taken and evidence of issue closure.

2.1.7 Thus, NHSL has provided the Inquiry with a body of evidence showing how decisions were reached, actions taken, concerns raised and evidence provided to close out issues identified in the summer of 2019.

2.1.8 NHS NSS has also provided the Inquiry with documents, including correspondence, meeting minutes and consultation with experts, that show a high level of engagement in ensuring hospital building systems at the RHCYP and DCN were compliant and fit for purpose.

2.1.9 A priority for NHSL and the Scottish Government, who were also responding to incidents at Queen Elizabeth University Hospital (QEUH), Glasgow, was to put in place a robust technical assurance structure to ensure that building systems were designed and built to be compliant with guidance. This work, outlined in papers presented to the ESG, included:

- Design and construction sign-off: Assurance proposals for RHCYP + DCN remedial & enhancement works. Includes 'experiences to be amended' reflecting on experiences with MPX and IHSL
- Learning from colleagues at Glasgow and discussion of issues at ESG.

- Scottish Centre for Reducing Infection and Risks in the Healthcare Built Environment Services Validation.
- RHCYP/DCN Assurance processes.
- Capital Projects Assurance and Resources.

2.1.10 A key outcome of the attempt to improve assurance processes was the establishment of NHS NSS Assure after NSS received a commission from Scottish Government to support the creation of a Scottish Centre for reducing Infection and Risk in the Healthcare Built Environment as outlined in the 2019 / 2020 Programme for Government.

2.2 **Duty Holder Matrix**

2.2.1 At the management level, a Duty Holder Matrix (or responsibility matrix) was developed in direct response to the NSS reviews which had noted “omissions identified in key roles within the management structure”. The duty holder matrix, which “used the format adopted by Health Facilities Scotland for national use as a template” was a series of tables giving the details of appointments to key roles in the management of different building services, as outlined in the associated SHTMs. For example it included key personnel (or roles) identified for decontamination as per SHTM 01-01, medical gas (SHTM 02-01), ventilation (SHTM 03-01), water systems (04-01) electrical (SHTM 06-01) and so on, including a named person against each role, and the name of the person who appointed them, the date of appointment, and other details. This became a live document to be amended as appropriate.

3. Water

3.1 **Overview**

3.1.1 An L8 Legionella Risk Assessment conducted by Clira in February 2019 on behalf of BYES, and a Compliance Audit, conducted by Callidus in May 2019 found problems with water management, and a high Legionella risk.

3.1.2 NHSL later commissioned Westfield Caledonian to do Legionella testing and TVC testing and to “quantify the risk of infection from *Pseudomonas aeruginosa* in augmented care areas and to assess the bacteriological load within the domestic

systems generally". This was to confirm the safety of the water supply and was in response to

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

3.1.3 Westfield Caledonian found 56 positive samples for *P. aeruginosa* in a number of shower outlets, Zip Hydrotap outlets, Arjo baths and Markwik 21 thermostatic mixing taps.

3.1.4 In response to concerns around water safety the Scottish Government asked HFS and HPS to determine whether the domestic water systems at the RHCYP and DCN were fit for purpose given the risk profile of patients being treated there.

3.1.5 Water Solutions Group (WSG), which had experience at the QEUH, were commissioned to provide specialist technical and analytical support to HFS and HPS. They widened the scope of water testing beyond what was required by guidance and found evidence of some gram negative activity and mould. The WSG report also found that the indicators for audit and assurance were largely either partially satisfactory or unsatisfactory.

3.1.6 On 9 September 2019 NHS NSS reported back on their findings, including those from the Water Solutions Group. They noted that the water testing carried out as part of their review was not detailed in current guidance and the review was influenced by 'lessons learned' from recent projects. Furthermore:

> "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."

3.1.7 Amongst the areas requiring work, the NHS NSS report noted that shower hose lengths were non-compliant with Scottish Water Bylaws.

3.1.8 The water action log, which consolidated issues identified in various reports, recorded 18 issues with water, some of these contained a number of sub-issues requiring action. The issues were divided into three overarching themes:

- Documentation: records and evidence that an appropriate site-specific water safety plan was in place
- Individual Remedial Actions: a small number of specific actions to rectify components of the water system that were connected incorrectly or were not performing as expected. One action involved a risk reduction measure to address the risk posed by a fire water tank which was a large volume of stagnant water. (These were straightforward to resolve as evidenced by the action log and are not discussed further here)
- Resolution of Contamination: a more complex set of actions to address the contamination found in parts of the water system. This included replacing contaminated components eg taps and Arjo baths, as well as additional investigative and risk-reduction measures recommended by NHS NSS.

3.1.9 In November 2019 an interim RHCYP and DCN water safety group was set up, chaired by Dorothy Hanley, Commissioning Manager, NHSL. The group reported to the NHSL Water Safety Group and RHSC Site Infection Control Committee, from which the reporting chain ultimately reached the Board Chief Executive. The purpose of the group was

> "to minimise the risk of hospital acquired infection (HAI) associated with waterborne pathogens such as legionella and pseudomonas aeruginosa. Until such time as the building is occupied, this group will oversee the implementation of a water safety policy, in line with that of the overarching NHSL version, and the development and review of the specific water safety plan associated with this site."

3.1.10 Its aim was also "to provide assurance that water safety and water management at RHCYP and DCN is sufficient to mitigate and manage any hazards or risks prior to, and up to occupation by patients." The group reviewed key

documents related to water management and water safety. A formal Water Safety Group was set up in February 2020 chaired by Tracey Gillies.

3.2 Documentation

3.2.1 NHSL and the OB required documentation from BYES, the Facilities Manager responsible for water management, which would show that appropriate water management was in place as required by SHTM 04-01: Water safety for healthcare premises, SHTM 00-00: Best practice guidance for healthcare engineering, Control of Substances Hazardous to Health Regulations 2002 (COSHH) and the Health and Safety at Work Act 1974. Specifically:

- As-built information of the water system (full water schematic)
- Site Specific Water Management or Water Safety Plan including:
    - flushing regimes
    - planned preventative maintenance (for occupied and unoccupied building)
    - temperature control for Legionella
    - remedial actions in response to non-conformances and positive water samples.
    - Programme of disinfection works
    - Names and qualification of responsible person (duty matrix)

- Records for review, including:
    - Confirmation of turn-over of water tanks
    - Flushing records and Kemper System records
    - Legionella (L8) Risk Assessment
    - Water turnover records (report)
    - Temperature logs

3.2.2 Dennis Kelly, NHSL's authorising engineer for water, completed two audits of water management which involved reviewing BYES' water safety plan and relevant records. The final audit, completed on 11 February 2021, found that:

> "the hospital is well run by people with a high level of understanding of the requirements of successfully operating a hospital water system. There were no "very high" risk issues identified during this audit. Seventeen

recommendations have been made and some of these are for suppliers in terms of evidencing competence and providing suitable paperwork.

Overall the conclusion from this audit is that the hospital operates well run water systems and is generally able to evidence that with the onsite water safety plan that is in use."

3.2.3 BYES internal authorising engineer for water had also completed two internal audits in November 2019 and October 2020, and an 'unofficial audit' was completed in January 2021. Mr Kelly called this "an excellent practice" which "should be continued". He also noted that BYES undertake "a monthly review of the on-site water action plan."

3.3 **Resolution of Contamination**

3.3.1 Lindsay Guthrie and Donald Inverarity prepared a Water Safety Report for the OB to provide an assessment and a proposed response to the actions recommended by NHS NSS in their review of ventilation, water and drainage at RCHYP and DCN to address contamination.

3.3.2 The Water Safety Report outlined the risk-based approach NHSL would take to "demonstrate that water quality and delivery systems are safe, and conform with legislation and technical guidance." It took into consideration the fact that:

- there was no evidence of systemic contamination
- the testing for mould and fungus had gone beyond what was required by regulations
- potable [drinkable] water is not sterile
- the hospital was unoccupied and
- "NHS Lothian is not in an outbreak situation, and has no clinical cases to investigate".

3.3.3 The paper provided a summary of actions taken to date which included the "removal, cleaning and replacement of all tap strainers"; gave a description of the current controls in place required by legislation and guidance; and noted actions

required to improve existing controls. It made some recommendations to further manage risks to water safety.

3.3.4 The paper also recommended that NHSL not undertake or partially undertake certain actions recommended by NHS NSS because, to summarise: they were not required by current guidance; there was no clear methodology; and it was not clear what benefit they would provide in the absence of systemic contamination and in an unoccupied building; in some cases the risks of taking action outweighed any potential benefits, or alternatively, the actions were not warranted given the controls in place which were expected to effectively manage risks to water safety.

3.3.5 The paper was initially shared with the OB on 14 January 2020. OB minutes on 16 January noted that NSS were "content with overall direction and infection control and prevention plan". The next draft was shared with the OB on 28 January 2020, following which the OB asked for "a shorter paper summarising NHSL intentions against the actions in the Report that would sit behind it."

3.3.6 In response, the 'Water Quality Update paper', dated 20 February 2020, was shared with the OB. This outlined actions to address five key issues:

- The need to maintain control and oversight of a filled water system prior to occupation.
- Action prior to occupation
- Action to ensure the system remains fit for purpose
- System level assurance
- Compliance with national guidance

3.3.7 This plan, which involves an overarching approach to guidance and assurance, as well as specific actions, is illustrated below:

Compliance With National Guidance

- Proactive approach to nationally issued guidance
- Comply with evidence based guidance or guidelines produced from expert bodies, OR transparently report reasons not to.

System Level Assurance

- Strengthen oversight and assurance of water safety
- Local water safety groups report to Health and Safety Committee using standard templates
- Use of ICNet system to identify patient infection
- Consideration of role of built environment, using a Standard Operating Procedure and convening an Incident Management Team if required

The need to maintain control and oversight of a filled water system prior to occupation

- Local water safety group to provide exception reports on temperature control, outlet management and Total Volume Count (TVC) trend monitoring and Psduomonas aeruginosa monitoring in augmented care areas to the Executive Steering Group and water safety reporting structure.
- Maintenance regimes appropriate for unoccupied building, recorded and monitored.
- Replacement of 57 fixtures found to be positive for *Pseudomonas aeruginosa*.
- Monitoring and action on water temperature

Action prior to occupation

- Low value change issued to cover whole system disinfection prior to occupation of the building by patients.

Action to ensure system remains fit for purpose

- Planned preventative maintenance regime that includes corrosion monitoring and system condition assessment has been clarified and shared in detail with Bouyges. Monitored through the local water safety group.

3.3.8 The paper also noted there was a risk of further delay "by seeking a level of assurance about water safety that is greater than the assurance of the water quality that can be provided for either of the current sites." It recommended:

> "that the Oversight Board accept the actions and monitoring described in the paper to allow closure of the outstanding actions from the Water section in the NSS phase 1 report."

3.3.9 The OB Minutes for 20 February 2020 record:

- The OB 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 OB 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 OB noted that both HFS/HPS were content with the paper as it stood.
- The large amount of good work undertaken to get to this position was recognised by the OB.

3.3.10 Once laboratory results for pseudomonas came back clear, management of water safety was passed onto the local Water Safety Group. On 12 March 2020 the OB "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." The Water Safety Log dated 4 March 2020 shows all actions closed.

3.4 **Shower hose lengths**

3.4.1 The final outstanding issue in terms of water safety was shower hose lengths which were not compliant with the Water Supply (Water Fittings) (Scotland) Byelaws 2014.. This was also the only issue which NHS NSS considered a ‘major priority’ (ie where there is an absence of key controls and major deviations from guidance). Poorer quality water coming from the shower head could generate a risk of infection.

3.4.2 Welded, disposable shower heads with a shorter hose length were installed. To become compliant with SW Bylaws, a programme of regular water sampling to test for contamination was put in place, eventually returning to 6 month sampling. Scottish Water formally approved the solution for shower hoses as compliant on 20/03/2020. At a meeting of the ESG on 23 March 2020 “It was agreed that the detail of the resolution in this area should be shared nationally.”

3.5 **Drainage**

3.5.1 The NHS NSS report found issues with sinks drains, bottle traps and pumped drainage to be a ‘minor priority’. NHSL felt that concerns around sink drains and bottle traps would be addressed through business as usual water safety management (eg, appropriate cleaning and maintenance).

3.5.2 The issue with the basement sump (pumped drainage) had arisen during the construction phase when IHSL’s design and installation diverged from their initial proposals contained in the Project Agreement. A dispute arose, a summary of which is included in the Project Agreement Settlement Agreement of February 2019, along with a description of the agreed resolution. These works and measures, as well as the Board’s ‘impact and continuity plans’, helped to mitigate the risks of the drainage design.

3.5.3 NSS’s recommendation was for ‘active monitoring’. The issue is not considered further in this paper given that it was considered a ‘minor’ priority by NSS, and had operational as opposed to direct patient safety risks.

3.6 **Actions taken by NHS NSS**

3.6.1 As noted above, the water testing that took place went beyond existing guidance and was targeted, focusing specifically on the RHCYP + DCN. This was influenced by ‘lessons learned’ from recent projects.

3.6.2 NHS NSS have told the Inquiry that because the ‘lessons learned’ were derived from a live incident they “were not appropriate for inclusion within guidance at that stage”.

3.6.3 Health Protection Scotland and ARHAI Scotland (Anti-microbial resistance and healthcare associate infection, Scotland) are a national body that provides support, advice and guidance, including sharing lessons learned from unpublished incidents and outbreaks. NHS Boards “after appraisal of this advice, may or may not choose to act upon these shared lessons learned”

3.6.4 HPS/ARHAI have a process to update guidance. This was paused due to NSS’s involvement in respect of COVID-19, but has now restarted and is at the stage of external consultation.

4. Electrical

4.1 **Overview**

4.1.1 The NHS NSS review found two major priority issues and one minor issue with electrical installations.

4.1.2 One of the major issues was with the electrical installation in the Child and Adult Mental Health Service. Here, it "was observed that there may be the potential to defeat the ligature reduction measures. In addition, the power to the CAMHS unit rooms cannot be isolated outwith the room" which "might require modification". NHSL were advised to check the installation against HBN 03-01: Adult mental health units: planning and design.

4.1.3 NHSL completed clinical risk assessments relating to ligature reduction measures, which was reviewed by HFS, and issued Medium Value Change 099 to address the isolation of services from outside the room. These and other changes to the Melville Unit (CAMHS) were outlined in a paper to the ESG dated 27 January 2020, and relevant items closed on the action log on that date.

4.1.4 The other major issue identified by NHS NSS related to electrical cabling, but whether this was indeed an issue was questioned by TUV SUD. Since any issue in this regard would have presented a resilience rather than patient safety risk, it is not considered further here.

4.1.5 The High and Low Voltage Systems Audit Report issued on 13 February 2020 by TAD Facilities Management for BYES found no major non-compliances. The report noted that "the site demonstrated that its procedures and processes were in accordance with the current legislation and relevant Safe Systems of Work." The report also commended the local site team for the resolution of several issues and the "continued positive attitude to achieve compliance" and commented positively on the ability of Bouygues to secure trained personnel despite challenges.

4.1.6 At the OB meeting of 12 March 2020 it was noted that:

- "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…

- Agreed that the electrical workstream could be closed off upon receipt and appropriate certification of evidence statements by the MPX authorising engineer."

5. Fire Safety

5.1 **Overview**

5.1.1 The NHS NSS report did not find any major deviations from guidance or absence of key controls in relation to fire safety. The report found that fire doors were a moderate priority issue (meaning there were elements of non-compliance with guidance). There were also opportunities to enhance fire safety through creating protected evacuation routes that would be less affected by smoke. Otherwise, NHSL noted, "The facility has received the necessary building warrant and completion certification to demonstrate fire safety and compliance with legislation."

5.1.2 NHSL provided a proposal for Fire Safety Enhancement Works which was reviewed by Richard Walker of 3-FE Fire Engineering Consultancy. The 3-FE report concluded that "once the additional fire protection measures have been incorporated into the design of this building, it will exceed the minimum fire safety requirements."

5.1.3 Fire Safety Enhancement Works, which included necessary work to fire doors, took place under Supplemental Agreement 4. Specifically:

- MVC 112 - fire enhancements (DCN)
- MVC 126 – fire enhancements (RCYP)
- MVC 127 – changes to CAMHS
- MVC 131 – fire enhancements to CAMHS
- MVC164 – fire enhancements critical care, haematology/ oncology

5.1.4 Oakleaf, which provided third party validation for fire enhancement, confirmed completion to relevant standards. Jim Gardner, the Fire Safety Adviser, Royal Infirmary Edinburgh emailed Ronnie Henderson and Brian Currie to confirm "that the current building fire risk assessment and emergency fire evacuation plans remain valid" following the works.

5.1.5 A further issue with cladding was reported at the ESG meeting of 28 October 2019. On 8 March 2021 an SBAR was produced confirming that Atrium Wall Coverings were not made of ACM (Aluminium Composite Material) which had been linked to the Grenfell Tower blaze. This was following a request from Bill Connolly, the National Fire Advisor, HFS, for such confirmation.

6. Medical Gas Installation

6.1 **NHS NSS Review**

6.1.1 Medical gas installations were found to have been "designed installed and commissioned in accordance with the relevant standards".

7. Final issues:

7.1 **Window Restrictors**

7.1.1 In August 2020 an issue emerged that a number of windows in DCN could be opened wider than the restricted level. BYES), surveyed all of the window restrictors and found that some others showed signs of damage

7.1.2 All damaged window restrictors were replaced.

7.1.3 This issue prompted action to review other health and safety issues referenced in the Callidus Report and Health and Safety learning, in case any issues had been side-lined. The paper concluded "Overall no other concerns were identified and everyone was in agreement that relationships were constructive and collaborative." It was not felt necessary to send anything to the OB.

7.2 **Dental rooms**

7.2.1 On 31 December 2020 an issue was reported regarding significant longstanding damp identified in two dental surgery rooms following an invasive survey involving wall removal. Black mould was found to a height of 5 feet. A wall had to be stripped down and rebuilt. According to ESG minutes Brian Currie noted it was "important to recognise that issues like this were a normal and routine occurrence in an operational hospital". Lindsay Guthrie "commented that she was anxious that two drainage issues had emerged in a building that was not yet

occupied" and "questioned whether there was confidence that all drainage and plumbing issues had been signed off".

7.2.2 The infection prevention and control team reported the incident to the Antimicrobial Resistance and Healthcare Associated Infection Service (ARHAI) Scotland using the Healthcare Infection Incident Assessment Tool (HIIAT).

7.2.3 A water leak was found to have caused the damage in dental rooms, as well as water damage in the Atrium. Remedial Action was expected to take 4 weeks. According to ESG minutes relating to this update, "The HIART [sic – HIIAT] was showing amber in respect of public anxiety given that his was a new hospital and was already having issues of mould reported."

7.2.4 According to ARHAI procedures, if an incident is amber or red, then the IPCT must complete Healthcare Infection, Incident and Outbreak Reporting Template ("HIIORT"), send a press statement (holding or release) to ARHAI Scotland, request ARHAI Scotland (HPS) support as required and follow local governance procedures for assessing and reporting. ARHAI Scotland (HPS) then share this information with SG HAI PU.

7.2.5 When amber, the HIIAT is reviewed and reported at least twice weekly or as agreed between the IMT and ARHAI Scotland (HPS). The HIIAT should remain amber only whilst there is ongoing risk of exposure to new cases or until all exposed cases have been informed.

7.2.6 Children who had received treatment between October and December 2020 who might have been exposed to the mould were regarded as low risk. NHSL have noted that

> "There is general surveillance for fungal and mould organisms in the population and **if** any of the individuals who had received treatment **had** presented with such an organism, an epidemiological link to the dental treatment would have been considered (**they did not**). All children who had received dental treatment between Oct and Dec 2020 had diseases which entail regular secondary care follow-up for the disease not the dental treatment."

[NHSL's emphasis]

7.2.7 The impact on patients was that six children had to be rebooked. There were no cancellations. A communication was prepared for parents to provide information regarding the incident, and a Q&A.

7.3 Further incidents submitted using the Healthcare Infection, Incident and Outbreak Reporting Template (HIIORT)

7.3.1 In their response to the PPP, NHS NSS noted two further incidents were submitted using the HIIORT:

> "The first was dated 18 January 2021: 'Water damage to dental rooms causing mould growth in the wall cavities. No staff or patients involved following a look back exercise. Remedial works undertaken and incident closed 10/03/21.'
>
> The second was dated 19 November 2021: 'Water leak in patient room in Lochranza ward (Haematology/oncology). Mould contamination identified in wall cavity. No patient infections identified from look back exercise. Incident closed 01/12/21 following remedial works.'
> Both of these incidents were reported timeously, action was taken and, to the best of NSS's knowledge, there was no adverse impact on patient safety."

7.4 Frequency of cavity barriers in external walls

7.4.1 The Inquiry team asked Core Participants whether they were aware of any further unresolved issues or defects with building systems not discussed in the paper that could have an adverse impact on patient safety. NHSL and IHSL note that the only other issue with building systems they are currently aware of relates to fire cavity barriers in external walls. After the hospital was constructed an insulating material used in the construction of the hospital was re-classified. Under the previous classification, fire cavity barriers at 20m intervals would have been sufficient to comply with the relevant building regulations. Following re-classification, intervals of 10m were required. Work is underway to address this. IHSL note that the issue "is

not necessarily one that could have an adverse impact on patient safety" but they raise in response to the Inquiry's question "for completeness".

7.5 Conclusion

7.5.1 A number of reports raised issues with key building systems (other than ventilation) which may have had the potential to adversely impact on patient safety and care. However, because the opening of the hospital was delayed, there was an opportunity to remedy these before they could have an adverse impact on patient safety and care.

7.5.2 The Inquiry team has found that despite some areas of disagreement between parties in resolving complex issues, there was an effective governance structure, robust assurance processes and improved management not just to undertake remedial actions, but to ensure similar issues would not arise again in future.

7.5.3 The Inquiry team has seen papers and minutes of the ESG and OB in this regard, along with action logs used to track resolution of issues. These show an appropriate escalation and decision making process which took into account risk assessments by Infection Prevention and Control experts, and evidence gathered by NHSL's Facilities Manager- Hard FM from IHSL and third parties through improved management and assurance processes respectively. Ongoing consultation with NHS NSS provided an additional level of assurance, as did the OB itself.

7.5.4 NHSL has also shared over 40,000 documents with the Inquiry, including significant amount of correspondence, which show the challenges and significant amount of work involved in resolving complex issues.

7.5.5 Issues relating to possible non-compliance were resolved either through remedial work, or alternatively, where works were deemed too costly or high risk, mitigations and control measures were put in place following risk assessments. These solutions had the support of NHS NSS and other third parties.

7.5.6 Remedial actions followed a risk-based approach in consultation with NHS NSS and others. Building systems were found to be fit for purpose by third party

validators. Mary Morgan, the Senior Programme Director, stated at the penultimate OB meeting on 25 February 2021, that “The new Hospital was now one of the safest and best buildings in the whole of Scotland.”

7.5.7 Appendix A: Key reports identifying issues, and completion of recommended actions

Report details	Issues Found	Confirmation of Completion of recommended actions
Arcadis Snagging Notice and Settlement Agreement 1 Outstanding Works February - March 2019 Commissioned by: IHSL	Outstanding works and snagging issues to be resolved following handover.	Confirmed closed in ESG paper 20 September 2020, following receipt of “Snagging Review Report” July 2020 along with additional evidence to Michael Pryor and Outstanding Works Completion Certificate
Callidus Compliance Audit May 2019 Commissioned by: NHSL	Health and Safety control measures not functioning or lacking. Management arrangements poor and documentation lacking High legionella risk	ESG paper 20 April 2020 noted completion of Callidus actions Some issues covered in NHS NSS review, closed in May 2020. “Health and Safety Learning” paper to ESG 5 October 2020 reconsidered Callidus report.

Refers to Clira Legionella Risk Assessment commissioned by BYES		
IOM validation June 2019 Commissioned by: NHSL Draws on: IOM validation, added to following site visit by Q-Nis, the AHU Manufacturer to demonstrate compliance with SHTM 03-01	Poor commissioning of systems, issues with theatre ventilation, air handling units (AHU), air change rates in the high dependency unit (Critical Care), the building management system, general readiness, and use of ‘swirl diffusers’ which is a component ‘not normally used in critical areas’. Additional AHU issues discovered during Q-nis visit.	Consolidated in ventilation action log, which was confirmed closed at the final meeting of the OB on 8 April 2021.
Westfield Caledonian Water Safety Assessment Report July 2019	No systemic contamination of the hot and cold water systems, however: • 56 positive samples for *Pseudomonas aeruginosa*, found in a number of shower outlets, Zip Hydrotap outlets, Arjo baths and Markwik 21 thermostatic mixing taps.	See NHS NSS Review

Commissioned by NHSL	• Post-commissioning strainer decontamination was not carried out effectively, and a number of areas of the water system were not achieving the right temperature.	
NHS NSS Review of Water, Ventilation and Plumbing Systems September 2019 Commissioned by: Scottish Government Draws on: • IOM issues log • Malcolm Thomas site visit • John Rayner Report • Callidus Compliance Audit	• Management and Assurance: Moderate Priority: document management system Minor issue: management structure and reporting processes, and an unprioritized alarm system • Ventilation: Major Priority: 'General ventilation systems' deviations from SHTM 03-01, including maintenance bypass, air handling units and ductwork, single and multi-bed ventilation design, access to fire dampers, location of the helipad, and external plant door gap created risk of contamination. Moderate priority: 'theatre ventilation systems' and 'isolation room ventilation systems' were 'moderate priorities'. • Water	"NHS Lothian Response to actions" report 1 May 2020 showed most actions completed, closed or necessary works agreed. 7 May 2020, OB noted formal completion of actions in both reports (caveat that HVC 107 works still to be completed)

• Westfield Caledonian report • Water Solutions Group Report	Major Priority: Shower hose lengths not compliant with Scottish Water byelaws and guidance in SHTM 04-01 Water safety for healthcare premises. Moderate Priority: swarf and biofilm found in tap strainers, contrary to SHTM 04-01 in non-augmented care areas, fungal and mould contamination, water management, water tanks, hot and cold water temperatures and the flushing regime. Minor issues were found with plumbing systems	
NSS Review of Fire Systems, Electrical Systems and Medical Gas Installation October 2019 Commissioned by: Scottish Government	• Management and Assurance: Moderate Priority: Lack of qualified and experienced Authorised Persons and Competent Persons for High Voltage and Low Voltage electrical installations and no responsible person for HV electrical installation, as required by The Electricity at Work Act (1989) and SHTM 00, SHTM 06-01 and SHTM 06-02. • Electrical Installations: Major Priority: electrical cabling used for Medical IT systems too long, in contravention of manufacturer and SHTM 06-01	As above

Draws on Paul Harris Report	recommendations, and building standards wiring regulations (regulation 134.1.1 of BS 7671). CAMHS Unit: ligature risk and power to unit could not be isolation from outside the room. Minor Priority: Uninterruptable Power Supplies all located in the same room, reducing resilience of power supply to critical areas in the event of catastrophic failure. Not rated: Earth Bonding Bars not installed correctly creating infection control risk. • Fire Safety: Moderate priority: issues with fire doors which were not all appropriately fire-rated or fitted for fire safety. Minor priority issue with remedial snagging and housekeeping issues Potential for improvements noted	

	• Medical Gas Installation: Compliant.	

Note on issues with the ventilation system outside of Critical Care areas with the potential to adversely impact on patient safety and care at the RHCYP + DCN; and remedial works undertaken

Purpose of the Note

This note sets out the Inquiry's understanding of issues of issues with the ventilation system outside of Critical Care areas that could have had the potential to adversely impact on patient safety and care, and which arose in the construction of the Royal Hospital for Children and Young Persons and Department of Clinical Neurosciences (RHCYP/DCN) and the manner in which these issues were resolved. It also outlines the Inquiry team's understanding of actions that have been taken to remedy these issues.

It follows on from an earlier version of this note that was published on the Inquiry's website and distributed to relevant core participants. Comments were provided by NHS Lothian, NHS NSS, IHS Lothian Limited, Multiplex Construction Europe Limited and TUV SUD Limited.

The Inquiry has carefully considered the comments received, together with the supporting material submitted and other material held by it. It has reviewed and revised the note accordingly to produce this updated version.

As a result, the views expressed in this Paper are firmer than those set out in the previous one. It follows that the Chair will be invited by the Inquiry Team to make findings in fact based on the content of this note. However, while the views may be firmer, that should not be equated with "final". The Inquiry's investigations are not yet concluded and, at the time of publication, there is to be a hearing dealing with matters arising in relation to the Royal Hospital for Children and Young Persons/ Department of Clinical Neurosciences commencing on 26 February 2024. Evidence at that hearing and submissions made following it (as well as any other evidence received) may require the Inquiry to reconsider matters set out in this note. Nonetheless, in the absence of such evidence or submissions, it is likely that the contents of this note will be used as a basis for the Inquiry's report.

Readers of this note should note that section 2 of the Inquiries Act 2005 provides that an inquiry is not to rule on, and has no power to determine, any person's civil or

criminal liability. Accordingly, in the context of the Scottish Hospitals Inquiry's investigations into the matters falling within its remit in relation to the Royal Hospital for Children and Young Persons, the issue of any liability arising under the Project Agreement is not a question for the Inquiry to rule on or determine and nothing in this note should be taken as doing so.

Glossary

ac/hr	air changes per hour (air change rate for ventilation)
AE	Authorising Engineer
AHU	Air Handling Unit
BYES	Bouygues Energies & Services FM UK Limited, the facilities management contractor appointed by IHSL
DCN	Department of Clinical Neurosciences
DSSR	Engineering Consultants
ED	Emergency Department
ESG	Executive Steering Group
FM	Facilities Management
H&S	Health and Safety
HAI or HCAI	Healthcare Associated Infection
HAI-Scribe	Healthcare Associate Infection Systems for Controlling Risk in the Built Environment
HCID	High Consequence Infectious Diseases
HEPA filter	High Efficiency Particulate Air filter
HFS	Health Facilities Scotland (part of NHS National Services Scotland)
HIIAT	Hospital Infection Incident Assessment Tool
HPS	Health Protection Scotland (part of NHS National Services Scotland)
HVC	High Value Change
IHSL	Integrated Health Solutions, Lothian, the Project Company or private partner to NHSL to deliver the new hospital.
IMT	Incident Management Team
IOM	Institute for Occupational Medicine, third party validators for ventilation
IPC	Infection Prevention and Control
IPCT	Infection Prevention and Control Team
LVC	Low Value Change
OB	Oversight Board
NHSL	National Health Service Lothian

NHS NSS	National Health Service, National Services Scotland
MM	Mott MacDonald, NHSL's technical advisors
MPX	Brookfield Multiplex Construction Europe Limited, the construction contractor appointed by IHSL
MVC	Medium Value Change
NIPCM	National Infection Prevention and Control Manual
Project Agreement	the agreement between NHSL and IHSL dated 12 and 13 February 2015 for the design, build, finance and maintenance of the new RHCYP building at Little France.
RAG	**R**ed **A**mber **G**reen risk rating
RHCYP	Royal Hospital for Children and Young People (name given to the new children's hospital)
SA1	Settlement and Supplementary Agreement No.1
SA2	Project Agreement Supplementary Agreement No. 2
SBAR	Situation, Background, Analysis and Recommendation
SG	Scottish Government
SHTM	Scottish Health Technical Memorandum
SHPN	Scottish Health Planning Note
TUV SUD	TUV SUD Limited (trading as Wallace Whittle) – the building services engineer appointed as a sub-contractor by MPX
QEUH	Queen Elizabeth University Hospital

1. Introduction

1.1 Terms of Reference

1.1.1 Included in the terms of reference of the Inquiry is:

> 1. To examine the issues in relation to adequacy of ventilation, water contamination and other matters adversely impacting on patient safety and care which arose in the construction…of the RHCYP/DCN; and to identify whether and to what extent these issues were contributed to by key building systems which were defective in the sense of:
>
> A. Not achieving the outcomes or being capable of the function or purpose for which they were intended;
> B. Not conforming to relevant statutory regulation and other applicable recommendations, guidance, and good practice.
>
> And,
>
> 7. To examine what actions have been taken to remedy defects and the extent to which they have been adequate and effective.

1.1.2 In July 2019, after concerns were raised about the ventilation system in Critical Care areas of the Royal Hospital for Children and Young People (RHCYP), a decision was made to delay opening the hospital until it was confirmed safe for patients. Thus, there was effectively an opportunity to remedy any potential 'defects' or issues in building systems before they could have an adverse impact on patient safety and care.

1.1.3 The focus of this note is to consider whether there were any potential issues identified with the ventilation system outside of Critical Care areas, and actions taken to remedy them, not including works under Settlement Agreement No.2 (SA2). Any references to 'defects' and 'non-compliances' in this note are taken from contemporaneous sources and are not intended by the Inquiry to be references to whether or not the contractual requirements under the Project Agreement were met.

Rather, the paper is concerned with systems that are or may have been “defective” in the sense that the term is used in Term of Reference 1 (with Term of Reference 7’s reference to “defects” being interpreted accordingly).

1.2 Identification of ventilation issues

1.2.1 In June 2019 the Institute of Occupational Medicine (IOM) undertook validation of the ventilation system. IOM reported a number of issues. An ‘IOM issues log’ was created to record all issues identified.

1.2.2 The Scottish Government commissioned NHS NSS to further investigate issues with the ventilation system, amongst other things. NHS NSS (HFS) appointed Malcolm Thomas, a consulting engineer, and John Rayner from TurnerPes, a consulting engineering company that provides Authorising Engineers and specialises in ventilation and water systems. John Rayner was NHSL’s Authorising Engineer for ventilation, appointed through the HFS framework. Following site visits they submitted separate reports on 27 July and 9 August respectively.

1.2.3 Following the discovery of issues with air handling units, the AHU manufacturer attended an all-party walkround on 7 August 2019 to discuss the issues and agree a plan to resolve them. This resulted in a checklist of 23 items to be remedied.

1.2.4 NHS NSS issued their review on 9 September 2019. The issues identified in these reports were added to the ‘IOM issues log’ and renamed the ‘ventilation action log’.

1.2.5 In total 81 issues with ventilation were recorded in the action log. One of these was related to air change rates in High Dependency Units (within Critical Care Department). Based on an analysis of the action log and other evidence the other 80 recorded ventilation issues could be said to fall into the following categories:

a) Issues that were confirmed not to be an issue following inspection or demonstration.

b) Relatively minor or ‘snagging’ issues that were straightforward and quick to resolve, or that could be addressed during a normal commissioning and validation process.

c) Issues that involved non-compliance with guidance and required further works, risk assessment or other demonstration to close. This largely corresponds with the issues identified as a ‘major priority’ by NHS NSS and includes:

- Air Handling Units
- Maintenance bypass
- Single and multi-bed ventilation design
- Discrepancies in the environmental matrix

As well as some issues with theatres:

- Excessive flexible ductwork
- Scrub areas

1.2.6 The issue regarding flexible ductwork was primarily about functionality and performance, rather than any IPC risk with the potential to adversely impact on patient safety and care. Thus, it is not considered further in this paper.

1.2.7 Other issues involving non-compliance with guidance had the potential to impact on patient safety either through the provision of inadequate ventilation to disperse air-borne pathogens, or because non-compliant installation created a risk of contamination.

1.2.8 Most ventilation issues were closed out by 1 May 2020. At the final meeting of the Oversight Board on 8 April 2021, the final action log for ventilation “showing all actions now closed following discussions and correspondence with Ian Storrar” was accepted. An issue with DCN theatre corridor ventilation was not fully resolved. However the issue did not impact on patient safety and so does not require further consideration by the Inquiry.

2. AHUs and ductwork

2.1 According to the NHS NSS review, AHUs and ductwork contained deviations from SHTM 03-01. These included “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.” Filters were also poorly fitted. Loose cabling inside the air ducts posed a fire safety and infection control risk, and was considered by the Infection Prevention and Control Team to be ‘unconventional’.

2.2 Multiplex proposed a solution that involved “bespoke metalwork to fix [cabling] in place within the unit” and demonstrated their solution on a ‘benchmark AHU’ which would act as a blueprint for all the other AHUs (outside of Critical Care and Neutropenic patient areas). Other options to resolve the issue either had significant time and cost implications, presented an unsatisfactory risk, or required a Board Change. Following a multidisciplinary assessment by relevant stakeholders, which found the proposed solution to be ‘acceptable’ with some caveats, the Oversight Board agreed to proceed with it subject to:

- written confirmation of acceptance from HFS, IOM and the Board’s Authorising Engineer (AE)
- all IPCT recommendations being implemented
- IHSL/MPX providing outstanding confirmation and information required regarding the cleaning methodology, details of anti-bacterial sealant and other specific IPCT queries.

2.3 Thirty seven separate sign-off sheets (one for each AHU in the hospital) were created, titled “AHU Refurbishment Inspections”. Each sheet listed 23 items from the ventilation action log. On 6 May 2020 the sheets were signed by Ronnie Henderson, the NHSL Commissioning Manager for Hard FM (facilities management), John Rayner, the authorising engineer for NHSL, and P.W Jameson, the Authorising Engineer for Independent Validation – IOM. They stated:

> “The signatories below confirm that the AHU meets the definition contained in Section 8 of SHTM 03-01 as follows: ‘The system will be acceptable to the client if at the time of validation it is considered fit for

purpose and will only require routine maintenance in order to remain so for its projected life.'"

3. Single and Multi-bed ventilation and the Environmental Matrix

3.1 Single and multi-bed ventilation had been designed with four air changes per hour mechanical ventilation. The design contained a natural ventilation component, but did not specify that natural ventilation would contribute to meeting a particular air change rate.

3.2 Following the decision to delay opening the hospital, NHS NSS identified two issues with this design. Firstly, while in most cases the provision of 4ac/hr through mechanical ventilation had been validated by IOM, the natural ventilation component had not been proven. For example, it was not clear whether natural ventilation could increase the air change rate for bedrooms to the 6 ac/hr required in SHTM 03-01. Secondly, opening windows would affect the pressure regime, which meant that the pressure differential and direction of airflow described in the Environmental Matrix "cannot be relied upon when windows are open".

3.3 NSS's requirements to close out the actions, logged as V7 and V8 on the action log, were to:

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

3.4 NHSL were also asked to

> "demonstrate through risk assessment, that the Board is assured that the provision of 4 air changes per hour on mechanical supply, rather than 6 air changes per hour on mechanical supply does not compromise patient safety by introducing either an increased risk of transmission of infection or acquisition of healthcare associated infection."

3.5 The IPCT team completed an “SBAR Risk Assessment regarding Impact of Design Ventilation on managing HAI risk in RHCYP & DCN clinical areas (not including Paediatric Critical Care)” on 27 September 2019. The report outlined risk mitigation measures appropriate for patients based on their risk profile (for example, how vulnerable they were to infection) and the airborne infections they were likely to be exposed to in different parts of the hospital. The review “did not reveal any further significant areas of non compliance or concern”. It made a number of recommendations to mitigate risks.

3.6 A further review of all outpatient and therapy areas was undertaken to address “the potential of further discrepancies in the Environmental Matrix” which was logged as a separate issue, V2 on the ventilation action log.

3.7 As part of a broader “dialogue with HFS” across NHSL’s programme of works, in November 2019 Iain Graham (Director of Capital Planning and Projects, NHSL) attended a short stay elective technical workshop organised by programme managers and HFS to go through “a range of challenges with the interpretation of their guidance in anticipation of the new regime.” The issue of air change rates and provision of natural ventilation and 4 ac/hr, vs 6 ac/hr mechanical ventilation, was discussed. It was clear that there was a lack of clarity regarding interpretation of guidance. Feeding back to colleagues Mr Graham noted:

> “Much discussion was had about the failure of Boards to be clear…[regarding ventilation requirements] but equally about the need for the guidance to be updated.”

3.8 In addition to the issues identified above, concerns were raised about whether appropriate ventilation had been provided for neutropenic patient areas. This issue had been identified during construction and a resolution was agreed in Settlement Agreement 1. However following the delay to the hospital opening, and the receipt by NHS Greater Glasgow & Clyde (NHS GGC) of an Improvement Notice regarding inadequate provision of specialist ventilation to haematology, oncology and renal transplant patients, NHSL undertook further work to improve ventilation in neutropenic patient areas. This was included in the works undertaken under the High Value Change Notice 107, under Settlement Agreement 2.

3.9 After the Covid-19 outbreak, guidance relating to Infection Prevention and Control advice for acute care settings was updated, which impacted on the requirements for isolation of 'high consequence infectious diseases' (HCID) in the Emergency Department. Following engagement between NHSL and NHS NSS on how to meet new requirements, the Oversight Board agreed on a recommended solution on 18 June 2020. Works to make alterations to the Emergency Department took place under Medium Value Change (MVC) 157.

3.10 On 2 March 2021 IOM issued its validation audit taking into consideration:

- Design Assurance Statement from John Rayner (AE) received on 4 February 2021 following a site visit on 19 – 21 January 2021. This confirmed the AHUs met the full requirements of SHTM 03-01 and was fit for purpose.
- AHU factory visit on 20 July 2020 by Paul Jameson, AE (ventilation) of the IOM, confirming the quality of the Daikin Air Handling Units,
- Hepa Filter integrity test on 23 January 2021 which confirmed that filter systems were properly installed with no bypass leakage and free from defects
- Confirmatory readings carried out by IOM. IOM "compared data with H&V commissioning services of all the grilles in G-A1 based on the Hoare Lea design data through January and February 2021. During this time all three parties along with NHS Lothian made changes as required in line with SHTM 03-01."
- Calibration certificates including an aerosol generator certificate of compliance and electrical safety test were included.

3.11 Thus while some single and multi-bed rooms in the hospital retained the ventilation solution which had been a source of concern, infection control measures were put in place to reduce the risks of infection for the types of patients likely to stay in those rooms. Separate, technical, ventilation solutions were found for neutropenic patient areas accommodating particularly vulnerable patients and the emergency department for receiving patients with high consequence infectious diseases.

4. Maintenance Bypass

4.1 According to the NHS NSS report,

> "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."

4.2 Maintenance bypass was considered in the above-mentioned IPC "Risk Assessment regarding Impact of Design Ventilation on managing HAI risk in RHCYP & DCN clinical areas", which outlined "the actions required if one or more air handling unit fails resulting in the loss of isolation room supply ventilation." The report noted that

> "in the absence of an infectious disease of high consequence, and providing all other standard and transmission based precautions required by HPS NIPCM [National Infection Prevention and Control Manual] are in place, the risk of infection to patients, staff or visitors is likely to be low...
>
> Depending on the nature and duration of the AHU failure, and in line with NHS Lothian Prioritisation of Isolation Guidance, a clinical risk assessment would be required in conjunction with the IPCT to determine any further actions required on a case by case basis…."

4.3 According to the action log final evidence of closure of this issue was "Email providing details from BYES on frequency and duration of planned PPM downtimes, AHU maintenance information attached." At the Oversight Board meeting 23 April

2020 it was noted that maintenance bypass "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 [the remedial works for Critical Care Areas and enhancement of neutropenic patient areas]." NHSL have confirmed that this is no longer an issue.

5. Scrub areas

5.1 NHS NSS reported an issue with airflow in scrub areas, which were "narrow and deep " and thus were "unlikely to be scavenged effectively by theatre air changes and require alternative means of achieving removal of contaminants as per SHTM 03-01." Instead of installing low level extract for removing air from the room, In accordance with the approved design, Multiplex had installed high level extract which was less effective and "is not in accordance with the requirements of SHTM 03-01". Multiplex/TUV SUD moved scrub extracts to a low level. No board change was required. When IOM revalidated theatres in March 2020 they found no issues with scrub rooms.

6. Helipad

6.1 Malcolm Thomas (consulting engineer) raised concerns about the location of air intakes below the helipad, ie that downdraughts from the helicopter landing or taking off could impact on the ventilation system. On 18th March 2020 helicopter test flights, including take-off and landing manoeuvres, were carried out. The building management system (BMS) was monitored during these tests and the results showed no adverse effect on the ventilation system pressures. Thus the location of the helipad was found not to be an issue.

Provisional Position Paper 8

How the potential issue in the Critical Care department of the Royal Hospital for Children and Young People and the Department of Clinical Neurosciences could have been detected during the Construction Phase

Purpose of the Paper

This Provisional Position Paper (PPP) has been produced to assist the Chair in addressing the terms of reference. It outlines the Inquiry team's current understanding of ventilation design development during the construction phase of the Royal Hospital for Children and Young People and the Department of Clinical Neurosciences (RHCYP/DCN).

Specifically, this PPP will consider the 'Reviewable Design Data' process and highlight the potential missed opportunities to detect the discrepancy between the Environmental Matrix and SHTM 03-01.[1] For the purposes of this paper, a 'missed opportunity' is defined as any occasion where a different course of action had the potential to produce a more favourable outcome; that is, the occasions where decisions or actions (taken or not taken) failed to detect the discrepancy when they conceivably could or should have.

Readers of this paper should note that section 2 of the Inquiries Act 2005 provides that an inquiry is not to rule on, and has no power to determine, any person's civil or criminal liability. Accordingly, in the context of the Scottish Hospitals Inquiry's investigations into the matters falling within its remit in relation to RHCYP/ DCN, the issue of any liability arising under the Project Agreement is not a question for the Inquiry to rule on or determine. The Inquiry's investigations to date indicate that certain parts of the Project Agreement, and in particular what was (or was not) specified in the Project Agreement as being NHSL's requirements, are controversial. While nothing in this paper should be taken as seeking to determine what the respective civil liabilities of the parties were or may be, it is clearly impossible for the Inquiry to fulfil its terms of reference without having regard to the development of the Project Agreement and the views of the parties involved as to NHSL's requirements. The paper should therefore not be read as offering a view or otherwise commenting on the respective legal rights and obligations of the parties involved.

[1] SHTM 03-01 guidance is reviewed and updated periodically. Any reference to SHTM 03-01 in this paper will relate to the 2014 edition of SHTM 03-01, which was applicable during the construction phase of the RHCYP/DCN.

In due course, the Chair is likely to be invited by the Inquiry Team to make findings in fact based on the content of this paper. It is open to any Core Participant (CP) or indeed any other person holding relevant information, to seek to correct and/or contradict it by way of response to this paper. In considering those responses, and in taking forward its investigations, it is therefore possible that the Inquiry's understanding of matters set out in the paper may change, and so the position set out in this paper at this point remains provisional.

If it is the case that the Inquiry's understanding does change significantly, a revised edition of this paper may be issued in due course.

While it is possible that the matters covered in this paper will be touched upon to a greater or lesser extent at a subsequent hearing held by the Inquiry – something that may also change the Inquiry's understanding of matters – this is not guaranteed, and if parties wish to address the issues dealt with in this paper, they are invited to do so now. If they do not do so, as noted above, the Chair is likely to be invited by the Inquiry Team to make findings in fact based on the content of this paper.

Those responding to this paper should be aware that it is likely that the responses received will be published on the Inquiry's website, or otherwise made publicly available, after the deadline for responses has passed.

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Glossary

ac/hr	air changes per hour (air change rate for ventilation)
CAMHS	Child and Adult Mental Health Service
DCN	Department of Clinical Neurosciences
DGHSC	Director General of Health and Social Care
DSSR	Engineering Consultants
EM	Environmental Matrix
FC	Financial Close
FM	Facilities Management
HAI-Scribe	Healthcare Associate Infection Systems for Controlling Risk in the Built Environment
HDU	High Dependency Unit
HFS	Health Facilities Scotland (part of National Services Scotland)
IHSL	Integrated Health Solutions, Lothian, the Project Company or private partner to NHSL to deliver the new hospital.
IOM	Institute for Occupational Medicine, third party validators for ventilation
IPC	Infection Prevention and Control
IPCT	Infection Prevention and Control Team
IT	Independent Tester
ITU	Intensive Treatment Unit (also referred to as Intensive Care Unit)
NHSL	National Health Service Lothian
NNU	Neonatal Unit
MM	Mott MacDonald, NHSL's technical advisors
MPX	Brookfield Multiplex
PICU	Paediatric Intensive Care Unit
PG	Production Group (Clinical User Groups)
PG RDD	Production Group Review Procedure for Clinical User Groups
Project Co	Project Company (IHSL and its extended supply chain)
RDD	Reviewable Design Data

RDS	Room Data Sheets
RFI	Request for Information
RHCYP	Royal Hospital for Children and Young People (name given to the new children's hospital)
SA1	Settlement Agreement 1 (Project Agreement Supplementary Agreement 1)
SG	Scottish Government
SHBN	Scottish Health Building Notes
SHFN	Scottish Health Facility Notes
SHTM	Scottish Health Technical Memorandum
SHPN	Scottish Health Planning Notes
QEUH	Queen Elizabeth University Hospital

1. Introduction

1.1 At the conclusion of the Project Agreement, and with the arrival of the contractor Multiplex (MPX) on site on 16 February 2015, the RHCYP/DCN reprovision project entered the construction phase with a proportion of the design still to be agreed, including some of the room environmental conditions contained in the Environmental Matrix.

1.2 This was made possible by a provision in the Project Agreement which allowed for the parties to categorise elements of unfinished design work as 'Reviewable Design Data' (RDD).

1.3 The Inquiry has already heard how at least part of the Environmental Matrix came to be included within the RDD Schedule.

1.4 By virtue of section 2 of the Inquiries Act 2005, the issue of any liability arising under the Project Agreement is not a question for the Inquiry to rule on or determine. The Inquiry acknowledges that the certain parts of the Project Agreement, particularly what was specified in the Project Agreement as being NHSL's requirements, are controversial. While nothing in this paper should be taken as seeking to determine what the respective civil liabilities of the parties were or may be, it is clearly impossible for the Inquiry to fulfil its terms of reference without having regard to the development of the Project Agreement and what the perceptions as to NHSL's requirements were. Similarly, the Inquiry team understand that the Environmental Matrix contained 'discrepancies', where the parameters for ventilation it contained differed from those recommended in SHTM 03-01 and these are examined not for the purpose of determining the respective rights and obligations of the parties but to enable the Inquiry to fulfil its terms of reference.

1.5 SHTM 00 "Best practice guidance for healthcare engineering – policies and principles" states that the purpose of SHTM is to ensure everyone concerned with the management, design, procurement and use of a healthcare facility understands the requirements of the specialist, critical building and engineering technology involved.

1.6 SHTM 03-01 sets out guidance on ventilation for health care premises. It states that specialised ventilation is required for “critical areas and high-dependency units of any type” and provides the specific design information within Table A1 of Appendix 2.

1.7 The specific design information contained in Table A1 covers all the key parameters of the ventilation system. Of relevance to the issues discussed in this paper, Table A1 of SHTM 03-01 states the following recommendation:

- ‘General Ward’: 6ac/h (supplied naturally or mechanically), no particular pressure regime.
- ‘Single room’: 6ac/h (supplied naturally or mechanically), with a balanced (or negative) pressure relative to the adjoining space.
- ‘Neutropenic patient ward’: 10ac/h (mechanical supply only) and a positive pressure of +10 pascals relative to adjoining space.
- ‘Critical care areas’: 10 ac/h (mechanical supply only) and +10 pascal positive pressure relative to adjoining space.

Extract from SHTM 03-01 Appendix 1 Table A1:

SHTM 03-01: Part A – Design and Validation

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

1.8 The rooms in which a discrepancy is understood to have caused the delay to the opening of the new facility in July 2019 are the 4 multi-bed rooms and 5 single-bed rooms in the B1 Paediatric Intensive Care Unit (PICU), High Dependency Unit (HDU) and Neonatal Unit (NNU) (Critical Care):

Department	Room Name	Room Number
B1 PICU/HDU/ NNU	Single-bed cubicle	1-B1-019
	Single-bed cubicle	1-B1-020
	Single-bed cubicle	1-B1-021
	Single-bed cubicle	1-B1-037
	Single cot cubicle (with ensuite)	1-B1-075
	Open Plan Bay (4 beds)	1-B1-009

	Open Plan Bay (4 beds)	1-B1-031
	Open Plan Bay (4 beds)	1-B1-063
	Open Plan Bay (3 cots)	1-B1-065

1.9 It is the Inquiry's provisional understanding that the primary cause of the delay to the opening of the RHCYP/DCN was a non-compliance with the air change rates recommended for those Critical Care areas. For clarity, 'non-compliance' as it is referred to throughout this paper means non-compliance with the published guidance SHTM 03-01. The term should not be interpreted as suggesting any non-compliance with contractual requirements.

1.10 While this paper will provide commentary on the changes made to the EM in relation to other ventilation parameters (and in some other areas of the RHCYP), 'the discrepancy' represents the non-compliance understood to have caused the delay and is therefore defined as the discrepancy between the air change rate reflected in the EM for the 9 Critical Care rooms and those recommended in SHTM 03-01 for Critical Care areas.

1.11 The purpose of this paper is to consider

1. whether this discrepancy could have been detected sooner than it was, and as a consequence,
2. whether the delay could have been avoided, or decided upon sooner, thereby avoiding the consequences of a last minute change to plans for moving staff and patients to the new hospital.

1.12 The Inquiry acknowledges that the requirements within the Project Agreement are controversial. Therefore the very issues of whether there was a 'discrepancy', and whether that discrepancy amounted to an error, are also controversial.

1.13 The focus of this paper is on the construction phase, during which the EM went through the 'RDD process' intended to finalise design matters, and when the ventilation system was being built.

1.14 PPP6 considered the process of commissioning and validation, and addressed the extent to which commissioning and validation was done adequately prior to handover and before the planned opening date of the hospital. PPP6 touched on whether an opportunity to detect the discrepancy was missed as a consequence of how commissioning and validation was undertaken.

1.15 For the purposes of this paper, a 'missed opportunity' is defined as any occasion where a different course of action had the potential to produce a more favourable outcome; that is, the occasions where decisions or actions (taken or not taken) failed to detect the discrepancy when they conceivably could or should have.

1.16 A chronological narrative of events during the construction phase has been provided at section 9 of this paper. It provides the detailed evidence drawn upon in sections 3 to 6 and provides a factual basis for the provisional conclusions in this paper.

1.17 Section 2 of the paper provides an outline of the governance and project management structures in place during the construction period. Note that this paper provides only a limited overview of governance. Governance will be addressed further by the Inquiry team in other work.

1.18 Section 3 is a graphic timeline of the RHCYP/DCN construction phase, containing links to the relevant sections of the narrative.

1.19 Section 4 provides an explanation of the RDD process and how it unfolded during the construction phase of the project. Missed opportunities relating to RDD are discussed in this section.

1.20 Section 5 outlines actions taken by NHSL, MM and Project Co to resolve a disagreement over the requirements for 4 bed rooms, otherwise known as multi-bed rooms or multi-bed wards. Missed opportunities relating to the multi-bed room dispute are discussed in this section.

1.21 Section 6 outlines the Settlement Agreement that NHSL and Project Co entered into in February 2019. Missed opportunities from this period are discussed.

1.22 Section 7 provides provisional conclusions.

1.23 Section 8 contains questions for CPs.

1.24 Section 9 contains a chronological narrative of the construction phase. It provides the detailed evidence drawn upon in sections 3 to 6, and supports the discussion and provisional findings contained within this PPP.

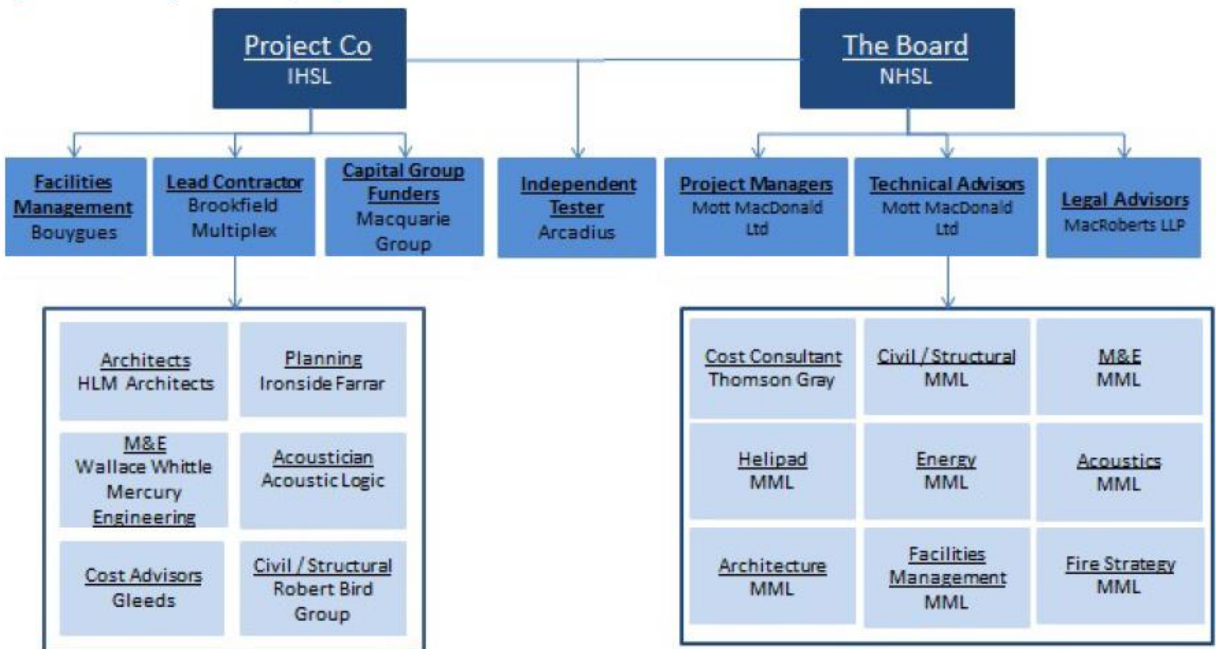
1.25 Contractual provisions in the Project Agreement which are relevant to RDD are provided as an appendix to this paper.

2. Governance and Project Management

2.1 A 'Construction Phase Project Execution Plan' produced by Mott MacDonald in June 2015 provided the structure of the team and their key roles during the construction phase of the RHCYP/DCN.

Extract from the Construction Phase Project Execution Plan

Figure 1.2: Project Delivery Organisational Structure



2.2 The structure of the NHSL Project Team and MM Advisory Team (the Delivery Team) was provided in table 2.2 and figure 2.2 of the execution plan. The role of the Delivery Team was to:

- "Manage and support the overall Project;
- Ensure that structure, processes and resources are in place to enable delivery of the Project's aims and objectives;
- Develop monitoring and reporting mechanisms;
- Ensure documentation and audit trails are maintained;
- Commission external support as necessary;
- Develop monitoring and reporting on progress of those plans;
- Establish and support Project workstreams;

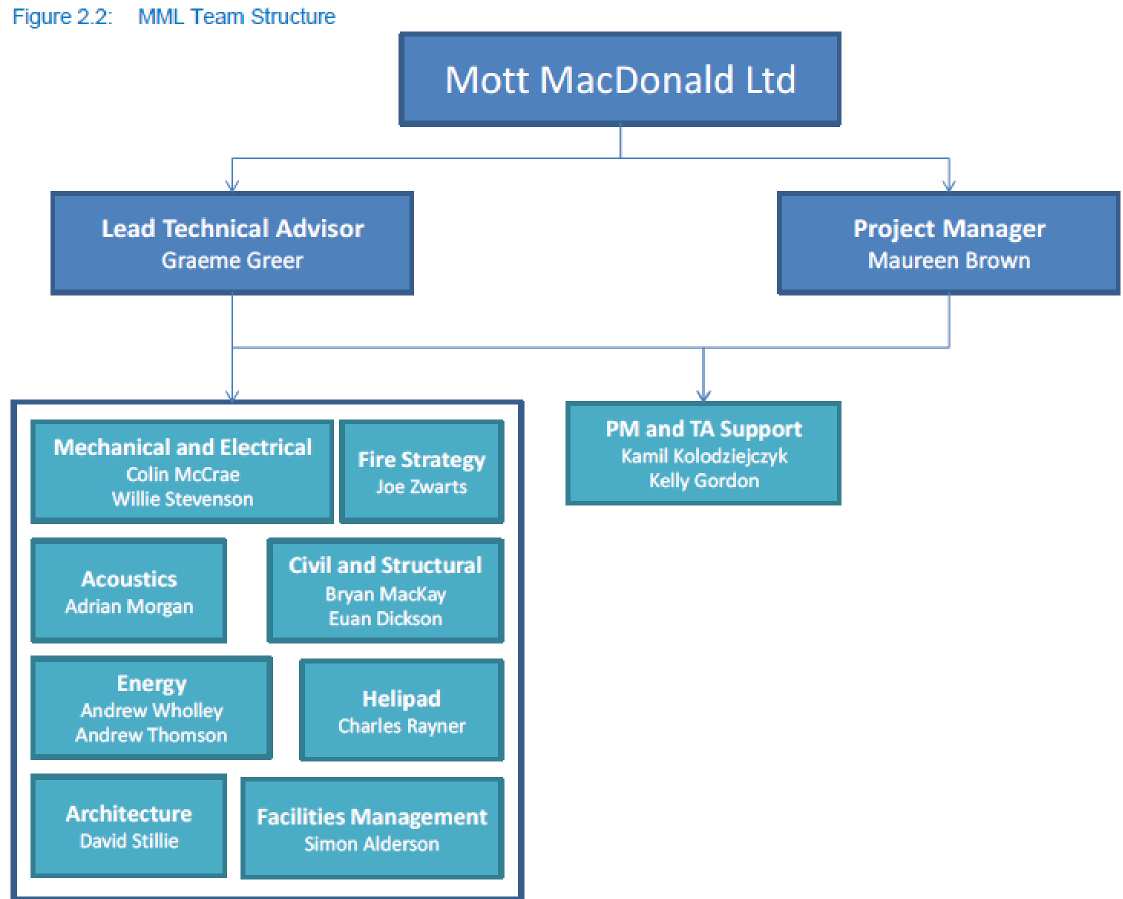
- Develop and maintain Risk Register;
- Ensure the effective engagement of and communication with staff, service users and other stakeholders;
- Undertake Post Project Evaluation;
- Develop, maintain and review the Benefits Realisation Plan."

Table 2.2: NHSL Project Team [tbc by NHSL]

Role	Name
Project Director	Brian Currie
Project Manager	Sorrel Cosens
Project Finance	Lynn Allan
Equipment Lead	Neil McLennan
Clinical Enabling	Margaret DiMascio
Enabling Works Project Manager	Andrew MacDonald
Project Clinical Director	Janice Mackenzie
Clinical Support Project Manager	Fiona Halcrow
Head of Commissioning	Jackie Sansbury
Contracts Manager	Stuart Davidson
Commissioning Manager	Ashley Hull
Commissioning Manager	Jane Campbell
Communication Manager	David Ridd
Administration	Grace May
Administration	Darren Dryburgh

Extract of Construction Phase Project Execution Plan

Figure 2.2: MML Team Structure



Extract of Construction Phase Project Execution Plan

2.3 Details of the various “work-streams” during the construction phase were provided in Table 2.3. The objective of the work-streams was to “encourage delivery teams to manage themselves in the most appropriate way”. An overview of the Clinical Support workstream provides:

> “The NHSL Clinical Management Team is responsible for ensuring that design and planning reflect clinical operational need and best practice. They must ensure that an efficient, practical, functional facility is achieved through the construction phase”.

2.4 The membership of the NHSL Clinical Management Team (CMT) is not provided in the Project Execution Plan. The role of the Infection Prevention and Control Team (IPCT) is also not provided.

Extract of Construction Phase Project Execution

Table 2.3: Work-streams

Work-stream	Workstream Lead	Over-view
Project Management Executive (PME)	Project Director	The PME comprises the Project Director, the Head of Commissioning, Clinical Project Director, Project Manager and Lead TA. PME will liaise with all the work-streams to monitor progress and ensure the project is proceeding appropriately. The Project Director will act as the filter for all Technical Advisor queries to the NHSL Project Team.
Design & Construction	Project Director	The project team will assist in the evaluation of the RDD packs submitted by IHSL. The team will advise on issues surrounding the proposed design and check for compliance with current standards and regulations and Financial Close documents.
Facilities Management	Head of Commissioning	The FM work-stream shall assist in the evaluation of the RDD packs submitted by IHSL. FM work-stream shall work with the Board to refine FM requirements, documentation, payment mechanism and interface agreements which shall ensure the new facility is effectively and efficiently maintained.
Equipment	Equipment Lead	A dedicated equipment work-stream has been identified to be responsible for determining the facility-wide equipment requirements. The Equipment work-stream shall assist in the evaluation of the RDD packs submitted by IHSL
Clinical Support	Project Clinical Director	The NHSL Clinical Management Team is responsible for ensuring that design and planning reflect clinical operational need and best practice. They must ensure that an efficient, practical, functional facility is achieved through the construction phase.
Clinical services Commissioning	Head of Commissioning	The Board head of commissioning is responsible for the overall NHS commissioning and service migrations to the Facility and decommissioning of the old facilities. This will include aligning familiarisation and commissioning of the building, the equipment and the services to ensure the building is ready for occupation.
Communications	Project Director	TBC
Art and Therapeutic Design	Project Manager	TBC
Information and Communication Technology (ICT)	Clinical Support Project Manager	TBC

2.5 Table 4.3 provided the RDD review team members. Figure 4.3 provided the process that was to be followed by the review teams.

Extract from the Construction Phase Project Execution Plan

Table 4.3: NHSL and MML review team

Department	NHSL Advisor	MML Advisor	Method of recording comments
Board Representative	Brian Currie	-	-
Lead Technical Advisor	-	Graeme Greer	-
Infection Control	Janette Richards	-	-
Mechanical and Electrical	Brian Douglas	Colin McCrae	Electronically
	Stuart Davidson	Willie Stevenson	Electronically
Civil / Structural	-	Bryan MacKay	Electronically
Architecture	-	David Stillie	Hard Copy
Fire Strategy	Clive Armstrong	Joe Zwarts	Electronically
Facilities Management	Jackie Sansbury	Simon Alderson	Electronically
	Stuart Davidson		
Energy	-	Andrew Wholley	Electronically
	-	Andrew Thomson	
Acoustics	-	Adrian Morgan	Electronically
Helipad	Stuart Davidson	Charles Rayner	Electronically
	Fiona Halcrow		
Equipment	Jackie Sansbury	David Stillie	Electronically
	Douglas Coull	-	
	Patrick Macaulay	-	
	Neil McLennan	-	
Clinical Management	Janice Mackenzie	David Stillie	Hard Copy
	Fiona Halcrow		

Figure 4.3: RDD Review Process

IHSL delivers one hard copy of the RDD pack to MML an electronic copy via a transmittal on Aconex.

↓

Project Team checks the documents to make sure there is nothing missing from the RDD Pack.

↓

MML updates the RDD tracker.

↓

MML will forward the transmittal and electronic copy of the RDD pack to the relevant work stream lead.

↓

The work stream will meet to agree comments and record all comments as per Table 4.3. All electronic documents shall be printed and stamped and returned to IHSL as a hard copy.

↓

The Project Team will return one copy of the RDD pack containing their comments within 15 business days.

2.6 The Execution Plan also provided that: "To manage the flow of information and documents successfully throughout the RDD process, MM will keep a record of all documents submitted through the Review Procedure. The RDD tracker will be a working document, updated and distributed to Project Team on a regular basis and will consist of the following:

- the date the RDD pack was received; all document numbers;
- the date the pack was issued to Project Team/Technical Advisors;
- the date the Pack needs to be returned to IHSL; and
- the status of the drawing / document reviewed".

2.7 The suite of project management trackers proposed by MM was provided in Table 4.2.

Extract of Construction Phase Project Execution Plan

Table 4.2: Management Trackers

Tracker Name	Brief Description	Issued by MML to NHSL	NHSL Shared Drive	MML PiMS Link
Change Control	Captures all internal Board proposed changes and Change requests.	Fortnightly	K:\RHSC and DCN NPD\Design\Change Control	Change control.
RDD Tracker	Records all incoming RDD Packs from IHSL, the dates the packs are issued to the Project Team, the date in which NHSL needs to respond to IHSL and the status NHSL are assigning to the drawing.	Weekly	K:\RHSC and DCN NPD\Design\RDD Process\RDD Tracker Folder	RDD Tracker.
PG RDD Tracker	Records all incoming PG Packs from IHSL, the dates the packs are issued to the User Groups, the date in which NHSL needs to respond to IHSL and the status NHSL are assigning to the drawing.	Weekly	K:\RHSC and DCN NPD\Design\RDD Process\RDD Tracker Folder	PG RDD Tracker.
User Group Meeting Tracker	Records the time and date of all user group meetings, including who has confirmed attendance and the address each pack is to be delivered to.	Monthly	-	User Group
Request for Information	Records all requests for information from NHSL to IHSL.	Weekly	K:\RHSC and DCN NPD\Design\RDD Process\RFIs	RFI Tracker.
Design Issues	Captures all comments from the Board RDD meetings that are deemed 'not relevant' by IHSL and, therefore, will be ignored if recorded onto the RDD documents.	Weekly	K:\RHSC and DCN NPD\Design\RDD Process\RDD Tracker Folder	Design Issues
Hospital Wide Changes to Equipment	Captures changes to equipment identified during the RDD reviews that affect the entire hospital.	As required	TBC	Hospital wide

2.8 The Inquiry has reviewed evidence confirming that the agreed trackers were maintained during the construction phase. The Inquiry has not been provided with minutes of the meetings held to agree comments on RDD items.

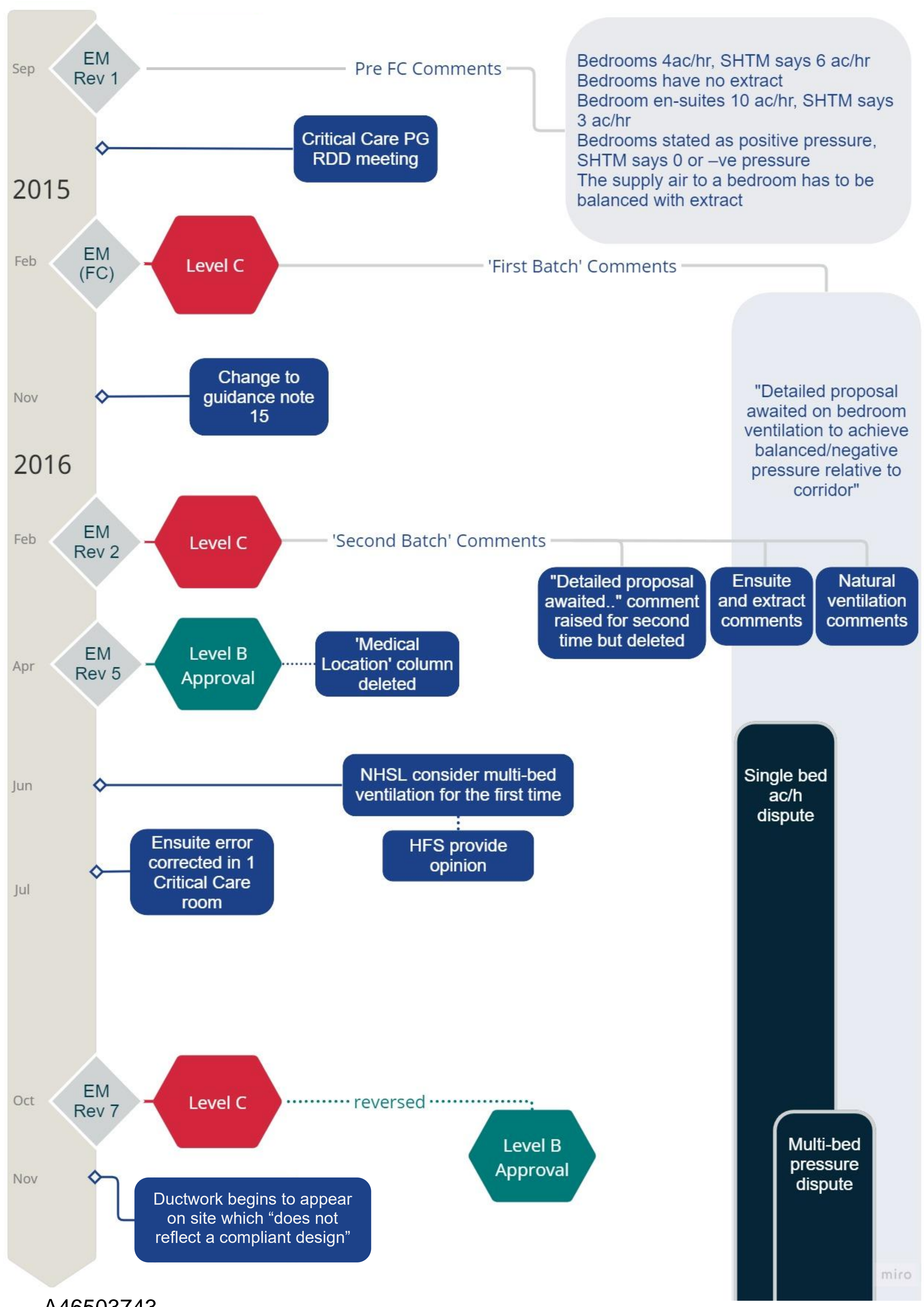
2.9 Key information regarding the project was communicated to the Programme Board through a Risk Register, Project Dashboard, and topical papers. The Programme Board minutes listed the 'top 6 risks' to the Project.

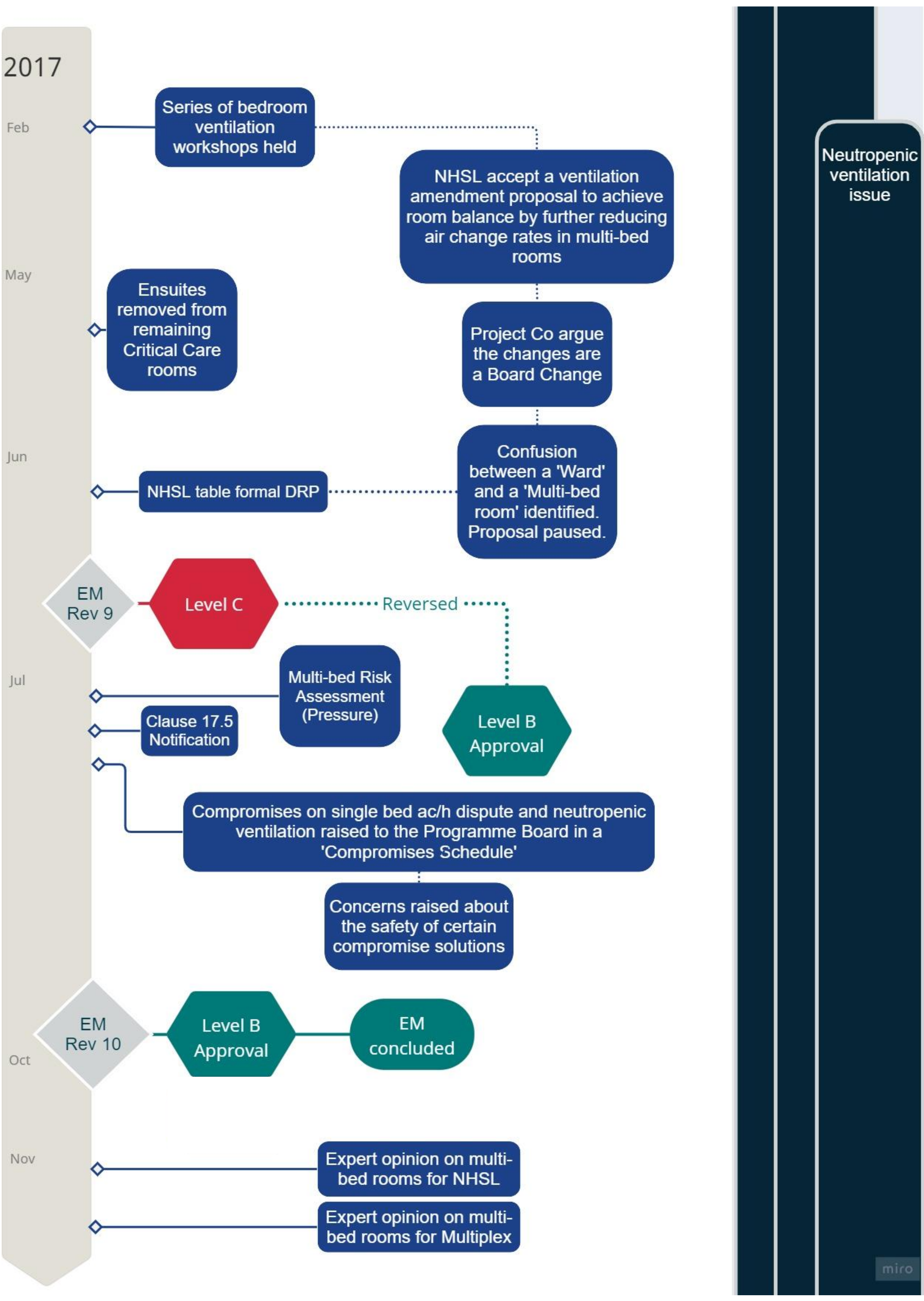
2.10 From early 2017, issues with the compliance of ventilation were being raised at Programme Board meetings. In July 2017, the Programme Board were made aware of the compromises being considered in single bedrooms and neutropenic patient rooms.

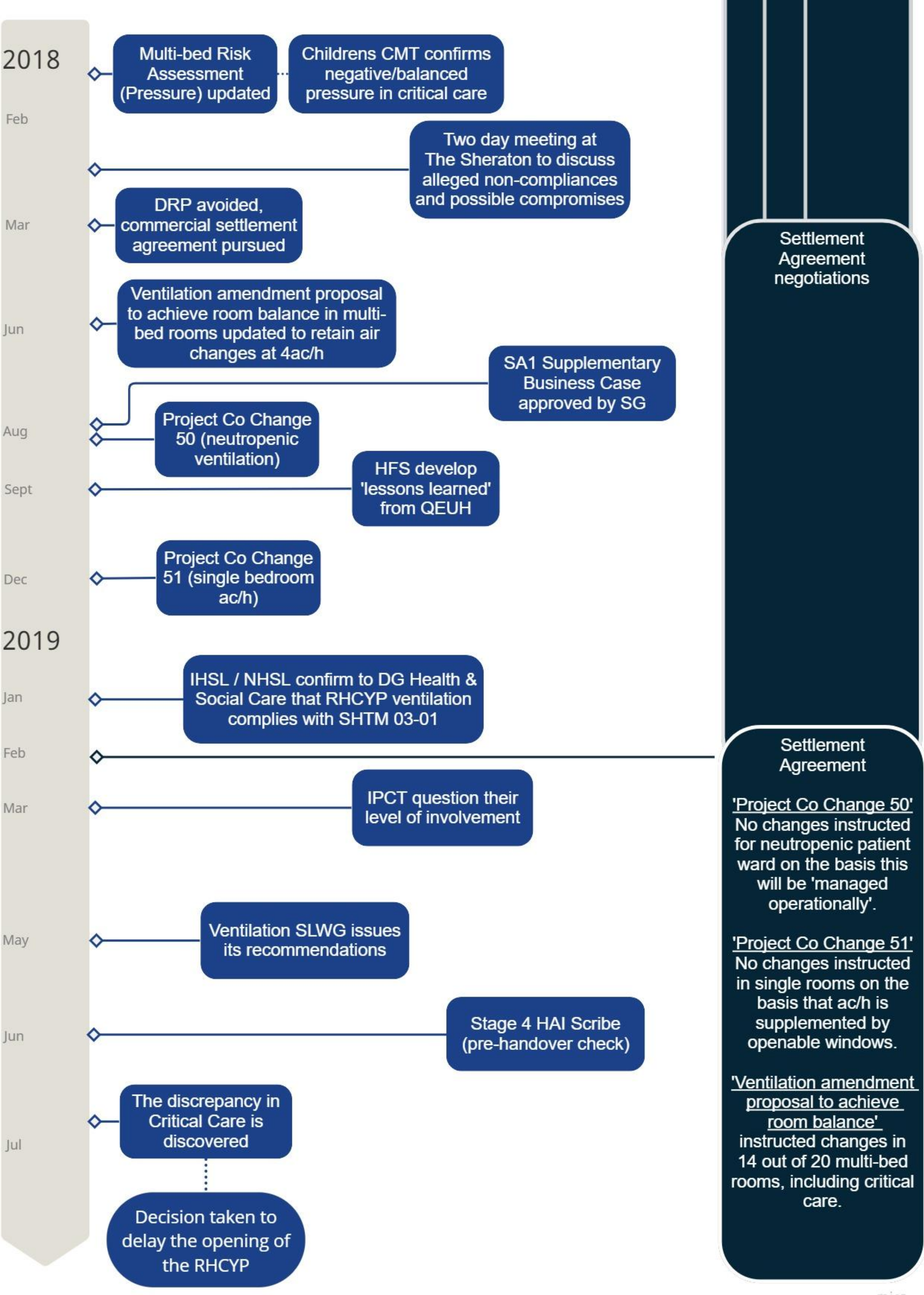
2.11 An issue with ventilation first made it into the Risk Register in December 2017. This was the issue of ventilation requirements in multi-bed rooms. It was escalated to the Director of Finance, the Finance and Resources Committee, and the Cabinet Secretary in early 2018.

2.12 Ventilation concerns were not included in the 'top 6 risks' in any Programme Board minutes.

3. Timeline of the Construction Phase




2017
Feb
May
Jun
Jul
Oct
Nov
Series of bedroom ventilation workshops held
NHSL accept a ventilation amendment proposal to achieve room balance by further reducing air change rates in multi-bed rooms
Ensuites removed from remaining Critical Care rooms
Project Co argue the changes are a Board Change
NHSL table formal DRP
Confusion between a 'Ward' and a 'Multi-bed room' identified. Proposal paused.
EM Rev 9
Level C
Reversed
Multi-bed Risk Assessment (Pressure)
Clause 17.5 Notification
Level B Approval
Compromises on single bed ac/h dispute and neutropenic ventilation raised to the Programme Board in a 'Compromises Schedule'
Concerns raised about the safety of certain compromise solutions
EM Rev 10
Level B Approval
EM concluded
Expert opinion on multi-bed rooms for NHSL
Expert opinion on multi-bed rooms for Multiplex
Neutropenic ventilation issue
miro


2018
Feb
Mar
Jun
Aug
Sept
Dec
2019
Jan
Feb
Mar
May
Jun
Jul
Multi-bed Risk Assessment (Pressure) updated
Childrens CMT confirms negative/balanced pressure in critical care
Two day meeting at The Sheraton to discuss alleged non-compliances and possible compromises
DRP avoided, commercial settlement agreement pursued
Ventilation amendment proposal to achieve room balance in multi-bed rooms updated to retain air changes at 4ac/h
SA1 Supplementary Business Case approved by SG
Project Co Change 50 (neutropenic ventilation)
HFS develop 'lessons learned' from QEUH
Project Co Change 51 (single bedroom ac/h)
IHSL / NHSL confirm to DG Health & Social Care that RHCYP ventilation complies with SHTM 03-01
IPCT question their level of involvement
Ventilation SLWG issues its recommendations
Stage 4 HAI Scribe (pre-handover check)
The discrepancy in Critical Care is discovered
Decision taken to delay the opening of the RHCYP
Settlement Agreement negotiations
Settlement Agreement
'Project Co Change 50' No changes instructed for neutropenic patient ward on the basis this will be 'managed operationally'.
'Project Co Change 51' No changes instructed in single rooms on the basis that ac/h is supplemented by openable windows.
'Ventilation amendment proposal to achieve room balance' instructed changes in 14 out of 20 multi-bed rooms, including critical care.
miro

4. The RDD Review Procedure

4.1 It is usual in construction projects to keep some design data under review after a contract has been signed. This becomes Reviewable Design Data.

4.2 In the Project Agreement, Reviewable Design Data (RDD) means

> "the Design Data listed at Section 5 (*Reviewable Design Data*) of Schedule Part 6 (*Construction Matters*)"

4.3 Part 3 (section 12) of the Project Agreement (Design and Construction (The Design Construction and Commissioning Process)), contains a number of clauses relevant to the RDD process under subheadings: "Overall Responsibility"; "Board Design Approval"; and "Rectification of Project Co's Proposals". RDD is subject to the Review Procedure outlined in Schedule Part 8. Relevant extracts from the Project Agreement are included in an appendix to this paper.

4.4 The Review Procedure for RDD is an iterative process of review and sign-off by the client of contractor proposals, ending with approval of the final design.

4.5 Design proposals were to be presented to NHSL at staged intervals during construction, according to an agreed schedule provided by IHSL. NHSL was required, within a contractually agreed timescale, to either reject the proposal or approve to proceed to construction with or without comments.

4.6 The levels of endorsement are:

- "Level A – no comment" - An endorsed document with no further comments/amendments.
- "Level B - proceed subject to amendment as noted"; Project Co to make amendments as noted and continue next level of design or to implement the works without re-submitting documents.
- "Level C - subject to amendment as noted"; do not act upon the Submitted Item, amend the Submitted Item in accordance with the Board's Representative's comments and re-submit the same to the Board's Representative within 10 business days.

- "Level D - rejected"; do not act upon the Submitted Item, amend the Submitted Item and re-submit the Submitted Item to the Board's Representative within 10 business days.

4.7 In accordance with the Review Procedure any "Level A" or "Level B" approval which entitled IHSL to commence construction (subject to any comments from NHSL) did not relieve IHSL of compliance with its other obligations under the Project Agreement.

4.8 The Dispute Resolution Procedure (DRP) could be used should NHSL and Project Co fail to reach agreement on a design proposal.

4.9 The Environmental Matrix was not approved at Financial Close. It was included in Part 4 of Schedule Part 6 to the Project Agreement (Section 5, Reviewable Design Data, “the RDD schedule”) along with Board comments. Amongst the Board comments was a request for a “detailed proposal… on bedroom ventilation to achieve balanced/negative pressure relative to the corridor”.

4.10 Also included in the RDD schedule was the Ventilation Distribution design for all floors of the hospital, including level 1 where Critical Care was located. It is the Inquiry’s understanding that the environmental data contained in the EM would inform the material design elements contained in these drawings.

4.11 Prior to Financial Close 40% to 50% of Room Data Sheets containing, amongst other things, environmental data for each room in the hospital, had been completed. The remaining 50% to 60% were to be completed after the EM had been finalised through the RDD process.

4.12 The Inquiry team understand that MM reviewed the EM and prepared comments on behalf of the Board, which members of the Programme Board signed off. Thus, when referring to review by ‘the Board’, often what is meant is review by Mott MacDonald with sign off from the Programme Board.

4.13 The RDD process also involved engagement with 'Production Groups' including the service leads of different departments in the hospital. These production groups were provided with design documentation which they would review.

4.14 From 2015 to 2017 the EM was revised a number of times beginning with "revision 2" in November 2015 and ending with "revision 11 version 33" in October 2017.

4.15 The Inquiry team has identified a number of potential missed opportunities to detect the discrepancy during this review process.

4.15.1 The purpose of the Production Group review was to finalise the design in relation to 'operational functionality' only. This did not include Mechanical and Electrical engineering. Thus Clinical User Group for "B1 Critical Care" did not have an opportunity to comment on room environmental conditions such as ventilation parameters during this process.[2]

4.15.2 Included amongst the problems identified in the EM were the ventilation parameters for single and multi-bed rooms in the B1 Paediatric Critical Care Unit and High Dependency Unit. Specifically, the EM provided for extract through ensuite facilities but, it was noted, rooms in Critical Care areas would not have ensuites. Likewise the provision of natural ventilation in Critical Care areas was questioned by NHSL and partially removed by Project Co. The Inquiry team notes:

- when making these comments the Board referred to specific single bedrooms or open-plan bays in Critical Care areas rather than describing the requirements for the area as a whole [3]
- when responding to Board comments, Project Co initially made the requested changes only to the rooms specifically mentioned by NHSL [4]

[2] See paragraph 9.2
[3] See paragraph 9.3.8
[4] See paragraphs 9.4.6 and 9.5.2

- it took 14 months for Project Co to remove ensuites from all bedrooms and open plan bays in Critical Care areas in the EM [5]
- it took the same amount of time to remove natural ventilation in seven out of nine Critical Care rooms in the EM[6]
- by the end of the review process two Critical Care rooms continued to reflect a natural ventilation supply.[7]

4.15.3 NHSL and Project Co failed to reach agreement on a design for single bedroom ventilation, and the requirements for multi-bed room ventilation. The attempts to reach agreement on these matters involved considering ventilation parameters in Critical Care areas on a number of occasions. This is discussed in the following section.

4.15.4 Information that could have helped alert reviewers to the discrepancy in the EM was removed, or not considered:

- A change to Guidance Note 15 for Critical Care air change rates in November 2015 was not identified by NHSL or MM [8]
- NHSL/MM did not identify from Guidance Note 15 that HDU rooms in Critical Care required 10ac/h, despite referring to the Guidance Notes for design detail [9]
- A “medical location group” column on the EM was deleted in February 2016, which may have provided each room/department with a clinical risk profile and could have alerted reviewers to the unique requirements of Critical Care areas [10]

4.15.5 The unique requirements for some specialised areas was recognised, but this did not trigger any consideration of the requirements for Critical Care areas:

[5] See paragraph 9.7.3
[6] See paragraph 9.7.2
[7] See paragraph 9.7.4
[8] See paragraph 9.3.3
[9] See paragraph 9.3.3; 9.1.10 and 9.4.9
[10] See paragraph 9.4.9

- The air change rate was adjusted to 6ac/hr for bedrooms in CAMHS that would not receive natural ventilation. However, Project Co did not recalculate the ac/h for rooms in Critical Care after removing natural ventilation [11]
- In February 2017 NHSL identified that the parameters contained in the EM for one specialised area (neutropenic patient areas) were non-compliant with recommendations contained in SHTM 03-01. This did not prompt a review of other specialised areas, which may have been similarly overlooked [12]

4.15.6 Following the final review of the EM in October 2017 TUV SUD suggested a final line-by-line review, which was declined by MM on the basis that TUV SUD confirmed that a line-by-line review had been carried out at their office.[13]

4.15.7 Despite a lack of agreement on some of the ventilation parameters, NHSL on two occasions approved the EM at 'level B' status, meaning Project Co could proceed to construction:

- In April 2016 the EM was given level B status "relative to the Financial Close comments"[14].
- In October 2016 this was changed to level C[15].
- In November 2016 this was changed back to level B status because "no progress is likely to be made on all others aspects which we are comfortable with unless IHSL (or MPX more accurately) receive a status B"[16].
- In June 2017 the EM was given level C status "as the ventilation for multibed rooms is still an issue"[17].

[11] See paragraph 9.4.7
[12] See from paragraph 9.6.27
[13] See paragraph 9.8.4
[14] See paragraph 9.4.13
[15] See paragraph 9.6.4
[16] See paragraph 9.6.7
[17] See paragraph 9.7.7

- In July 2017 the EM was given level B status with the bedroom ventilation dispute still unresolved, quoting "If we were to lose the argument re ventilation, then PCo may use it for potential compensation event and therefore extension to programme"[18].

4.16 The final review of EM Rev 11 in October 2017 concluded its development through the RDD process but did not contain the final agreed specifications for ventilation in multi-bed rooms. Instead, these were contained in a Settlement Agreement. This is discussed in later sections.

4.17 The Inquiry team notes the following observations which may have contributed to the issue with Critical Care air changes being overlooked during the review procedure:

- Specific inconsistencies with ventilation parameters in Critical Care areas were raised, but these were considered separately[19].
- A risk that Board Comments could be interpreted differently by Project Co was not considered[20].
- Project Co did not investigate the potential scale of inconsistencies and made changes to the rooms exampled by NHSL only[21].
- Project Co actioned partial corrections, often with long delays between a comment being made and changes appearing in the EM[22].
- Partially resolved or unresolved Board Comments resurfaced as issues or disagreements outside of the review procedure[23].
- It does not appear that any individual was responsible for ensuring that Board Comments were actioned appropriately in the first instance.
- No robust procedures were in place to keep track of the large number of issues identified during the review procedure.
- Design development resumed after the EM was 'approved for construction'

[18] See paragraph 9.7.28
[19] See paragraphs 9.3.8, 9.4.17, 9.6.6, 9.7.8
[20] See paragraphs 9.1.8, 9.3.8
[21] See paragraphs 9.4.6, 9.5.2
[22] See paragraphs 9.4.3 to 9.4.6, 9.5.2, 9.7.2 to 9.7.6
[23] See paragraphs 9.4.19, 9.6.3

- The ventilation system was under construction before a final agreed ventilation specification for multi-bed rooms and single-bed rooms was agreed.

4.18 The Inquiry team understands that the RDD process takes place in a context where there are changing pressures (such as financial and time constraints) and that the process has been known to give rise to protracted dialogue, particularly after multiple submissions in relation to the same item.

4.19 Stakeholder relations became increasingly strained during the RHCYP/DCN RDD process, with supply chain difficulties contributing to a breakdown in design development[24].

4.20 Given the known challenges of RDD, views are invited from CPs on whether it is an appropriate process to finalise the design of critical ventilation systems in clinical areas where:

- There may be differing interpretations of guidance
- There is a greater clinical risk associated with non-compliant design
- Changing one element of the design may have a knock-on effect on other parts of the design (e.g. changing a pressure regime may require a change to other specifications which have already been agreed)
- The construction materials (such as ductwork and air handling units) are based on the specified design.

4.21 The Inquiry has already heard from CPs on some of the challenges associated with carrying out line-by-line reviews of design documents like the Environmental Matrix. The Inquiry has also heard how MM sought and received assurances from the original authors of the EM, Hulley & Kirkwood (H&K), prior to financial close, that it complied with published guidance.

4.22 At the conclusion of the Inquiry hearings in May 2023 the Chair was invited to consider whether there came a point where it was clear that the assurance provided by H&K was potentially incorrect. This was based on the potential non-compliance

[24] See paragraph 0

identified at financial close and included in the RDD Schedule. the Inquiry's investigations have shown that during the construction phase further non-compliances with published guidance were identified by NHSL and MM in the EM.

4.23 The Inquiry is interested in whether a separate audit by another engineer was necessary, appropriate and/or proportionate given the assurances NHSL had received from MM and H&K. Views from CPs on this matter are welcomed.

5. Multi-Bed Room Dispute

5.1 As noted, during the RDD process NHSL and Project Co struggled to agree on a design for bedroom ventilation generally and the specific requirements for "4 bedded rooms".

5.2 Note that the terms "4 bedded rooms", "4 bed rooms" and "multi bed ward" were used interchangeably during the construction period and thus are used interchangeably in this paper where evidence is quoted. Rooms containing four beds had been given the room function "multi-bed ward" in the Environmental Matrix. Not all rooms given the room function "multi-bed ward" were actually called 4 bedded rooms. While rooms in medical in-patients were called "4 bed rooms", those in B1 PICU/HDU that had been given the room function "multi-bed ward" were called "Open Plan Bay (4 beds)" or "Open Plan Bay (3 Cots)."

5.3 The disagreement emerged after Project Co submitted derogation requests WW014 and WW015 to NHSL in June 2016:

> "The air change rate has been decreased within the single bedrooms from 6ac/hr to 4ac/hr. Mixed mode ventilation has been provided with additional natural vent available from the opening windows. Single bedrooms without opening windows have been provided with 6ac/hr."
>
> The proposal is noted as:-
>
> "Single bedrooms with opening windows to have a mechanical ventilation rate of 4ac/hr."[25]

5.4 NHSL contacted HFS for its "interpretation of the ventilation pressure requirements for four bed wards". At the time, the parameters contained in the EM for multi-bed wards were for a positive pressure regime. HFS responded that

> "it would not be unreasonable to treat this area as one would a single bed ward with respect to ventilation as the measures for infection control

[25] See paragraph 9.4.21

would be the same. Therefore the room should be neutral or slightly negative with respect to the corridor."[26]

5.5 On 22 September 2016 NHSL rejected Project Co's derogation request, referring to a 4 bedded room where to achieve balanced pressure, "the en-suite extract would have to be in order of 36ac/h" which was much greater than SHTM 03-01 recommendations and did not allow for heat recovery.[27] Project Co questioned the reference to a 4 bedded room, noting that the derogation request was for single bedrooms only and that "the design solution for single bedrooms is fundamentally different to 4 bedded design"[28].

5.6 Ventilation workshops were held in early 2017. Over the course of five months various iterations of a 'Multi-bed room - Ventilation amendment proposal to achieve room balance' were under review by Project Co, Mott MacDonald and NHSL. The ventilation design in the Critical Care multi-bed rooms was considered in detail[29].

5.7 A disagreement came to be centred around how to interpret Table A1 of SHTM 03-01[30]. Table A1 of SHTM 03-01 did not contain specific guidance on the parameters for four bed rooms or 'multi-bed wards' as they were referred to in the Environmental Matrix. Instead, it provided parameters for 'General Wards' and 'single bedrooms'.

5.8 Project Co maintained that 'general ward' applied to 4-bedded rooms. SHTM 03-01 did not contain a specific recommendation for the pressure regime in General Wards. NHSL maintained that the recommendations in SHTM 03-01 for single bedrooms applied to 4 bed rooms or multi-bed wards.

5.9 On 5 July 2017 NHSL conducted a 'general risk assessment' which considered the risks of the proposed positive pressure regime for 4 bedded rooms on various departments in the hospital, including the Critical Care Department specifically[31]. The risk assessment did not identify the unique requirements for

[26] See paragraph 9.4.23
[27] See paragraph 9.6.2
[28] See paragraph 9.6.10
[29] See paragraph 9.6.22, 9.6.43 to 9.6.47, 9.7.10
[30] See paragraph 9.7.15
[31] See paragraph 9.7.17

bedrooms in Critical Care areas outlined in SHTM 03-01. For example, it failed to note that a positive pressure regime was in fact recommended for Critical Care areas. The risk assessment did not consider the impact of lower air change rates than those recommended in SHTM 03-01 for bedrooms generally (4ac/hr instead of 6 ac/hr).

5.10 The Inquiry team understands that a "General Risk Assessment" is different to an Infection Prevention and Control Risk Assessment. The Inquiry team has not seen evidence that the IPC Team were invited to comment on the general risk assessment.

5.11 Mott MacDonald, members of the Programme Board and Project Co continued to review recommendations contained within guidance, including SHTM 03-01, and reached different interpretations[32].

5.12 In 2017 NHSL considered using the Dispute Resolution Procedure (DRP) to resolve outstanding design issues and discussed this option with Project Co[33].

5.13 In late 2017 both NHSL and Project Co sought advice on the interpretation of SHTM 03-01 and the Board's Construction Requirements from consultant engineers. David Rollason, advising NHSL and DSSR, advising Project Co, were unable to reach a definitive interpretation of SHTM 03-01 in respect of recommendations for 4 bed rooms/multi-bed wards[34].

5.14 While these consultants were not asked about ventilation for specialised areas, and did not pick up the issue with ventilation in Critical Care areas, their advice referred to differences in the parameters for specialised areas. David Rollason's advice to NHSL contained information on the parameters for rooms in Critical Care areas, which showed that they did not have ensuite facilities and were a different design to other 4 bedded rooms[35]. The DSSR report noted that "should a

[32] See paragraphs 9.6.13, 9.7.23, 9.7.24
[33] See paragraph 9.7.16
[34] See paragraphs 9.10.2, 9.10.9
[35] See paragraph 9.10.4

specific pressure regime be critical in either of these room types [bedrooms or general wards], natural ventilation would not be an appropriate solution”[36].

5.15 In November 2017, NHSL sought advice from the Independent Tester, Arcadis. The IT’s view, provided in January 2018, was that there are conflicting requirements contained within Schedule Part 6 (Project Co Proposals) with respect to multi-bed wards/4 bed rooms, but that that the Board should have the final say regarding standards. The IT also stated that where there are ‘alternative options’ in the guidance, Project Co should adopt Board preferences. This opinion did not resolve the disagreement[37].

5.16 The 4 bed room general risk assessment was updated in January 2018.[38] The Children’s CMT (Clinical Management Team) was consulted and “confirmed that all three of the 4 bedded rooms to have negative/balanced pressure”. The Inquiry team has seen no evidence that either the clinical team/service lead for Critical Care, or the Infection Prevention and Control Team were consulted.

5.17 In February 2018 a ‘4 bed room tracker’ was produced to assist NHSL in negotiations with Project Co[39]. This document explicitly showed the ventilation parameters provided for multi-bed rooms in Critical Care areas, including that the air change rate was 4ac/hr.

5.18 During the negotiations with Project Co on the multi-bed room issue, NHSL recorded the impact and rationale for compromises on the pressure regime for multi-bed rooms on a room-by-room basis, with a focus on clinical functionality[40]. The clinical team for Haematology and Oncology were consulted. The clinical team for Critical Care were not consulted.

[36] See paragraph 9.10.9
[37] See paragraphs 9.10.7, 9.10.13
[38] See paragraph 9.10.18
[39] See paragraph 9.10.16
[40] See paragraph 9.10.25

6. Settlement Agreement 1

6.1 Following a period of discussion and negotiation, DRP was avoided. The Settlement Agreement was concluded and signed in February 2019. This had the practical effect of 'handing over' the new facility from IHSL to NHSL.

6.2 The settlement agreement provided for 4ac/hr with a balanced pressure regime for single and multi-bed rooms in the Critical Care Department.

6.3 This agreement appears to have been reached on the basis of Project Co Changes that were submitted by IHSL to NHSL. The purpose of these changes appears to have been to permit, in some instances, derogations from guidance such as SHTM 03-01 or to clarify the understanding of the effect of that guidance.

6.4 A derogation to relieve Project Co of its obligation to comply with the air change rates recommended for single bedrooms in SHTM 03-01 was accepted in the settlement agreement. This was on the basis that 4ac/h would be supplemented by a natural ventilation supply of 2ac/h through openable windows[41].

6.4.1 The derogation did not detail the solution for single bedrooms designed with 4ac/h supply and no access to natural ventilation.

6.4.2 The Inquiry has been unable to locate any risk assessment in relation to the air change rates specified in the derogation above.

6.5 After handover, and in light of issues arising at the QEUH, members of IPCT expressed their concern regarding the level of IPCT involvement in the project. Concerns raised included:

- how an issue with air change rates was resolved: "I am aware as a result of the cancelled FOI there was discussion re air exchanges rates perhaps being suboptimal in clinical areas and we don't know what the outcome of that report was"
- that IPCT had not been made aware of NHSL accepting handover of the new facility

[41] See paragraph 9.10.46

- that the Stage 4 HAI Scribe (pre-handover check) had not been carried out, and was postponed until one month before the patient move-in date[42].

6.6 A short life working group (SLWG) convened in February 2019 to "learn lessons from recent incidents" and to "make recommendations for the re-write of [S]HTM 03-01".

6.6.1 It reported in May 2019, two months before the decision to delay the opening of the RHCYP/DCN. Among the recommendations in the report was:

> "The guidance requires to provide definitive requirements in respect of: Air change efficiency, and contaminant removal effectiveness; Pressure cascades within critical or specialist areas. These requirements must be mandatory with no derogation accepted in normal circumstances."[43]

6.6.2 Among the membership of the SLWG was a member of the RHCYP/DCN Programme Board and NHSL's Authorising Engineer on the project.

[42] See section 9.13
[43] See paragraphs 9.12.9. 9.13.10

7. Provisional Conclusions

The following provisional conclusions do not constitute the conclusions of the Chair of the Inquiry. Conclusions are provisional in nature; they are to assist further discussion by providing Core Participants (CPs) with the opportunity to confirm or clarify the understanding currently set out in this paper.

The Inquiry Team also welcomes views, contributions and/or additional recommendations from CPs on how the Critical Care ventilation issue could have been detected sooner.

7.1 The purpose of the RDD process is to finalise design elements, which includes clarifying construction requirements.

7.2 The RDD process involved a thorough review of the Environmental Matrix. Mott MacDonald on behalf of the Board provided detailed comments which were signed off by the Programme Board and sent to Multiplex/TUV SUD. This resulted in a number of revisions, culminating in revision 11 version 33 in October 2017.

7.3 During this process a multitude of issues were identified with the EM beyond those originally commented upon in the RDD schedule. Potentially important information about rooms in Critical Care was also removed. These represent missed opportunities during the RDD process to detect the discrepancy.

7.4 Amongst the issues identified in the EM were issues with the ventilation specifications in Critical Care areas. Specifically, this was in relation to the provision of ensuites and the provision of natural ventilation.

7.5 NHSL, Mott MacDonald, Multiplex and TUV SUD consulted and referred to SHTM 03-01 on a number of occasions during the construction phase. For example, NHSL identified and highlighted to Project Co that the specification contained in the EM for single bedroom air change rates[44] and neutropenic patient areas[45] was not compliant with SHTM 03-01. A decision was made to compromise on these items[46].

[44] See paragraph 9.4.19
[45] See paragraph 9.6.30
[46] See paragraph 9.7.31

7.6 An issue was also identified with the ventilation parameters provided for multi-bed rooms. The pressure regime provided in the EM for multi-bed rooms was positive but NHSL's position was that SHTM 03-01 recommended a negative or balanced pressure for all bedrooms including multi-bed rooms.

7.7 A number of documents were generated which showed that some multi-bed rooms were located in Critical Care areas and that rooms in this area had different requirements from other areas due to the type of patients cohorted there. This included:

- A 'general risk assessment' which considered the impact of the proposed pressure regime for 4 bedded rooms on the Critical Care Department[47].
- A document titled "Board preparation for the RHSC + DCN Principals Meeting on 20 and 21 Feb 18"[48].
- A non-compliance and compromises schedule produced to help reach agreement with Project Co on a number of design and construction matters[49].
- A '4 bed room tracker' which explicitly showed the ventilation parameters provided for Critical Care areas, including the air change rates[50].
- Various iterations of a document titled "Multi-bed rooms – Ventilation amendment proposal to achieve room balance"[51].

7.8 The NHSL Programme Board, Mott MacDonald, Multiplex and TUV SUD were presented with the exact ventilation parameters provided in the EM for Critical Care areas on numerous occasions, during the review of the EM, when considering the risks of the ventilation design for multi-bed rooms and when negotiating design solutions. They would have had the opportunity to consider the impact of these parameters for Critical Care areas specifically. Despite this, the discrepancy with air change rates was not identified.

7.9 The dispute over multi-bed rooms centred on differing interpretations of SHTM 03-01. In attempting to resolve the multi-bed room dispute NHSL, Mott MacDonald,

[47] See paragraphs 9.7.17, 9.10.18
[48] See paragraph 9.10.22
[49] See paragraph 9.10.25
[50] See paragraph 9.10.16
[51] See paragraphs 9.6.22, 9.6.43, 9.7.10, 9.12.6

Multiplex and TUV SUD all consulted relevant guidance. This did not identify that a positive pressure regime was in fact recommended in SHTM 03-01 for Critical Care areas.

7.10 Instead, in raising concerns about the pressure regime for multi-bed rooms in Critical Care NHSL, Mott MacDonald, Multiplex and TUV SUD all showed a misunderstanding of the ventilation recommendations for Critical Care areas contained in SHTM 03-01.

7.11 NHSL consulted HFS for advice on the recommendations contained within SHTM 03-01 for multi-bed rooms.[52] Further advice was sought from two separate consultant engineers by both NHSL and MPX.[53] Each opinion contained information which indicated different requirements in some areas. David Rollason noted that the rooms in Critical Care did not have ensuite facilities and were a different design to other multi-bed rooms. DSSR noted that “should a specific pressure regime be critical in either of these room types [bedrooms or general wards], natural ventilation would not be an appropriate solution”.

7.12 NHSL consulted with the clinical team/service lead for Haematology & Oncology to clarify ventilation requirements for that area.[54]

7.13 The Inquiry team has not seen any evidence that the Infection Prevention and Control Team or the clinical team/service lead for Critical Care areas were consulted on the multi-bed or single bed ventilation issues during the construction phase. This would have been an appropriate thing to do when it became clear that SHTM 03-01 did not unambiguously define recommended conditions for multi-bed rooms.

7.14 Inquiry expert Andrew Poplett provided the Inquiry with his view on the actions which could reasonably be expected from a Project Team if they were to encounter a patient environment that is not defined within SHTM:

> “what it should be possible to do is for the clinical team to look at similar patient environments and determine the correct minimum level of ventilation requirements. […] Ultimately that would be an infection prevention discussion

[52] See paragraph 9.4.22
[53] See paragraphs 9.10.2, 9.10.9
[54] See paragraph 9.6.37

> between [the Infection Prevention and Control Team], Clinicians and Microbiologists with advice sought from engineers in a collaborative process, discussing what was going to be done in the room, any chemical agents or anaesthetising being used. All of these play a factor into the right level of ventilation for that space."

7.15 During the time that NHSL experienced and expressed concerns around potential non-compliance of ventilation, NHS Greater Glasgow & Clyde (NHS GGC) and Health Facilities Scotland (HFS) were aware of issues with ventilation at the QEUH. Lessons learned, some of which related to ventilation, were in development from September 2018[55].

7.16 The Inquiry understands that at some point during the construction phase, even if the discrepancy with air change rates in Critical Care areas was identified, this would not have avoided the delay. This is because components of the ventilation system were purchased and installed in order to progress with building the hospital according to the project programme.

7.17 Instead of quickly finalising the design, the RDD review process revealed further issues with the EM which turned into a protracted disagreement about how to interpret the Board's Construction Requirements and SHTM 03-01.

[55] See paragraph 9.10.41

8. Questions

8.1 Do you agree with the provisional findings and conclusions? Where the answer is no, can you please provide an explanation with supporting evidence?

8.2 Can you provide a list of members and explain the role and function of the Children's CMT [Clinical Management Team]. Why was the Childrens CMT asked to provide input on the risks and compromises related to ventilation?

8.3 Were Critical Care Service Leads consulted on the concerns related to ventilation, specifically around pressure regime in 4 bed rooms?

8.4 Please provide a copy of the 'cancelled FOI' referred to in email from Fiona Cameron, which referred to sub-optimal air change rates in clinical areas[56].

8.5 Were risk assessments for the settlement agreement derogations from SHTM for neutropenic patients and single bedroom air change rates carried out? If yes, please provide these.

8.6 What is the difference between a "general risk assessment"[57] and an Infection Prevention and Control risk assessment?

8.7 References to natural ventilation were removed in the EM for some Critical Care rooms. Despite this, the derogation for single rooms agreed in the settlement agreement required a supplement of 2ac/h from natural ventilation. The inquiry invites views from CPs on why this occurred.

8.8 Despite the removal of natural ventilation from Critical Care rooms in the EM, the Inquiry understands that all nine rooms in Critical Care were ultimately constructed with openable windows and mechanical ventilation specification of 4ac/hr. Why was this?

8.9 Views are invited from CPs on whether the changes made to the EM were being communicated and actioned appropriately in the construction of the RHCYP.

[56] see paragraph 9.13.5
[57] see paragraph 9.7.17

8.10 The Inquiry invites views from CPs on why the RDD process did not detect the specific requirements for air change rates and pressure regime in Critical Care areas.

8.11 Which department in the RHCYP/DCN housed “post-operative care beds”, referred to in email by Brian Currie as potentially requiring positive pressure? [58]

8.12 Given the apparent challenges of the RDD process, is it an appropriate process to finalise the design of critical ventilation systems in clinical areas?

- If yes, why? Is there anything that could be done to improve it in future?
- If no, why? What alternative could be adopted in future?

[58] see paragraph 9.10.14

9. Narrative

This section provides a narrative describing the review of the Environmental Matrix during the RDD process, the discovery of further issues with the ventilation system than those that had initially been identified at Financial Close, and what steps were taken to address these issues.

This narrative informs the Inquiry's understanding of 'missed opportunities' to detect the discrepancy between the Environmental Matrix and SHTM 03-01 for Critical Care Areas. For the purposes of this paper, a 'missed opportunity' is defined as any occasion where a different course of action had the potential to produce a more favourable outcome; that is, the occasions where decisions or actions (taken or not taken) by NHSL, MM or Project Co failed to detect the discrepancy when they conceivably could or should have.

9.1 The Environmental Matrix at Financial Close

9.1.1 By Financial Close the EM (dated 13 February 2015) had not yet been approved by the Board. It was included in the schedule of Reviewable Design Data and was still undergoing a review process, which involved Project Co addressing comments received from the Board.

9.1.2 Whether the Environmental Matrix in its entirety was RDD, and therefore subject to the Review Procedure, is controversial. However, the Inquiry notes the following Board Comments were included in the RDD Schedule:

> "a. Bedrooms 4ac/hr, SHTM says 6 ac/hr
> b. Bedrooms have no extract
> c. Bedroom en-suites 10 ac/hr, SHTM says 3 ac/hr
> d. Bedrooms stated as positive pressure, SHTM says 0 or –ve pressure
> e. The supply air to a bedroom has to be balanced with extract e.g:
>
> Bedroom area 19m2 and 2.4m high = volume 45.6m3 x 6ac/hr =273.6 m3 / hr
>
> En-suite area 5 m2 and 2.4m high = volume 12.0m3 x 3ac/hr = 36 m3 / hr

To achieve balanced pressure within room bedroom extract required = 273.6 – 36 = 237.6 m3 / hr”

9.1.3 Project Co partially addressed the above comments as follows:

a. Not addressed
b. Not addressed
c. Not addressed
d. Addressed for single bedrooms (but not multi-bed rooms)
e. Addressed for single bedrooms (but not multi-bed rooms)

9.1.4 The relative pressure column had been changed for all single bedrooms from “positive to ensuite” to “balanced”, though continued to reflect 4ac/h supply with extract “via ensuite”. Multi-bed rooms were unchanged, remaining as per the pre-financial close version of the EM with relative pressure “positive to ensuite”, 4ac/h supply and extract “via ensuite”.

9.1.5 The table below demonstrates the room environmental conditions for Critical Care following the changes made in response to the Board comment. Where a value has been changed by Project Co from the previous iteration, shading has been applied to that cell. The changes made to the EM in respect of Critical Care bedrooms did not comply with SHTM 03-01 recommendations.

Environmental Matrix at Financial Close (February 2015)

Dept Name	Room Name	Room Function	ADB Code		Ventilation				
					Ventilation Type	Supply ac/hr	Extract ac/hr	Relative Pressure	Min Filtra-tion
B1 PICU HDU	Open Plan Bay (4 beds)	Multi-bed Wards	B160 9-01 (also B160 9-02)	**Actual**	**Natural and Central Supply Air**	**4**	**Via ensuite**	**Positive to ensuite**	**G4**
				Recommended	Supply	10	(no ensuite)	positive (no ensuite)	F7

Environmental Matrix at Financial Close (February 2015)

Dept Name	Room Name	Room Function	ADB Code		Ventilation				
					Ventilation Type	Supply ac/hr	Extract ac/hr	Relative Pressure	Min Filtra-tion
	Single Bed Cubicle	Bedroom	B1401	Actual	**Natural and Central Supply Air**	**4**	**Via ensuite**	**Balanced**	**G4**
				Recommended	Supply	10	(no ensuite)	positive	F7
	Single cot cubicle (ensuite)	Bedroom	B1421	Actual	**Natural and Central Supply Air**	**4**	**Via ensuite**	**Balanced**	**G4**
				Recommended	Supply	10	-	positive	F7
	Open Plan Bay (3 Cots)	Multi-bed Wards	B1407-01	Actual	**Natural and Central Supply Air**	**4**	**Via ensuite**	**Positive to ensuite**	**G4**
				Recommended	Supply	10	(no ensuite)	positive (no ensuite)	F7

9.1.6 This version of the EM was not approved at Financial Close (FC). It was included in the RDD schedule with a further seven Board Comments, including the following comment:

> "Detailed proposal awaited on bedroom ventilation to achieve balanced/negative pressure relative to the corridor."

9.1.7 This issue was discussed further at a Mechanical and Electrical meeting on 24 February 2015:

"Project Co require to submit their proposals for bedroom ventilation to demonstrate the 4ac/h to the bedroom and all extracted through the en-suite to produce a balanced or negative pressure within the bedrooms."

9.1.8 The scope and definition of 'bedrooms' was not clarified.

9.1.9 On 15 June 2015 Project Co responded to the Board's comment on bedroom ventilation:

"The single bedrooms have had their ensuite extract increased to achieve a balance within the room, this has been noted within the matrix".

9.1.10 On 22 July 2015 NHSL responded:

"Note 26 and ventilation type have not been altered."

9.1.11 EM Guidance Note 26 stated:

"Single Bedroom - The design philosophy for ventilation is for a mixed mode operation where natural vent is encouraged which has benefits both physiological with users being partly in control, and from an energy stand point where mechanical vent loading is partly reduced (2/3rds). This strategy results in zero pressure differential regime within the room where supply and extract is balanced".

9.1.12 On 22 September 2015 an issue relating to isolation cubicles in Critical Care areas was raised. This was recorded in the Request For Information Register, which was maintained by Mott MacDonald and used to record requests for information between Project Co and the Board:

"Date Issue Raised – 22/09/2015 **,**
Action by & Due date – 30/09/2015**,**
RFI no. – BMCE-RFI-000346 **,**
Subject – Confirmation of Isolation Cubicles**,**
Issue Description - We have noted that there are rooms on the layout drawings that are labelled as Isolation Cubicles room references:-
1-B1-036, 1-B1-026, 1-B1-017 and 1-B1-016.

> These rooms do not follow the standard isolation room layout as depicted within the SHPN 04 Supplement 1 and therefore we would like some guidance as to their intended use and ventilation requirements. Currently we have provided supply air into the Gowning Lobby with a pressure stabiliser in the party wall to the bedroom and a dedicated extract within the bedroom to provide a duty of 10ac/hr which will give a pressure balance. In addition to the rooms listed above, room 1-H2-021 (Single Bed 1) is not labelled as an isolation bedroom, again ventilation services confirmation required.
> **Raised by -** KH **,**
> **Assigned To –** CMac/FH **,**
> **Response/ Comments -**
> **Action Open/Closed"**

9.1.13 The response was:

> "Almost all children and infants admitted to PICU/HDU need their breathing to be supported by a ventilator. Hence en-suite facilities are not required. The proposed solution is correct and should maintain a positive pressure in the gowning lobby with respect to the corridor. The door directly into the bedroom is for patient entry/exit, with all other access and egress via the gowning lobby."

9.2 Production Group Review

9.2.1 On 24 November 2015 the service leads for the PICU and HDU (Critical Care) department were given the opportunity to review Reviewable Design Data as part of the Production Group Review Procedure for Clinical User Groups (PG RDD).

9.2.2 The Production Group Review procedure was outlined in the Construction Phase Project Execution Plan. It stated: "To ensure the clinical needs and interests of the project are fully incorporated, NHSL has engaged clinical and operational staff to review the Submitted Items. There are 70 departmental user groups involved in the review process to ensure that design and planning reflect clinical operational need."

9.2.3 A paper prepared by Janice Mackenzie (Project Clinical Director), Fiona Halcrow (Project Manager) and David Stillie (MM Technical Advisor, Architect) provided instructions for the "B1 – Critical Care Unit" user group. It stated:

> "The RDD process is the next stage in the design development process following the extensive work that was undertaken between April and July 2014 […] The RDD process will be the final sign off for the 1:50 [floor plans]. The programme for this is based on the construction programme for the building and therefore there is no flexibility in the sequencing of this. It is important to note that the RDD process is to conclude the previous work undertaken and is not an opportunity to re-design the department."
>
> "The planned meeting will involve the lead user/s, representatives from the Project Team and technical advisor and equipment lead. The purpose of the meeting will be to discuss and agree any comments that will be fed back to Project Co Design Team."

9.2.4 The 'Information for Service Leads' paper also stated that "the sign off of the 1:50s and associated information is to confirm operational functionality…". The Inquiry understands that "operational functionality" (as defined in the Project Agreement) did not include consideration of room environmental conditions.

9.2.5 An "RDD User Pack" was to be issued for Clinical User Group review a week in advance of the PG RDD meeting. According to the Execution Plan, the Financial Close Room Data Sheets (RDS) were to be included in this pack.

9.2.6 RDS existed for 5 out of 9 bedrooms in Critical Care at financial close. It is the Inquiry's understanding that the full suite of RDS were not to be completed until the Environmental Matrix had been finalised through RDD.

9.2.7 According to the PG RDD Tracker, which recorded the documents submitted for PG RDD review, only production groups 1, 2 and 6 received RDS as part of their RDD pack. The B1 Critical Care user group ('PG10') did not receive RDS for review and comment.

9.3 Revision 2 of the Environmental Matrix

9.3.1 Revision 2 of the Environmental Matrix was dated 26 November 2015. This version of the EM included a table containing the Board Comments, Project Co's 'initial response', the Board's feedback and a column headed 'reconciliation'. Changes made to this version of the EM were highlighted in red.

9.3.2 Guidance Note 26 had been amended in line with previous Board comments. Additional text highlighted in red stated:

> "En-suite dirty extract volume flow rate has been increased to achieve a balanced ventilation system".

9.3.3 A change was also made to Guidance Note 15 within revision 2 of the EM. The reference in Guidance note 15 to "10ac/hr Supply" for Critical Care areas was changed to read 10ac/hr Supply "for isolation cubicles". The additional text has implications for the design criteria in Critical Care bedrooms, but this change was not highlighted when it was made.

9.3.4 The part of Guidance Note 15 relating to HDU (one of the critical care areas) continued to state a requirement for "10ac/h Supply". The discrepancy between SHTM 03-01 recommendations and the air change rates reflected in the EM was not identified for those rooms.

9.3.5 Revision 2 was resubmitted to the review procedure on 4 December 2015 and returned to Project Co nine weeks later with a further 50 Board Comments attached[59]. This was longer than the 15 days intended for the provision of comments by the Board.

9.3.6 Kamil Kolodziejczyk (MM) emailed a draft response for approval to (among others) Brian Currie (Project Director), Janice Mackenzie (Project Clinical Director), Fiona Halcrow (Project Manager, Clinical Support) and David Stillie (Technical Adviser, Architecture), copying in Colin Macrae (Mechanical Engineer/adviser, MM), Kelly Gordon (MM) and Graeme Greer (Lead Technical Adviser, MM).

[59] The contractually agreed timescale was 3 weeks (15 working days)

9.3.7 Attached to the email alongside the 50 Board Comments was a tracked changes version of the same. Item number 1 in the tracked changes version had been scored out and was not included in the final list. It read: "Previous comment in relation [to] bedroom/corridor ventilation not resolved".

9.3.8 Within the final list of 50 Board Comments a number of issues with the ventilation specification in some specified Critical Care areas were raised by the Board in relation to the use of ensuite facilities and natural ventilation:

- Board Comment no. 7 draws attention to Critical Care multi-bed room 1-B1-063:

  "B1-063 Stated as supply air 4ac/h, extract via en-suite, this room does not have en-suite facilities"

- Board Comment no. 32 draws attention to 2 out of 4 multi-bed rooms (and a medical gas storage room) in Critical Care:

  "confirm where natural ventilation i.e. 1-B1-063/065/067"

9.3.9 These rooms – and all other single and multi-bed rooms in Critical Care – had been provided in the EM with "Natural and Central Supply Air", indicating a mixed mode ventilation system with openable windows. The extract being provided was "via ensuite" and pressure was "positive to ensuite".

9.3.10 What was specified as NHSL's requirements in the Project Agreement is not a matter for the Inquiry to determine.

9.3.11 Other relevant comments made by the Board following its review of EM revision 2 included:

- Board Comment no. 4, drawing further attention to the lack of ventilation extract in the 'bedrooms':

  "Isolation cubicles and bedrooms are not shown with any extract ventilation".

- Board Comment no. 26, drawing attention to the higher air change rate being provided in one area of the hospital:

  "G-F1 Bedrooms with 6ac/h where most bedrooms are taken as 4ac/h"

9.3.12 On 11 February 2016 Kamil Kolodziejczyk informed Project Co via the Aconex transmission system that revision 2 of the EM had been rejected by the Board:

> "All,
> The Environmental Matrix shall be updated to reflect updated SoA[60], attached Board's comments (also discussed on 26th January and 2nd February), comments made during PGs reviews, and shall also include any changes resulting from Changes between the Board and Project Co…
>
> Due to the extent of Board's comments, which relate to both Financial Close and Design Development post Financial Close, the Matrix is given Status C."

9.4 **Revision 5 of the Environmental Matrix**

9.4.1 Revision 5 of the Environmental Matrix was dated 11 February 2016. It is unclear to the Inquiry what happened to revision 3 and 4.

9.4.2 This version contained a second table titled "second batch", which incorporated the 50 Board Comments from the review of EM revision 2.

9.4.3 Project Co had issued a response to some Board Comments within the 'second batch'. The response to comments 4A and 7 (relating to ventilation extract in isolation rooms/bedrooms and ensuite facilities in a multi-bed room in Critical Care, respectively) was the same, and read:

> "Refer to the design drawings for details. Generally, the extract is via the en-suite which is in line with SHPN 04. Where no ensuite is present, extract is via the room. No action required."

9.4.4 No changes were made to the design detailed in the EM as a response to the Board's Comments. The extract provided in Critical Care remained "via ensuite", including in those rooms without ensuite facilities.

[60] Schedule of Accommodation (floor plan, room layouts)

9.4.5 Project Co's response to Board Comment no. 32 (relating to the provision of natural ventilation in some Critical Care rooms) read:

> "Extent of ventilation clarified on schedule.. Now updated on matrix."

9.4.6 Within the EM the "ventilation type" for the Board's listed rooms "1-B1-063/065/067" had been changed from "Natural and Central Supply Air" to "Central Supply Air" only. Project Co made this change to the rooms exampled by NHSL only. All other rooms in Critical Care continued to demonstrate "Natural and Central Supply Air".

9.4.7 A failure to update air change rates in Critical Care rooms where natural ventilation had been removed contrasts with a response to Board Comment 26, with respect to bedrooms in CAMHS. The response read:

> "This is a CAMHS bedroom so 6 AC/H has been utilised, reference to natural ventilation will be removed".

9.4.8 Project Co updated all CAMHS bedrooms from "Natural and Central Supply Air" to "Central Supply and Extract" in response to this comment.

9.4.9 It was in this revision of the EM that the "medical location" column was removed. In the previous review of the EM, the Board had commented:

> "Medical location column states 'See Guidance Notes' for every entry and not mentioned in those guidance notes".

9.4.10 Project Co's response read:

> "This has been superseded by the risk profile document which sets out the medical grouping and classification. Column has been removed."

9.4.11 The "Risk profile document" that superseded this column appears to be a reference to a separate document called "Risk Profile and Medical Location Categorisation and Grouping". The document lists the rooms within the RHCYP/DCN and assigns to each one a "Clinical Risk Category" as defined by SHTM 06-01 for "Electrical Services Supply and Distribution".

9.4.12 In the Risk Profile document the isolation rooms, single bedrooms and multi-bed rooms in Critical Care have been assigned to the highest clinical risk group:

> "Category 5 – Life support or complex surgery […] defined as operating theatre suites, critical care areas, cardiac wards, catheterising rooms, accident & emergency resuscitation units, MRI, angiographic rooms, PET and CT scanner rooms".

9.4.13 Revision 5 of the Environmental Matrix was submitted to the review procedure on 18 March 2016 and returned by Kamil Kolodziejczyk on behalf of the Board on 15 April 2016.

9.4.14 An email from Kamil Kolodziejczy (MM) to Brian Currie (NHSL Project Director) on 15 April 2016 sought approval on a response to Project Co:

> "Hi Brian,
>
> We now have reviewed and commented on the Environmental Matrix. The comments we made previously were incorporated within this revision, with few minor issues, however please note the Matrix wasn't updated to reflect any comments made during PGs[61], resulting from Change process and SoA[62].
>
> We propose status B based on the Financial Close comments.
>
> […] PCo is keen to start production of Room Data Sheets now so can you please confirm you are happy for them to progress without re-submitting the matrix or you would prefer to see updated matrix before RDSs?"
>
> Mr Currie responded:
> "Please confirm to IHSL that they can progress RDS production without further update to the matrix being concluded and submitted."

9.4.15 Mr Kolodziejczyk informed Project Co via the Aconex transmission system of the Boards decision to approve the EM at RDD level B:

[61] Production Groups (PG RDD for clinical user groups)
[62] Schedule of Accommodation (floor plan and room layouts)

"Please note that the Board reviewed the Environmental Matrix and provided comments within the attached. Relative to the Financial Close comments, the Environmental Matrix is given status B.

The Board require the Environmental Matrix is re-submitted for the Board's review, including the following comments (as per MM-GC-001184):

- Updated Schedule of Accommodation,
- Changes resulting from Change process,
- Changes resulting from Production Groups comments,
- Design Development,
- Plus any other subsequent changes.

Project Co shall also review all related drawings against the Environmental Matrix with respect to anomalies between the detail on the drawing and the detail within the Environmental Matrix. Particular note to be given to the method of cooling provision e.g. Comfort Cooled Fresh Air or Ceiling Cassette Chilled Water. It is also noted that there are areas of over and under provision of both heating and cooling.

IHSL are also reminded that the reference design has no relevance to the current contract, and IHSL are to comply with the Project Agreement and in particular the BCR's and PCP's. Any non-compliance with the BCR's or PCP's should be highlighted to the Board. "relative to the Financial Close comments".

9.4.16 It was not a requirement of the PA that RDD items which were approved at Level B should be resubmitted for further review.

9.4.17 The Board's Comments on revision 5 were captured in annotations on the attached copy. Some 'second batch' comments had been annotated in red text:

- Comment 7 (relating to the lack of ensuite facilities in a Critical Care room) read: "please update matrix"
- Comment 4A (relating to the lack of extract in the 'bedrooms' and isolation rooms) read: "please detail room extract and update matrix".

9.4.18 The Board did not comment further on Project Co's response to Board Comment no. 32 (relating to the provision of natural ventilation in Critical Care).

9.4.19 A month after the EM was approved, on 19 May 2016 Kelly Gordon (MM) wrote to Project Co:

> "The Board have noted the number of air changes within the en-suites is higher than that required under SHTM. The Board understand this is to provide adequate air changes for the volume of air within both the en suite and single room and there is not an extract fan within the bedroom. As the extract fan is in the en suite and extracting 'dirty' air the Board understand that no heat recovery is possible. Can Project Co please confirm the above and if a Derogation needs to be submitted for the Boards approval."

9.4.20 On 24 May 2016, Brian Currie (Project Director, NHSL) attended an IHSL Board meeting. The minutes of that meeting stated:

> "Mercury have commenced M&E 1st Visit Works in a number of areas throughout zones A, B & C with some minor quality issues to date – these have also been highlighted to IT and recorded. These minor quality items are being highlighted early to a very high standard to ensure a high level of quality is maintained through the project and future installation. Chronic delay in processing and agreeing "Change Requests" due to supply chain difficulties. The continuing issues with poor response from Mercury Engineering was noted. This is a current action for Multiplex and will be monitored. Mr Weir will include this item in the weekly update until resolved".

9.4.21 Ken Hall submitted derogation requests WW014 and WW015 on behalf of Project Co on 3 June 2016 to seek acceptance of the derogations from SHTM 03-01 guidance regarding the single bedroom and ensuite air change rates.

> "The air change rate has been decreased within the single bedrooms from 6ac/hr to 4ac/hr. Mixed mode ventilation has been provided with additional natural vent available from the opening windows. Single bedrooms without opening windows have been provided with 6ac/hr."
>
> The proposal is noted as:-

"Single bedrooms with opening windows to have a mechanical ventilation rate of 4ac/hr."

9.4.22 On 13 June 2016, a telephone call took place between NHSL and Health Facilities Scotland (HFS), during which NHSL requested an opinion on ventilation requirements for the "four bed wards".

9.4.23 Ian Storrar (HFS) responded to the information request in writing on 19 June 2016:

"SHTM 03-01 Part A, Appendix 1, Table A indicates the air change rates and pressure regime for clinical areas within healthcare premises. There is no four bed ward noted in Table A, however it would not be unreasonable to treat this area as one would a single bed ward with respect to ventilation as the measures for infection control would be the same. Therefore the room should be neutral or slightly negative with respect to the corridor.

- SHTM 03-01 Part A clause 1.35 et al details the Management Action with Clause 1.37 highlighting the need to seek guidance from Clinical colleagues.
- SHTM 03-01 Part A clause 1.39 et al details the Design and validation process. Table 2 highlights the model to be followed and item 2 outlines some the design questions to be asked and resolved."

9.5 Revision 6 of the Environmental Matrix

9.5.1 Revision 6 of the EM was dated 28 June 2016.

9.5.2 In revision 6, Project Co revised its response to Board Comments 4A and 7. Comment 4A had been partially actioned and extract rates for "isolation rooms" had been provided. With respect to Comment 7, Critical Care multi-bed room 1-B1-063 was changed from extract "via ensuite" to extract "0.5 ac/h" (via the room). The reference to an ensuite was also removed from the relative pressure column, which changed from "positive to ensuite" to "positive".

9.5.3 The Inquiry team notes from the revised response to Board Comment no. 7 that:

- The pressure relative to the corridor was being reflected in the EM for a Critical Care multi-bed room for the first time
- The 'ventilation type' in 1-B1-063 was not updated to reflect the introduction of an extract from the room
- Project Co made the change to the room exampled by NHSL only. Other multi-bed rooms and bedrooms within Critical Care continued to demonstrate extract via an ensuite that was not present.

9.5.4 The table below demonstrates the room environmental conditions for Critical Care following the changes made. Where a value has been changed by Project Co from the previous iteration shading has been applied to that cell.

Environmental Matrix Rev 6

Dept Name	Room Name	Room Function	Room number		Ventilation Ventilation Type	Supply ac/hr	Extract ac/hr	Relative Pressure	Min Filtra-tion
B1 PICU and HDU	Open Plan Bay (4 beds)	Multi-bed Wards	1-B1-009	**Actual**	**Natural and Central Supply Air**	**4**	**Via ensuite**	**Positive to ensuite**	**G4**
			1-B1-031	**Actual**	**Natural and Central Supply Air**	**4**	**Via ensuite**	**Positive to ensuite**	**G4**
			1-B1-063	**Actual**	**Central Supply Air**	**4**	**0.5**	**Positive**	**G4**
				Recommended	Supply	10	-	positive	F7

Environmental Matrix Rev 6

Dept Name	Room Name	Room Function	Room number		Ventilation Type	Supply ac/hr	Extract ac/hr	Relative Pressure	Min Filtration
	Open Plan Bay (3 Cots)	Multi-bed Wards	1-B1-065	**Actual**	**Central Supply air**	**4**	**Via ensuite**	**Positive to ensuite**	**G4**
				Recommended	Supply	10	-	positive	F7
	Single bed cubicle	Bedroom	1-B1-037 1-B1-021 1-B1-020 1-B1-019	**Actual**	**Natural and Central Supply Air**	**4**	**Via ensuite**	**Balanced**	**G4**
				Recommended	Supply	10	-	positive	F7
	Single cot cubicle	Bedroom	1-B1-075 (with ensuite	**Actual**	**Natural and Central Supply Air**	**4**	**Via en-suite**	**Balanced**	**G4**
				Recommended	Supply	10	-	positive	F7

9.6 Revision 7 of the Environmental Matrix

9.6.1 Revision 7 of the EM was submitted to the Review Procedure on 20 September 2016.

9.6.2 On 22 September 2016 Kamil Kolodziejczyk (MM) issued the Board's response to Project Co's derogation request of 3 June[63]:

> "Following the review of PCo's derogations (WW014 & 015) the Board cannot accept this proposal. As per the BCRs, PCo are required to provide room heat

[63] See paragraph 9.4.21

recovery with balanced ventilation at specified air change rates. Based on PCo derogations, in order to achieve balanced pressure regime (in 4 bedded room 1-L 1-100), the en-suite extract would have to be in order of 36ac/h. This is in excess of SHTM recommendation of 3ac/h. Also it means that heat recovery from this air cannot be achieved. Can Project Co please confirm how compliance with SHTM in relation to air change rates, balanced ventilation and room heat recovery will be met".

9.6.3 The Inquiry team notes the specific inclusion of a four-bed room as an example. This appears to be the first time the definition of 'bedroom' has clearly included multi-bed rooms.

9.6.4 Comments on Revision 7 were returned by the Board on 17 October 2016. The approved status had been withdrawn due to (among other things) non-compliant air change rates in single bedrooms and ensuites.

9.6.5 An email from Kamil Kolodziejczy (MM) to Project Co provided the Boards Comments from that review, which included both general and specific comments, but none relating to Critical Care areas:

> "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.
> […]
> 6. Some ventilation rates don't appear to comply with BCRs. The Board would like to point that is still awaiting response from PCo to the issues raised as per MM-RFI-000172 & MM-GC-002006 relating to ventilation rates.
>
> 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 the Board not commenting, does not remove that obligation on Project Co."

9.6.6 As per the Boards first ‘general’ comment, some design data was highlighted within the hard copy of the EM returned by the Board for Project Co to review. The ‘ventilation type’ for two of the multi-bed rooms in Critical Care was highlighted in blue: 1-B1-063 (flagged previously for lacking ensuite facilities) and 1-B1-065.

9.6.7 In EM Rev 7 (version 21), the status ‘C’ had been scored out and replaced by a status ‘B’.

9.6.8 An email from Kamil Kolodziejczyk (MM) to the Project Director, Brian Currie read:

> “Following a review of our previous comments that led to a status C, the caveats we have drafted on an upgraded status B may not sufficiently protect the Board. […] the comments are extensive hence we think the status C still applies, however as requested, we have drafted the following caveat for an upgraded status B;
>
> > ‘The Board have serious concerns over the upgrading Environmental Matrix to Status B considering some of the issues raised (as per MM-GC-002084) 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 have 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 BCR’s/PCPs (as per MM-GC-002084), the Board believes would result in a non-compliant Facility. The Board would suggest that Project [Co] resolve the non-compliant issues as a matter of urgency, and requests that Project Co issues a strategy for resolution of these issues’”.
>
> Mr Currie responded:
>
> “We need to, as you have done, clearly identify all aspects of the current Environ Matrix that require further work and agreement and that Status B is

only given on that basis. The key line in the caveat is: '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 BCR's/PCPs (as per MM-GC-002084), the Board believes would result in a non-compliant Facility'. What we have to weigh up here is that no progress is likely to be made on all others aspects which we are comfortable with unless IHSL (or MPX more accurately) receive a status B. The approval process is, no doubt, designed to avoid just such unfinished work accumulating and not being closed out but it fundamentally relies on all parties playing the game which IHSL's extended supply chain seem unable to do".

9.6.9 On 11 November 2016, Brian Currie wrote to IHSL with concerns that Project Co had proceeded to construct what NHSL considered to be a non-compliant ventilation system:

> "I feel compelled to write expressing our concern and alarm that ventilation ductwork is appearing on site which quite clearly does not reflect a compliant design. It is nobody's interest to allow this situation to continue. Ventilation to single and 4 bedded rooms: You are not providing heat recovery and your designed air changes rates in relation to extract through toilets are unacceptable."

9.6.10 On 16 December 2016, Colin Grindley of MPX emailed Kamil Kolodziejczy, MM to address NHSL's rejection of the proposed air change rates in the single bedrooms and ensuites[64]:

> "'We note your comments relate to both single bedrooms and 4 bedded rooms. We would confirm derogations WW014 and WW015 were prepared for single bedrooms only. Reference to 4 bedded room comments made, taking Room 1-LI-100 as the example, you have noted the ensuite extract would have to be in order of 36ac/h. This statement is incorrect as the design solution for single bedrooms is fundamentally different to 4 bedded design […] We would reiterate the extract within the 4 bedded rooms ensuite is 10ac/h as detailed within the environmental matrix and not 36ac/h as you have noted

[64] See paragraph 9.6.2

[…]. WW015 for the bedroom supply ventilation reducing 6ac/h to 4ac/h was prepared on the basis of the pre FC report pulled together from the M+E workshops and tabled at the meeting of 13.01.15. BMCE-RFI- 000077 dated 19.01.15 refers. 4ac/h was captured within the environmental matrix, and drawing WW-SZSL-v 01 was prepared as part of the FC pack clearly showing 'supply only' within the bedroom, and 'extract' via the ensuite".

9.6.11 On 21 December 2016 Kamil Kolodziejczy (MM) shared a draft response to Mr Grindley with Ronnie Henderson (NHSL) and Colin Macrae (Mechanical Engineer/Adviser, MM) for their input:

"Ronnie/Colin, I still need design requirement for multi bedded areas, hopefully we will close it tomorrow. I will also need statement regarding pressure regime for those areas in relation to corridor and en-suite. Can you please check relevant guidance and send back some suggestions?".

9.6.12 The draft response to Project Co read:

"Board reviewed the information submitted and provided comments in red below. We would like to note that the Board highlighted concerns in relation to ventilation design before FC and further clarified at and post financial close that design has to comply with requirements. The Board is disappointed to see, after considerable time period, that design still hasn't been amended to suit BCRs/SHTMs, despite Board's efforts indicating non-compliance.

[…]

The SHTM 03-01 requires 6ac/h to the area as per the same table referenced in your response. The supply rate of 4ac/h is not in accordance with SHTM 03-01.

The environmental matrix states either "via en suite" or "minimum 10", which in both instances is not acceptable and actual value shall be provided throughout environmental matrix.

In terms of the WC/en-suite, please note reference in SHTM 03-01 providing further guidance as how this should be approached:

> 'Toilets should have an extract ventilation rate as set out in the building regulations. Where WC's are located in shower and bathroom spaces, the ventilation required for the WC will normally be adequate for the whole space.'

Therefore the extract rate of 3ac/h for the en-suites should be provided by PCo.

The Board would like to note that PCo report as submitted and discussed at the meeting on 13.01.15 suggests that there is no dubiety in the interpretation of Table A1 Appendix 1 of the SHTM 03-01 in terms of single room and WC ventilation.

Nonetheless the ventilation issue was first raised pre-FC (14 October 2014, MM-GC-000339, copy attached) highlighting the areas where environmental matrix is non compliant in relation to ventilation which was further clarified as per Board response on 29 January 2015 (MM-GC-000432) confirming that PCo design shall comply with SHTM guidance. As follows:

> 'Hi Ken,
>
> Following your recent RFI, the Board respond as follows:
>
> - The single room with en-suite ventilation design shall comply with the parameters set out in SHTM 03-01
> - The design solution should not rely in any way with the opening windows as these will be opened or closed by patient choice.
> - 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.
> - Isolation room ventilation shall comply with SHPN 04 Supplement 1.'

Furthermore, the Board reviewed environmental matrix several times before and after FC and made comments regarding the deemed non compliance of the ventilation design. The environmental matrix was rejected at FC on the

basis that it did not comply with the BCRs. The Board also rejected all ventilation drawings submitted for FC, please refer to Section 5 of Schedule Part 6. PCo since has not provided design that would comply with the Board's requirements…".

9.6.13 On 22 December 2016 Colin Macrae (MM) offered some "points worth considering" in the form of air flow calculations. For the multi-bed ventilation requirements Mr Macrae pointed Mr Kolodziejczy to the Scottish Health Facilities Notes (SHFN 30) for Infection Control measures:

"SFPN 30 Infection Control 3.14 Implementation of effective prevention and control of infection measures reduce the risk of transmission… this can be achieved by… provision, where appropriate, of negative pressure ventilation".

9.6.14 Ronnie Henderson contributed the following feedback on the same day:

"The pressure regime is non-compliant at 4ach/hr, it will be much worse at 6".

9.6.15 Also on 22 December 2016, the issues arising with bedroom ventilation were discussed at the Project Management Executive meeting:

"Ventilation (highest risk going into 2017):

- MPX to question the brief over the room functions
- Need to review the BCRs for each of the rooms
- Rooms:
- Non-compliant air changes on several aspects and no heat recovery
- RH/CMAC/Infection Control need to be convinced of the regime
- Concern over the isolation rooms and infection control in single rooms
- Meeting to be organized with MPX to discuss the proposals
- Potential to relax position on 4 bed rooms but not on the single rooms
- Heat recovery:
- Uneconomical according to MPX"

9.6.16 On 11 January 2017, Kamil Kolodziejczy (MM) sent a revised response to Mr Grindley (Project Co) which incorporated the comments from Mr Macrae and Mr

Henderson. The comment regarding the non-compliance of air change rates at 4ac/h had been removed. Regarding multi-bed requirements, it stated:

> "In relation to your statement that the design solution for single bedrooms is fundamentally different to 4 bedded design, can you please confirm which guidance/ specification details this? In accordance with SHFN 30 Infection Control, the pressure cascade for single/multibed areas shall be negative to corridor and positive to en-suite (if available). Please also refer to the attached diagram of Board's interpretation of the SHTM guidance and PCo proposed design (to be further discussed at the workshop)."

9.6.17 Mr Kolodziejczy concluded with:

> "There is clearly still a difference of opinion as to whether PCo has provided a compliant design, hence we would like to suggest a workshop on Monday 16 January at 10am to progress through the below points".

9.6.18 The Inquiry has been unable to confirm whether a ventilation workshop was held on 16 January 2017.

9.6.19 The revised response acknowledged not all bedrooms would have access to an ensuite for ventilation extraction. A review of EM by the Inquiry team suggests that only 10 rooms did not have ensuites: 8 were in Critical Care; 1 a parent room; 1 a sleep room in the sleep lab.

9.6.20 A Programme Board meeting was held on 16 January 2017. The Project Dashboard circulated in advance of the meeting stated:

> **Clarification:** "Design/Compliance issues – Ventilation, Movement Joint giving cause for concern"
>
> "Still a number of design issues to be resolved which include location of movement joints, ventilation in single bedrooms and ensuites and drainage. The Project Team and advisors are working closely to find a suitable solution".

9.6.21 The Risk Register, also circulated in advance of the meeting, does not include any risk relating to ventilation. Minutes of the meeting do not record any discussion of single or multi-bed ventilation.

9.6.22 Ventilation workshops were held on 23 January and 6 February 2016. Tabled for review and discussion at the workshops were iterations of a "Multi-bed room - Ventilation Amendment Proposal To Achieve Room Balance".

9.6.23 Project Cos proposal to achieve NHSL's desired pressure regime in the multi-bed rooms "identified as being of concern" was to further reduce the air change rate from 4ac/h to between 2.7 and 3.5ac/h. Drawings were provided marking up the location of 12 out of 20 rooms in which the changes were being proposed. This included three of the four multi-bed rooms in Critical Care.

9.6.24 On 6 February 2017 Kamil Kolodziejczy (MM) forwarded the proposal to Dorothy Hanley, Ronnie Henderson and Brian Currie (NHSL), copying in Colin Macrae (Mechanical Adviser, MM). Mr Kolodziejczy provided comments within the email:

- "PCo please confirm that proposed reduced ventilation rates comply with the Building Standards
- Rooms D, E and F have introduced general extract to the rooms, can this not be achieved in all rooms.
- Detail all ventilation rates for both supply and extract in both volume and air change rate".

9.6.25 Mr Kolodziejczy's email concluded, "Anything else to add?".

9.6.26 MM asked Project Co to confirm that the reduced air change rates complied with Building Standards rather than SHTM 03-01. In addition, it is noted that "rooms D, E and F" were located in Critical Care and therefore did not have ensuite facilities for extract via ensuite.

9.6.27 On 7 February 2017, Dorothy Hanley (Project Manager, Children's Services Lead) emailed Brian Currie (Project Director) and Ronnie Henderson (Project Manager, Hard FM):

"Sorry but I just noticed on this doc that the haematology oncology ward (a neutropenic patient area) should have a different air change rate from other types of wards. Is this factored in do you think?"

9.6.28 Brian Currie responded the same day, adding Kamil Kolodziejczy and Graeme Greer of MM into circulation:

"If we have not already stated our requirements (environment matrix etc) we need to do it now. Suggest we cross check against what has been communicated to IHSL already. Have copied in Kamil".

9.6.29 Mr Kolodziejczy asked Ms Hanley to "confirm which document you are referring to". Ms Hanley responded attaching HTM 03-01 [the English version of SHTM 03-01]. Mr Kolodziejczy responded, adding Colin Macrae (MM) into circulation:

"Ronnie/Colin, can we please discuss asap. As per Dorothy's email below, and SHTM 03-01, the Neutropenic Patient Ward requires 10ac/h and +10 pressure. There are 17 bedrooms, 15 single and 2 multi bed areas in haematology and oncology ward. The latest environmental matrix (attached) suggests the same design parameters as any other single/multibed areas, i.e. 4ac/h and balanced/negative pressure. Note the neutropenic ward was previously the biolab department."

9.6.30 Mr Kolodziejczy later responded to all, stating:

"..following conversation with Dorothy and Ronnie it looks like the design seems to be non-compliant for this department with BCR and SHTM. The clinical specification indicates the service will include the care of children with febrile neutropenia and SHTM have clear design guidance for neutropenic patients ward. The environmental matrix suggests the same design principles as adopted anywhere else in the Facility which is not in line with BCRs/SHTMs for this department."

9.6.31 The issue was discussed further at the PMG meeting on 8 February 2017: "Bedroom Ventilation: Third meeting to be held on 13/02/17. Board have queries on

the specialist bedrooms, both single and multiple in the Haematology and Oncology with regard to compliance. [Kamil Kolodziejczy/Colin Grindley] to review asap".

9.6.32 Kamil Kolodziejczy (MM) emailed David Martin (R.A.M) and Colin Grindley (MPX) that same day:

> "As briefly discussed at the PMG earlier today, can you please confirm that PCo's design complies with SHTM 03-01 and Sub Section D of BCRs (C1.4 Haematology & Oncology Clinical Output Based Specification) for neutropenic patients?"

9.6.33 Colin Grindley (MPX) responded:

> "We have reviewed the clinical spec for the C1.4 Haematology & Oncology department […] There is no mention of +10Pa that we can see which you mentioned in our meeting. The document refer to isolations rooms (x5) which we have already been provided with ventilation in [line] with SHPN 04 Supplement 1. Can you please provide evidence of your claims of non-compliance and we will review."

9.6.34 In response, Mr Kolodziejczy directed Mr Grindley to Appendix 1, Table A1 of SHTM 03-01.

9.6.35 On 9 February 2017, John Spalding (TUV SUD) also responded to the query about Neutropenic Patient areas:

> "We have looked into this is detail and would note the following comments. It is our understanding that patients with neutropenia have a higher risk of developing serious infection. Also we would refer you to the following Cancer.net website which provides useful information on the management and treatment of patients with neutropenia.
>
> > 'If you have neutropenia, take steps to prevent infection. For example, avoid being around people who have a cold, flu, or other illness. Neutropenia, 2016, Cancer.Net, viewed 09 February 2016, http://www.cancer.net/'

The Haematology & Oncology Dept. (C1.4) contains 5 no. isolation rooms Where we would have thought that patients with these symptoms would be treated and not within the single bedrooms or multi bed rooms. We would not expect patients of this nature to be exposed to other ill patients as this would surely create a risk of cross infection. This department is briefed as coping for a range of illnesses and treatments and seems illogical to expect that the full ward is designed to serve only one of these. This returns me to the previous statement referring the 5 no. isolation rooms - We do not don't think it unreasonable to assume that the isolation rooms would be used to treat patients with Neutropenia."

9.6.36 On 10 February, Dorothy Hanley emailed Kamil Kolodziejczy sharing input she had received from 'the ward' on a response to Project Co. Additional input on the response was provided by Janice Mackenzie (NHSL Project Clinical Director). It read:

> "Our patients on this ward are amongst the most vulnerable patients and it is therefore essential that all bedrooms (single and multibed) in haematology & oncology ward be compliant with the SHTM 03-01 Appendix 1; Table A1 […] The isolation rooms will be used for patients with infections or undergoing bone marrow transplant procedures. Patients with neutropenia, but no active infection, would be cared for separately from those children and young people with an active infection resulting either from exposure to infection in the community or as a result of their chemotherapy inducing a compromised neutropenic state [...] Please therefore provide design that complies with BCRs and SHTM 03-01 for neutropenic patient ward."

9.6.37 On 13 February 2017 Dorothy Hanley and Janice Mackenzie arranged a meeting with clinical staff. Ms Hanley wrote to the clinical staff:

> "I wonder if I could prevail on you to attend a meeting with me/Janice to discuss the ventilation for single rooms within the new haematology/oncology ward in the new building. There would appear to have been a need for contractors to deviate from an SHTM in order to achieve the output specification signed off at Financial close. Just need to make sure before the contractors proceed further that we are all in agreement around any

operational issues/ balance of potential risks to patients […] The contractors will give me airflow drawings to share at the meeting so we can be clear on these".

9.6.38 The meeting was to take place on 23 February 2017. To be in attendance were:

- Dorothy Hanley (Project Manager)
- Janice MacKenzie (Project Clinical Director)
- Janette Richards (IPCT, Lead HAI Scribe Adviser)
- Ann Cairney (Charge Nurse)
- Pota Kalima (Consultant Microbiologist)
- Mark Brougham (Consultant Paediatric Oncologist)

9.6.39 Ventilation in single rooms in the haematology/oncology ward was to be discussed at the meeting, while multi-bed rooms were not. No minutes or notes of the meeting on 23 February have been provided to the Inquiry.

9.6.40 The Project Risk Register was updated on 14 February 2017. The risk "Performance of Project Co" was increased from "medium" to "high", due to "Increased evidence of potential non-compliance during room reviews".

9.6.41 On 17 February 2017 another ventilation workshop was held. The Inquiry has not been able to review minutes or notes of the workshop.

9.6.42 On 22 February 2017, a Programme Management Group meeting noted "Environmental Matrix on hold until bedroom ventilation items resolved".

9.6.43 On 23 February 2017, Project Co issued another iteration of the 'General ward - Ventilation amendment proposal to achieve room balance". Brian Rutherford (TUV SUD) wrote:

> "As discussed and agreed at last Fridays Ventilation Workshop, see enclosed a copy of our General Ward Ventilation Proposal to Achieve Room Balance with columns incorporated to identify the severity of the ventilation works and whether the ductwork has already been fabricated."".

9.6.44 The title of the document had been changed from ‘Multi-bed rooms – Ventilation amendment proposal..’ to ‘General Ward – Ventilation amendment proposal..’.

9.6.45 Following the 24 February 2017 workshop, which was attended by:

- Brian Currie (Project Director, NHSL)
- Ronnie Henderson (Project Manager/Commissioning Lead, NHSL)
- Janice Mackenzie (Project Clinical Director, NHSL)
- Dorothy Hanley (Project Manager/Commissioning Lead, NHSL)
- Kamil Kolodziejczy (Technical Adviser Support, MM)
- Ken Hall (Mechanical and Electrical Manager, MPX)
- Colin Grindley (Mechanical and Electrical Manager, MPX)
- Hayley [Prouse] (IHSL)
- Brian Rutherford (Mechanical Engineer, TUV SUD)
- Stuart McKechnie (Principle Engineer, TUV SUD)

the “General Ward – Ventilation Amendment Proposal to Achieve Room Balance” was circulated again.

9.6.46 This version included all 20 multi-bed rooms, including the two in Haematology & Oncology which had been identified as requiring 10ac/h and positive pressure. A note in red pen reads “marked up at meeting 24/02/17”. Further markups indicated the 14 rooms for which a further reduction in ac/h was considered essential. Included in the “essential rooms” were the four Critical Care rooms. The two rooms in Haematology & Oncology were marked as “non-essential”.

9.6.47 The Inquiry understands that the ‘General Ward – Ventilation amendment proposal to achieve room balance’ was accepted by NHSL and MM at this 24 February 2017 workshop.

9.6.48 On 2 March 2017 IHSL issued an update to NHSL on the difficulties being experienced with its extended supply chain. It stated:

> “The issue raised in respect to the responsiveness of Mercury Engineering, having improved for a period is noted to have deteriorated. Multiplex has

> again raised this with Mercury Engineering at the highest level and will continue to press for a consistent improvement in response. IHSL will continue to monitor the position with Multiplex.
>
> […] subject to NHS Lothian review and approval, and considering the programme critical path, the implementation of the programme is on target."

9.6.49 Brian Currie (Project Director) responded to the update in an email to Wallace Weir (IHSL) on 3 March 2017:

> "I do not share your view that the 'programme is on target' but given that we have not yet actually received a revised Schedule 7 Programme this view is based only on evidence gathered on site. […]
>
> The Room Review programme is turning quite quickly now into a farce given that not only were the first batch of rooms offered not complete but subsequent releases have not been forthcoming and many false starts have been experienced. If this is not concerning enough in terms of quality, the implications for the Board's finite team resource for what will undoubtedly become a very compressed review programme is significant.
>
> A similar comment is made in relation to the Witnessing and Testing Programme.
>
> As we discuss every Monday and more formally at regular meetings, there seems to little progress with many unresolved issues of non compliance (Movement Joints, Ceilings, Free Swing Door Closers, Ventilation, Helipad Emissions etc), processing of Change Requests (Mercury seem to have slipped back into old habits) and preparation of the extensive body of paperwork necessary to ensure the Independent Tester is fully conversant with the project as we approach Handover (Derogations, Changes, Completion Criteria etc).
>
> I expressed similar views when asked to comment at the most recent PCo Board meeting, as you may recall, and unfortunately little or no progress seems to have been made since.

[…] All in all, I remain to be convinced of the security of the anticipated handover date of the 12th October 2017 and the quality of the product which will be finally presented.”

9.6.50 At a Programme Board meeting on 20 March 2017 the following update was issued on the Project Dashboard:

“Following a meeting with the clinical team, microbiology and infection control an agreed position for ventilation in single bedrooms and en-suites has been reached and a meeting with Multiplex has been held, who are now progressing with the required solution.”

9.6.51 On 27 March 2017, following a meeting between the Board of NHSL and the Board of IHSL, Jim Crombie (Deputy Chief Executive, NHSL) issued a letter to IHSL. It stated:

"Your view that the anticipated actual completion date of 12th October of this year is secure, although challenging, was not conveyed with confidence and in my view you presented little in the way of evidence to support it.

[…] A major factor in potential rework on site is the chronic problem of processing Board change timeously through what appears to be a single point of failure by your construction contractor. This is the issue of Mercury Engineering and their prevailing unhelpful attitude and apparent lack of participation. You did not refute the Board's Project Director's view that we seem to have reached a point where no more can be done. If this is indeed the case, the Board require your assurance that all Board change in process, whether fully signed off or not in commercial terms, will be implemented by actual completion, notwithstanding that some aspects of some changes were always programmed to be delivered in the Board's Commissioning phase."

9.6.52 At a Programme Board Meeting on 15 May 2017 Brian Currie commented that room reviews remained behind schedule, and stated:

“a pattern of the same issues with all rooms being reviewed is now emerging […] These problems may relate to the change process which is very

cumbersome and has proved extremely challenging for IHSL/MPX's supply chain, most noticeably the performance and attitude of Mercury Engineering. Drawings which have been updated or changed via the RDD or change process are not being implemented and this is now resulting in clear mistakes with incorrect fixtures and fittings being installed."

9.7 Revision 9 of the Environmental Matrix

9.7.1 EM revision 9 was dated 18 May 2017. It's not clear what happened to revision 8.

9.7.2 In version 26 of revision 9 the reference to a natural ventilation supply was removed by Project Co for a further 5 rooms in Critical Care. As previously, the air change rates were not recalculated to reflect the removal of a 2ac/h supplement from openable windows.

9.7.3 Project Co also identified and made changes to the remaining seven rooms in Critical Care which erroneously referenced ensuite facilities. Extract rates were introduced to those rooms accordingly and the relative pressure in the multi-bed rooms was changed from "positive to ensuite" to "positive".

9.7.4 These changes were made one year after the Board issued its comments on natural ventilation and ensuite facilities in some Critical Care rooms. Two Critical Care rooms continued to reflect a natural ventilation supply (1-B1-009 and 1-B1-075).

9.7.5 A change was also made to the 'ventilation type' in Critical Care room 1-B1-063, previously highlighted by the Board in their review of EM revision 7[65]. It was changed from "central supply air" to "central supply & extract" to reflect the 0.5ac/h (mechanical) extract that had been introduced to the room the previous year[66].

9.7.6 The second room 'ventilation type' that had been highlighted by the Board in EM revision 7 (1-B1-065) remained unchanged.

[65] See paragraph 9.6.6
[66] See paragraph 9.5.2

9.7.7 Revision 9 was submitted to the Review Procedure on 19 May 2017 and returned by the Board on 26 June 2017. Mott MacDonald suggested the EM be given status C “as the ventilation for multibed rooms is still an issue”.

9.7.8 An email from Kamil Kolodziejczyk (MM) to Ronnie Henderson (Project Manager/Commissioning Lead, Hard FM) and Brian Currie (Project Director) provided the Boards Comments:

> “The Board reviewed the Environmental Matrix rev 9 and has noted there are still inconsistencies in the matrix, these have been highlighted red.
>
> […]
>
> There are also inconsistencies across the matrix, for example the ‘Ventilation type’ column states central general extract where no extract in this specific room is provided. Or where central supply air is indicated in ‘Ventilation type’ column while the supply and extract are being provided. Refer to G-A1-038 & 1-B1-065 respectively
>
> […]
>
> It is not clear from the submitted environmental matrix what is the pressure cascade from multi-bed rooms into corridor. As per previous discussions with PCo, where it was explained the need to have balanced / -ve pressure regime in multi-bed rooms, can PCo please confirm and indicate in the matrix that the multi-bed rooms are balanced / -ve in relation to corridor.
>
> Please note that no Project Co changes were highlighted other than the ‘All Rooms’ sheet, hence the Board only reviewed ‘All Rooms’ sheet and did not review the matrix line by line, noting any non-compliance with BCRs/PCPs/SHTMs etc is Project Co’s responsibility. As per separate discussions on Project Co’s ventilation strategy, Project Co should submit change/derogation for the Board’s consideration relative to any deviation from BCRs/PCPs/SHTMs etc.
>
> The matrix is returned at status C based on the comment relating to ventilation in multibed rooms.”

9.7.9 Mr Henderson responded "Fine with me" and Mr Currie indicated that the response should be issued to IHSL.

9.7.10 On 23 May 2017, Project Co issued an updated 'General Ward – Ventilation amendment proposal to achieve room balance' to NHSL:

> "Please find attached the updated ventilation drawings and associated narrative which accommodates the Boards request to have the 4 bedded ward at a negative or balanced pressure.
>
> Our opinion is that this amendment to the environmental conditions and operation of these rooms constitutes a change for the reasons noted below.
>
> > 1.0 Environmental matrix was signed off as status B with the noted design parameters that the current ventilation design represents - as per MM-GC-001398.
> >
> > 2.0 Full RDD ventilation zonal design pack and workshops have been through RDD and signed off.
> >
> > 3.0 Copy of WW design document outlining compliance with the SHTMs is attached.
>
> We anticipate that the costs of this Change will be in the Medium Value category. We look forward to the Board's, positive response to this request."

9.7.11 The "WW design document" at item 3.0 appears to be a reference to a document dated 21 February 2017, called 'Accommodation design criteria - single rooms and multi-bed wards', which attributed SHTM 03-01 guidance for General Wards to all multi-bed rooms.

9.7.12 On 1 June 2017, Kamil Kolodziejczy (MM) emailed Dorothy Hanley (NHSL) seeking her input on a response to Project Co:

> "Can you in few words explain the difference between general ward and 4 bedded room, the way you explained at the meeting with MPX?".

9.7.13 The jointly composed draft response, read:

> "As previously described under MM-GC-002408, the Board does not believe this change to environmental conditions constitutes a Board Change. Without

these changes PCo's design ~~was~~ is not compliant with BCRs and relevant guidance.

In relation to point 1 & 2 below, as per Schedule Part 8 (Review Procedure) of the Project Agreement please note that the RDD review doesn't remove PCo's obligation under the Project Agreement and the Board did not receive a derogation/change from PCo for an alternative design.

In terms of point 3, the WW design report states that current ventilation design for single room and general ward areas are fully compliant with SHTM 03-01, please note however that this is incorrect. PCo proposed air change rates do not align (as stated in the report) with SHTM recommendations hence, without PCo change, the design as it stands is not compliant. The Board expects to receive PCo's Change for deviation from recommended air change rates as per SHTM 03-01.

The Board understands the confusion arising from design criteria for General Ward as stated in Table A1 of SHTM 03-01, as the SHTM does not explicitly acknowledge a multi-bed room. However, as explained by the Board, these rooms have never been referred to as wards because of the following: A "ward" constitutes the total bed complement of a designated area . Multi-bed rooms are much smaller sections within a ward that allow patients to be nursed as a small group. Within Children's Services these areas are important for the purposes of clinical safety as they allow cohorting of patients who require enhanced level of nursing observation/support either because they have the same type of infection, or are at similar stages of acute post operative recovery. Additionally these rooms aid the normal socialisation and development of young children. Similarly within DCN multi-bed rooms within the ward are used to cohort patients requiring enhanced levels of nursing/monitoring that is more difficult to achieve within single room environment".

9.7.14 In the email ultimately sent to Project Co on Monday 5 June 2017 the assurance that "these rooms have never been referred to as wards" had been removed. It read:

> "…the Board notes that PCo used wrong design criteria for the multi bed rooms. As explained by the Board at the meeting on Monday 23 January, a "ward" constitutes the total bed complement of a designated area. Multi-bed rooms are much smaller sections within a ward that allow patients to be nursed as a small group".

9.7.15 Having identified that the agreed solution to achieve room balance was based on the incorrect SHTM 03-01 criteria, the Inquiry understands that progress on the proposal ceased from 23 May 2017.

9.7.16 Formal dispute resolution procedure ['DRP'] was tabled by NHSL on 13 June 2017.

9.7.17 On 5 July 2017 a risk assessment was carried out by NHSL in relation to the non-compliant multi-bed pressure regime. The template used by the Project Team was for a 'General Risk Assessment' under the 'Lothian Occupational Health and Safety Department'.

9.7.18 Janice Mackenzie (Project Clinical Director) was named as the "manager responsible" on the risk assessment, while Dorothy Hanley (Project Manager, Childrens Services) and Fiona Halcrow (Project Manager, Clinical Support) were also named assessors.

9.7.19 Under the 'subject of assessment' heading, it stated:

> "Bedroom Ventilation design in 4 bedded rooms does not meet the recommendations of SHTM 03-01, as the current design has the 4 bedded rooms as being positive pressure. To allow cohorting of patients with the same air-borne infections these rooms require to be balanced or negative pressure. Whilst the Board can rationalise the number of 4 bedded rooms where the ventilation needs to change it should be noted that this does reduce overall flexibility and future-proofing. Given the different patient groups related to specific wards, separate risk assessments have been undertaken (see attached). Individual risk assessments have identified that the need for cohorting of patients is only an issue for the Children's Service. The risk assessments have been discussed with the Children's CMT and Infection

Control & Prevention who have confirmed that not having the ability to cohort patients is not acceptable from a patient safety perspective. In addition the Children's CMT highlighted that if the programme is going to be delayed in order to achieve compliance with the SHTM 03-01 in the 4 bedded rooms then should we not be considering achieving this in all 4 bedded rooms. As opposed to the ones that have been identified to reach a compromise solution which would ensure future proofing and flexibility within the building for service changes and avoid the need to retro-fit."

9.7.20 Separate risk assessments were carried out for specific wards "as the risk rating for each ward/s is different dependent upon the patient group and clinical risk". This included a separate risk assessment for 'RHCYP Critical Care (B1)' , for which the 'manager responsible' was Peter Campbell, Deputy Associate Nurse Director for Childrens Services:

<table>
<tr><td>Name of Assessor(s):
Posts Held:</td><td>Janice Mackenzie
Dorothy Hanley
Fiona Halcrow</td><td>Date of Original Assessment:</td><td>05/07/17</td></tr>
<tr><td>Manager Responsible:</td><td colspan="3">Peter Campbell, Deputy Associate Nurse Director – Children's Services</td></tr>
<tr><td>Department:</td><td colspan="3">RHSC & DCN Reprovision Project – RHCYP Critical Care (B1)</td></tr>
<tr><td colspan="4">Subject of Assessment: Consider Task or Environment.</td></tr>
<tr><td colspan="4">Ability to cohort patients within Critical Care Unit</td></tr>
<tr><td colspan="4">Step 1: What are the Hazards?</td></tr>
<tr><td colspan="4">Clinical risk is still relatively high if no cohort area available and therefore operationally to retain the ability to cohort within B1-063 (low acuity HDU) would be clinically and operationally highly advantageous.</td></tr>
<tr><td colspan="4">Step 2: Who might be harmed and how?</td></tr>
<tr><td colspan="4">Patients through spread of infection.
Potential cancellation of elective surgical cases as staff group will be required to deliver 1:1 care who potentially could be cared for within a cohort area</td></tr>
<tr><td colspan="4">Step 3: What are you already doing? (Existing Precautions)</td></tr>
<tr><td colspan="4">Critical Care (B1) – 24 beds
• 3 x 4 bedded rooms (intensive care, high acuity & low acuity)
• 1 x 3 bedded room (surgical neonates)
• 4 x isolation rooms
• 5 x single rooms

The increased number of single rooms and a higher nurse to patient ratio within the Critical Care Unit will help mitigate the risk of nursing patients in single rooms</td></tr>
</table>

Level of Risk if no cohort area	9
Level of Risk if cohort retained	3

Step 4: Action Plan			
What further action is necessary?	**Action By Whom**	**Action by when (dd/mm/yy)**	**Action completed. (dd/mm/yy)**
In the Building Users Guide need to state that two 4 bedded rooms (ITU & high acuity high dependency) and one three bedded room (surgical neonates) cannot be used to cohort patients with air-borne infections Careful placement of patients within the designated areas	Jane Campbell Senior Nurse in Charge & Consultant	September 2017 Ongoing	

9.7.21 The SHTM 03-01 recommendation for positive pressure and 10ac/h in Critical Care was not identified by those conducting the risk assessment.

9.7.22 A risk assessment was also carried out for the two multi-bed rooms in Haematology & Oncology, which the project team had previously identified as requiring a positive pressure regime at 10ac/h.

9.7.23 On 7 July 2017 Brian Currie (NHSL, Project Director) emailed Wallace Weir (IHSL) outlining NHSL's argument that the amendment to the multi-bed rooms to achieve room balance should be made at no additional cost to NHSL. This argument was on the basis that the current design was non-compliant. It read:

> "In addition to the comments made at Financial Close, the Board also would like to draw PCo's attention to the following clause in the Appendix B of Schedule Part 10:
>
> > '2.1.31 Project Co shall provide completed Section 6 (Room Data Sheets) of Schedule Part 6 (Construction Matters) for all rooms and areas within the Facilities including the environmental data contained in the Environmental Matrix. These Room Data Sheets shall be complete in all respects'.
>
> The Board also notes SHTM 03-01, clause 2.60 states the following:
>
> > '2.60 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).

The Activity Database are included in SHTM03-01, and are therefore included in the Boards Construction Requirements, and form part of the Project Agreement.

In terms of interpretation of design criteria for multi bedrooms, for the avoidance of doubt the 3.10 of SHPN 04-01 states:

> ‘The acceptable maximum number of beds in a multi-bed room is four as it gives each patient a corner as a `home base` and a neighbour on one side only.’

The SHPN 04-01 also describes what the ward is and it cross refers to HBN 04-01, which in *Figure 1 Functional Relationships* gives an indicative layout of typical ward. It is clear from the information that a ward is a group of different types of rooms that can consist of single and multi bed rooms.

On that basis PCo assumption to use “general ward” as design guidance for multi-bed rooms, in the Board’s opinion was incorrect.

As for the reason why the Board believes the multi bedrooms should be designed to balanced/-ve pressure, as per 5.4 of SHFN 30, which states:

> ‘Multi-bed rooms can also be used to cohort patients with the same infection if they have en-suite toilet and shower, and a door to the main ward area. The possible need for this should be considered at the design stage.’

The pressure cascade should be from corridor to bedroom and to en-suite preventing spread of infection. Please also refer to 6.10 of SHFN 30:

> ‘The same basic principle applies for all clinical areas whereby positive pressurisation is maintained by providing supply ventilation in cleanest areas cascading to dirty areas where negative pressure will be achieved. This will inhibit the spread of contamination.’

Furthermore, clause 4.8 of SHFN 30 states:

> ‘Similarly, the detailed design of the building elements can contribute to reducing the risk of transmission of micro organisms e.g. selection of finishing materials for floors, walls and ceilings; designing the ventilation system to inhibit the spread of contamination.’

And clause 4.9 of SHFN 30:

> 'A number of design and layout issues could contribute to the risk of transmission of micro-organisms. For example, the ventilation system needs to inhibit contamination spread rather than contribute to it. Internal and external routes identified for removal of dirty laundry, waste food, healthcare waste, similarly need to be carefully planned.'

Based on all the above guidance documents, the Board believes the multi bedrooms should be designed to balanced/-ve pressure in order to prevent spread of infection."

9.7.24 Countering responses were prepared by Brian Rutherford (TUV SUD) in support of Project Cos opposing argument that the original design (positive pressurisation) was compliant. It read:

> "SHTM 03-01 para 2.60 Contrary to what has been stated, the ADB sheets are not within SHTM 03-01 they are referred to. Contract ADB sheets for 4 Bed Room/Multi Bed Ward state 4ac/hr supply and positive pressure within the room.
>
> SHPN 04-01 para 3.10 The document reference is for 'Adult In-Patient Facilities'. HBN 04-01 This document is in reference to 'Adult In-Patient Facilities'. Refer to HBN 23 Hospital accommodation for children and young people, para 3.97 makes reference to 4 Bed Wards.
>
> SHFN 30 para 5.4 This section does not make reference to a ventilation requirement, it does ask that an en-suite toilet and shower be provided and specifically asks for a door, all of which is provided within the current 4 Bed Room/Multi Bed Ward layouts.
>
> SHFN 30 para 6.10 There is no reference within this document to the pressure cascade being from corridor to bed room and to en-suite preventing spread of infection. The paragraph taken from the document states 'positive pressurisation is maintained by providing supply ventilation in cleanest areas', cleanest arears in this scenario is the 4 Bed Room/Multi Bed Ward, as corridor cannot be designated as a clean area.

SHFN 30 para 4.8 This paragraph is under the heading of Space Planning. Ventilation as designed will inhibit the spread of contamination. Again, refer to previous comment.

SHFN 30 para 4.9 This paragraph is under the heading of Space Planning. Ventilation as designed will inhibit the spread of contamination. Again, refer to previous comment".

9.7.25 Graham Coupe (MPX) in response to Mr Currie's email voiced his concern that "the volume of reference documentation now being tabled is serving more to cloud the issues, than assist in clarifying them."

9.7.26 On 10 July 2017 Ronnie Henderson (Project Manager, Hard FM) emailed Ian Powrie (Deputy General Manager (Estates) at the Queen Elizabeth University Hospital, Glasgow) seeking advice on multi-bed ventilation:

"We are now looking into issues with ventilation, specifically 4 bedded rooms. I understand that there are some in the Childrens area of the QEUH and for comparison we would like to know what airflow/pressure regime has been applied: 1. Corridor to room to en-suite to outside (Balanced or slightly negative) or 2. Room to corridor and Room to en-suite (Positve) Clinical staff are worried about the infection control risk if the rooms are used to cohort patients. Appreciate any info you can give".

Mr Powrie responded:

"We also have an ICT concern on this, en-suite to room slightly negative. Room to corridor neutral Page 2 of 4 Room ACR 3-4 Ach (not 6 as defined in SHTM 03-01, this is due to the use of chilled beam units and the reduced air flow. Are you adopting chilled beams? If so be careful if the dew point control issues. Call me if you would like to discuss."

Mr Henderson responded:

"No chilled beams thankfully but worse pressure issues, our 4 beds are positive to both corridor and en suite so a major issue when cohorting

patients. Air change rates are same as you at 4 with openable windows, they are claiming this complies with a mixed mode system as described in the SHTM, not sure about that but it's the least of our worries compared to infecting the ward. By the way they used the 'General Ward' description from appendix 1 Table AI to design the pressure regime for the '4 beds!! If it's not too much trouble do you have an extract from your environmental matrix for 4 bedded rooms that you could send us by any chance?"

9.7.27 On 12 July 2017, while the EM was unapproved RDD, IHSL issued to NHSL and the Independent Tester formal notification pursuant to Clause 17.5 of the PA that the completion date was secured in three months' time.

9.7.28 On 18 July 2017 Kamil Kolodziejczyk (MM) emailed Ronnie Henderson and Brian Currie (NHSL) seeking approval of an email reinstating EM Rev 9 to level B approval:

> "Brian / Ronnie,
>
> Following our review of Environmental Matrix and recent discussions with PCo relating to multi bed room ventilation, we suggest sending the following response:
>
> > 'The Board reviewed the Environmental Matrix rev 9 and has noted there are still inconsistencies in the matrix, these have been highlighted red (but not limited to) in the attached, with examples provided below;
> >
> > - The 'Ventilation type' column states central general extract where no extract in this specific room is provided.
> > - Central supply air is indicated in 'Ventilation type' column while the supply and extract are being provided. Refer to G-A1-038 & 1-B1-065 respectively.
> > - […]
> >
> > Please note that no Project Co changes were highlighted other than the 'All Rooms' sheet, hence the Board only reviewed 'All Rooms' sheet and

did not review the matrix line by line, noting any non-compliance with BCRs / PCPs / SHTMs etc is Project Co's responsibility.

The Board notes it is the Board's opinion the ventilation design for multi bedrooms is not compliant with the BCR's and separate discussions are ongoing relative to the satisfactory resolution of the design. Please also note the Board rejected Project Co's derogation for single rooms and are considering the compliance of the alternative solution.'

Based on the comments above we propose status B.

Appreciate the issue on ventilation for multi bedrooms is still not resolved, however I don't think we should be rejecting matrix on that basis. If we were to lose the argument re ventilation, then PCo may use it for potential compensation event and therefore extension to programme".

9.7.29 The response was issued to Project Co via the Aconex transmission system the same day. Board comments remained as per the previous response on 26 June in which approval was withdrawn[67]. No changes had been made by Project Co within the attached and highlighted copy of the EM, which appears consistent with EM revision 9 (version 26).

9.7.30 The ventilation specification for the nine Critical Care rooms in EM revision 9 (version 26) is reflected in the table below:

Environmental Matrix Rev 9

Dept Name	Room Name	Room Function	Room number	Ventilation					
					Ventilation Type	Supply ac/hr	Extract ac/hr	Relative Pressure	Min Filtration
B1 PICU and HDU	Open Plan Bay (4 beds)	Multi-bed Wards	1-B1-009	Actual	**Natural and Central Supply Air**	**4**	**1.7**	**Positive**	**F7**

[67] See paragraph 9.7.8

Environmental Matrix Rev 9

Dept Name	Room Name	Room Function	Room number		Ventilation Type	Supply ac/hr	Extract ac/hr	Relative Pressure	Min Filtration
			1-B1-031	Actual	**Central Supply and Extract**	**4**	**1.8**	**Positive**	**F7**
			1-B1-063	Actual	**Central Supply and Extract**	**4**	**0.5**	**Positive**	**F7**
				Recommended	Supply	10	-	positive	F7
	Open Plan Bay (3 Cots)	Multi-bed Wards	1-B1-065	Actual	**Central Supply air**	**4**	**1.9**	**Positive**	**F7**
				Recommended	Supply	10	-	positive	F7
	Single bed cubicle	Bedroom	1-B1-037 1-B1-021 1-B1-020 1-B1-019	Actual	**Central Supply and Extract**	**4**	**4**	**Balanced**	**F7**
				Recommended	Supply	10	-	positive	F7
	Single cot cubicle	Bedroom	1-B1-075 (with ensuite	Actual	**Natural and Central Supply Air**	**4**	**Via en-suite**	**Balanced**	**F7**
				Recommended	Supply	10	-	positive	F7

9.7.31 At a Programme Board meeting on 24 July 2017, “Performance of Project Co” continued to be a high risk. A document titled “Compromises Schedule” was also tabled. It contained a list of 30 potential compromises which were under review by NHSL:

- Item 1 of 30 was the issue with single bedroom air change rates. It read:

  Reason for Compromise: Project Co’s design is not in line with SHTM guidance in relation to air changes. Currently the only extract is via the ensuite, meaning this is ‘dirty extract’ which can’t be used for heat recovery.
  Technical Solution: Single bedrooms have reduced air supply rates to maintain correct pressure regime. There is not solution proposed to provide heat recovery from the bedrooms.
  Description of Compromise: Less air supply to the bedroom than recommended by SHTM and increased extract through en-suite which will affect running cost of the Facility. No ability to recover heat from en-suite dirty extract
  Impact: Operational
  Consulted: Ronnie Henderson, Project Manager (Hard FM)
  Dorothy Hanley, Project Manager (Childrens Services)
  Janice Mackenzie, Project Clinical Director
  Fiona Halcrow, Project Manager (Clinical Support)
  Janette Richards, Lead HAI Scribe Advisor (IPCT)
  Pota Kalima, Consultant Microbiologist
  Haem/Onc Clinical Team
  Status: Under Review

- Item 2 of 30 was the ventilation issue in neutropenic patient rooms. It read:

  Reason for Compromise: As per SHTM and Clinical Specs, the rooms for neutropenic patients should be designed as isolation rooms (+10 positive pressure). However, there are 10 single rooms which Project Co have designed to balanced pressure.
  Technical Solution: No solution proposed

Description of Compromise: NHS took a decision to operationally manage the department rather than asking Project Co to change the design
Impact: Operational
Consulted: Ronnie Henderson, Project Manager (Hard FM)
Dorothy Hanley, Project Manager (Childrens Services)
Janice Mackenzie, Project Clinical Director
Fiona Halcrow, Project Manager (Clinical Support)
Janette Richards, Lead HAI Scribe Advisor (IPCT)
Pota Kalima, Consultant Microbiologist
Haem/Onc Clinical Team
Status: Under Review"

9.7.32 The Critical Care Clinical Team was not listed as consulted.

9.7.33 In the minutes of the Programme Board meeting it was recorded that concerns regarding the compromises being made by NHSL were raised by George Curley, Director of Operations (Facilities):

> "[George Curley] expressed his concern and disappointment that such a large amount of significant compromises and derogations are being made at this stage of the project. [George Curley] also questioned the safety and suitability of certain compromised solutions and requested further discussion on some points. [Brian Currie] communicated his surprise at this given the historical and continuing engagement of estates and facilities with the project. [Jim Crombie] and [Brian Currie] agreed to discuss these concerns in detail with [George Curley] outside of the meeting".

9.7.34 On 7 August 2017, Brian Currie (Project Director) issued a letter to IHSL in response to their Clause 17.5 notification (issued 12 July). It stated:

> "Further to this Clause 17.5 Notification, the Board has commenced relevant activities in preparation for the anticipated completion date of 12 October 2017 and is therefore incurring associated costs. Moreover, this Clause 17.5 Notification has also triggered the activities of the Independent Certifier.

> The Clause 17.5 Notification is not one which should be served lightly by Project Co and should be a genuine trigger to the countdown to the Actual Completion Date. In the event that the stated date of 12 October 2017 transpires to be incorrect, the Board shall require Project Co to be held to account for any costs incurred by both the Board and/or the Independent Tester in relation to all reasonable activities carried out by either the Board and/or the Independent Tester in preparation for the anticipated completion date beyond 12 October 2017 […]
>
> The Board must have absolute confidence in the anticipated completion date stated by Project Co pursuant to the Clause 17.5 Notification. A false or misleading anticipated completion date will quickly escalate to the highest levels of both the Board and Scottish Government, which shall have reputational consequences for Project Co."

9.7.35 On 28 August 2017, Kamil Kolodziejczyk issued another Aconex transmission regarding the review of EM revision 9. It read:

> "Ken, Further to the Board's comments issued as per MM-GC-003072, and the meeting held on 28 July, please find attached updated Board's response to rev. 9 of the Environmental Matrix."

9.7.36 The Inquiry has been unable to review the updated Board Comments on EM Rev 9 issued on 28 August.

9.8 Revision 10 of the Environmental Matrix

9.8.1 Revision 10 of the EM was dated 12 September 2017. It had been updated to incorporate Board Comments received on 28 August 2017.

9.8.2 Changes had been made to the ventilation specification in two Critical Care multi-bed rooms:

- In room 1-B1-063 the "extract ac/h" was increased from 0.5ac/h to 3ac/h (with 4ac/h supply and positive pressure maintained).

- In room 1-B1-065 the “extract ac/h” was increased from 1.9ac/h to 4ac/h. Relative pressure was changed from “positive” to “balanced” and the “ventilation type” was changed from “central supply air” to “central supply and extract”.

9.8.3 Following this change, Critical Care room 1-B1-065 was the only multi-bed room out of 20 to reflect a balanced pressure regime.

9.8.4 An ‘Environmental Matrix meeting’ was held on 28 September 2017 following a review of EM Rev 10. On 5 October, Ken Hall (MPX) distributed a confirmation of the discussion at that meeting:

1. “11 points noted and attached to be captured in the current Rev 10 version in for RDD. Revised version 10 to be circulated to Kamil who will then discard the current copy. Update to be complete and issued by 13.10.17.
2. TUV SUD requested a review line by line, Motts noted if TUV SUD can confirm a check has been made line by line then there was no requirement to do a line by line check. TUV SUD confirmed a line by line check had been carried out in their office. Item closed.
3. Feedback from Motts that subject to the 11 No clarifications required for Rev 010 this concludes the review of the matrix. Next stage is to use the matrix at site to check off against what is installed within the rooms.
4. Multi bed rooms were not discussed at this meeting. Matrix will require to be updated once the changes are instructed.
5. […]
6. […]
7. With rev 10 review now concluded, Motts noted the following updates to be scheduled out:

   (i) Schedule Accommodation Changes

   (ii) Change Controls

   (iii) 4 bedded wards (as item 4 above)

(iv) Plantroom Numbering (as item 6 above)"

9.8.5 It's not currently clear if any members of the NHSL project team were present at the meeting. Further, the Inquiry Team does not hold the "11 points noted and attached" which were to be incorporated into EM Rev 10.

9.8.6 On 4 October 2017, at a Programme Management Group meeting it was noted: "Environmental Matrix: Returned as status B with 11 minor items to be addressed. Revision 10 to be updated to include ALL previously issued comments and agreed between the parties to mark agreement at a point in time".

9.9 **Revision 11 of the Environmental Matrix**

9.9.1 Revision 11 of the EM was dated 25 October 2017. It had been updated to incorporate Board Comments and a revised accommodation schedule.

9.9.2 The Inquiry understands from notes of the Environmental Matrix meeting on 28 September that this revision 11 was to be used "at site to check off against what is installed within the rooms".

9.9.3 How the EM was used after it was concluded through RDD is considered within a separate Inquiry paper on commissioning and validation.

9.9.4 The specification reflected for Critical Care at this time was:

Environmental Matrix Rev 11

Dept Name	Room Name	Room Function	Room number		Ventilation				
					Ventilation Type	Supply ac/hr	Extract ac/hr	Relative Pressure	Min Filtration
B1 PICU and HDU	Open Plan Bay (4 beds)	Multi-bed Wards	1-B1-009	**Actual**	**Natural and Central Supply Air**	**4**	**1.7**	**Positive**	**F7**
			1-B1-031	**Actual**	**Central Supply and Extract**	**4**	**1.8**	**Positive**	**F7**

Environmental Matrix Rev 11

Dept Name	Room Name	Room Function	Room number		Ventilation Type	Supply ac/hr	Extract ac/hr	Relative Pressure	Min Filtration
			1-B1-063	Actual	**Central Supply and Extract**	**4**	**3**	**Positive**	**F7**
				Recommended	Supply	10	-	positive	F7
	Open Plan Bay (3 Cots)	Multi-bed Wards	1-B1-065	Actual	**Central Supply and Extract**	**4**	**4**	**Balanced**	**F7**
				Recommended	Supply	10	-	positive	F7
	Single bed cubicle	Bedroom	1-B1-037 1-B1-021 1-B1-020 1-B1-019	Actual	**Central Supply and Extract**	**4**	**4**	**Balanced**	**F7**
				Recommended	Supply	10	-	positive	F7
	Single cot cubicle	Bedroom	1-B1-075 (with ensuite)	Actual	**Natural and Central Supply Air**	**4**	**Via en-suite**	**Balanced**	**F7**
				Recommended	Supply	10		positive	F7

9.10 **Settlement Agreement Negotiations**

9.10.1 From August 2017 all parties were engaged in without prejudice dialogue around a growing list of alleged non-compliances. The multi-bed ventilation dispute

continued to present an impasse, and external expert opinion was sought by both NHSL and Project Co in support of their respective positions.

9.10.2 David Rollason consulting engineers were instructed on behalf of NHSL to "give an opinion on whether Project Co's proposed ventilation design for the four-bed rooms complied with the relevant contractual provisions." The report, dated 1 November 2017, stated: "With regards to pressure regimes, the Board believes that Project Co's proposed ventilation design for the 20 '4-bed rooms' does not comply with the…BCRs [Board's Construction Requirements]… PCPs [Project Co Proposals]… and guidance in SHTMs. I understand the Board may also have concerns regarding Project Co's proposed air change rates, but this is not an issue upon which I have been asked to comment at this stage".

9.10.3 The Inquiry understands that David Rollason was supplied with a one page schedule of design data for the multi-bed rooms, which had been extracted from various revisions of the EM. Rooms were sorted by department, thereby identifying that four were located in "B1 PICU & HDU".

9.10.4 Mr Rollason noted that the four rooms in Critical Care did not have ensuite facilities through which an extract could be provided: "mechanical extract from the four 4-bed rooms (1-B1-009, 1-B1-031, 1-B1-063 and 1-B1-065), which do not have adjacent en suites/accessible WCs/wet rooms, at rates of 1. 7 to 4ac/h…"

9.10.5 David Rollason's report, dated 1 November, stated:

> "Project Co was required to provide balanced/negative pressure in all 4-bed rooms relative to the adjacent ward corridors […] This is consistent with what I would normally expect, as providing balanced/negative pressure in the 4-bed rooms inhibits the spread of infection from patients in the 4 bed-rooms to adjacent areas. […] Project Co's proposed ventilation design for the 4-bed rooms does not comply with the relevant contractual provisions because Project Co's design provides positive…pressure in 19 of the 20 4-bed rooms relative to the adjacent ward corridors."

9.10.6 In noting this comment, the Inquiry is aware that exactly what was required under the Project Agreement is controversial and not a matter for the Inquiry to determine.

9.10.7 On 3 November 2017, NHSL issued a letter to the IT seeking an opinion on the David Rollason report and its support in the ongoing dispute. On 7 November 2017, John Edwards (Arcadis) responded by email to Brian Currie (NHSL):

> "I have had an initial review of the 'ventilation' report by David Rollason and would comment in respect of two areas that do not appear to be addressed. These are:
>
> - The inclusion in the PCP's of a revised ADB sheet that indicated neutral or positive pressure to the surrounding areas, which is what I presume Project Co were identifying in their reference to compliance with the ADB sheets in the PCPs.
> - There is no reference to Table A1 of SHTM03-01 Part A which indicates.

Application	Ventilation	ac/Hour	Pressure (Pascals)	Supply Filter	Noise (NR)	Temp (°C)	Comments For further information see Section
General Ward	S/N	6	-	G4	30	18	

> and that HBN 23 Hospital accommodation for children and young people makes reference to the provision for 4 Bed Wards of a similar nature and use to the rooms addressed in the report and that although paragraph 3.96 makes reference to the use of single bedrooms for isolation in emergency situations there is no mention of a similar use for 4 bedded rooms as below:
>
> 3.96 In a 16-bed ward, provision of 100% single rooms with en-suite facilities would offer maximum flexibility.
>
> Furthermore, in an emergency situation, for example an epidemic, these rooms can be used as additional inpatient accommodation. Day care patients should not normally be mixed with acutely ill in-patients, except in

an emergency. I believe these elements need to be addressed and would like to discuss the above on Tuesday."

9.10.8 Brian Currie responded to John Edwards on 9 November 2017:

"Suggest we go over your points in detail on Tuesday [14 November 2017] and I have asked Graeme Greer to attend to assist in those discussions…Would be good to discuss on Tuesday to clarify the impact of the above on the air change rate/pressure regime for the 4 bed rooms."

9.10.9 Multiplex, by way of response to the David Rollason report, instructed DSSR Consulting Engineers to provide their view on the matter. The report dated 6 December 2017 provided:

"Within the BCR, there does not appear to be specific or explicit reference to pressure regimes within the multi-bed areas which are subject to this dispute, nor do there appear to be any statements relating to the definition of, and related design criteria for, multi-bed areas, which I would expect to see if the Board had explicit requirements for these spaces. […] It can be seen that General Wards can acceptably be provided with supply or natural ventilation, and that single rooms can be provided with supply, natural or extract ventilation. General wards have no pressure requirements, and single bed wards can be neutral or negatively pressurised. However given the statement in 2.3, should a specific pressure regime be critical in either of these room types, natural ventilation would not be an appropriate solution".

DSSR concluded:

"The parties have taken a different approach to whether the design should reflect that required for a single bedroom or a ward. There is nothing specific in the BCR's to assist with interpretation as to whether the area is a ward or bedroom. In the absence of explicit requirements on the design criteria for 4 bed areas, I would concur with the approach taken by MPX in applying general ward design criteria from Table A1".

9.10.10 On 19 December 2017, Multiplex sent a letter to IHSL and the IT enclosing the DSSR report: “we note that NHS Lothian has set out at some length the contractual analysis that it contends should apply to the ventilation design. That is presumably an attempt by NHS Lothian to unduly influence the Independent Tester given that he is already deemed to be aware of the various contractual conditions which apply between NHS Lothian and Project Co.”

9.10.11 An updated Project Risk Register was tabled at an Extraordinary Programme Board meeting on 19 December 2017. A new risk had been added on 30 November rated “very high”. It read:

“UHD Objectives: UHD 4. Quality/Patient Safety/Patient Experience

Title: Non Compliance of HV Network and 4 Bedded Room Ventilation

Description: The facility cannot become operational without remedial works to the currently designed and installed HV network and 4 bedded room ventilation regime. This is due to lack of resilience in relation to HV and infection control issues with 4 bedded room ventilation.

Controls in place:
NHSL having obtained full NHSL Lothian Board approval to proceed to adjudication within the dispute resolution process (DRP) as per project agreement with IHSL.

Independent expert reports have been prepared and issued to both IHSL and the Independent Tester supporting the Boards position that these two issues are non-compliant.

Decision to initiate adjudication is pending a formal response from the Independent Tester in relation to the impact of these two issues on “actual completion” of the facility. NHSL Lothian anticipate this response by 19th December 2017. Project Co continue to take a different view on the validity of these issues as non compliant.

Risk Level (current): Very High

Risk Owner: Jim Crombie

Handler: Brian Currie “

9.10.12 The DSSR Report and Independent Testers report were discussed at the Programme Board meeting of 15 January 2018. According to the minutes:

> "BC noted that written confirmation of this position is awaited from the Independent Tester and that the Independent Tester is expected to confirm that completion cannot be authorised with the current four bed ventilation as currently installed and designed."
>
> NHS Lothian Board approval granted to proceed with DRP [Dispute Resolution Procedure] if the issues are not resolved following the receipt of IT report."

9.10.13 John Edwards of Arcadis provided the view of the IT in an email of 23 January 2018:

> "Following the review, the Independent Tester would reaffirm the statement…that there are conflicting requirements contained within Schedule Part 6 and that in accordance with the provision of section 2.5 of Section 3 Board's Construction Requirements of Schedule Part 6 […] the Board shall have the final decision regarding standards. […] In certain instances, NHS publications include a number of options or alternative solutions. Where the Board has defined their preference specifically, Project Co shall adopt these preferences as a mandatory requirement. Where no Board preference is stated, Project Co shall engage the Board in the design development process to seek and incorporate the Board's preference within the Facilities."

9.10.14 In a subsequent email from Brian Currie (Project Director) which forwards the positive opinion from the IT to Janice Mackenzie (Project Clinical Director) and Jackie Sansbury (Director of Strategic Planning & Modernisation), Mr Currie adds:

> "Janice, did you get any feedback on positive pressure regime in post operative care beds?".

9.10.15 It's currently not clear to the Inquiry Team which department would house 'post-operative care beds' or if NHSL had identified different ventilation requirements in that department.

9.10.16 On 1 February 2018 an internal document titled “4 Bed Room Tracker” was circulated between Dorothy Hanley (NHSL) and Janice Mackenzie (NHSL). The tracker was a condensed view of the EM, filtered only to show multi-bed rooms.

9.10.17 Within the tracker, Ms Hanley and Ms Mackenzie had contributed to the columns in which possible compromises, their impact and the rationale behind them were considered by NHSL. For “B1 PICU & HDU” it stated:

		Compromise 24/02/17 - Essential = room to be negative / balanced	Draft 01/02/18 Essential = room to be negative / balanced	Rationale
B1 PICU & HDU	1-B1-009	Essential	Would be very useful, but not essential for current planned operational use. May compromise future Service development needs	operationally cohorting within this area is impractical due to number of access/egress points and number of persons using through corridor
	1-B1-031	Essential	Not Essential	operationally cohorting within this area is impractical due to number of access/egress points and number of persons using through corridor
	1-B1-063	Essential	Essential	patients with same respiratory illnesses will be cohorted to ensure ease of observation and safe care

1-B1-065	Essential	Essential	pre-term babies with same respiratory illnesses will on occasion need to be cohorted to ensure ease of observation and safe care

9.10.18 On 8 February 2018 an updated General Risk Assessment for multi-bed rooms (initially carried out in July 2017, see 9.7.17) was circulated among the Project Team by Dorothy Hanley. Janice Mackenzie responded, stating:

> "I was planning to update further following the meeting with Brian and Graeme to reflect what is now on the spreadsheet Graeme produced and haven't done this yet. I will do tomorrow when back in the office and send to you all."

9.10.19 On 9 February Ms Mackenzie circulated the updated General Risk Assessment. It stated:

Summary of Risk by Ward/s (Essential to have ventilation changed)

Ward/s	Proposed Action	Risk Rating If No Change	Risk Rating if Change Implemented
RHCYP - PARU	All three 4 bedded rooms (A2- 028, 046 & 054)	15	4
RHCYP – Medical Inpts	All two 4 bedded rooms(C1.1-018 & 046)	10	3
RHCYP – Critical Care	One 4 bedded room low acuity HDU (B1-063) & 3 bedded room surgical neonates (B1-065)	9	3

Summary of Risk by Ward/s (Desirable to have ventilation changed)

RHCYP – Critical Care	4 bedded room intensive care (1-B1-009)	8	2
RHCYP – Surgical Long Stay Ward	All two 4 bedded rooms (C1.2-023 & 026)	6	2
RHCYP - Neurosciences	All two 4 bedded rooms (C1.3-011 & 013)	6	2
RHCYP – Medical Day Case Unit	One 3 bedded room (D9-022)	6	2

Summary of Risk by Ward/s (No change to ventilation)

RHCYP – Surgical Short Stay Ward	No change to ventilation in the two 4 bedded rooms	1	
RHCYP – Critical Care	No change to high acuity 4 bedded room (B1-031)	1	
RHCYP – Haematology Oncology Day Care	No change to ventilation in the two multi-bed day care areas	1	
DCN – Acute Care Ward	No change to ventilation in the two 4 bedded rooms	1	

9.10.20 In relation to Critical Care, and the three out of four multi-bed rooms still with positive pressure, it stated: "The Children's CMT [Clinical Management Team]

have confirmed that all three of the 4 bedded rooms to have negative/balanced pressure".

9.10.21 A two day 'Principles meeting' was held at The Sheraton on 20 and 21 February 2018. The purpose of this meeting was to establish what the final design and construction of the building would be, secure the programme and agree costs.

9.10.22 A document titled "Board preparation for the RHSC + DCN Principals Meeting" provided NHSL's position on the list of potential non-compliances. Included in the schedule was:

Item 4

"**Issue description**: Bedroom ventilation pressure regime and air change rate rooms for neutropenic patients

Category of Issue: Haematology and Oncology patients.

Current status: MPX have installed a non-compliant system, however the Board will be able to operationally manage around the issue.

Board opinion on Impact to Project Co (timing, cost, duration): Major - if the Board alter position on operational workaround.

Board opinion on Project Co Position: Non-negotiable

Board position: Negotiable

Possible Board Compromise: The Board accept a Project Co Change.

Impact of Compromise on the Board: Reduced operational flexibility. But manageable."

Item 7

"**Issue description**: 4 bed ventilation

Category of Issue: Patient safety risk - inability to cohort. Risk of infection

Current status: MPX confirmed current installation is compliant, Board disagree. MPX challenging Independent Tester interpretation of the contract, Noting the IT has since repeated his agreement with the Boards interpretation. ?

Board opinion on Impact to Project Co (timing, cost, duration): Major - mechanical works. High cost and several months work.

Board opinion on Project Co Position: Negotiable as Compromise design was prepared in Feb 17, however not progressed.
Board position: Negotiable, however must be completed before handover.
Possible Board Compromise: The Board accept a Project Co Change for a reduced air change rate, but achieve negative / balanced pressure. There are 20 rooms involved in total however on a risk analysis there are 13 for which sorting the problem is desirable, and 7 in which it is essential.
Impact of Compromise on the Board: Less dilution of airborne containments and odours in the room. Reduced operational flexibility and reduced flexibility for change of ward use in the future."

Item 13
"**Issue description**: Single bedroom ventilation air changes
Category of Issue: Patient Comfort.
Current status: MPX have installed a non-compliant system, Board awaits a Project Co Change.
Board opinion on Impact to Project Co (timing, cost, duration): Major - if the Board does not accept the Project Co Change.
Board opinion on Project Co Position: Non-negotiable
Board position: Negotiable
Possible Board Compromise: The Board accepts a Project Co Change for a reduced air change rate, but achieve negative / balanced pressure.
Impact of Compromise on the Board: Reduced patient comfort."

9.10.23 The Inquiry does not hold minutes of the meetings held on 20 and 21 February 2018.

9.10.24 NHSL escalated its concerns regarding progress with negotiations to the Finance and Resources Committee. Minutes of the F+R Commitee meeting on 21 March 2018 record:

"The Committee previously approved the recommendation by The Director of Finance to raise a court action seeking an interim order to force IHS Lothian

Ltd to design and install a compliant ventilation system to twenty number four bedded rooms with an air change rate of 6 ac/hour.

…

The Chair thanked Mrs Goldsmith for briefing the Committee on the situation. The Committee noted with concern the situation as it was at the moment. It was noted that court action for an interim order in relation to Four Bedded Room Ventilation, if served, would be done on Monday 26th March and that there would be a robust communications strategy around this. In the meantime the Cabinet Secretary's concerns would be clarified and a response from IHSL in relation to mediated discussion remained awaited. The Committee acknowledged the Chief Executive's awareness of the current situation."

9.10.25 By 27 March 2018 a list of 76 potential non-compliances were compiled into a spreadsheet, under the heading "Items discussed between the board and project co at principals meeting 20th and 21st Feb 18".

9.10.26 Regarding multi-bed ventilation, it stated:

"Item 7: 4 bed ventilation

Issue: In relation to ventilation pressure regimes, the Board believes Project Co's design for ventilation is non-compliant with the Board's Construction Requirements (BCRs), Project Co Proposal's (PCPs), SHTM Guidance and RDD FC comments. In addition, the Board believe the intake air change rate and the extract air change rate are non-compliant. From a clinical perspective, the principal concern to the Board in continuing with Project Co's proposed pressure regime design means there is an unacceptable risk of the spread of bacterial airborne infections into corridors and surrounding patient rooms (positive to the corridor). The Board requires the pressure regime to be balanced or negative to the corridor".

RAG: Amber

MPX response:

Position: MPX have QC opinion on contractual position. Subject to further discussion next week. NHS have changed their position on what is acceptable and reverted to all 20 rooms at 4 AC/H. This will have major consequences

Current Action(s): subject of further letter and discussion by the parties.

Close Out Date: 2nd March 2018 (Dependent on Outcome)"

9.10.27 The compromises detailed on the "Compromise List" for the single bedrooms ac/h and neutropenic ventilation items remained as per the Compromises Schedule on 24 July 2017[68].

9.10.28 Multiplex provided a response:

- "Item 4: Bedroom ventilation pressure regime and air change rate in rooms for neutropenic patients

  MPX response:

  Position: NHSL believe all single bedrooms should be able to cater for Neutropenic patients. MPX believe the department design meets the brief.

  Current Action(s): NHSL replied on 08 March 2018 15:19. MPX collating response.

  Close Out Date: Date 28th March (await Tuv-Sud to formulate response / HLM received)"

- "Item 13: Single bedroom ventilation air changes

  MPX response:

  Position: NHSL have rejected change. Albeit it was discussed and agreed in principle at mediation.

  Current Action(s): Board to confirm position on this change and whether fundamentally it will or will not accept 4 air changes per hour in the single

[68] See paragraph 9.7.31

bedroom. MPX reviewing its position on resubmitting the change or withdrawing."

9.10.29 On 4 April 2018 the first 'Project Technical Management Group meeting' was held. The purpose of the group was:

"To determine a definitive list of actions required to be completed/closed out to enable a completion date/programme to be achieved. Information taken from the following:

- Previous PMG notes/actions
- Change notes/actions
- Pre-Post PC meeting notes
- Board issued "Project Potential Non-Compliance list"

9.10.30 In attendance were:

- NHSL: Janice Mackenzie, Jackie Sansbury, Ronnie Henderson
- Mott MacDonald: Kamil Kolodziejczyk, Ian [surname unknown], Kelly Bain
- IHSL: Wallace Weir, David Martin
- Multiplex: Liane Edwards-Scott, John Ballantyne, Stuart Jackson, Colin Grindlay
- Bouyges: Paul Wandless, Paula Ramage

9.10.31 Actions from the meeting included:

Item 4: Bedroom ventilation for neutropenic patients

"Board to draft proposed wording for MPX review and incorporation into change"

Item 7: 4 bed ventilation

"14 rooms at 4 a/c confirmed. Room numbers to be confirmed and updated on drawings. (MPX)"

Item 13: Single bedroom ventilation

"Technical solution agreed at 4a/c. Change wording to be concluded (via change list)"

9.10.32 At the Programme Board meeting of 15 May 2018 it was noted that the DRP (dispute resolution procedure) had been avoided and a Settlement Agreement would be pursued. Notes of the discussion included:

> "Operational risks as a result of compromises made are mitigated to the extent that they do not adversely effect clinical specifications and requirements as outlined in BCR's."

9.10.33 By 5 July 2018, resolutions to three ventilation disputes (Items 4, 7 and 13) had been agreed in an early draft "Technical Schedule" and the items were noted as being closed. An excerpt of SHTM 03-01 Table A1 was included in the early draft for Item 4, but it did not include the recommendations for Critical Care areas.

9.10.34 The 'Ventilation Amendment Proposal to Achieve Room Balance' was updated on 6 June 2018. This version retained air changes at 4ac/h but did not incorporate a supplement of 2ac/h from openable windows as Project Co Change 51 had done.

9.10.35 The agreed technical solution in the four Critical Care multi-bed rooms (without ensuite facilities) was:

> "Retain the supply ventilation at 4ac/hr. Introduce new general extract ductwork and grille into the room to provide 4ac/hr overall. The existing general extract ductwork currently serving the room has been increased in size and another grille added to it to serve the room. This will achieve a balanced room pressure. New branch duct to be connected locally into the existing general extract ductwork main…"

9.10.36 The agreed technical solution in 10 other multi-bed rooms (with ensuite facilities) was to retain the supply ventilation at 4ac/h and ensuite facilities at 10ac/h or 17ac/h. New general extract ductwork and grilles were to be introduced in these rooms to provide 4ac/hr overall.

9.10.37 No changes were instructed in six out of 20 multi-bed rooms, which would remain positive to the corridor, including the two multi-bed rooms in Haematology & Oncology.

9.10.38 The works required in multi-bed rooms were being progressed by MPX as "Without Prejudice Works" ["WPW"] in the absence of a signed settlement agreement.

9.10.39 At the Programme Board meeting of 16 July 2018 the risk register recorded that the HV/ 4 bed room ventilation risk level was "low".

> **Controls in place:** "IHSL are undertaking works to ensure compliance as part of settlement agreement under negotiation"
> **Adequacy of controls:** "Satisfactory; controls adequately designed to manage risk and working as intended"
> **Notes:** "Controls revised with Risk Handler and risk level significantly reduced."

9.10.40 On 25 July 2018, NHSL submitted a Supplementary Business Case to the Scottish Government to support the proposed commercial agreement. The proposal was approved by Christine MacLaughlin, SG Director of Health Finance, on 8 August.

9.10.41 By 6 September 2018, HFS were involved in developing lessons learned from the QEUH project. Lessons compiled in a PowerPoint presentation included:

- **"Client Briefing**
    - Lack of accurate detail on guidance
    - Reinventing design solutions (no learning)
    - No specification of materials or quality
    - Deliverables at handover not specified
    - No checks on project deliverables at milestones (FBC, Design, Installation, Handover)
    - Estates, FM and Infection Control teams not involved
- **Design/equipment selection**

  - Designs tend to be “copy-and-paste”
  - Insufficient technical skills in design teams
  - Thermal models developed too late and do not inform the design solution
  - Contractor design portion higher and they don’t have the skills or indemnity to follow through
  - Significant levels of overdesign to avoid risk
  - Taps and basins selected by architect on aesthetics rather than engineering
  - Avoidance of guidance to save money
  - Value engineering has become cheapening of the design
  - Derogations used to remove technical aspects from projects and not technically equivalent/improvement on the original guidance
  - Estates, FM and Infection Control teams not involved.
- **Installation**
  - Supervision poor
  - Installation does not meet best practice
  - Contractors not trained in healthcare specifics (i.e. not competent persons by healthcare definitions)
  - Designers not being paid to attend site during installation phase
  - Nonexistent ventilation
  - Technical advisors inconsistent
  - Certain aspects physically squeezed in so as to make maintenance difficult if not impossible.
  - Estates, FM and Infection Control teams not involved
- **Commissioning**

  - Commissioning is poor and do not reflect the requirements of healthcare facilities
  - Chemicals used do not disinfect the systems
  - Chemicals used invalidate warranty of the taps and other components
  - Water systems are being handed over microbiologically contaminated
  - Time allocated to properly commission the mechanical and electrical services is not protected.
  - No understanding of electrical systems in theatres/critical care areas
  - Failures not challenged
  - Safe, adequate access for all services (including IPS and ward isolation valves)
  - Estates, FM and Infection Control teams not involved
- **Handover**
  - Project success is measured only as a function of time and money.
  - No formal acceptance of engineering systems
  - No formal assurance of engineering systems from contractor
  - Lack of suitable and appropriate Client training on systems
- **Post-occupancy**
  - […]"

9.10.42 'Project Co Change 50' (Disputed Works Schedule Appendix 1 Item 4) for neutropenic patient rooms was produced by IHSL on 28 August 2018. It stated:

> **"Proposed Project Co Change**
> Project Co are not proposing to alter the design. However, the Boards view is that the design is non-compliant with Schedule Part 6, Sub Section C, Clause 2.1 (Approach to Design) and Clause 8 (Mechanical & Electrical Engineering Requirements) of and Sub Section D, C1.4 Haematology & Oncology Inpatients & Day Care Clinical Output Based Specification and SHTM 03-01 (Ventilation for healthcare premises Part A – Design and validation) Table A1 (Appendix 1: Recommended air change rates).
>
> In summary, the Haematology and Oncology Department treat a range of medical issues which can be dealt with in a number of situations. The

Financial close design proposes this solution as a mix of single bedrooms and full isolation suites. The Board would have preferred all single rooms in haematology and Oncology to have been suitable for neutropenic patients.

Reason

Project Co's Financial Close design assigned balanced pressure to the neutropenic single bedrooms. The conclusion of design workshops held throughout the Construction Phase confirmed that, a balanced pressure regime will be managed operationally and is acceptable on the basis that 5 isolation suites are provided in accordance with SHTM 03-01.

Implications

Project Co require relief from the following:

- Section 2.1 (Approach to Design) of Sub-Section C (General Requirements) of Section 3 (Boards Construction Requirements) of Schedule Part 6(Construction Matters), which states:

  Project Co shall take cognisance of all the architectural and building services implications of the requirements described in the Board's
  Construction Requirements in this Schedule Part 6 Section 3 Sub-Section D (Specific Clinical Requirements) and Sub-Section E (Specific Non-Clinical Requirements).

- Section 8 (Mechanical & Electrical Engineering Requirements) of Sub-Section C (General Requirements) of Section 3 (Board's Construction Requirements) of Schedule Part 6 (Construction Matters), which states:

  Project Co shall take cognisance of all the building services implications of the requirements described in Section D (Specific Clinical Requirements) and Sub-Section E (Specific Non-Clinical Requirements) of Sub-section C of the Board's Construction Requirements.

- Section 1.1.1 (Scope of the Service) of C1.4 (Haematology & Oncology Inpatients & Day Care Clinical Output Based Specification) of SubSection D (Specific Clinical Requirements), which states:

  The paediatric Haematology and Oncology Unit, (Inpatient and Day Care services), is to provide a 24 /7 service for the care of all patients with cancer or blood dyscrasia (a pathologic condition in which any of the constituents of the blood are abnormal in structure, function, or quality, as in leukaemia or haemophilia). Patients and families will attend for assessment, investigations, treatment, ongoing care planning, and palliative and end of life care.

- Table A1 (Appendix 1: Recommended air-change rates) of Scottish Health Technical Memorandum (SHTM) 03-01, Ventilation for healthcare premises Part A – Design and validation, as follows:

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	

Due to the current design, the Board is required to prepare specific standard operating procedure for management of infection and patients not using the isolation rooms within this department."

9.10.43 On 26 September 2018, a Project Technical Management Group meeting was held. Item 7 for multi-bed ventilation had been removed from the 81 point list. Only one ventilation action remained: "Item 4; Bedroom ventilation for neutropenic patients; Wording to be agreed between IHSL and NHSL."

9.10.44 Under a second heading, "IHSL Change Requests", was:

- Item 50: "Neutropenic Patients Ventilation - Renamed: Disputed Works Schedule Appendix 1 Item 41. Include in SA pack. [Kamil Kolodziejczyk] to advise on blank document issued"
- Item 51 "Single Bedroom Ventilation - Renamed: Disputed Works Schedule Appendix 1 Item 13. Include in SA pack. Text agreed".

9.10.45 Further Project Technical Management Group meetings to work through the 81 point list in the settlement negotiations were held on 3 October, 17 October and 24 October 2018.

9.10.46 'Project Co Change 51' was produced by IHSL on 12 December 2018. It stated:

> **"Detail of change**
> Table A1 of Appendix 1 : Recommended air-change rates of SHTM 03-01: Part A - Design and Validation indicates that single room should be provided with 6 ac/h and 0 or -ve pressure. Single room WC should be provided with 3 ac/h and -ve pressure.
>
> **Project Co proposes to:**
> 1. 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); and
> 2. Increase the mechanical air change ventilation rate within single bedroom WCs from 3 air changes per hour (3 ac/hr) to minimum 10 air changes per hour (10 ac/hr).
>
> **Reason**
> Project Co's design philosophy for bedroom ventilation is based on mixed mode operation where mechanical supply ventilation providing 4ACH is then supplemented by openable windows to provide a passive means of ventilation (where access to an openable window is available).
>
> **Implications**

As there is no general extract proposed in single rooms, Board will not be able to extract heat generated within the space from the air extracted through the en-suites."

9.10.47 Project Co Change 51 did not detail the solution in single rooms designed with 4ac/h supply and no access to an openable window, such as Critical Care.

9.11 **The letter from DG Health & Social Care**

9.11.1 On 25 January 2019 the Director General of Health and Social Care, Paul Gray directed all NHS Boards to confirm that their critical ventilation systems were compliant with SHTM. This was to provide assurance in response to an ongoing HAI incident linked to the ventilation systems at the Queen Elizabeth University Hospital (QEUH) in Glasgow. It was further noted that all responses would be co-ordinated by HFS.

9.11.2 On 31 January, a representative of IHSL wrote to Brian Currie confirming that "all ventilation systems have been designed, installed and commissioned in line with SHTM-03-01 as required". The response does not detail Project Co Changes 50 and 51 or agreed derogations from SHTM 03-01.

9.12 **Settlement Agreement**

9.12.1 By the Programme Board meeting on 6 February 2019 the HV/4 bed ventilation risk was removed from the Project Risk Register. The risk associated with "Performance of Project Co" remained a high, but 'non-compliance' was no longer part of the risk description.

9.12.2 The Settlement Agreement was signed on 22 February 2019 by Susan Goldsmith (NHSL) and Matthew Templeton (IHSL). It included:

- A technical schedule of 81 disputed items and agreed resolutions

- A “post-completion works” schedule, including three key technical issues to be resolved after completion during NHSL’s commissioning phase (fire detection, isolation room heating, foul drainage)
- A ‘joint completion programme’ outlining the key milestones/deliverables for construction activities to continue alongside NHSL’s commissioning activities
- A variation to the Independent Testers contract to enable the Independent Tester to:
    i. issue the Certificate of Practical Completion based on the agreed technical solutions set out in the Settlement Agreement; and
    ii. certify when the technical solutions of the three outstanding material technical matters have been constructed, tested and commissioned (‘Final Certification’)

9.12.3 Accordingly, the Independent Tester issued the Practical Completion Certificate on the same day. This had the effect of handing the RHCYP/DCN over to NHSL.

9.12.4 Within the technical schedule (Schedule 1 Part 1 of SA1), a ‘Description of the Agreed Resolution’ for Item 4 (neutropenic patients – single rooms) provided:

> “The design and construction solution for 12 single bed rooms within the Haematology and Oncology Department has been approved through Schedule Part 8 (Review Procedure) and agreed by Project Co and the Board as resolving the Dispute. as set out in Disputed Works Schedule Appendix 1 Item 4. For clarity it is confirmed that the balanced pressure solution agreed is in accordance with the schedules reproduced in Section 1 of Disputed Works Schedule Appendix 1 Item 4 (Formally Project Co Change 050) - Neutropenic Patients Ventilation.”

9.12.5 ‘Project Co Change 050’ as incorporated into the settlement agreement relieved Project Co of its obligation to comply with the SHTM recommendations for neutropenic patient areas[69].

[69] see paragraph 9.10.42

9.12.6 A 'Description of the Agreed Resolution' for Item 7 (multi-bed rooms) provided:

> "The Reviewable Design Data noted below for this item has been given status Level B in accordance Schedule Part 8 (Review Procedure).
>
> 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. The remaining 6 No 4 bed wards remain as per the environmental matrix, WW-XX-XX-DC-XXX-001 Rev 11 [Environmental Matrix, Rev 11] and rev 07 of the schedule WW-SZ-XX-DC-XXX-010 ['Ventilation amendment proposal to achieve room balance, Rev 7']."

9.12.7 A 'Description of the Agreed Resolution' for Item 13 (single bedroom ac/h) provided:

> "The Board/Project Co agree this item is closed, and the agreed technical solution approved through Schedule Part 8 (Review Procedure) and, agreed by the Board and Project Co as resolving the Disputes as set out in Disputed Works Schedule Appendix 1 Item 13."

9.12.8 The Inquiry understand that 'Disputed Works Schedule Appendix 1 Item 13' is formally 'Project Co Change 051'[70]. It relieved Project Co of its obligation to comply with the SHTM recommendation for single room air change rates. The change was applied in Critical Care areas and Neutropenic patient areas for which SHTM 03-01 recommended 10ac/h mechanical ventilation.

9.12.9 At this time (February 2019), the Scottish Engineering Technology Advisory Group ('SETAG') chaired by George Curley, NHSL Director of Operations (Facilities), was convening a national Short Life Working Group ('SLWG'). The remit of the SLWG was:

- "To gain an understanding of the nature and transmission routes of the possible infections relating to ventilation systems in healthcare facilities

[70] See paragraph 9.10.46

- To learn lessons from recent incidents and use this to improve guidance for all users of healthcare facilities
- Make recommendations for policy, training, guidance, procedures, assurance and accountability etc
- Make recommendations for the re-write of HTM 03-01 (ventilation guidance)."

9.12.10 Membership of the SLWG (among others from various Health Boards) included:

- George Curley (NHS Lothian)
- James Picken (NHS Lothian)
- Ian Powrie (NHS Greater Glasgow and Clyde)
- John Raynor (Turner Pes)
- Malcolm Thomas (Consultant in Healthcare Ventilation)
- Eddie MacLaughlin (Assistant Director, Health Facilities Scotland);
- Chris Lyon (NSS)
- Ian Storrar (NSS)
- (Supported by) Anette Rankin (NSS)

9.12.11 Of the members above, John Raynor was authorising engineer for NHSL on the RHCYP project. George Curley (Director of Operations – Facilities, NHSL) was also a member of the RHCYP Programme Board. Ian Storrar (HFS) had previously provided advice to NHSL regarding ventilation specifications for RHCYP multi-bed rooms

9.13 **After Handover**

9.13.1 On 11 March 2019 Judith Mackay, Director of Communications, Engagement and Public Affairs for NHSL emailed the project team in anticipation of "questions from the media today about the formal involvement of Infection Control expertise in the design of RHCYP/DCN in the wake of criticisms about the apparent lack of documented evidence of their involvement in the design/commissioning/handover of QEUH".

9.13.2 Project Director Brian Currie responded:

"We can confirm that the Board's Infection Control have been involved from the early stages in the project including competitive dialogue, evaluation of some parts of the submission; actively contributing with the clinical teams to the clinical area design development and approval process reviewing relevant specifications for items such as sanitary ware, flooring, vent coverings etc. We have been fortunate in that there has always been a nominated IPCN for Reprovision and they have been an integral part of the process participating in key meetings and, if they could not be present at meetings, taking the opportunity to comment on meeting outputs where required and following up on issues in consultation with project and other clinical staff. Throughout each of the stages of the project they have provided expert advice on elements such as isolation room design and functionality, room ventilation design, and HAI Scribe. They have also joined project team personnel in reviewing the rooms for adherence to design brief, quality of finish and functionality, (including ease of cleaning and compliance with SHTM and HEI guidance)".

9.13.3 On 12 March the IPCT Head of Service, Fiona Cameron responded directly to Brian Currie:

"Alex sent on your email I am unsure what HEI guidance you are referring to. Healthcare Environment Inspectorate do not have standards for buildings. I can confirm any reviews, recommendations IPC made would be in alignment with the SHTM guidance by HFS for building works. I agree we did have involvement and a dedicate person i.e. our HAI SCRIBE lead involved. However as per communications with Alex IPC were not involved in handover as per SCRIBE guidance recommendations. I cannot reliably say if all our recommendations were accepted".

9.13.4 That email goes on to raise specific concerns about ventilation:

"I am aware as a result of the cancelled FOI there was discussion re air exchanges rates perhaps being suboptimal in clinical areas and we don't know what the outcome of that report was. The HAI SCRIBE documents or minutes of your project meetings should be able to confirm. Another example IPCT can only assume the building engineer who accepted the building on

behalf of NHS Lothian saw evidence of theatre validation See p114-124 of SHTM 03-01. IPC to the best of my knowledge have not seen a validation report (section 8.64-8.65 of SHTM 03-01)…"

9.13.5 The Inquiry team has not been able to identify the "cancelled FOI" referenced by Ms Cameron in her email.

9.13.6 On 14 March 2019, regarding the involvement of IPCT at handover, Mr Currie responded:

> "On further reading of the chain of emails from Lindsay Guthrie to Alex can we just advise that Sarah Jane Sutherland, Lead HAI Scribe Advisor, and IPCN Emma Collett last visited the project on Monday 28th January, 2019 at 9.15am.
>
> The purpose of this visit was to reassure Sarah Jane that Janette (recently retired HAI Scribe advisor) was fully involved in the room review process and in anticipation of an imminent completion or handover of the facility. Janette was provided with the timetable for our first and second round of reviews and she chose which ones she wanted to attend. To ensure a consistent approach was taken to the reviews a checklist of what to look at was developed, which was discussed with Janette. The project team have been consistently checking that previous observations made by them have been addressed and to identify any further observations that have occurred since the 2nd room reviews through to completion.
>
> A further meeting on 27th February with one of the project's Commissioning Managers also took place to review previous documentation signed off by Janette Richards.
>
> However, it is accepted that given the uncertainty of the actual completion date, to almost the day before it occurred, ICPT were not involved in the actual day of completion. It is worth emphasising that patients will not occupy the facility until 9th July, 2019. It is our intention to carry out a pre handover check[71] when all construction activity by IHSL/MPX completes in June.

[71] HAI Scribe Stage 4 (Pre-Handover Check)

We can confirm that the Board's Infection Control have been involved from the early stages in the project including competitive dialogue, evaluation of some parts of the submission; actively contributing with the clinical teams to the clinical area design development and approval process reviewing relevant specifications for items such as sanitary ware, flooring, vent coverings etc.

We have been fortunate in that there has always been a nominated IPCN for Reprovision and they have been an integral part of the process participating in key meetings and, if they could not be present at meetings, taking the opportunity to comment on meeting outputs where required and following up on issues in consultation with project and other clinical staff.

Throughout each of the stages of the project they have provided expert advice on elements such as isolation room design and functionality, room ventilation design, and HAI Scribe.

They have also joined project team personnel in reviewing the rooms for adherence to design brief, quality of finish and functionality, (including ease of cleaning and compliance with SHTM ~~and HEI guidance~~) and advised us on aspects of the building that they felt HEI inspectorate may consider during any future inspections."

9.13.7 Regarding the sub-optimal air change rates in clinical areas, Mr Currie does not address the "cancelled FOI", but states:

"During the review of the environmental matrix it was identified that air exchange rates within the single and 4 bedded rooms did not meet the recommendations of SHTM 03-01. Risk assessments were carried out and discussed with infection control staff (sample attached). A workable solution has been implemented which includes mixed mode ventilation where natural ventilation provides the difference between 4 and 6 ac/hr".

9.13.8 The Inquiry team have not seen the 'sample attached'. The only risk assessment circulated as part of this email chain appears to have been the risk assessment carried out for the pressure regime in multi-bed rooms, which does not address the reduced air change rates.

9.13.9 On 27 March, plans were made for the completion of the Stage 4 HAI Scribe review. An email from Donald Inverarity to Sarah Jane Sutherland stated:

> "Hi Sarah,
>
> As part of this can you ensure that for all the isolation rooms in the new building that we are provided with details of the air pressures in the room and anteroom or corridor and ensure that there has been some assessment of air flows and pressures in the room and anteroom, particularly when doors are open. I had been speaking to some of the ID consultants at QEUH and the Glasgow children's hospital yesterday and they explained that all their isolation rooms were being refitted as the original design didn't seem to provide appropriate pressures and air flows when the rooms were occupied."

9.13.10 In May 2019, the Ventilation SLWG issued its findings in a paper entitled "Ventilation Guidance Recommendations". Included among the recommendations in the paper was:

- "It should be noted that "derogations" to the guidance may only be put forward if there is a sound technical reason provided for deviating from what the solution described in the guidance is (note this applies to ALL applicable guidance not just ventilation). Derogations should not be accepted if there is a lack of technical evidence."
- "It is considered that the guidance should focus on 4 main areas within healthcare settings
    - Indirect healthcare (eg, offices, dining rooms etc.)
    - Non critical (eg, General patient/ clinical areas)
    - Critical (eg, Theatres, ICU etc.)
    - Specialist (eg, aseptic facilities, category 3 and 4 rooms, infectious diseases unit etc)".
- "The guidance requires to provide definitive requirements in respect of:
    - Air change efficiency, and contaminant removal effectiveness
    - Pressure cascades within critical or specialist areas

  These requirements must be mandatory with no derogation accepted in normal circumstances."

- "The guidance for critical and specialist areas must be more specific and detailed and should ensure that the ventilation design fully supports the desired clinical activity and outcomes".
- "It is anticipated that non healthcare guidance and non critical health guidance can be derived from, or sign posted to existing guidance, e.g. CIBSE guidance. The SHTM guidance should make specific comment around the areas in which natural ventilation is permissible and the air change efficiency and contamination removal effectiveness required in specific area...".
- "All too often the issues are presented as a fait accompli where remedial action cannot reasonably be undertaken. It is essential that sufficient time and properly qualified and experienced resource is utilised to draft the Board or Authority's Construction Requirements (BCRs/ACRs)".

9.13.11 On 1 June 2019, the HAI Scribe Stage 4 checklists were completed. The review team consisted of

- Sarah Jane Sutherland (IPCT, Lead HAI Scribe Adviser)
- Lindsay Guthrie (IPCT)
- Ronnie Henderson (Project Team)
- Dorothy Hanley (Project Team)
- Janice Mackenzie (Project Team)
- "F.Cowan" [not currently known to the Inquiry]

9.13.12 In the 'Additional Notes' section room location references were provided, to be denoted by an asterisk:

*Lochranza – Haem/Onc;

*PICU – Paediatric Critical Care;

*DCN Acute Care".

9.13.13 Against point 4.26, "Is the ventilation system designed in accordance with the requirements of SHTM 03-01?" the review team selected 'yes', with an asterisk and a handwritten note alongside reading "with derogation 4ac/h - single rm - risk assessed and approved". The Inquiry Team understands the asterisk to indicate that

the ‘risk assessed and approved’ derogation to air change rates applied specifically to the Haematology/Oncology ward, Paediatric Critical Care and DCN Acute Care.

Appendix

Contractual Provisions relevant to RDD

1. A separate paper on the Project Agreement has been distributed to CPs.

2. In the Project Agreement, Reviewable Design Data (RDD) means

   "the Design Data listed at Section 5 (Reviewable Design Data) of Schedule Part 6 (Construction Matters)"

3. Part 3 "Design and Construction ", Section 12 "The Design Construction and Commissioning Process", contains a number of clauses relevant to the RDD process, under subheadings including "Overall Responsibility", "Board Design Approval", "Rectification of Project Co's Proposals".

4. Under the subheading "Overall Responsibility"

   "12.1 Project Co shall carry out the Works:

   12.1.1 so as to procure satisfaction of the Board's Construction Requirements;

   12.1.2 in accordance with Project Co's Proposals; and

   12.1.3 in accordance with the terms of this Agreement.

   12.2 To avoid doubt, the obligations in Clauses 12.1.1, 12.1.2 and 12.1.3 are independent obligations. In particular:

   12.2.1 the fact that Project Co has complied with Project Co's Proposals shall not be a defence to an allegation that Project Co has not satisfied the Board's Construction Requirements; and

   12.2.2 the fact that Project Co has satisfied the Board's Construction Requirements shall not be a defence to an allegation that Project Co has failed to comply with Project Co's Proposals."

5. Under the subheading “Board design approval”, clause 12.5 and 12.6 states:

> “12.5 The Board confirms that, as at the date of this Agreement, it has reviewed such of Project Co's Proposals as have been initialled by the Board and that, subject to any qualifications and/or comments notified by the Board to Project Co in writing and set out in Section 9 *(Board's Qualification/Comments in respect of Operational Functionality requirements)* of Schedule Part 6 (*Construction Matters*) such proposals satisfy the Board's requirements in respect of Operational Functionality, so far as can reasonably be determined given the level of detail of Design Data which has been disclosed to the Board.
>
> 12.6 Project Co shall develop and finalise the design and specification of the Works and the Board shall review the Reviewable Design Data in accordance with Schedule Part 8 (*Review Procedure*) and the provisions of this Clause 12.6:
>
> 12.6.1 Project Co shall submit the Reviewable Design Data and the design of any Changes developed in accordance with the procedure set out in Schedule Part 16 (*Change Protocol*) to the Board's Representative for review under Schedule Part 8 (*Review Procedure*). Project Co shall not commence or permit the commencement of construction of the part or parts of the Facilities and/or Retained Estate Handback Infrastructure to which such Reviewable Design Data relates until it has submitted the appropriate Reviewable Design Data and either it is confirmed by the Board's Representative that Project Co is entitled to proceed with construction in accordance with paragraph 3.3 of Schedule Part 8 (*Review Procedure*) or Project Co is:
>
> (a) disputing the status of such Reviewable Design Data pursuant to paragraph 1.3.1 or paragraph 4.3 of Schedule Part 8 (*Review Procedure*); and
>
> (b) proceeding at risk pursuant to paragraph 1.3.2 of Schedule Part 8 *(Review Procedure).*

12.6.2 with effect from the date at which any item of Reviewable Design Data is or becomes an Approved RDD Item in accordance with Schedule Part 8 (*Review Procedure*), such Approved RDD Item shall for the purposes of this Agreement be deemed to have satisfied the requirements of the Board in the manner and to the extent set out in, Table A in Appendix 1 of Schedule Part 8 (*Review Procedure*)…"

6. Under the subheading "Rectification of Project Co's Proposals", clause 12.7 states:

"12.7 Without prejudice to Clause 12.1, if it should be found that Project Co's Proposals do not fulfil the Board's Construction Requirements, Project Co shall at its own expense, and in accordance with Clause 12.8 below, amend Project Co's Proposals and rectify the Works or any part affected. Such amendment and rectification shall have the effect that:

12.7.1 Project Co's Proposals shall satisfy the Board's Construction Requirements; and

12.7.2 following the amendment or rectification, the structural, mechanical and electrical performance of the Facilities and/or Retained Estate Handback Infrastructure will be of an equivalent standard of performance to that set out in Project Co's Proposals prior to their amendment or rectification (for the purpose of this comparison disregarding the fault which required the amendment or rectification to be made)."

"12.8 Where Clause 12.7 applies, Project Co shall submit its proposal for amending Project Co's Proposals and rectifying the Works (or any part affected) to the Board's Representative for review under Schedule Part 8 (*Review Procedure*) and shall not amend Project Co's Proposals or commence or allow the commencement of the rectification of the Works (or any part affected) until it is permitted to proceed in accordance with Schedule Part 8 (*Review Procedure*)."

7. Schedule Part 8 of the PA, paragraph 1.2 provides the obligations of Project Co and the Board in progressing Reviewable Design Data through the Review Procedure:

> "1.2.1 As soon as possible and, if the Submitted Item comprises:
>
> (a) an item of Reviewable Design Data;
>
> (b) a revised Programme submitted pursuant to Clause 14 (Programme and Dates for Completion); or
>
> (c) a document or proposed course of action submitted in the case of (an emergency)
>
> within fifteen (15) Business Days of the date of receipt of a submission (or resubmission, as the case may be) of the Submitted Item to the Board's Representative (or such other period as the parties may agree), the Board's Representative shall return one copy of the relevant Submitted Item to Project Co endorsed "no comment" or (subject to and in accordance with paragraph 3 (Grounds for Objection)) "comments" as appropriate".

8. Should the Board fail to meet the agreed review period following receipt of a submission to the Review Procedure by Project Co: "then the Board's Representative shall be deemed to have returned the Submitted Item to Project Co endorsed 'no comment' (and, in the case of Reviewable Design Data, endorsed 'Level A - no comment')".

According to paragraph 1.3:

> "1.3 If the Board's Representative raises comments on any Submitted Item in accordance with paragraph 3 (Grounds for Objection) he shall state the ground upon which such comments are based and the evidence or other information necessary to substantiate that ground. To the extent that the Board's Representative comments on a Submitted Item other than on the basis set out in this Schedule Part 8 (Review Procedure), or fails to comply with the provisions of this paragraph, Project Co may, in its discretion, either:

1.3.1 request written clarification of the basis for such comments and, if clarification is not received within ten (10) Business Days of such request by Project Co, refer the matter for determination in accordance with Schedule Part 20 (Dispute Resolution Procedure); or

1.3.2 in the case of a Submitted Item comprising Reviewable Design Data only, at its own risk, and without prejudice to Clause 12 (The Design, Construction and Commissioning Process), proceed with further design or construction disregarding such comments pending the outcome of any reference to the Dispute Resolution Procedure that may be made by either party."

9. The levels of endorsement are described in paragraph 4.3 and include:

a) "Level A – no comment" - An endorsed document with no further comments/amendments.
b) "Level B - proceed subject to amendment as noted"; Project Co to make amendments as noted and continue next level of design or to implement the works without re-submitting documents
c) "Level C - subject to amendment as noted"; do not act upon the Submitted Item, amend the Submitted Item in accordance with the Board's Representative's comments and re-submit the same to the Board's Representative within 10 business days
d) "Level D - rejected"; do not act upon the Submitted Item, amend the Submitted Item and re-submit the Submitted Item to the Board's Representative within 10 business days.

10. In accordance with the Review Procedure any "Level A" or "Level B" approval which entitled IHSL to commence construction (subject to any comments from NHSL) did not relieve IHSL of compliance with its other obligations under the Project Agreement.

SCOTTISH
HOSPITALS
INQUIRY

Provisional Position Paper 9

The Governance Structure within the project to construct the Royal Hospital for Children and Young People and Department of Clinical Neurosciences, Edinburgh

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Glossary

ADS	Architecture & Design Scotland
ARHAI	Antimicrobial Resistance and Healthcare Associated Infection
Board or NHSL Board	Unless the context otherwise requires, the Board of NHS Lothian. See section 1.2 below.
CIG	Scottish Government Capital Investment Group
CPT	Health Facilities Scotland Capital Planning Team
FBC	Full Business case
HAI PU	Scottish Government Healthcare Associated Infection Policy Unit
HFS	Health Facilities Scotland
HIIAT	Hospital Infection Incident Assessment Tool
HIS	Healthcare Improvement Scotland
HPS	Health Protection Scotland
HSCMB	Health and Social Care Management Board
IAF	Independent Assurance Framework
IHSL	IHS Lothian Limited, the company with which NHS Lothian entered into the project agreement for the design, build, finance and maintenance of RHCYP/ DCN
IIB	Scottish Government Infrastructure Investment Board
IJB	Integrated Joint Boards
IM&T	Information Management & Technology
IMT	Incident Management Team
IPCT	Infection, Prevention and Control Team
KSR	Key Stage Reviews
LCIG	Lothian Capital Investment Group
LDP	Local Delivery Plan
Multiplex	Brookfield Multiplex Construction Europe Limited, the construction contractor appointed by IHSL to design and build the new RHCYP/ DCN.
NDAP	NHS Scotland Design Assessment Process
NFD	Non-Profit distribution public private partnership model
NHSL	NHS Lothian
NSS	National Services Scotland
OBC	Outline Business Case
PAC	Public Audit Committee

PID	Public Interest Director
Project Agreement	the agreement between NHSL and IHSL dated 12 and 13 February 2015 for the design, build, finance and maintenance of the new RHCYP/ DCN building at Little France
Project Co / Project Company	IHSL
RHCYP/DCN	Royal Hospital for Children and Young People and Department of Clinical Neurosciences, Edinburgh
RHSC	Royal Hospital Sick Kids (reference used for the period before NPD when projects being progressed separately)
SA1	Supplementary Agreement 1
SCIM	Scottish Capital Investment Manual
SFT	Scottish Futures Trust
SG	Scottish Government
SGHD	Scottish Government Health Directorate
SHTM	Scottish Healthcare Technical Memorandum
SO	Standing Order
SOP	Standard Operating Procedure
SPFM	Scottish Public Finance Manual
SRO	Senior Responsible Officer

1. Introduction and Purpose of This Paper

1.1 Introduction and Purpose

1.1.1 This paper explains the governance structures in place during the project to construct the Royal Hospital for Children and Young People and Department of Clinical Neurosciences, Edinburgh (RHCYP/DCN). The period that is examined in this paper is approximately September 2005 to March 2021.

1.1.2 In this paper, a broad view is taken of governance. Governance can broadly be defined as the arrangements by which organisations and/or processes are authorised, controlled or held to account. Governance for the purpose of his paper includes corporate governance, national governance and the day-to-day management structure. While it may, in theory at least, be possible to draw distinctions between, for example, governance and management or governance and assurance, those distinctions can be arbitrary or imprecise, and therefore "governance" is not taken in this paper in its purest sense (not including management or assurance). In any event, it would be difficulty to give an explanation of (for example) assurance structures without dealing with the management structures that they are intended to assure.

1.1.3 However, there are limitations on the approach taken to governance which should be noted at the outset. First, in this paper, it is the governance of the project by NHS Lothian and other public sector bodies that is the focus – the paper does not attempt to explain how the contractor governed and managed its responsibilities during the project. This is consistent with the Inquiry's terms of reference which require the Inquiry to examine "Whether … NHS Lothian put in place governance processes to oversee the projects and whether they were adequate and effectively implemented, particularly at significant project milestones…".

1.1.4 Second, this paper inevitably focuses on the formal aspects of the governance structures. It would, however, be a mistake to assume that those formal structures were the sole means by which governance took place. For example, many of the individuals involved in the project held regular meetings outside the structures discussed in this paper. For example, the Senior Responsible Officer, Project Director and the NHSL Director of Capital Planning and Estates held regular

meetings to review progress, consider risks and provide oversight.[1] Some of these meetings would involve representatives of several of the bodies referred to in this paper.[2] It would be extraordinarily difficult to document every single meeting that took place and to assess what contribution it made to governance outwith the formal structures discussed in this paper, though it would be a mistake to assume that they did not take place.

1.1.5 Third, the paper inevitably focuses on the written record of the various bodies comprising the formal governance structures discussed in this paper. There are potential deficiencies in, for example, the minutes of meeting which may not record the entire discussion that took place or reflect nuance in discussion. Similarly, matters may not be recorded in minutes for reasons of confidentiality. Indeed, this has been alluded to by witnesses to the Inquiry:

> "Issues would be discussed at Board level; they would also be discussed at the Finance and Resources Committee. This is not always necessarily evident through the minutes because these were clearly very commercial discussions and issues that would not have helped the Board's negotiating position if they were in the public domain at that time. Therefore, the minutes might capture that there was a discussion about the progress being made on the Project, but not provide the detail. But they would certainly be actively discussed with Finance & Resources Committee members."[3]

1.1.6 This implies no criticism on those responsible for the creation of the minutes and similar documents. But the Inquiry can only proceed on the basis of the material contained in those documents, supplemented by statements of witnesses like that quoted above, as the evidence of how the governance structures actually worked in practice.

1.1.7 During the period of the planning and build of RHCYP/DCN (a total period of over 15 years), the governance structure evolved and changed. The structure was

[1] Witness Statement - Susan Goldsmith - 09.05.2023 | Hospitals Inquiry at paragraphs 4 – 5.
[2] See for example Witness Statement - Susan Goldsmith - 09.05.2023 | Hospitals Inquiry at paragraph 52.
[3] Witness Statement - Susan Goldsmith - 09.05.2023 | Hospitals Inquiry at paragraph 50.

complex and involved several key individuals and groups, many of which changed their name and/or role during the project (and the identities of some individuals changed). Part 1 of this paper, after a brief introduction explaining the overarching structure of the governance of the RHCYP/DCN project and sets out a narrative explaining the governance structure as it applied during five key stages of the project. The internal governance structure of NHS Lothian is examined alongside the national oversight and advisory structure during the life of the RHCYP/DCN project. The final section of this Part deals with previous assessments of the governance structure.

1.1.8 Part 2 of this paper deals in more detail with the roles, functions and membership of various bodies that were involved in the governance of the project. This Part starts with an explanation of the statutory framework under which the NHS in Scotland operates and moves on to look at individual bodies within that framework that were involved in the governance of the project. This is perhaps in the nature of an appendix to Part 1, giving more detail of the background. Note, however, that this is not intended to be a textbook on the NHS in Scotland or to provide an explanation of everything that is involved in that undertaking – it focuses very much on those parts of the NHS (and other bodies) that were involved in delivery of the project.

1.1.9 Part 3 of this paper deals with a part of the governance of projects that was not in fact utilised in the RHCYP/DCN project, namely the NHS Scotland Design Assessment Process before looking to the future with the recent establishment of NHS Scotland Assure. Finally, it deals with whistleblowing.

1.1.10 It should be noted that this paper refrains from examining why certain decisions were taken or exploring the reasons for certain directions the project took. Instead, the paper examines the structure of governance and where appropriate the level of governance where certain decisions were taken. Perhaps put slightly differently, the paper looks at how decisions were taken, not the content of the decisions themselves.

1.1.11 This Provisional Position Paper follows on from a draft that was distributed to core participants with knowledge of the governance structures adopted by the public sector bodies involved in the RHCYP/ DCN project. Substantive comments on

the draft were provided by NHS Lothian, NHS National Services Scotland and the Scottish Futures Trust.

1.1.12 The Inquiry has carefully considered the comments received, together with the supporting material submitted and other material held by it. It has reviewed and revised the draft paper accordingly to produce this Provisional Position Paper.

1.1.13 As a result, the views expressed in this Paper are firmer than those set out in the draft. It follows that the Chair will be invited by the Inquiry Team to make findings in fact based on the content of this paper. However, while the views may be firmer, that should not be equated with "final". The Inquiry's investigations are not yet concluded, and, at the time of publication, there is to be a hearing dealing with matters arising in relation to the Royal Hospital for Children and Young Persons/ Department of Clinical Neurosciences commencing on 26 February 2024. Evidence at that hearing and submissions made following it (as well as any other evidence received) may require the Inquiry to reconsider matters set out in this paper. Nonetheless, in the absence of such evidence or submissions, it is likely that the contents of this paper will be used as a basis for the Inquiry's report.

1.2 References to NHSL and "The Board"

1.2.1 In this paper, and indeed in the NHS environment in Scotland more generally, the term "Board" can have different meanings. Firstly, each of the corporate bodies charged with delivery of NHS care in Scotland is called a Board, or Health Board. Secondly, each of these corporate bodies is itself governed by a Board, consisting of senior members of staff and other nonexecutive Directors. Thus, NHS Lothian is a "Health Board" that is itself governed by a Board.[4]

1.2.2 The Inquiry has sought throughout this Paper to make clear in which sense the term is used in its particular context, but readers should be alert to the distinction. This is particularly so when terms are used in quotations from other documents that are used in this paper, or when terms are used in titles of documents. Subject to that rider, as a general rule, "NHSL" is a reference to the corporate body; "the Board" is a

[4] The role of the NHS Lothian Board (the governing body) is described further here and in Chapter 10 below.

reference to the governing body. Ultimately, of course, the Board in the sense of the governing body is responsible for the actions of the corporate body as a whole.

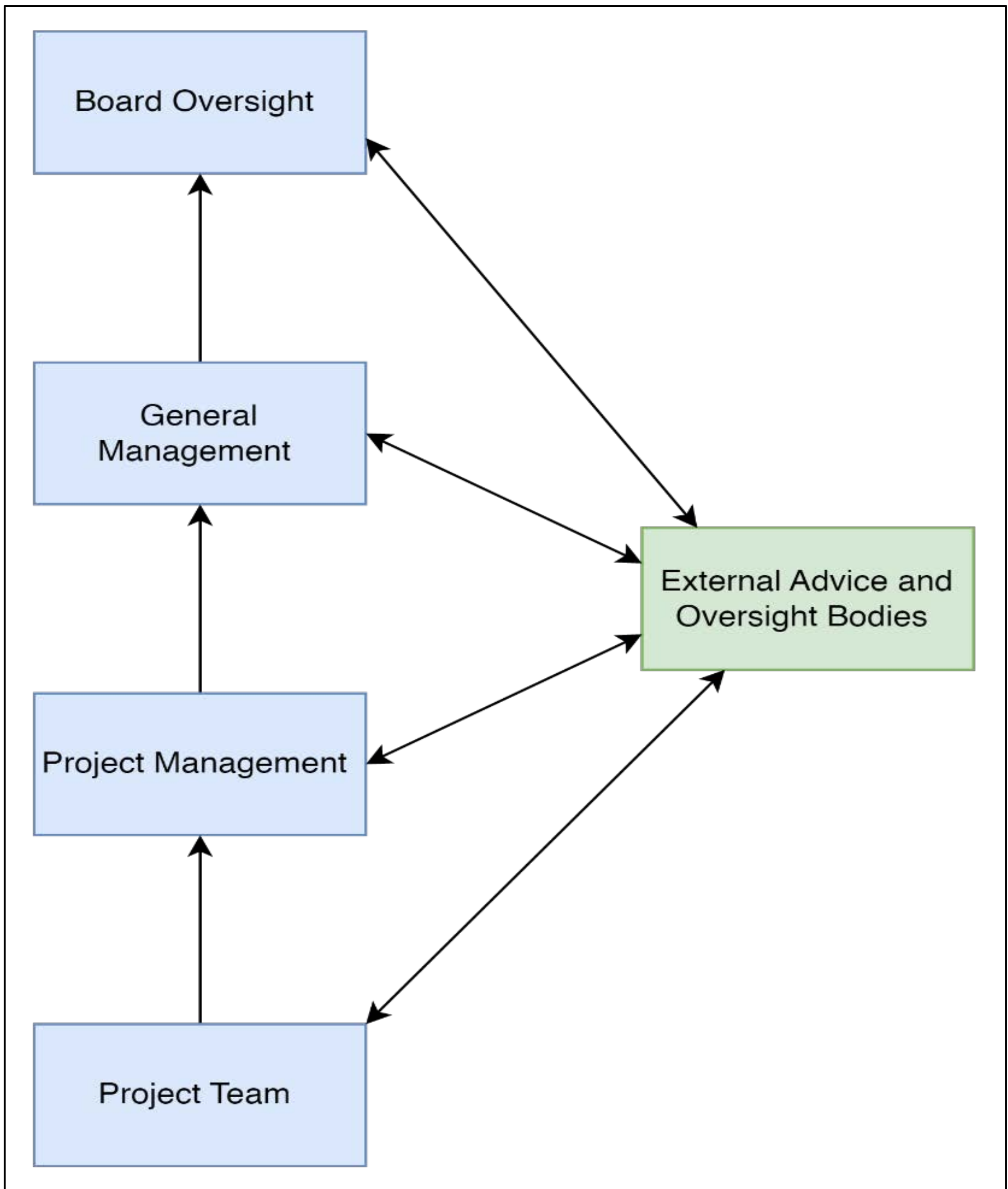
1.2.3 It should be noted that the position is complicated further by two factors. First, by the existence of other bodies referred to as a “Board” in this paper such as the Project Board (see chapter 16), the Oversight Board (see chapter 21), (Scottish Government Infrastructure Investment Board (see chapter 26 – usually referred to in this paper as “IIB”) and the board of SFT (see section 27.1). Again, the Inquiry has sought throughout this Paper to make clear to which body it is referring in its particular context. Second, in documents that are quoted in this paper, use of “the Board” can refer to either the corporate body or the governing body. In some cases, this is clear from context; in others, the reference could be to either. The Inquiry has not amended the quotations in any way for the purpose of this paper.

2. Part 1 - Overarching Structure of Governance of the RHCYP/DCN Project

2.1 Overview

2.1.1 This section is a short introduction to the bodies, boards, teams and key role holders who were involved in the governance structure of the RHCYP/DCN project. Not all these bodies were in existence during the entire life of the project, and some may have been operational for only part of the period. The main bodies from this section will be examined in more detail throughout the paper.

Organigram: NHS Lothian: Snapshot of Overall Governance



2.2 Project Team

2.2.1 The Project Team level on the structure comprised of the following bodies.

2.2.2 **Project Director**: This was the lead person responsible for delivering the facilities and services agreed in the business case. The role was defined in the Full Business Case, but the function was principally to provide strategic direction, leadership and to ensure that the business case reflected the views of all stakeholders.

2.2.3 **Workstream Leads**: These were members of the Project Team and led workstreams such as:

- Legal and Commercial workstream. The Director of Capital Planning and Projects managed the legal, commercial and financial workstream for NHSL. This involved liaising with Scottish Futures Trust regarding the funding competition and supporting the Project Director in relation to the wider Board capital planning requirements.
- Infection, Protection and Control Team (IPCT) workstream. Led by an infection control nominated IPCT nurse who attended the Project Team.
- Estates and Facilities Workstreams. The Head of Commissioning and Service Redesign represented the facilities members who participated in the design development, procurement and construction. Two commissioning managers for both hard and soft facilities became members of the Project Team.
- Clinical Leads. The Clinical Director represented the clinical services on the project. This involved working with the preferred bidder to financial close to complete the clinical design and leading the implementation of the agreed service model in respective clinical services.

2.2.4 **NHSL Project and Commissioning Managers:** The Head of Commissioning and Service Redesign was a member of the Project Team. The purpose of these managers was to ensure that the clinical enabling projects required were delivered, and to lead the overall service change and workforce planning implementation for the project. The leads also planned for and co-ordinated the transition of services into the new facility.

2.2.5 **Commissioning and Design Development Groups:** These groups were involved in the RHCYP/DCN project during the procurement, design and construction phases. Each different area of operational healthcare within the hospital environment had a commissioning group who reported to the RHCYP/DCN Commissioning Group. This group worked with the Project Team and Head of Commissioning and Service Redesign, with an overarching aim to bring the new hospital and surrounding areas into use, equipping it and preparing it for occupancy by clinical and non-clinical services, staff, patients and visitors.

2.2.6 **External Project Advisors and Managers:** There were a range of external firms engaged to support the Project Team from the Non-Profit Distribution public private partnership model (NPD) procurement and during the lifecycle of the RHCYP/DCN project.[5] The principal areas were represented by:

- Project Manager : Mott Macdonald Ltd
- Legal Advisors: MacRoberts LLP
- Financial: Ernst & Young LLP
- Insurance: Willis

2.2.7 **Stakeholder and Engagement Groups:** The Project Team engaged with a variety of groups including charities, patient representatives, among others. These groups were consultive and were not directly part of the project design development or the project governance.

2.3 Project Management

2.3.1 The Project Management level of the governance structure comprised of the following bodies.

2.3.2 **Project Board/Programme Steering Board/Programme Board:** This was a key project management committee for approving the business cases and monitored project performance. It provided detailed project and programme governance for project delivery. The principal areas of responsibility for the Project Board included:

- establishing project organisation.
- authorising allocation of project funds.
- monitoring project performance.
- resolving strategic issues which needed the agreement of a senior stakeholder.
- maintaining commitment to the programme.
- managing the project management structure.

[5] External advisers had also been appointed during the capital funded phase of the project – see paragraph 3.6.6.

- producing the Full Business Case.
- preparing for transition to operational phase.

2.3.3 **Project Management Executive:** This was a group designed to support the development of the project from business case through procurement and consisted of NHSL leads and advisors. This group monitored project delivery and made recommendations for approval to the Project Board. It coordinated submission of papers to all governance groups as required.

2.3.4 **Project Working Group:** This group consisted of NHS project leads and advisors who linked in with Scottish Futures Trust when working through the Key Stage Reviews and the Project Agreement terms during procurement and the Preferred Bidder stages.

2.3.5 **Stakeholder Groups Board:** This was a Board which was established in the early planning stage for general engagement and exchange of information. It included representation from families, and other health boards.

2.3.6 **Consort Joint Project Board and Little France Campus Working Group:** This was a commercial working group with Consort to programme manage the changes to the Royal Infirmary of Edinburgh PFI Project Agreement including land issues and enabling projects. The Little France Working Group was created as a link between the NPD and the PFI structure and facilities.

2.4 General Management

2.4.1 The following paragraphs provide a brief overview of the teams and individuals from NHSL who were involved in the general management of the RHCYP/DCN project.

2.4.2 **Executive Management Team/Corporate Management Team/Joint Management Team /Executive Leadership Team:** This body existed throughout the project lifespan with various names and changes to its role and personnel as introduced by different Chief Executives. In general terms it was an NHSL leadership and performance management meeting for the executive functions. It provided

support to the Senior Responsible Officer within the project and periodically received reports from the Project Director or the Senior Responsible Officer.

2.4.3 **Senior Responsible Officer:** This role existed throughout the life of the project and was performed by an Executive Director.

2.4.4 **Lothian Capital Investment Group:** This was an internal management group to support the capital programme. It met regularly but considered the Project periodically after the Project Team was established and when the business cases were being considered.

2.4.5 **Executive Steering Group:** This came into existence in July 2019. This provided Executive Director leadership and its Chair was the Director of Nursing. It considered matters prior to reporting to the Scottish Government Oversight Board.

2.4.6 **Improving Care Investing in Change:** This existed pre-2013 and was a management board for planning a number of transformational projects proposed and delivered by NHSL. It was chaired by the Director of Strategic Planning.

2.4.7 **Acute Senior Management Team/Women and Children's Senior Management Team:** This existed throughout the project lifespan. These were operational leadership groups for the services to be occupying the facility. These were meetings for the acute hospital's divisions and related functions (e.g., facilities). Nominated Directors from the Women and Children's Senior Management team sat on the Programme Board.

2.4.8 **Various Leadership Groups with NHSL:** These were operational leadership groups for the specialist areas of management of the organisation – Risk Management Steering Group, Health and Safety Committee, Lothian Partnership Forum and Area Clinical Forum.

2.5 NHSL Governance

2.5.1 The NHSL governance structure comprised of the following bodies.

2.5.2 **Lothian NHS Board:** This is the ultimate decision-making body within NHSL.[6] It oversaw the project and once operational, the performance of the facility. It had a role in approving the final contract and resolving matters within the Board's delegated authority and function.

2.5.3 **Finance & Resources Committee/Finance and Performance Review Committee:** The overall remit of this committee was to keep under review the financial position of NHSL and to seek and provide assurance that suitable arrangements were in place.

2.5.4 **NHSL Committees (various):** There were various Board committees which received periodic updates and/or provided limited oversight based on their specialisms. Examples of these committees are the Strategic Planning Committee who advised the Board on the appropriateness of clinical and service strategies (with reference to the NHSL Strategic Clinical Framework); Healthcare Governance which considered clinical working practices; Staff Governance which dealt with working practices and partnership engagement; Acute Hospitals Committee which addressed service planning and resourcing and the Audit and Risk Committee which was latterly involved in commissioning an internal audit report on the project.

2.5.5 **Community Health Partnerships/Integration Joint Boards/Health and Social Care Partnerships:** These were various organisations who received periodic updates during the project and/or provided service planning which focussed on community aspects and delivery of community health services.

2.5.6 **South East and Tayside NHS Boards (SEAT):** This was a regional planning and operational services grouping of a number of health boards.[7]

2.6 External Governance

2.6.1 The External Governance element of the governance structure both received information or assurance and provided guidance, consent or authority.

2.6.2 **Scottish Government Health Capital Investment Group (CIG):** This Group reviewed the business cases during the RHCYP/DCN project and made

[6] It is the governing body referred to in section 1.2
[7] The bodies noted at paragraphs 2.5.3 to 2.5.6 are (as at December 2023) still in existence.

recommendations for approval or not to the Director General Health and Social Care or Cabinet Secretary. It received input from Scottish Futures Trust and utilised the information provided in their Key Stage Reviews as part of their consideration of the various business case stages.

2.6.3 **Scottish Futures Trust (SFT):** Provided programme management for the NPD programme. Dual role of assurance and advice/guidance on the RHCYP/DCN project. This involved support and advice to Scottish Ministers and CIG and assurance provided by Key Stage Reviews at specific points during the procurement journey. Portfolio and project support was provided to the Board and Project Teams in the delivery of the project.

2.6.4 **Scottish Government Infrastructure Investment Board (IIB):** It performed strategic scrutiny for the Scottish Government. The IIB reviewed the RHCYP/DCN project through a presentation by the Senior Responsible Officer and Project Director. It had a role to

- provide strategic scrutiny of high-value major infrastructure projects at an early stage of development;
- use robust management information to review the governance and delivery of the capital programme, including the Infrastructure Investment Plan;
- provide advice to Ministers about capital investment priorities to inform Ministerial decisions;
- review portfolio- level governance and decision-making structures for capital projects to ensure they are fit for purpose;
- explore options together with SFT for implementing new financing models e.g., NPD.

2.6.5 **Health Facilities Scotland (HFS):** Part of NHS National Services Scotland (NSS), providing advice to health boards and others. This body wrote and published guidance for the development and operation of NHS Scotland healthcare facilities e.g., Scottish Healthcare Technical Memorandum (SHTM). Specialist officials from

HFS were available for advice during the project development and produced technical review reports post 2019. HFS also conducted the Gateway Reviews.[8]

2.6.6 **Health Protection Scotland (HPS):** Part of NSS. They were advisors to the Scottish Government and health boards. Provided expert advice on areas within healthcare and provided horizon scanning which covered infection prevention and control (IPCT) in the built environment. There was engagement with specialist officers for advice during the project as it developed, and they were involved in a technical review post 2019.

2.6.7 **Scottish Government Health Oversight Board (Oversight Board):** This board was implemented by the Scottish Government in July 2019 to oversee actions to deliver the opening of RHCYP/DCN. It provided advice and recommendations to the Cabinet Secretary for Health.

2.6.8 **Architecture & Design Scotland (ADS):** Advisors to the Scottish Government on design in healthcare. This body provided a professional review and report to CIG as part of the business case process.

2.6.9 **Statutory and other regulatory bodies:** This encompassed general technical approval that was required during the RHCYP/DCN project. Examples are the City of Edinburgh Council for town planning consents, building standards warrants and completion certificates. This would have included consulting with other bodies to obtain the necessary consents such as Scottish Water, Scottish Fire and Rescue Services, Scottish Environmental Protection Agency. Once the project agreement was in place, the responsibility for obtaining the required consents passed from NHSL to Integrated Health Solutions Lothian (IHSL).

[8] See Chapter 29 below.

3. Governance at Key Stages of the Project: Framework Scotland (September 2005 – November 2010)

3.1 Overview of the period

3.1.1 This period commenced in September 2005 with the NHSL Board supporting the development of a new Children’s Hospital. The development of the initial planning and exploring the service model required for the new children’s services was based on NHSL’s strategic programme objectives. The high-level vision for the service to relocate to be adjacent to the Royal Infirmary of Edinburgh was progressed through the business case process.

3.1.2 During the period 2007 – 2009, the Project Team operated as a core group with sub-groups covering, for example, redesign, infrastructure and patient engagement. This earliest period ended with the near completion of the capital build design proposals for the new children’s hospital following the procurement of BAM Construction as Principal Supply Chain Partner under Framework Scotland in early 2009.

3.1.3 As of 2010, an Investment Steering Board had been established to update the project sponsor and coordinate the design development. It involved external Project Manager advisors and BAM representation. Commercial management of the Principal Supply Chain Partner included a cost group with a delivery group led by the external project manager. The Department of Clinical Neurosciences was also being developed as a separate business case managed by the same project team but with different client representation.

3.2 NHSL Board Approval – Initial Agreement/Business Case

3.2.1 At a meeting of the NHSLBoard on 28 September 2005, the Board approved development of an options appraisal and Business Case for the reprovision of the Royal Hospital for Sick Children in Edinburgh (RHSC), with a view to replacing it with facilities that would support the acute children's service to be delivered for Lothian in 5 to 15 years.

3.3 Initial Agreement

3.3.1 The Initial Agreement was developed by NHSL during February to April 2006. It was presented to the Finance and Performance Review Committee on 12 April 2006. The discussion of the Committee on the Agreement was around the funding model and the Committee noted that the current Scottish Executive procurement requirements would require the Board to consider the option of PFI. The Committee agreed to: ‘support the proposed submission and approval process and submit the Initial Agreement to the Scottish Executive, noting that the configuration of the hospital and the procurement route had still to be agreed’.

3.3.2 The Initial Agreement was sent to the Scottish Government and circulated to CIG on 18 April 2006. It is to be noted that that this only related to the RHSC.

3.3.3 By letter dated 16 June 2006, to the Chair of the NHSL Board, from the Chair of CIG, it was confirmed that CIG had considered the Initial Agreement at a meeting on 16 May 2006. CIG was content with the strategic direction described in the Initial Agreement and the intention to develop the OBC. The letter stated that it was vital that there was (a) continued contact with the National Steering Group for Specialist Children’s Services throughout development of the OBC and (b) that the Chair of the National Steering Group confirmed that the outcomes of the OBC were consistent with the findings of the Children Services Review (which were due in late 2007)

3.3.4 The National Steering Group for Specialist Children’s Services on 22 May 2006 received a presentation from Jackie Sansbury and the planning for the new hospital was discussed.

3.3.5 The Initial Agreement stated:

> “The purpose of this Initial Agreement (IA) is to request approval from the Capital Investment Group of the Scottish Executive to progress to the development of an Outline Business Case (OBC) for a proposal to reprovide the Royal Hospital for Sick Children in Edinburgh. This will be undertaken in line with guidance set out in the Scottish Capital Investment Manual.”

3.3.6 In terms of Project Management Arrangements, the Initial Agreement stated that the project would be managed within the Improving Care Investing in Change (ICIC) programme and that it was intended that the Director of Strategic Planning would provide Board level leadership as the Project Sponsor. It was anticipated that PRINCE2 Methodology (a project management tool) would be used to deliver the project.

3.3.7 The Initial Agreement set out that the intended membership for the Project Board was to ensure representation from all key stakeholders including those that could represent the views of adjacent SEAT Health Boards. As the RHSC Yorkhill had commenced a similar project, the intention was to work closely with the Glasgow Project Team to ensure a consistent approach to the provision of specialist services. The Medical Director (Dr Morgan Jamieson) from the Yorkhill project was intended to be on the Project Board.

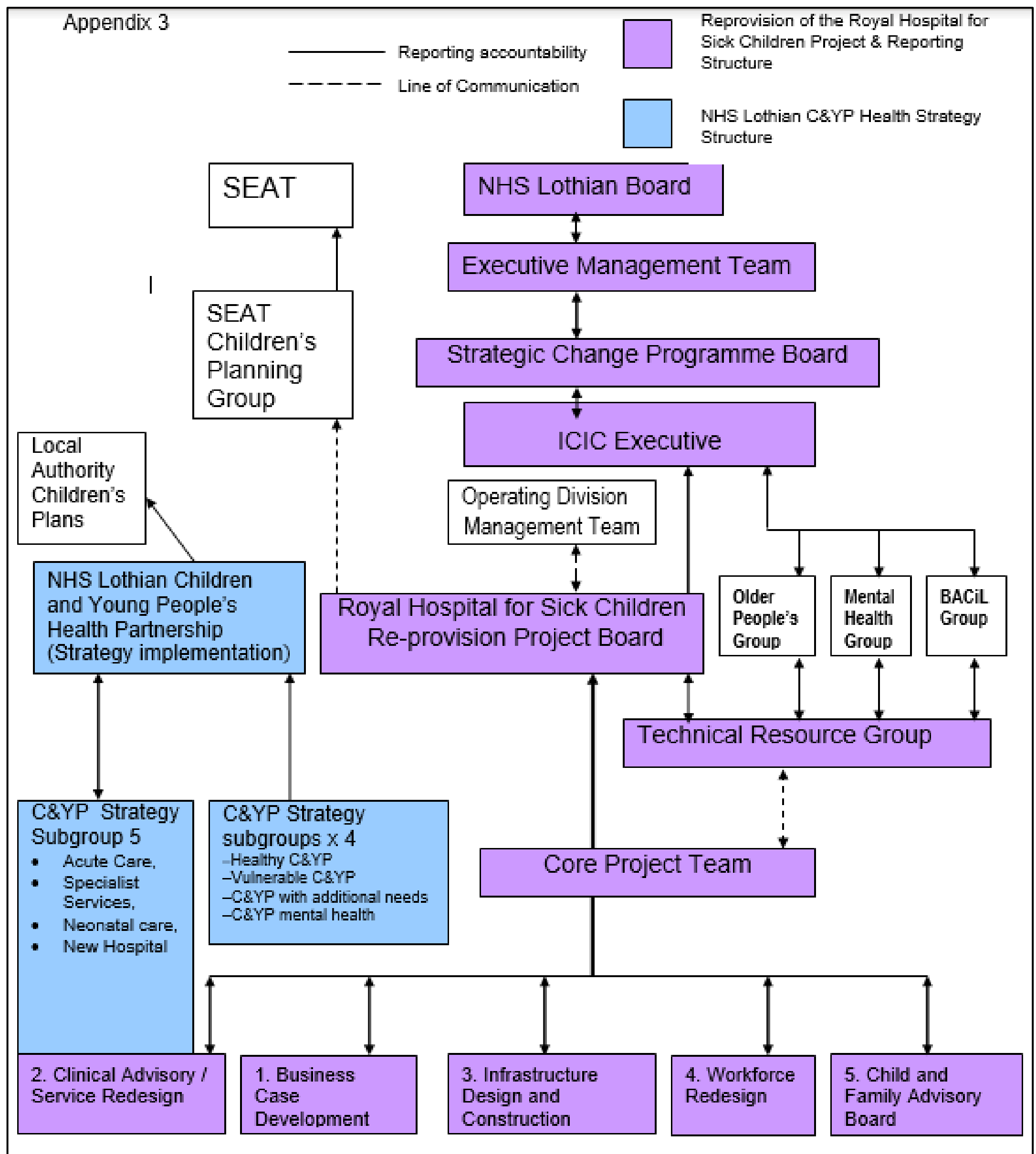
3.3.8 The Initial Agreement proposed that the project would be further supported by the establishment of the 'Specialist Children's Services Steering Group in Scotland' chaired by the Chief Executive of NHS Education Scotland. This Group reported to the Deputy Minister for Health and Community Care via the Children and Young Person's Health Support Group. Both these Groups took their membership from the Lothian Children's Service and Reprovision Project and from other Health Boards.

3.3.9 Once the Scottish Executive had approved the Initial Agreement the project work was incorporated into the 'Improving Care, Investing in Change' programme plan.

3.3.10 At the meeting of the NHSL Board on 22 November 2006, the Board agreed to the planning of a new Royal Hospital for Sick Children proceeding on the basis of relocation to a site at Little France, co-located with the Royal Infirmary of Edinburgh, with the completion of the Outline Business Case and Ministerial approval towards the end of 2007.

3.4 Project Management Structure - April 2006

3.4.1 The proposed Project Management Structure as set out in the Initial Agreement was as detailed in the organigram below:



3.4.2 The Strategic Change Programme Board was set up as there was a number of projects ongoing at the same time within NHSL.

3.4.3 The ICIC Executive was 'Improving Care Investing In Change' and this was a 2005 acute services strategy in Lothian where services would be moved around sites in Lothian based on need. The Technical Resource Group was an internal NHSL group that was set up to support the ICIC.

3.4.4 The Project Board while reporting to the ICIC Executive, had a line of communication to the Operating Division Management Team. Jackie Sansbury, NHSL, advised the Inquiry at a hearing on 13 May 2022 that this Team oversaw the acute services side of NHSL.

3.4.5 The Project Board at this period was chaired by Jackie Sansbury, (who was Director of Strategic Planning NHSL at that stage) and had a number of stakeholders on it. These comprised of a number of people from SEAT Boards, parent and family representation, primary care, secondary care, paediatric services, estates and facilities etc.

3.4.6 It is noted from this organigram (which is from the Initial Agreement 2006) that the Finance and Performance Review Committee does not feature in the governance structure at this point in time .

3.5 Workstream/Groups

3.5.1 Within this period (September 2005 to November 2010), the governance structure of NHSL had within it the following workstreams/groups:

"Client" Consultation/Operational Groups and Workstreams

Name	**Role**	**Who the workstream/group reported to in structure and comments**
Project Group 1 – Initial Agreement/Business Case/PID Development Group	Planned and developed the Initial Agreement, Project Initiation Document, Outline and then Full Business case. This included: • outlined current and proposed services, • proposed redesign of services, • identified all options for	Led by the Reprovision Project Manager. Reported to the Project Team

	hospital site • financial evaluation, • indicative project timescales, • outlined project management process, • identified risks, assumptions and interdependencies • maintained risk register and fed into overall risk register maintained by core group	
Project Group 2- Clinical Advisory/Service Redesign/Remodelling	Remit was to • identify key objectives for provision of hospital-based children's services • identify the current pathways of care, reflecting the known pressures and drivers for change • test these models of care against key objectives • make a recommendation on models of care required to address all the key drivers and objectives • once models of care agreed, take forward redesign of services • identify risks, assumptions and interdependencies	Reported to the Project Team. Chaired by the Clinical/Project Director

	• maintain a risk register and feed into overall risk register maintained by core group • worked with Project Group 5 re consultation process	
Project Group 3 – Infrastructure, Design and Construction Group	The work of this group involved: • identification of departmental needs and technical services required. • development and finalisation of design. • Identification of alternative options for re-provision of services. • equipment requirements • schedules of accommodation • determination/ management of appropriate procurement route, procurement process and equipment procurement process. • coordination of transfer/installation of equipment and interfaces with existing hospital services and equipment. • point of contact between hospital operational services and design and	Reported to the Project Team Chaired by the Design and Construction Manger Examples of subgroups as at Jan 2010 within Project Group 3 were: • Medial • Surgical • Haematology/Oncology • Critical care • A&E • Radiology • Therapies • Other Depts (School, dental, pharmacy etc) • CAMHS • Family Support • Academic

	construction process. • impact on local infrastructure of relocated services • coordination of handover on completion of build • identify risks, assumptions and interdependencies • maintain risk register and feed into overall risk register maintained by core group • work with Project Group 5 re consultation process.	
Project Group 4 - Workforce Redesign	The role of the Group was to identify the workforce planning and development implications relating to the known drivers for change associated with the provision of a redesigned children's service	Reported to the Project Team Chaired by the Clinical/Project Director
Project Group 5 – Child and Family Advisory Board	Effective involvement of children, young people and carers in all key aspects of the project and with each of the project groups as relevant.	Reported to the Project Team
Cost Group (2009-2010)	The role of the group was to develop the cost plans to be included in the Outline Business Case	Led by Project Manager. Reported to the Programme Board, Senior Responsible Officer and Finance Director
Core Project Team (Project Group 1)	The role was to manage the project on an operational	Reported to the Project Team Continue the work initiated by

(2007 – 2009)	basis	Project Group 1
PPFI Task Group (Project Group 5) (2009-2010)	The role was to ensure effective engagement with children, young people and their carers	Reported to the Project Team Continue the work initiated by Project Group 5
Steering Group (Project Group 3) (2008-2009)	Infrastructure, Design and Construction Group	Reported to the Project Team Continue the work initiated by Project Group 3
Redesign Sub Group (Project Group 2) (2006-2007)	Clinical Advisory/Service Redesign	Reported to| the Project Team Continue the work initiated by Project Group 2
Clinical Design Working Group (2009-2010)	Continuation of Project Group 2	Reported to the Project Team Continue the work initiated by Project Group 2
Strategic Capital Planning Group (2006 – 2009)	A board wide capital governance group reviewing business cases and capital spend. This later became the Lothian Capital Investment Group	Reported to the Finance and Performance Review Committee
NHS Lothian Consort (2010, 2013-17)	Management Teams within NHSL engaged with Consort management. It was a forum designed to ensure progress with the interface arrangements, clinical enabling works (such as critical care, pharmacy etc)	The workstreams reported to the Steering Board. They also may have reported to the Lothian Capital Investment Group and then the Finance and Performance Review Committee through a formal paper by the relevant Executive Director

Management of Client Groups/Workstreams and External Consultation

Name	Role	Who the workstream/group reported to structure and comments
Investment Steering Group (2009-2010)	Updated the Project Sponsor on project progress and coordinated design development and make key decisions regarding the project.	Reported to the Programme Steering Board by the Senior Responsible Officer and the Project Director.
Project Sponsor Meeting (2010-2012)	A meeting for the Project Sponsor/Senior Responsible Officer to ensure actions were progressing and assessing what papers needed to go to committees and when, etc. It was an opportunity for SRO and Team members to raise strategic issues or seek guidance. Set up as a regular internal meeting	This was an informal working / briefing meeting
Consort Meetings – Enabling Works	Discussions around RHSC Boundary, Roads etc Generally, the same purpose, membership and governance as the NHS Lothian Consort meetings. Many meetings needed to go through the technical, legal and commercial detail of bringing a new hospital into an existing PFI hospital site. Further	Reported to Project Steering Board

	complicated when the funding route changed to NPD. Attendance sometimes changed depending on subject matter.	
RHSC and DCN Steering Group 2010 - 2011	RHSC + DCN Adjacency Matrix Subject matter was an adjacency matrix model which define the departmental layouts (e.g., where imaging needs to be in relation to outpatients etc.) This workstream informed the project brief on these matters.	Different from latter group of same name.
Project Core Group	Meeting between the Project Team including designers, main contractor and subcontractors	Reporting through Programme Managers to Programme Steering Board. For NHSL the outputs would form part of Brain Currie's reports
Stakeholder Project Board (2006 – 2010)	Engagement with range of key stakeholders and project management interface. To manage stakeholder requirements	The SRO would report to the ICIC Executive and NHSL Board. (Improving Care Investing in Change)

3.6 Outline Business Case 2008

3.6.1 The Outline Business Case (OBC) was produced in July 2008 and it stated that its structure reflected the Scottish Government Health Department guidance and accepted best practice in business case presentation. At this stage it was the Framework Scotland Agreement which was intended to be used as the procurement option and that NHSL would secure the relevant training from Health Facilities

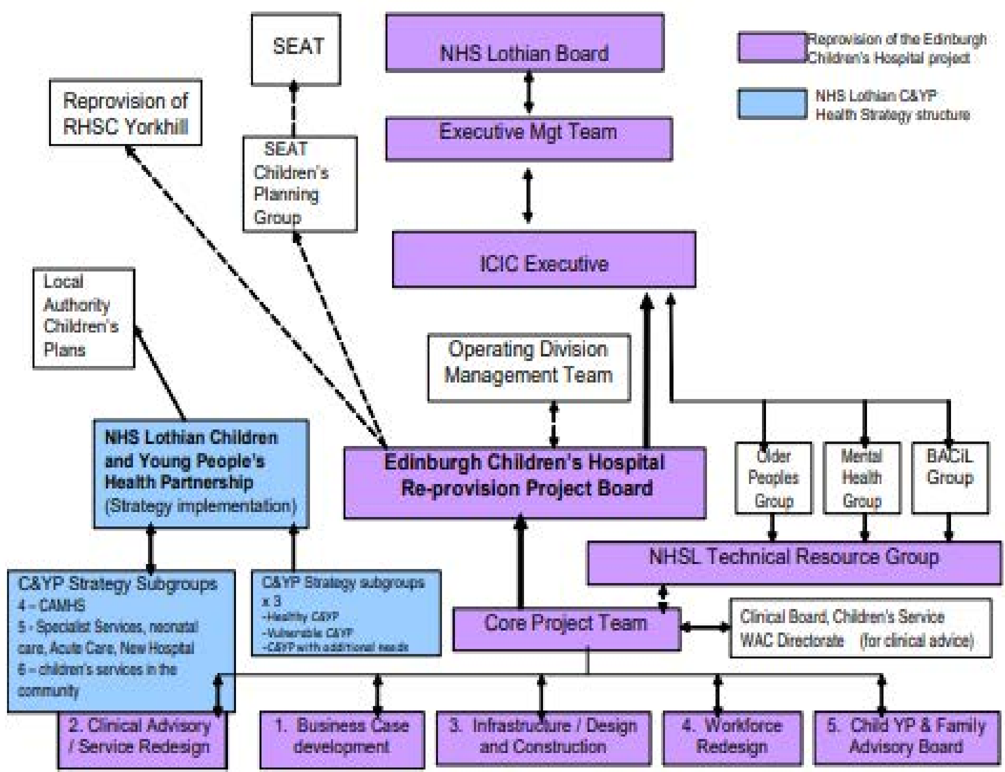
Scotland. It was proposed that the interaction with Consort and the existing site, infrastructure services, would be managed through the Principal Supply Chain contractor appointed with associated technical advisors appointed directly by NHSL.

3.6.2 The project at this stage was managed within NHSL's 'Improving Care, Investing in Change' (ICIC) programme as a defined project. It reported to NHSL Executive Management Team via the Strategic Change Programme Board. The Outline Business case stated that it would be delivered by:

> "Operationally managing the project via the Core Project Team with 5 Project Groups developed to address the key strands of work;
> - Ensuring each group and sub group has clearly defined remits and timescales to support the process of redesign and capital planning; and
> - Ensuring the Project Board has representation from all key stakeholders."

3.6.3 An Organigram within the OBC illustrates the governance structure of the project as at July 2008 is reproduced below. It is almost identical to the structure that existed in 2006. The reporting level of the Strategic Change Programme Board does not appear on the organigram. However, it is mentioned in the narrative within the OBC, and the organigram was illustrative only and did not detail all of the reporting lines.

18.2 Organisational Structure



3.6.4 A number of the key designated project roles were defined within the OBC and are fully described within this paper. The ongoing links with the Glasgow RHSC Yorkhill were confirmed and described as:

> "Both projects are working closely to ensure a consistent approach to the provision of specialist services, especially those that will require national planning. The Medical Director and Project Manager of the Glasgow Reprovision Project are both members of the RHSC Reprovision Project Board. There has been active sharing of project assumptions with the Project Boards holding a joint meeting in May 2007. More recently, regular meetings have been established with key project leads and redesign subgroups to share and understand redesign assumptions and where they differ, articulate the reasons why"

3.6.5 The OBC detailed that the links with the National Specialist Children's Services Steering group continued.

3.6.6 At this stage and in terms of the OBC, the role of the advisors external to NHSL in the project management were:

- Cost Consultancy and Procurement: Thomson Gray
- Legal: MacRoberts Solicitors (in relation to the Consort negotiations) and NHS Central Legal Office (property)
- Design: NHSL Capital Planning and Premises Development project architects and planners were involved.
- Post OBC external appointment were intended to be progressed which were to include Architecture & Design Scotland and General Electric (GE) Healthcare
- Procurement/project management: Ernst & Young. Post OBC the intention was to have independent construction project management appointments.

3.6.7 At a meeting on 23 April 2008, the NHSL Board was advised by Jackie Sansbury, that the OBC was being produced to meet the deadline for the 1 July CIG meeting.

3.6.8 The Finance and Performance Review Committee approved the OBC at a meeting on 11 June 2008 and the NHSL Board in turn approved the decision of the Committee at a meeting on 23 July 2008.

3.6.9 The Capital Investment Group discussed the OBC on 1 July 2008. By letter dated 3 July 2008 to NHSL Chief Executive, Mike Baxter, Chair of CIG advised that they were working with the NHSL team to resolve outstanding issues. The letter confirmed that as soon as these issues were addressed CIG would "make a recommendation to DG Health and Wellbeing using expediated procedures". It is understood from the paper submitted to CIG that the issues related to optimism bias and costings.

3.6.10 NHSL worked with CIG regarding the issues and provided a response to CIG's comments on 26 June 2008 and on 3 July 2008.

3.6.11 The Board was advised by the Chief Executive at a meeting on 24 September 2008 that the Chief Executive of NHS Scotland had accepted the recommendation to approve the Outline Business case for the Royal Hospital for Sick Children in a letter dated 15 August 2008.

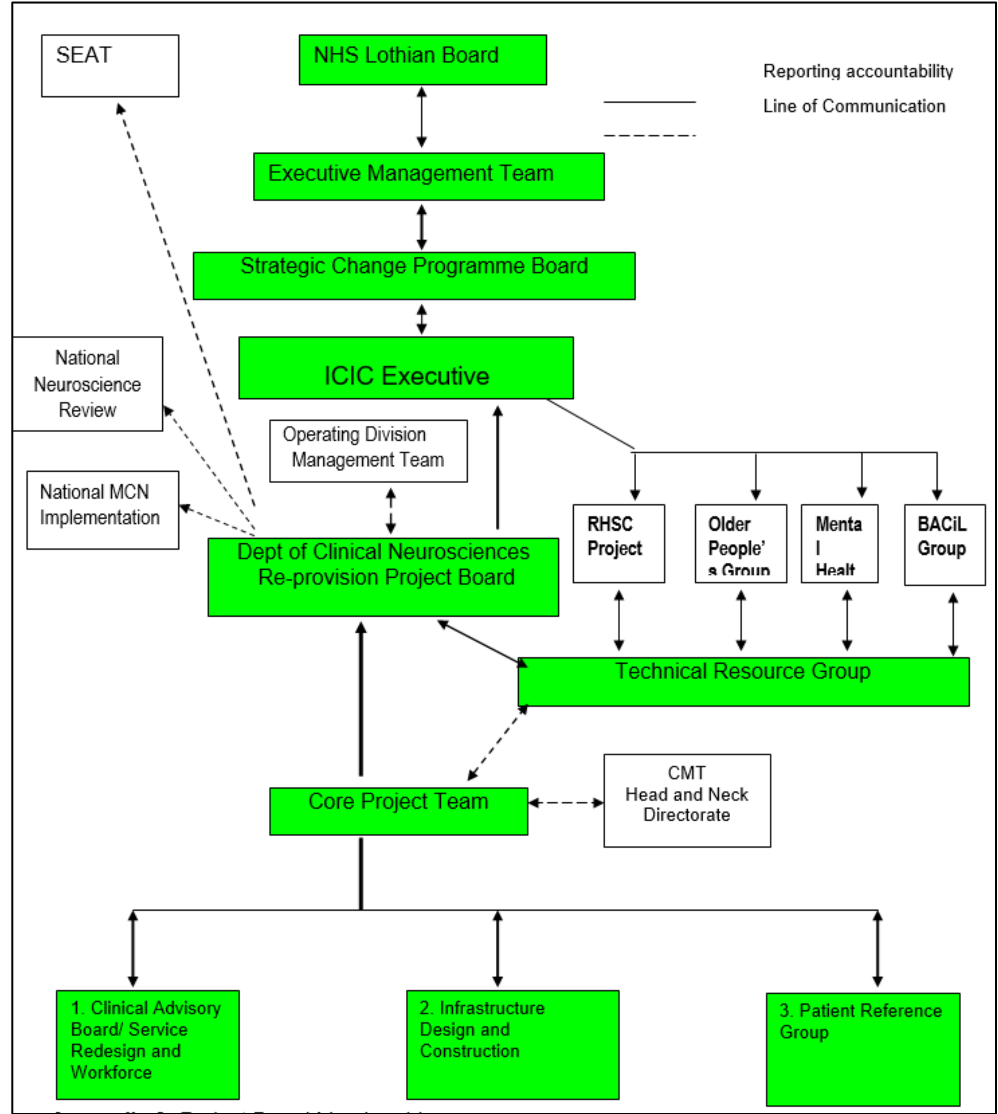
3.7 Department of Neurosciences (DCN)

3.7.1 At a meeting of the Finance and Performance Review Committee dated 11 June 2008, Jackie Sansbury, NHSL sought the approval of the Committee for the Initial Agreement for the DCN. The Committee approved the Initial Agreement for submission to CIG. Jackie Sansbury at this stage wished to move the project to OBC status with the intention to progress to a timetable that would allow the DCN project to catch up with the RHSC.

3.7.2 In relation to project management and governance, the Initial Agreement for the DCN was like the RHSC in that it proposed that the project would be managed within NHSL's Improving Care Investing in Change programme once the Initial Agreement had been approved. The Director of Strategic Planning and Modernisation would provide Board level leadership as the Project Sponsor. The intention was that the Project Director would oversee both the RHSC and DCN projects.

3.7.3 The intention was that a Project Manager and Clinical Manager would be appointed to the DCN project. The proposed membership of the Project Board was to ensure representation from all key stakeholders including patients and carers, staff partnership, and members representing the views of adjacent SEAT Health Boards.

3.7.4 The proposed project management structure that was contained within the DCN Project Initial Agreement is set out below. The subgroups which are set out in the organigram had the remits to support the process of redesign and capital planning. It is noted that the proposed governance structure reflected that of the RHSC Initial Agreement.



3.7.5 The Capital Investment Group approved the Initial Agreement for the redesign and reprovision of the DCN at a meeting on 1 July 2008. The Minute of the CIG meeting noted that "no major concerns had been raised following business case circulation and it was agreed that the Board should be congratulated on for the quality of the Initial Agreement.". CIG was content that the NHSL Board be invited to submit an Outline Business Case in respect of the DCN.

3.7.6 The Project Manager for Clinical Neurosciences, Sorrel Cosens, provided a report for the Finance and Performance Review Committee meeting of 12 October 2009 on the outcome of the options appraisal process exercise and the likely preferred option which was a joint build with Children's Services. The report stated:

"In August 2009 NHS Lothian instructed BAM Construction to commence design work on a joint build for DCN and RHSC. This was to ensure no further delay in construction of RHSC on the basis that the preferred solution both fiscally and clinically was likely to be a joint build."

3.7.7 At the Finance and Performance Review Committee meeting of 14 October 2009, the Committee considered the report by Sorrel Cosens mentioned in the preceding paragraph and the outcome of the option appraisal exercise in relation to the Clinical Neurosciences Project. However, the Committee also noted the financial appraisal was still to be completed and acknowledged the requirement for SGHD funding to deliver the project. The Committee approved the recommendation that design with the RHSC continued pending response from the Scottish Government regarding the availability of capital funding. It was also agreed that a parallel stand-alone design exercise would be undertaken to protect the progress of the RHSC project should capital funding for DCN not be available.

3.7.8 At a meeting of the NHSL Board on 25 November 2009, the Board approved the OBC for the DCN, subject to further advice from the Scottish Government regarding availability and source of capital funding, and subject to further work in NHSL to resolve the revenue issues. The Board was advised that the Director of Finance, Scottish Government Health Department had requested that NHSL did not submit the Business Case to the Scottish Government until formally requested due to capital issues in general across Scotland.

3.7.9 At a meeting of the Finance and Performance Review Committee on 9 December 2009, a letter was tabled from the Director of the Health Finance Directorate, Scottish Government which advised that "the need for specific/additional capital support for the DCN project [went] beyond previously planned capital allocations." NHSL Director of Strategic Planning and Modernisation, Jackie Sansbury, advised the Committee that the dual build process would require to stop, with the development of the RHSC continuing without the DCN. The Committee therefore agreed to de-couple the DCN from the RHSC. The Committee was advised that a paper would be produced which outlined proposals on how to proceed with the DCN.

3.7.10 The Finance and Performance Review Committee met on 10 February 2010 where an update was provided that a formal instruction was given to BAM Construction in December 2009 to cease design on the joint build and to progress with the design for the children's hospital on the existing car park B on the site of the Royal Infirmary of Edinburgh. The result for the DCN was that negotiations continued with Consort in respect of potential to build at the end of the ward arc and there was ongoing issues with the procurement and commercial issues.

3.8 Update on progress on Business case

3.8.1 The Finance and Performance Review Committee received updates on the progress of the DCN project at various meetings during the remainder of 2010 and both the RHSC and DCN were continued to be advanced as two separate projects.

3.9 Guidance Manuals

3.9.1 During this period there was a range of guidance such as:

- Ventilation of Health Sector Buildings: Scottish Health Technical Memorandum - 03-01 Ventilation for healthcare premises Part A – Design and validation, (published in 2011): Ventilation for Healthcare Premises (SHTM 03-01) | National Services Scotland (nhs.scot). The applicable guidance prior to that was HTM 03-01 and SHTM 2025;
- Business case guidance in the form of Scottish Capital Investment Manuals;[9]
- Design guidance that applied as laid out in the Policy on Design Quality for NHS Scotland (2006 – revised in 2010); and
- Finance guidance, within the Scottish Public Finance Manual was used at the time of the project together with NHSL's own Standing Financial Instructions which would apply to the management of these projects.

3.9.2 Scottish Ministers issued sector specific guidance mentioned above. The Scottish Capital Investment Manual ("SCIM") "provides guidance in an NHS context on the processes and techniques to be applied in the development of all

[9] Scottish Government Health Directorates Capital and Facilities Division and the SGHD SCIM - Manuals (archive.org)

infrastructure and investment programmes and projects within NHSScotland".[10] The relevant versions of SCIM for the RHSC/DCN project were published in 2009, 2011 and last updated in 2017.

3.9.3 The use of SCIM in respect of all infrastructure and investment programmes and projects by NHS Scotland bodies is mandated through NHS CEL 19 (2009).[11]

3.9.4 From the 1st April 2009, it was the SCIM published in 2009 which was applicable during this period (and, as it had not been applicable before then, required to be taken into account mid-business case development). For the purposes of this paper, the section on project management guidance is relevant.

3.9.5 The guidance was clear that NHS Scotland Bodies were accountable for the successful delivery of infrastructure programmes and projects. The Chief Executives remained responsible for compliance with mandatory policy and guidance. The guidance also highlighted that the appointment of "suitably qualified, experienced and trained" Project Directors and Client Advisors on a project was a mandatory requirement of the Scottish Capital Investment Manual.

3.9.6 The guidance supported a 'Programme and Project Management (PPM)" framework for the management of projects. Through this approach the guidance envisaged that it could be applied to NHS Scotland projects as follows:

> "At SGHD level to oversee and co-ordinate all NHS Scotland Bodies' capital programmes in line with strategic and national priorities;
> • At NHS Board level to manage and co-ordinate the Board's capital programme in line with local priorities
> • At Directorate level (i.e., Capital Planning) to manage and co-ordinate major projects within the capital programme;
> • At service/planning level to manage and co-ordinate complex service development projects with several interdependent sub-project deliverables, i.e., linked mental health, care of the elderly and learning difficulties."

[10] Page 8 of the Scottish Capital Investment Manual
[11] CEL 19 (2009) - Scottish Capital Investment Manual for NHSScotland

3.9.7 To be successful in the application of PPM techniques to programme management, the guidance stated that it was dependant on inter alia:

- Overall direction and leadership responsibility resting with one single named individual – Project Owner or equivalent, who needs to be accountable for each major programme.
- The organisation having appropriate personnel available with relevant skills and experience to set up, manage and deliver the programme.
- Programme management and support structures in place

3.9.8 The guidance stated that: “The early establishment of standard project structures and identification of core competencies, key roles and responsibilities are critical to the successful management and delivery of any project and must be put in place at the Project Initiation Phase. NHSScotland Bodies must ensure project structures are developed with appropriately qualified and experienced key personnel appointed and are given clear roles and responsibilities.”

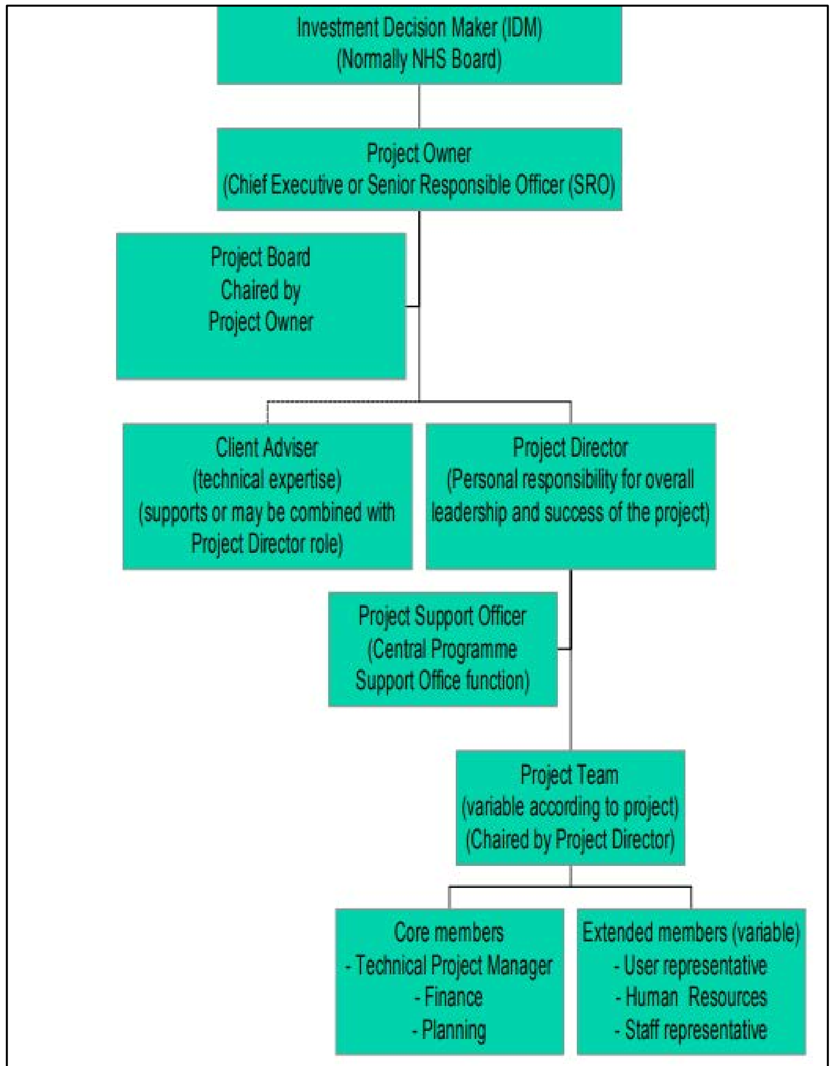
3.9.9 Section 7 of the guidance dealt with the key roles and responsibilities that required to be covered in managing programmes and projects together with the programme governance. It stated that:

> “At SGHD level the top team have oversight of all key NHSScotland Capital Programmes. This team require NHSScotland Bodies to set strategic priorities and then manage the risks and interdependencies on their major programmes, informed by a full understanding of the Departments current challenges and capacity.
>
> For each major programme overall direction and leadership responsibility should rest with one single named individual – a Project Owner or equivalent, who needs to be accountable.
>
> The SGHD has a pivotal role in enhancing capacity and capability. It supports programme and project teams, offers advice, ensures appropriate tools are used and disseminates lessons learned.”

3.9.10 The guidance continued:

> "Governance structures are crucial to enabling the right decisions to be taken at critical stages so that programmes and projects deliver strategic priorities and do not exceed the capacity and capability of NHSScotland Bodies."

3.9.11 The organisational chart below shows the typical project organisational structure that the guidance outlined for successful governance:



3.9.12 Notwithstanding that the guidance was issued fairly late in this period, the governance structure within NHSL for the RHSC/DCN project post NPD funding (see sections 4 to 6) and with the additional level of assurance provided by the Finance and Resource Committee, did on the face of it accord with this.

3.10 Gateway Reviews[12]

3.10.1 The following paragraphs look at how the Gateway Reviews were considered in the governance structure during this period.

Gateway Review 1

3.10.2 In respect of Gateway Review 1 which was carried out between 18th – 20th June 2008 (see section 23 .4 for full details) on the RHSC reprovision project and included a review of the Outline Business Case the following governance level decision making occurred as set out in the succeeding paragraphs.

3.10.3 The results of this Review were discussed at a meeting of the Finance and Performance Review Committee on 8 October 2008. It was explained that the purpose of the Gateway Reviews and the outcome of the Review. This was namely that while the project had been developed to the OBC stage there had been concern expressed by the Review report on the level of resources available to progress to FBC and advice had been given on the more detailed planning required to ensure a successful project outcome. Jackie Sansbury also advised the Committee of the recommendation to appoint a Project Director to take overall responsibility of the Project.

3.10.4 The Committee was advised of the Executive Management Team's decision to appoint a Project Director with capital projects and construction experience. After discussion between the Committee members, the Committee agreed:

> "to support the actions being taken by the project executive sponsors to address the recommendations made by the gateway review team and support the decision to appoint a project director with capital project experience to lead the next stage of the project and actions being taken to achieve this."

3.10.5 The Finance and Performance Review Committee was further updated on the actions taken following Gateway Review 1 at its meeting on 10 December 2008.

[1212] On Gateway Reviews generally, see Chapter 29.

these were that the Project Team had addressed the issues of the risk register and benefits realisation plan and the Project Director post would be advertised shortly. The Committee was also provided with a proposed governance structure.

3.10.6 The Finance and Performance Review Committee were advised at a meeting on 12 August 2009 that Project Director, Brian Currie had started on 3 August 2009 and would lead both the RHSC reprovision and the DCN reprovision projects. The intention was that the Project Director's first task would be delivering the FBC by December 2009.

3.10.7 The Inquiry can find no reference to Gateway Review 1 being discussed at the NHSL Board meetings.

Gateway Review 2

3.10.8 Gateway 2 took place between 23 to 25 February 2010 with a report published in March 2010. The Inquiry could find no mention of the Gateway 2 Review results being referred or discussed at the Finance and Performance Review Committee or the NHSL Board meetings.

4. Non-Profit Distributing Model (NPD) December 2010 – December 2012)[13]

4.1 Overview of the period

4.1.1 As a result of the change of procurement direction announced by the Scottish Government from a capital build of RHSC to a NPD for the provision as a joint project of both RHSC and DCN, the Project Team structure and supporting advisors were changed in a short timeframe. Procurement of technical and financial advisors was through frameworks and legal advisors were tendered. Their involvement brought experiences of other PPP procurement, which added to the input of Scottish Futures Trust (as NPD programme managers) and led to revised organisational arrangements.

4.1.2 This construction, maintenance, operation and finance of the RHCYP/DCN would be the first acute hospital project to adjoin an existing PFI acute hospital project (this being the Royal Infirmary of Edinburgh). The core Project Team under the Project Director was supplemented by, and eventually co-located on a regular basis with advisors and a wider team including Senior Capital Planning and Finance individuals to support the commercial aspects of the development of the business cases and procurement. The technical workstreams were revisited to agree the basis of the output specifications (ultimately the Board's Construction Requirements) to go to the marketplace.

4.1.3 Focus on creating the reference design and then the procurement documents – principally the Invitation to Participate in Dialogue (ITPD), was partly derived from minimising the further take up of clinical and operational time with the design having been already progressed with input from a relatively small cohort of clinical staff due to the specialist nature of the children's and neurosciences services.

4.1.4 The remit of the legal and commercial workstreams included establishing a scoring model for the tenders from interested parties, the development of the NPD Project Agreement (which was based upon SFT's standard form Project Agreement),

[13] On the NPD model generally, see the Inquiry's Provisional Position Paper 10 - Term of Reference 2: The Contractual and Funding Structure Relating To The Royal Hospital for Children and Young Persons/ Department of Clinical Neurosciences Project.

developing proposals for the construction and operational interface between NHSL's preferred bidder and Consort and developing potential funding requirements.

4.1.5 Significant engagement with SFT over this period was managed through a working group, this being the forum where the SFT Key Stage Review (KSR) documentation was agreed. Proposals developed within this forum were ultimately incorporated into the project structure. For example, the reference design brief was prepared for approval by SFT.

4.2 Guidance Manual

4.2.1 In July 2011, a revised version of the Scottish Capital Investment Manual (SCIM) was published which provided guidance on business cases for use on all infrastructure and investment projects within NHS Scotland. SCIM provided a blueprint to NHS Boards for presenting and developing a business case. NHS Boards were required to ensure that business cases are prepared in compliance with the requirements provided by the SCIM.

4.2.2 The 2011 SCIM provided health boards with guidance on a project from inception at the planning stage to evaluation of service benefits when a new build opened. The guidance covered such issues as investment appraisal, financial affordability and procurement but also the project management and governance arrangements.

4.2.3 The SCIM guide on the Outline Business Case[14] contained a section on the Management case which required a Board to consider such areas as project management arrangements. This comprised of reporting structure and governance, key roles and responsibilities, project recruitment needs and the project plan.

4.3 Joint Development of Business Cases for RHSC and DCN

4.3.1 The Scottish Government announced on 17 November 2010 that a number of capital infrastructure projects would be taken forward using a revenue funded model. This included the RHCYP and the DCN projects which were to be funded under the non-profit distributing (NPD) model.

[14] Scottish Government Health Directorates Capital and Facilities Division and the SGHD SCIM - Manuals (archive.org)

4.3.2 As a result of this announcement NHSL effectively required to:

- Abandon the capital funded construction contract with BAM;
- Adopt the NPD model for the RHSC and DCN project;
- Undertake a new procurement exercise for technical, legal, and financial advisors. 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 NHSL and for NHSL future use and the potential role(s) of the teams engaged by BAM in relation to working for NHSL or bidders.

4.3.3 The Scottish Government in November 2010 proposed to minimise any delay in the build of the new hospital by providing support to NHSL through the SFT. SFT were given a clear brief by the Scottish Government to develop a proposal and strategy that minimised any delay in the delivery of the project. It was proposed that given the stage of the detailed design of the hospital that the design development was completed and used as part of the NPD procurement.

4.3.4 The RHSC Project Steering Group on 2 December 2010 discussed the new procurement strategy. The Dashboard report stated:

> "Given this radical change of funding route, the Project Team have been instructed to cease all design and market testing activities planned in the coming weeks and redirect their efforts in preparing a study of the feasibility of combining a new DCN facility with a new RHSC at Little France. This is to be to be completed for NHSL consideration by 24 December 2010."

4.3.5 At a meeting of the Finance and Performance Review Committee on 12 January 2011, a report was submitted by the Director of Finance to provide the Committee with an overview of progress made to review the RHCYP and DCN projects following the Government announcement. The Committee was advised by Jackie Sansbury that:

> "two separate projects for the Royal Hospital for Sick Children and Department of Clinical Neurosciences on the same site would be very difficult to manage. Following a re-run of the non-financial option appraisal on the joint projects, it was considered that a single development would be the better option particularly supporting the clinical objectives for the projects."

The Committee were advised that a separate procurement exercise for the NPD model for the joint RHCYP/DCN project would require to be conducted.

4.3.6 The Committee agreed inter alia to:

- to confirm the previously agreed preferred option of a combined facility for the Department of Clinical Neurosciences and the Royal Hospital for Sick Children.
- to approve the commencement of a tender process to appoint advisors (technical, legal and financial) in addition to the advisory assistance provided by the Scottish Futures Trust
- that the proposed structure of the Project Team and a more detailed assessment of additional advisor costs would be brought back to the next meeting.

4.3.7 NHSL sought clarification from Scottish Government regarding the inclusion of DCN in the RHSC project as the joint build remained their preferred option clinically. This included advice on what was required for the OBC and what financial modelling was required in respect of options appraisal using NPD model. Scottish Government advised that it was about representing the work that NHSL had already done rather than re-doing it.

4.3.8 At a meeting of the Finance and Performance Review Committee on 9 February 2011 the Committee approved in principle the employment of both a design team and a technical advisory team to support the existing NHSL Project Team. The Committee also noted the requirement for an addendum to the Business Case with the format agreed with the Scottish Government Health Directorates.

4.3.9 At a meeting of the Finance & Resources Committee on 14 March 2011, the Committee agreed to recommend to Lothian NHS Board that the preferred option for RHSC/DCN was a joint build on the Little France site, funded through a Non-Profit Distributing (NPD) model and that a Business Case Addendum be prepared based on this option for consideration by the Lothian NHS Board meeting on 23 March 2011.

4.3.10 At a private meeting of the NHSL Board on 23 March 2011, the Board had before them for consideration the Business Case addendum which pulled together the governance arrangements needed to progress down the NPD route. The Board approved the recommendation that the preferred option for RHSC and DCN was a joint build on the Little France site through an NPD model and that Susan Goldsmith, Director of Finance, should submit the Business Case addendum to the SGHD.

4.3.11 The Business Case Addendum dated 23 March 2011 supplemented the 2008 RHSC OBC and DCN Initial Agreement and set out the options for delivering both reprovision projects on the Little France site using an NPD procurement route. The options available to NHSL were appraised for their non-financial benefits and risk, and their financial affordability and were analysed in the Addendum. NHSL sought Scottish Government support for both the direction of travel and for consideration of the initial capital and revenue estimates. Pending approval of the Business Case Addendum, NHSL proposed to submit a single OBC followed by a Full Business Case (FBC) incorporating DCN into the RHSC Reprovision project that presented the preferred option in more detail.

4.3.12 The proposed management of the new build project was set out in the Business Case Addendum in terms of the diagram below:

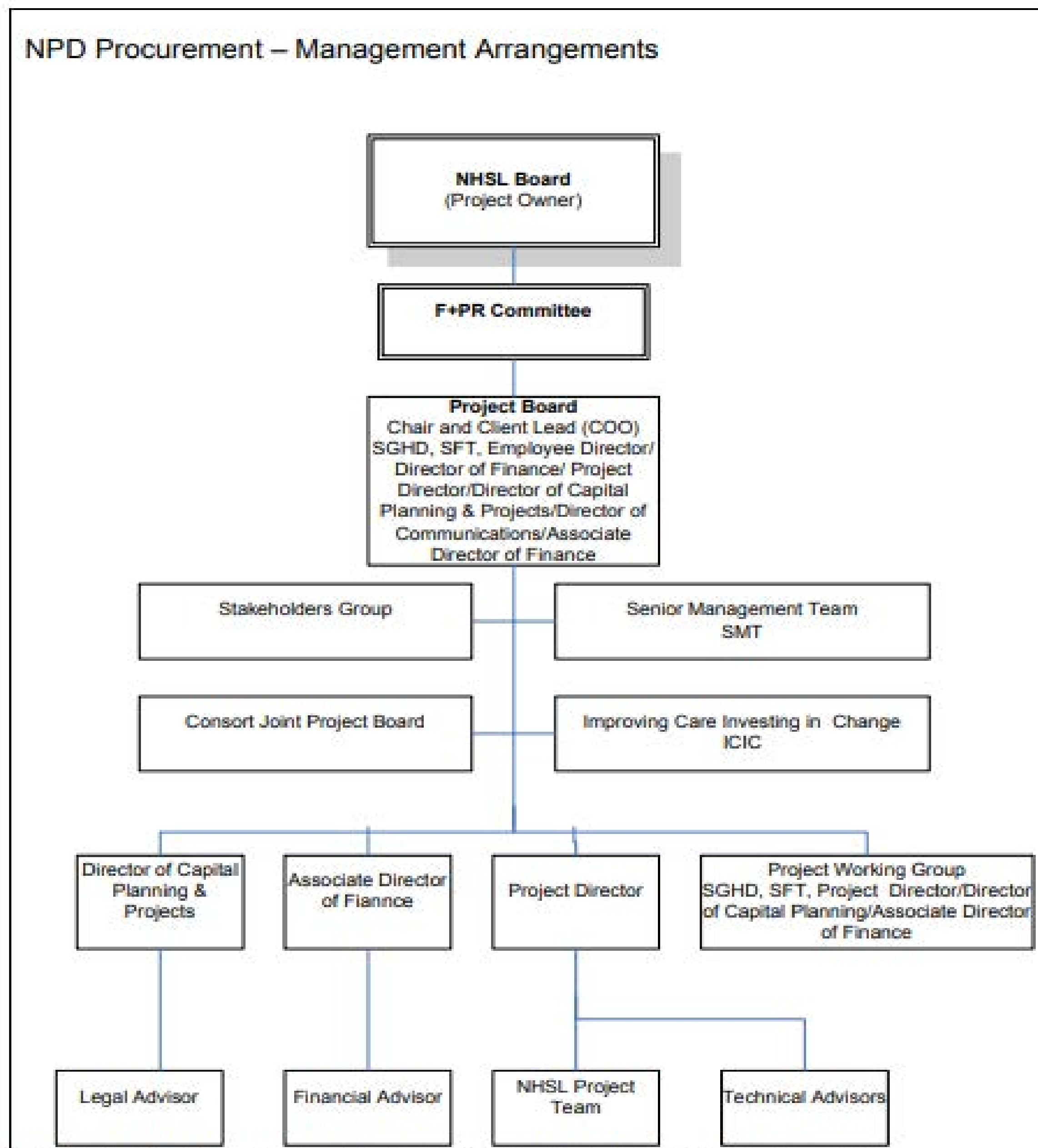
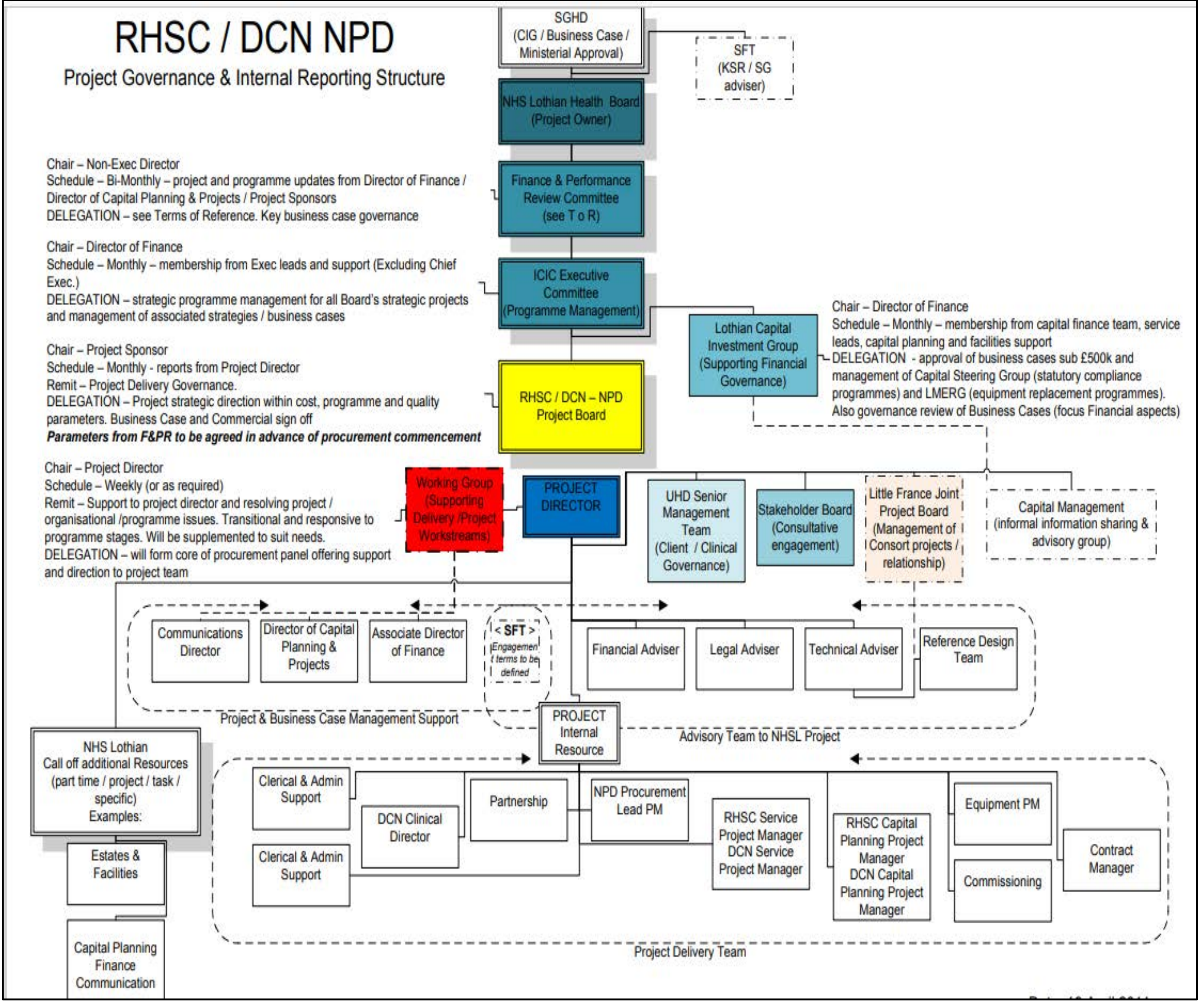


Figure 12: Management arrangements for the preferred option

4.3.13 By an organigram dated 19 April 2011, NHSL set out the governance structure of the RHCYP/DCN project . This consisted of the organisational chart detailed below which had written details on committee chairs, remits, schedules and delegation. Overall, this presented as a complicated structure:



4.3.14 At a meeting of the Lothian Capital Investment Group on 26 May 2011, chaired by Susan Goldsmith it was noted as part of the financial updates of major schemes that whilst the RHCYP/DCN project was now primarily a revenue based scheme, there would be a requirement for capital funding to support the project and that this was currently being quantified.

4.3.15 Throughout April and May 2011, NHSL responded to comments by CIG on the Business Case Addendum. On 21 June 2011, Acting Director-General Health and Social Care and Chief Executive of NHS Scotland, Derek Feeley wrote to the Chief Executive of NHSL, James Barbour supporting the Business Case Addendum and gave approval to develop an OBC for an integrated RHSC and DCN at Little France.

4.3.16 At a Lothian Capital Investment Group meeting on 30 June 2011, the Group were updated that a lot of work was ongoing with the RHCYP/DCN project The Group were advised that a revised Business Case would go to the next CIG.

4.3.17 In September 2011 the Project Execution Plan was published by Davis Landon with the purpose of imparting "to all parties involved in the project a clear understanding of how they interact with each other, and sets out the governing strategy, organisation, control procedures and roles and responsibilities for the project. The document provides a concise introduction to the project for new team members in terms of how the project will be delivered." For more information on the content of this Project Execution Plan and the governance regarding the external advisors see section 23.2 below.

4.3.18 The IIB provided scrutiny of the RHCYP/DCN project at the Business Case Stage of the project following the decision to fund the project through the NPD model. An IIB discussion on the RHCYP/DCN Project took place on 26 September 2011. This is fully discussed at section 26.3 of this paper.

4.3.19 At a meeting of the Finance & Resources Committee dated 14 December 2011 the Committee agreed to approve the OBC for submission to both NHSL Board and the Scottish Government.

4.3.20 On 25 January 2012 the NHSL Board approved the OBC for the RHSC/DCN project, subject to approval of arrangements to acquire land and access rights by the lender committees. The Board at the meeting were advised that the impact of the change of funding route had resulted in the timescale originally proposed for the RHSC development being delayed due to the need for extra work on the DCN aspects of the development. Additional governance layers were also required by Scottish Futures Trust and funders' lawyers. Jackie Sansbury also reminded the Board the process had been subject to several reviews by SFT, as well as a gateway review. She commented the Scottish Government Health Department had seen the draft OBC and were represented on the Project Board. Jackie Sansbury advised if the Board approved the OBC, it would then be formally submitted to the Scottish Government Health Department.

4.3.21 In relation to the governance /management of the project the Vice Chair of the Board commented at the meeting of 25 January 2012 that:

> "moving forward it would be important at Board level to agree how the Board governed the project and suggested this should be through trusting the project team to provide exception reports on progress, as well as providing support to both Mrs Goldsmith and Mrs Sansbury recognising they already had substantive and strategically important jobs to undertake in their own right."

4.3.22 The Chair advised the meeting that Price Waterhouse Cooper had reviewed management capacity. Susan Goldsmith, Director of Finance reported that the Project Board had received a paper proposing the team be enhanced by a further four staff members, one of whom was to have the necessary commercial experience required for the next phase of the project. She advised the Board that the enhanced staffing requests would need to be agreed by the Finance and Performance Review Committee.

4.3.23 In terms of board assurance, Susan Goldsmith advised the NHSL Board at the said meeting that the Project Board would report to the Finance and Performance Review Committee, which would also approve its scheme of delegation. One of the board members commented whilst she welcomed this position, it would be important for the board to be assured by the chair that project oversight arrangements were adequate. The chair advised he would discuss an appropriate mechanism with the vice-chair, Mrs Goldsmith and Mrs Sansbury.

4.3.24 A letter which confirmed NHSL Board's approval of the OBC dated 30 January 2012 was sent to SGHD.

4.3.25 Issus regarding the OBC required to be discussed with NHSL, SFT and SGHD in early 2012 and these were resolved. The status regarding approval of the OBC as at 17 April 2012 was confirmed in a letter from Nicola Sturgeon (at the time Deputy First Minister and Cabinet Secretary for Health, Wellbeing and Cities Strategy) to Sarah Boyack MSP . An extract from this is as follows:

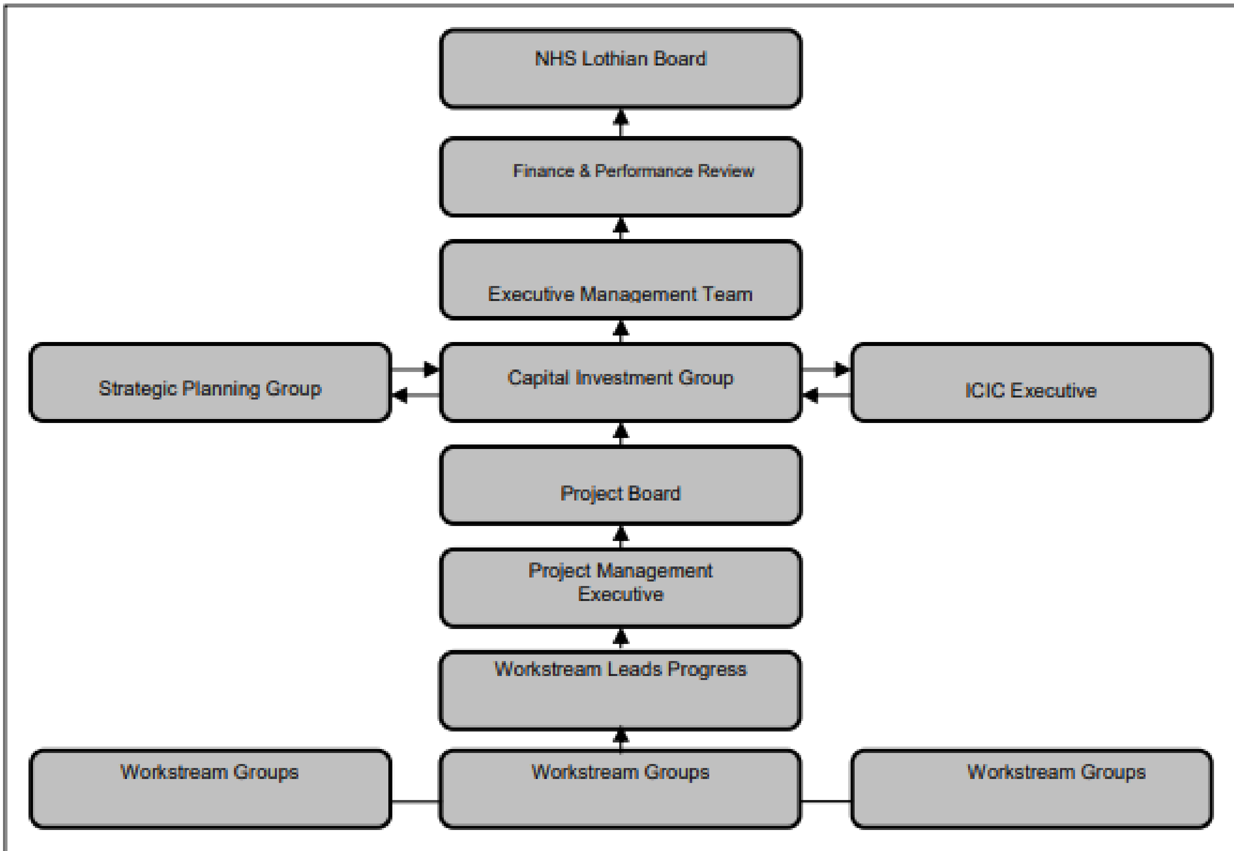
> "…. There were a number of outstanding issues associated with the Outline Business Case which have subsequently been resolved with the NHS Board. The approval of the Capital Investment Group is subject to conclusion of the Supplementary Agreement with Consort regarding the land swap and associated commercial issues. It is important that these issues are satisfactorily resolved prior to the launching of any procurement in order that there is a level playing field for all bidders concerned and that there is a robust position from which the Board can proceed with the project. *…."*

4.3.26 The Scottish Government's CIG considered the OBC for the RHCYP/DCN project using expediated procedures and by letter dated 18 September 2012 they approved the OBC. The comments to the Chief Executive of NHSL within the letter were:

> "Following CIG's original consideration of the project the Board were informed that approval of the OBC would be conditional on receipt of planning approval in principle and approval by funders of the existing PFI contract at Little France to the land and commercial changes required (encapsulated in Supplementary Agreement 6). Now that these conditions have been fulfilled CIG have recommended approval and I am. pleased to inform you that I have accepted that recommendation and now invite you to submit a Full Business Case."

4.4 Outline Business Case

4.4.1 The OBC that was approved by the NHSL Board in January 2012 set the governance and management structures for the project. The structure set out in the diagram below was designed to provide clarity on the project.



4.4.2 The OBC commented on the delegation that the Project Board had at this stage of the project namely to approve the following on behalf of the Finance and Performance Review Committee:

- OJEU notice for the project at Little France.
- Pre-qualification questionnaire for interested organisations.
- Scoring methodology for pre-qualification submissions to short-list three bidders.

4.4.3 The Project Team (from the OBC) at this stage was comprised of the following personnel:

Role	Responsibilities
Project Sponsor	Has ultimate responsibility for the project and leads the Project Board, providing overall direction and management of the project.
Project Director	Is responsible for the successful delivery of the project and is accountable to the Project Sponsor. The Project Director leads on the development control plan, corporate governance and negotiations with Consort Healthcare
Project Manager	Is the primary interface and first point of contact for the Project Director on all day-to-day issues affecting the project. Responsible for the overall project governance, structures, processes, lines of communication, programme monitoring and reporting (as detailed in the PEP). In addition, the project manager is responsible for the co-ordination of all workstreams under the NPD process.
Clinical Project Directors	Are responsible for providing strategic clinical input to the project. They are also responsible for representing the views of the clinical user groups within the design and project generally.
Service Planning Project Managers	Are responsible for the preparation of: • The clinical operational briefs, developing the clinical design and coordinating the eventual clinical functionality sign off. They will have the responsibility for representing the views of the clinical user groups within the design and project generally. • The non-clinical (FM) operational briefs and developing the clinical design and building functionality • The business case in line with the appropriate guidance.
Capital Planning Project Managers	Act as the liaison between NHSL and the reference design workstream and the design and construct workstream, responsible for informing the board's construction requirements and ensuring these are agreed by the appropriate NHSL user groups. These include the development of the schedule of accommodation. One of these Project Managers leads the equipment workstream the main output of which is equipment schedules.
Enabling Works Project Manager	Is responsible for developing managing and completing all clinical and non-clinical related enabling works to allow the RHDC + DCN project to take place.
Project Administrators	Assist the Project Director and wider project team in the administrative aspects of the project including meeting management.
Commissioning Manager	As described in the SCIM PPP Guide[14], this individual will be responsible for the programme of moves, management of the transition process, facilitating change, risk identification and management
Contracts Manager	As described in the SCIM PPP Guide, this individual will be responsible for specification, evaluation of tenders and negotiation of contract for FM services.
Project Accountant	Will be responsible for FBC production, assessment of affordability of tenders, interrogation of the financial model and application accounting standards.

Figure 42: Key project roles and their responsibilities

The Project Manager was Davis Langdon and there were two Project Clinical Director – DCN and RHSC

4.4.4 There were 11 workstreams set up to move the project through to financial close. These were:

- Project Management Executive
- Procurement Coordination
- Design and Construction
- Facilities Management
- Cost Consultancy
- Commercial
- Finance

- Legal
- Equipment
- Business Case
- Enabling works

4.4.5 A fixed term Reference Design Team were appointed to develop designs to the stage require for the OBC and in preparation of procurement. The workstreams met fortnightly and reported to the Project Manager.

4.4.6 The OBC set out the stakeholder involvement in the project as:

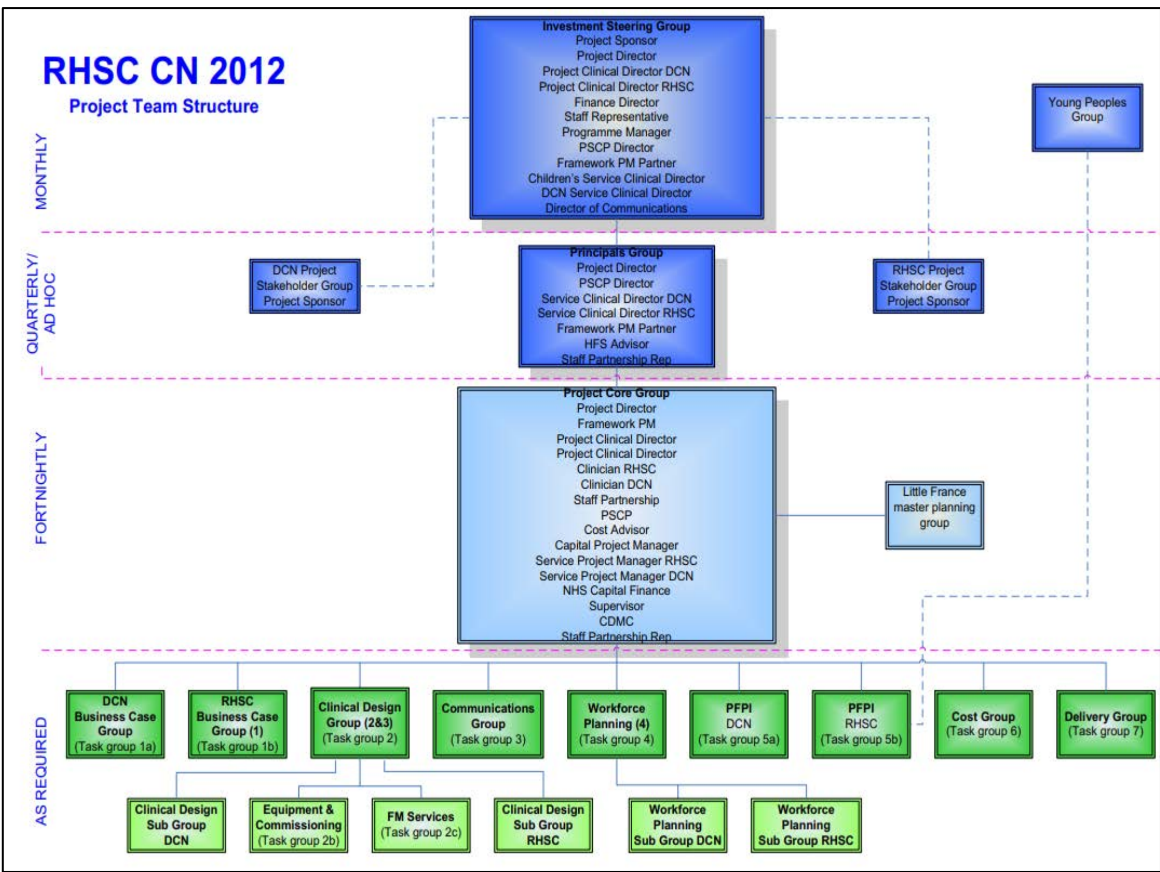
> "The stakeholders to the project can be summarised under six main headings:
> • NHS Lothian, comprising Lothian Partnership Forum, individual clinical design groups, Facilities Management, joint (support services) groups
> • RHSC + DCN combined project workstream groups
> • Statutory authorities and public utilities including the Health and Safety Executive, City of Edinburgh planning department as well as other bodies such as Architecture and Design Scotland (A&DS) who are a statutory consultee through the planning process
> • Funding comprising Lothian NHS Board, other NHS Boards, charities, the University of Edinburgh and the Scottish Government.
> • Patient Focus and Public Involvement (PFPI) groups
> • Other Stakeholders comprising National Education Services Scotland (NES), core NHS Lothian sections and others.
>
> Key stakeholders of the project are represented within the appropriate workstreams and, where required, at project board level."

4.4.7 In terms of the clinical design, the OBC outlined that the structure that was in place ensured that staff fed into the reference design, with representatives of departments participating in the design task groups. They engaged with their colleagues and the Project Team to develop and agree operational briefs that

reflected their requirements, and to review project designs and proposals and fed back to the design team.

4.5 Governance Structure 2012

4.5.1 The Inquiry has been informed that in 2012 the Project Team management structure for this Project within NHSL was as follows:



4.6 Workstreams/Groups

4.6.1 Within this period (December 2010 to December 2012), the following workstreams/ groups were comprised in the Project:[15]

[15] N.B. that the period covered by this table includes the transition from a capital funded project to an NPD project.

Client Consultation/Operational Groups and Workstreams

Name	Role	Who the workstream/group reported to.
Procurement Coordination	Developed and agreed the procurement elements of the projects including strategy and documentation. Guided the other technical subgroups in the development of their deliverables consistent with agreed procurement process.	Workstream Progress Group (attended by workstream leads to monitor progress of each workstream). This workstream joined with Commercial Workstream to create a Procurement Deliverables Team which incorporated financial and legal advisors.
Design and Construction (D & C)	Addressed all technical non-clinical issues in relation to procurement of the facility	Workstream Progress Group (attended by workstream leads to monitor progress of each workstream). The D&C workstream communicated with NHSL through the NHSL D&C Team Member. The workstream lead communicated on a regular basis with the other workstream leads to coordinate and maintain consistency across the project.
Facilities Management (FM)	Assisted and advised NHSL to ensure the reference design took due cognisance of how FM services could be effectively delivered during the operational phase.	Workstream Progress Group (attended by workstream leads to monitor progress of each workstream).

Name	Role	Who the workstream/group reported to.
	During the NPD procurement process and until Financial Close, the FM work-stream worked with the design team and NHSL to develop FM Service Level Specifications (SLS), tender documentation, payment mechanism and interface agreements, which ensured the new facility was effectively and efficiently maintained	
Cost Consultancy (part of commercial services support)	Assisted and advised NHSL in respect of RHSC and DCN capital value, life-cycle costing and change control processes during the development of the reference design and during the NPD procurement process up until Financial Close	Workstream Progress Group (attended by workstream leads to monitor progress of each workstream).
Finance (commission management)	Supported by Ernst & Young to provide financial advisory services for the pre-construction and procurement phases	Project Management Executive.
Commercial	Prepared the finance model, financial elements of tender documents and financial appraisal procedures.	Workstream Progress Group (attended by workstream leads to monitor progress of each workstream) Led by Ernest & Young
Legal	Board was supported by MacRoberts LLP to provide legal advisory services for the pre-construction and procurement phases of the project.	Project Board
Equipment	Was responsible for determining the facility-wide equipment	Workstream Progress Group (attended by

Name	Role	Who the workstream/group reported to.
	requirements. This group was tasked with confirming the users' ultimate equipment requirements for inclusion within the procurement model. This role also considered the replacement and transfer strategies in place within the RHSC and DCN facilities in the term leading up to facility hand-over.	workstream leads to monitor progress of each workstream). Workstream formed of NHS staff and other staff providing professional support where required e.g., general medical physics equipment manager, Xray, anaesthetic services manager.
Business case	Purpose was to deliver both the Outline Business Case and Full Business Case in accordance with key milestones.	Workstream Progress Group (attended by workstream leads to monitor progress of each workstream). Work-stream comprised: NHSL Project Director, Associate Director of Finance, Capital Planning Project Manager and EY Financial Advisor; the NHSL Service Planning Project Manager and the Technical Advisors contribute as required. Task group for DCN and one for RHCYP
Enabling works	Management and coordination of enabling works. Split into clinical and site wide.	Workstream Progress Group (attended by workstream leads to monitor progress of each workstream)

Name	Role	Who the workstream/group reported to.
Clinical Support	Ensured the clinical needs and interests of the project were fully incorporated. NHSL engaged clinical and operational staff, through the NHSL Project Team, to inform and review the Reference Design. They had a responsibility to ensure that the design and planning reflect clinical operational need and best practice.	Reported to the Project Core Group.
Reference Design Team	Production and management of NHSL's Reference Design for RHCYP and DCN.	Reported to Workstream Progress Group.
Communications Group (Task Group 3)	Remit was to build specific communication strategy and deliverables based on NHSL communication strategy	Reported to Project Core Team. Chaired by Project Director
Workforce Planning Group (4)	Remit was to inform the workforce requirements for the new building and new model of care.	This had two subgroup which reported to it: Workforce Planning Sub Group DCN and Workforce Planning Sub Group RHSC. Held quarterly. Reported to Project Core Group
Risk Workshop	Remit was to review risk status and update on mitigation of risk management plans	Reported to Project Management Executive. Facilitated by the Project Manager. Met monthly
Cost Group (Task Force 6)		Reported to the Project Core Group

Name	Role	Who the workstream/group reported to.
Delivery Group (Task Group 7)		Reported to the Project Core Group
Project Team meetings (2012,2013, 2014 2015, 2018)	Internal teams catch ups. A general team meeting	Any issues raised would be reported to the appropriate group and if require the Project Core Group.

Management of Client Groups/Workstreams and External Consultation workstreams

Name	Role	Who the workstream/group reported to structure.
Project Management Executive	Not a specific workstream. Liaised with all workstreams to monitor progress and ensure project proceeding.	Project Board Comprised of Project Director, Commission Director Lead Project Manager, Legal Lead and Finance lead. Met fortnightly
Workstream Progress group 2011	Attended by workstream leads. Monitor overall progress of workstreams against the programme. It sets tasks and agrees coordination between workstreams	Reported to Project Management Executive Internal project managers meeting for internal management purposes. Information gathering pre-procurement. Met Monthly
Project Sponsor Meeting (2010 – 2012)	Provided the project sponsor with an update on project progress including the business case.	Reported to Project Board Monthly meetings

Name	Role	Who the workstream/group reported to structure.
Patient Focus Public Involvement (PFPI) DCN (Task Group 5a)	This was part of the consultation process required for the planning application. Ensures effective involvement of children, young people and their carers on key aspects of the project.	Communication Task Group Reported to Project Core Group
Patient Focus Public Involvement (PFPI RHSC (Task Group 5b)	This was part of the consultation process required for the planning application. Ensured effective involvement of children, young people and their carers on key aspects of the project.	Communication Task Group Young Peoples Group reported to this Task group. Reported to Project Core Group
Peer Review	The remit was to provide a strategic project advisory function	Reported to Project Board Consisted of Project Director and lead representatives from the technical advisory team. Met monthly
BREEAM Group	This was responsible for management and monitoring of BREEAM status including design and briefing interface	
Planning Meeting	Remit was to integrate the planning and transport departments of Edinburgh City Council into the design process	
RHSC and DCN Working Group (2011)	Project Working Group which was to review and deliver key stage review documents.	An informal workstream with SFT to enable progress of their Key Stage Reviews
Commercial Workstream (2011-2012)	Internal meeting which met pre-procurement stage	

Name	Role	Who the workstream/group reported to structure.
Procurement Workstream (2012- 2013)	Internal meeting which included relevant external advisors (financial) for development of the commercial aspects prior to procurement	Used to be called the Commercial Workstream above
Core Evaluation Team (2012-2014)	This was an internal meeting, with advisor input, to bring together procurement scores, agree feedback and prepare reporting. It reported to the Programme Steering Board and onwards to Finance & Resources Committee.	
RHSC and DCN Steering Group 2010 – 2011	RHSC + DCN Adjacency Matrix	Different from latter group of same name.
Project Stakeholder Board (2011- 2013)	Informed RHSC and DCN stakeholder groups and organisations of progress	Reported to Project Board
Capital Management Group (2011, 2013, 2015)	Internal informal weekly meeting which reviewed progress and issues affecting projects at RIE	

4.7 SFT concerns re Governance.

4.7.1 In January 2011, SFT had concerns about the Project Team and the lack of someone with PPP experience.

4.7.2 This was re-iterated in a meeting between SFT, Scottish Government and NHSL on 1 February 2011. NHSL provided to this meeting an overview of the Project organisation and structure and advised that Jackie Sansbury would be the client and Susan Goldsmith would lead the procurement. It was agreed that NHSL would set this out in a document to ensure a common understanding and to reflect the different

roles and responsibilities e.g., the distinction between the Project Board and Project Team.

4.7.3 At this meeting, the role of the Project Director was discussed and the need to ensure that the complex project was appropriately led and supported. It was acknowledged the need to undertake a capability assessment of the current Project Director with a view to identify any gaps that required to be filled. It was explained that due to the structure used in NHSL, this meant that whoever led the project could only do so through a director and not direct to the CEO.

4.7.4 On 23 February 2011, Donna Stevenson, SFT reminded NHSL of the need to set out in a document the purpose in the proposed Strategic Board meetings and the Working Group meetings and referred to the SCIM guidance in this area. The Inquiry assumes that this was in reference to the Guidance examined in section 29.9 below.

4.7.5 On 11 March 2011, SFT highlighted the need to have one senior lead for the project – the Senior Responsible Officer. This was "vital for the ongoing decision making, direction and management of the project". At that point in time SFT were unclear whether this was Jackie Sansbury as she was named in the structure as the "Client Lead" or Susan Goldsmith who was named as the "Procurement lead".

4.7.6 SFT's concerns regarding the governance of the project were raised in the letter dated 1 June 2011 to Jackie Sansbury. SFT stated that in their view the skills and experience of the Project Director and the Project Team were of "vital importance" in the successful delivery of the project. They pointed out that there were additional demands on a Project Team on revenue funded projects as compared with capitally funded construction projects and the Project Team required experience to manage the advisory input into the project. They felt this would be difficult if the advisors were the sole source of experience on key aspects of the project.

4.7.7 Within this letter SFT gave advice that it was not sensible to appoint advisors with significantly overlapping remits (SFT view was that that was the situation with the technical advisory appointments at that stage) and were concerned that the architects who were employed on the reference design of the project were not restricted from working for one of the bidders. Overall, they stated "we do not believe

that the current project team has sufficient experience of PPP project delivery and would look to agree with you a change to this resource at the earliest opportunity and certainly well before the commencement of procurement.” It was envisaged that SFT would attend both the Project Board and Working Group meetings.

4.7.8 Gordon Shirreff was seconded to NHSL by SFT in June 2011 for 5 weeks to mitigate the concerns of SFT regarding the PPP experience within the project team. The intention was that he would provide input as a member of the Project Team to the development of the OBC. When this was proposed by SFT there was a concern from NHSL. NHSL set out terms of reference for the secondee’s temporary involvement with the NHSL team which limited the areas of involvement to procurement and the business case. Any views expressed by Gordon Shirreff re the management and administration of the project were not to be taken as the view of SFT. The Project Director stated that any comments made by the SFT secondee outwith the terms of reference were of his own making.

4.7.9 At a Project Working Group on 16 June 2011, Gordon Shirreff stated that he was personally preparing at his own initiative a 'Project Governance' paper and confirmed this is not a SFT document or view. The Working Group was advised that the Project Board had previously discussed and agreed the governance structure for the project and that it followed NHSL governance structure. It was decided that Gordon Shirreff was to forward the proposal to Brian Currie, Project Director in the first instance for consideration. This paper was referred to in the PWC report (see section 8.1.6) where they commented that it “contained a number of recognised best practice processes”.

4.7.10 On 16 June 2011, Susan Goldsmith, Director of Finance, NHSL wrote to Peter Reekie, SFT; and in relation to the SFT concerns re the experience of the Project Team stated:

> “Your assertions regarding the project director and team capacity are not evidenced given the established resource and governance in place for this project. We have already acknowledged the need to supplement the team and governance in respect of the project procurement route now required. We are grateful for the short-term support offered by SFT in this regard.

> We will work with you and SGHD to seek such additional input into the team, within the confines of staff governance and procurement rules. Our advisory team has just been appointed and scopes agreed to ensure no overlap of service provision. We are happy to share this with SFT as part of the ongoing project support."

4.7.11 Susan Goldsmith in her statement to the Inquiry (April 2022), in relation to describing the secondment of Gordon Shirreff, stated "After this short period, it became clear that the team, with advisers, already had a sufficient mix of experience and his role was no longer required."

4.7.12 At a meeting of the Project Board on 3 July 2011 again SFT raised concerns regarding the composition of the Project Team:

> "AB stated on behalf of SFT that they continue to believe that there is duplication of technical advisory duties through the employment of both Mott MacDonald and Davis Langdon. This was refuted by NHSL and BC explained that complimentary skills and experience have been deliberately specified with no overlap of duties of doubling up of fees."

4.7.13 On 5 July 2011, a meeting took place between NHSL, SFT and the Scottish Government. In relation to the Project Team the discussion at the meeting was as follows:

> "NHS Lothian confirmed that they did not agree with the sections in SFT's letter regarding the level of capacity within the NHS Board to support a NPD procurement, but they had, had commissioned PWC to do a stock-take on the governance arrangements supporting the projects.
> Susan Goldsmith was due to meet Cameron Reevie on 5 July to discuss. It was clear from discussion that the individual seconded into NHS Lothian from SFT needed to add value to the ongoing work within NHS Lothian. There were questions over the role and remit of that individual and there were to be discussions internally within SFT as to the work undertaken and consideration as to whether ongoing engagement of that resource was indeed required and indeed did add value."

4.7.14 On 12 July 2011, a meeting to discuss the RHCYP/DCN project took place between Scottish Government, NHSL and SFT. The Chief Executive of NHSL stated that the meeting was "to mutually agree the respective accountabilities and responsibilities for the RHSC/DCN project, in respect of Scottish Government, SFT and NHS Lothian." In relation to governance the key points of the meeting were:

- SFT stressed accountability for delivering the project remained with NHSL and its Accountable Officer and that accountability for the wider NPD programme rested with SFT. Therefore, SFT would generally act in a supporting/advisory capacity.
- SFT reiterated concerns about the strength of the project team and sought clarification that the PWC review of the project arrangements would include both governance and project management aspects. NHSL confirmed this was the case and the review would ensure the necessary skill set were in place at Director and sub-Director level to ensure the proper delivery of the project.
- NHSL recognised the points made by SFT about the complexities of the competitive dialogue process and accepted currently NHSL would need more capacity in this area, although it was noted the project had not reached that stage

4.7.15 SFT issued comments and issues for clarification on the OBC shortly after 22 December 2011 and in relation to governance referred to the PWC report (see below) and the requirement of delegation to the Project Board to simplify decision making. SFT expected the extent of this delegation to be greater as the project moved to the procurement stage. For further information on SET 's involvement in the OBC please see section 27.6 of this paper.

4.7.16 SFT reiterated their concerns in the Pre -OJEU Key Stage Review 1:

> "SFT has consistently commented that the team need to include a further resource with sufficient relevant commercial PPP experience: this is in addition to the proposed contract manger whose main focus appears to

> be on specification during procurement and the contract management thereafter… SFT has made a number of recommendations as to resourcing throughout the project and is content with the resourcing which is in place. NHSL has advised that Susan Goldsmith is the executive director responsible for the project and that Brian Currie reports to her. SFT recommends that the Board communicates to bidders and others involved in the projects a clear reporting and decision-making structure within the project team."

4.8 Price Waterhouse Coopers

4.8.1 A meeting of the Project Board on 3 July 2011 commented on the appointment of Price Waterhouse Coopers (PWC) as follows:

> "PWC have been commissioned to undertake a skills analysis of the NHSL Project Team following recently expressed belief from SFT (P Reekie letter to JKS of 1st June 2011) that the current project team has insufficient experience of PPP delivery and SFT would look to agree with NHSL a change to this resource at the earliest opportunity. PWC to report in August 2011."

4.8.2 Full details of the PWC report published on 13 September 2011 can be found in section 34.1 of the paper.

4.8.3 At an Executive Management Team meeting on 6 December 2011, the Director of Finance commented that financial commissioning and commercial aspects of the Project Team needed to be strengthened and this would be undertaken through the Project Board. The Chief Executive of NHSL stated that the PWC report had been clear that the Director of Finance was responsible for the commercial aspects of the project, including the Consort negotiations. He emphasised that the person responsible for this aspect of the project would require to report directly to someone at Executive Management Team level.

4.8.4 The NHSL Board mentioned the PWC report at a private meeting on 25 January 2012, namely that management capacity had been reviewed. The Board

was advised that the Project Board had received a paper proposing the team be enhanced by a further four staff members, one of whom would have the necessary commercial experience required for the next phase of the project. This is the only reference the Inquiry is aware of in relation to the PWC report and its discussion at NHSL Board. The Inquiry understands that this issue was resolved by the deployment of additional resources made available to the Project Team.

4.8.5 There was reference to the PWC report in the OBC. It set out that in August 2011, NHSL had engaged PWC to conduct a review of the significant challenges and risks around the project. Appendix 3 of the OBC set out a summary of the PWC recommendations to NHSL together with the NHSL responses. In terms of governance (relevant to this paper) the NHSL action plan as at 4 November 2011 stated the following:

> “The role of the Project Director and Advisors
>
> PWC recommendation :1.4 – the role of the Project Director should be re-assessed to ensure the present incumbent is fully supported in all key facets of the project’s development.
> Agreed action: A matrix setting out the roles and responsibility of the internal team and advisors is being prepared for the Project Board and F&PR in December.
>
> PWC recommendation :1.5 – we see benefits for NHSL through a single lead advisor working under the Project Director to ensure that other advisors have specific project roles for clarity and avoidance of duplication of effort and cost. Additionally, some rationalization of the wide range of advisors could also be considered after a full assessment of their roles and relative value.
>
> Agreed action: This is already in place. Mott Macdonald are the single lead advisors for NHS Lothian. Rationalisation will take place as the team working on the reference design and suite of procurement documents complete their work.

Governance Model

PWC recommendation 5.1 – the key delivery and governance roles to be delivered by the Director of Finance and Chief Operating Officer should be identified and allocated with clarity, to avoid conflicts or duplication. The hands-on role for the Director of Finance in delivery would currently indicate the need for the "governance" roles to be with the Chief Operating Officer.
Agreed action: This will be set out in the matrix of roles and responsibilities which will cover the different stages of the project.

PWC recommendation 5.2 – to meet its role in moving the Project through key stages in project lifecycle NHSL must ensure that the Project Board reflects all main stakeholders with input as necessary to inform the Board or provide expert advice. The Board should increase its formal business and provide an appropriate governance trail of discussion and decision making.
Agreed action: The role and remit of the Project Board has been reviewed. Membership has been extended and a suite of reports will be considered by the Project Board.

PWC recommendation 5.3 – it may be valuable to demonstrate robust governance within NHS Lothian by benchmarking its current internal arrangements and individual roles with that paper.
Agreed action: see 5.2 and 1.4.

PWC recommendation 5.4 – the current Project Governance and Internal Reporting Structures at Appendices 1 and 2 should be revisited to redefine more clearly the decision making and approval roles within NHSL, aiming for improved clarity and simplification. We appreciate that the balance between the cover of all key risks whilst avoiding duplication is never an easy task to achieve.
Agreed action: Reporting structures reflect the Governance arrangements within NHS Lothian for a wide range of matters. It has been agreed by the

F&PR Committee that there will be a delegation of authority to the Project Board and this will simplify decision making."

4.8.6 A report by the Director of Finance/Chief Operating Officer to the Finance and Performance Review Committee on 8 February 2012, had as its purpose to outline the resource and facilities requirements for the RHCYP/DCN project through the NPD procurement process and approval of the FBC. This was to ensure that the Project Team had the right level of resource and response to advice and guidance from SGHD and SFT during the OBC development. The report also addressed the PWC recommendations.

4.8.7 The Finance and Performance and Review Committee was recommended by officials to:

- Approve the recruitment of four posts to the NHSL Project Team:
  - Commissioning Manager
  - Communications Manager
  - Contracts Manager
  - Project Accountant
- Approve the secondment of a recognised PPP expert for the procurement phase of the project in a support role to the Project Director (as recommended by both SFT and PWC).
- Approve the resource for dedicated project time for the Director of Capital Planning & Projects and the Associate Director of Finance during the procurement phase of the project.
- Note the establishment of a Project Office suitable for the procurement phase of the project.

This was agreed by the Committee at the meeting on 8 January 2012.

4.9 Key Stage Review[16]

4.9.1 There was one Key Stage Review carried out within the period covered by this section of the paper. That was the Pre OJEU KSR.

4.9.2 SFT and NHSL were working on this KSR throughout 2012. On 9 March 2012, SFT wished to discuss the outstanding issues on the checklist with NHSL. On 30 April 2012, SFT reminded NHSL of the relationship between the design product review and the Pre ITPD KSR:

> "I attach the able of recommendations from the Project Review. As you will appreciate, SFT is not signing off on the design. Rather at the Pre ITPD KSR, we will look to the Board to confirm that it has taken account of and implemented the recommendations. Given that the reference design is now completed it would be useful at this stage if you could return the table confirming the implementation of the recommendations."

4.9.3 On 3 December 2012, SFT sent to NHSL the final draft KSR which had been reviewed by SFT's second reviewer. SFT confirmed that a number of the recommendations reflected the stage of development of the ITPD and that SGHD would issue the funding letter.

4.9.4 On 4 December 2012, SFT sent the signed Pre- OJEU KSR to Susan Goldsmith to sign on behalf of NHSL

- In relation to the Pre-OJEU KSR report, it is worth noting that it points out that "NHSL advise that the Project Steering Board will approve the procurement documentation including evaluation criteria and make recommendations to the Finance and Performance Review Committee… SFT considers that this delegation scheme is appropriate but it recommends that the Project Steering Board is made explicitly aware of terms and that reference is made to it as part of the ongoing decision making of the Project Steering Board and within the project."

[16] On Key Stage Reviews generally see Chapter 28; see also section 5.5.

4.10 Gateway Review 2

4.10.1 In a report to the Finance and Performance Review Committee on 13 September 2011, the Committee were advised that the project had been subject to Gateway Review 2 from 5-7 September 2011 and a draft report had been received by NHSL.

4.10.2 The Executive Management Team were informed of the grading from the Gateway review at a meeting as part of a general update on the RHCYP/DCN project at a meeting on 5 October 2011.

4.10.3 A report to the Finance and Performance Review Committee for its meeting on 12 October 2011, provided members with the rating (amber /red) of the Review Team and the recommendations from the Review together with the corresponding actions by NHSL. This was in the context of a paper giving a general update on the RHSC and DCN project, including the key risks for the project. The minutes of the meeting, while indicating that there was some discussion of matters in relation to the project, do not specifically mention the recommendations and the actions that were proposed.

4.10.4 In respect of the Gateway Review 2 resubmission, NHSL Board was advised of the Amber/Red status of the RHCYP/DCN project at a meeting of the Board (private) on 28 September 2011. The Board was advised this status was on the basis NHSL could not yet demonstrate it could ensure the delivery by Consort of aspects of the project to the same timescale as the rest of the project.

5. Procurement/inc. Design Development to Financial Close (January 2013 to February 2015)

5.1 Overview of the period

5.1.1 This period commenced with the preparations for taking the NPD project to the open market and ended when construction started on site, shortly after Financial Close.

5.1.2 The level of project management and administration resources managing the development of the procurement documentation, evaluation process and commercial contract negotiations was high. The Project Team members at the time were supplemented by internal and external advisors concentrating on specialist areas of activity. All reported to a core group who were represented on each workstream.

5.1.3 The activities undertaken included: following a period of market testing/ engagement, the OJEU notice advertising the Project was published on 5 December 2012.The Information Memorandum and Pre-Qualification Questionnaire (PQQ) was issued on 5 December 2012 to accompany the OJEU. The PQQ submission deadline for all bidders was 21 January 2013. NHSL then had a period to review and evaluate the PQQ submissions. The PQQ evaluation and short list was issued by NHSL on 8th March 2013. The Invitation to Participate in Dialogue (the ITPD) was issued by NHSL to all three bidders, including IHSL, on 11 March 2013. The competitive dialogue process ran from 11 March 2013 until close of competitive dialogue on 13 December 2013.

5.1.4 It was envisioned that the competitive dialogue process would comprise a series of meetings leading to the submission of a final tender by each of the bidders. A programme for the competitive dialogue set out key target milestone dates for the Project, as set out in paragraph 1.7 (Programme) of the ITPD. In general, all bidder issues had to be raised with NHSL during the competitive dialogue period. This was because, once competitive dialogue closed, in line with the procurement regulations only fine tuning and clarification of bids were allowed in relation to each bidder's submission (this being the Final Tender). In addition, a timetable of dialogue meetings was set out in paragraph 4.2 (Timetable of Dialogue Meetings) of the ITPD.

This original timetable referred to six dialogue meetings. The week before each of the dialogue meetings each of the three bidders required to submit an “informal submission” to NHSL. There were five informal submissions in total set out in the ITPD.

5.1.5 The competitive dialogue programme was extended by a period of eight weeks to achieve design compliance due to insufficient progress by the bidders. This longer programme was in line with NHSL’s initial estimate for the competitive dialogue programme (but at the outset of the Project, SFT had strongly encouraged NHSL to adopt a shorter programme). This meant that there were additional five dialogue meetings beyond the programme in the ITPD, added after the fourth and fifth rounds of dialogue.

5.1.6 A Draft Final Tender was submitted by bidders 21 October 2013. This was a “dry run” for the Final Tender. The Draft Final Tender was reviewed but not evaluated by NHSL. This was because, the Draft Final Tender was used as a tool during the competitive dialogue period: for bidders to set out their solutions to NHSL; and for NHSL to provide subsequent feedback on whether aspects of the Draft Final Tender met NHSL’s requirements as set out in the ITPD. After the submission of the Draft Final Tender, a final dialogue meeting then took place between NHSL and each bidder. At each final dialogue meeting, NHSL provided its feedback to each bidder in relation to their Draft Final Tender. This meeting was also an opportunity for NHSL to clarify any outstanding points with bidders.

5.1.7 On 13 December 2013, NHSL closed competitive dialogue. Bidders were then invited to submit a Final Tender on 16 December 2013 in accordance with the Invitation to Submit Final Tender (ISFT). The submission deadline for this Final Tender was 12 noon on 13 January 2014. NHSL had established a Core Evaluation Team to evaluate the Final Tender.

5.1.8 The Project Director prepared a report dated 5 March 2014 for the Finance & Resources Committee. This report recommended that IHSL be appointed as Preferred Bidder. The Finance & Resources Committee approved this recommendation on 5 March 2014. On 6 March 2014 a further Core Evaluation Team meeting was held by NHSL and its advisors in relation to de-brief preparation

and the first Preferred Bidder meeting. As authorised by the Finance & Resources Committee on 5 March 2015, NHSL issued a Preferred Bidder letter to IHSL (following discussion of a draft) on 5 March 2014.

5.1.9 Once IHSL was selected as NHSL's preferred bidder, an intensive dialogue and design development with IHSL and their supply chain was undertaken by NHSL. Again, the period was extended to allow fuller design progress, but Multiplex then ceased further design development for commercial reasons and this situation was then managed through to Financial Close and into site construction immediately thereafter.

5.2 Committee and Board Approval

5.2.1 At a meeting of the Finance & Resources Committee on 12 December 2012, the Committee considered a paper on the risk management for the RHCYP/DCN project. It was noted that this had been brought to the committee to give a sense of the risk involved with the work that had been undertaken with the project. Susan Goldsmith, Director of Finance, advised that this was a good example of a group handling risk well and was for the committee's information. It was noted by the committee that the risk register was incredibly comprehensive and that the Project Team reviewed the register quarterly and updated the Project Steering Board on changes to risks or the addition of new risks.

5.2.2 On 25 January 2013 a Project Steering Board meeting took place. This noted the three bids that had been received re the project. At this meeting, SFT requested that the programme to recommend bidders was accelerated but NHSL emphasised the importance of due and proper process. There was a discussion at this meeting on the accountability of both NHS Board and SFT in terms of making decisions about the project. Mike Baxter, SGHD confirmed that SFT's role was one of procurement and governance and not technical or clinical and Peter Reekie, SFT stated that the legal liability always rested with the procuring body (NHSL) as any contract is between that party and the Project Co. Mike Baxter reminded all present at the meeting that SFT are a wholly owned Scottish Government body providing independent assurance on behalf of Scottish Government.

5.2.3 At a meeting on 22 February 2013, the Project Steering Board unanimously approved the recommendation that all three candidates were to be invited to participate in dialogue. Delegated authority for the Project Steering Board to approve the shortlist and proceed to competitive dialogue was approved by the Finance & Resources Committee on 13 February 2013.

5.2.4 The Project Steering Board on 28 February 2014 approved that the recommended preferred bidder be submitted to the Finance & Resources Committee to consider at its meeting on 5 March 2014 and agreed to review the timing of the public announcement to ensure proactive release.

5.2.5 The Finance & Resources Committee meeting on 5 March 2014 received an update on the procurement process. The Committee were advised that the Project Steering Board now had a preferred bidder and sought endorsement from the Committee. Assurance statements were provided by Legal (MacRoberts), Technical (Mott MacDonald) and Financial Advisors (Ernst & Young). The Committee also noted the completion of the Key Stage Review (Appointment of Preferred Bidder) by the SFT. The Committee agreed unanimously to approve the recommendation of the Project Team, as endorsed by the Project Steering Board, to appoint Integrated Health Solutions Lothian as the preferred bidder for the development of the RHCYP/DCN project and to authorise the Project Director to issue the formal Preferred Bidder Letter and the two associated unsuccessful bidder letters.

5.2.6 A report was prepared for the Finance & Resources Committee meeting on 31 January 2014 by Sorrel Cosens, Project Manager, which set out the proposed approach and dates for reporting on the FBC.

5.2.7 The FBC was written following the Scottish Capital Investment Manual (the 2011 update). Before submission to the Scottish Government, within NHSL the business case went through (i) the Project Board, which included the Project Director, Clinical Director and clinical service representatives, the leads for Finance and Commercial (on 20 June 2014); (ii) Finance & Resources Committee (on 14 March 2011, 14 December 2011, 9 July 2014 and 11 March 2015) and then (iii) NHSL Board (on 23 March 2011, 25 January 2012, 6 August 2014 and 1 April 2015).

5.2.8 As the FBC described services to patients from Borders, Fife, Dumfries and Galloway, Fife, Forth Valley and Tayside, these NHS Boards also had to approve the elements that described the impact on their population and finances (see section 24 of this paper).

5.2.9 On 20 June 2014, the Project Steering Board approved the recommendation from the Project Director that the FBC, with some agreed changes, be submitted to the Finance & Resources Committee and the NHSL Board.

5.2.10 The Lothian Capital Investment Group met on 8 July 2014 and the cover paper for the RHCYP/DCN FBC, as submitted to Finance & Resources Committee was noted.

5.2.11 At a meeting of the Finance & Resources Committee on 9 July 2014, the Committee agreed to approve the submission of the FBC for RHCYP/DCN with a recommendation that it should proceed to CIG. The Committee also agreed to recommend to the Board that, subject to the approval of the FBC by the Scottish Government, the approval of the final terms of the NPD project agreement and associated contract documentation would be delegated to the Finance & Resources Committee. It also agreed to recommend to the Board that, subject to the approval of the final terms of the project agreement by the Finance & Resources Committee, the signing of the project agreement at the financial close be delegated to the Chief Executive or the Director of Finance for NHSL.

5.2.12 NHSL submitted the FBC to Mike Baxter, SGHD for consideration by CIG on 10 July 2014. The NHSL team provided a presentation on the FBC to CIG on 5 August 2014.

5.2.13 A FBC report was submitted to the NHSL Board for the meeting in August 2014. The NHSL Board approved the FBC on 6 August 2014. The Board delegated authority to its Finance & Resources Committee for approval of the final terms of the NPD Project Agreement and associated contract documentation. The Board approved that the signing of the Project Agreement at Financial Close be delegated to the Chief Executive or the Director of Finance for NHSL.

5.2.14 The Chief Executive of NHSL advised Mike Baxter, SGHD that the NHSL Board had approved the FBC by letter dated 7 August 2014.

5.2.15 CIG raised comments with NHSL on the FBC and NHSL responded to these before CIG approved the FBC.

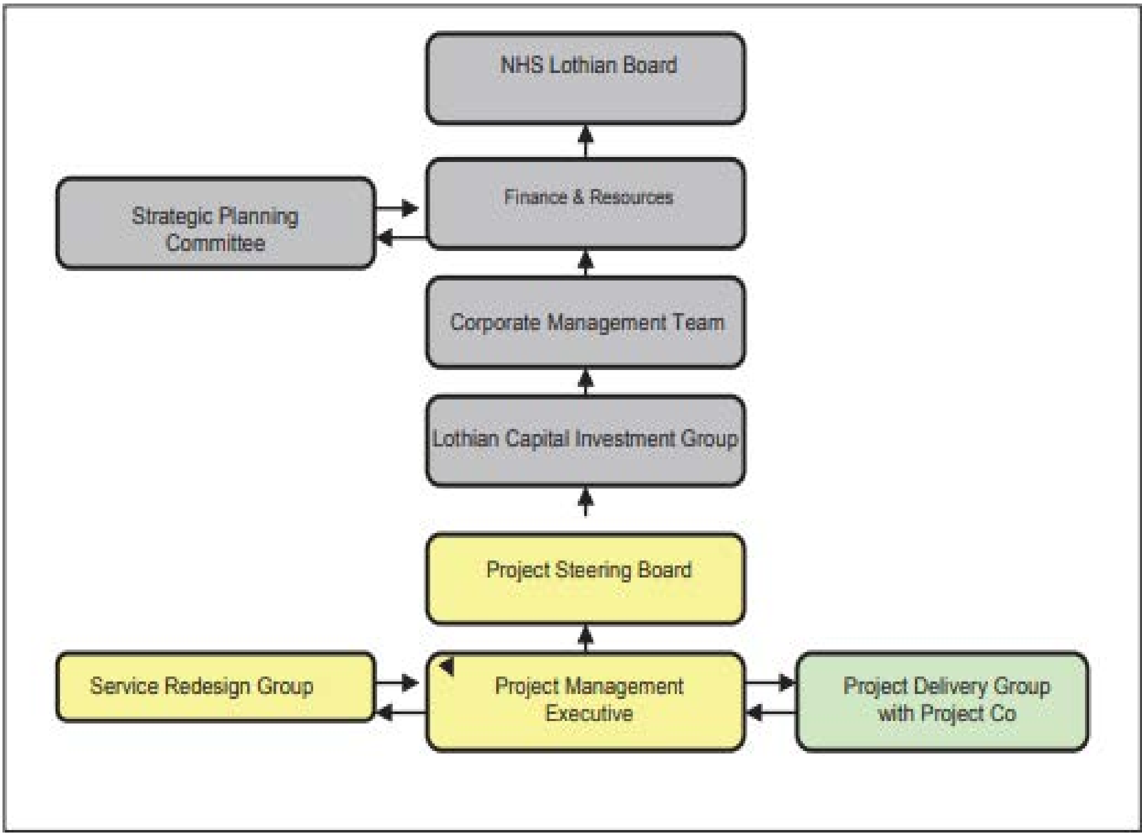
5.2.16 The Scottish Government issued a letter to the Chief Executive, NHSL dated 12 February 2015 confirming that they were content that the Pre– Financial Close KSR had been satisfactorily concluded and invited NHSL to proceed to financial close.

5.3 Full Business Case

5.3.1 The FBC was developed using the Scottish Capital Investment Manual guidance. It was based on NHSL's Outline Business Case (OBC) for the RHCYP/DCN that was approved by the Scottish Government in September 2012.

5.3.2 The FBC expanded on the project management arrangements described in the OBC. This included responsibilities in the period up to financial close, the construction and commissioning phase, and the 25-year operational term of the contract. The latter not being relevant for the purposes of this paper.

5.3.3 The FBC provided (as at 15 March 2015) a snapshot of how NHSL envisaged the governance structure and reporting framework during completion of procurement up to financial close and during the construction and commissioning phase:



5.3.4 It described how the Director of Finance for NHSL was the Senior Responsible Officer, chairing the Project Steering Board and reporting to the Finance & Resources Committee.

5.3.5 The FBC provided a list of the responsibilities of each of the levels within the governance structure in the above diagram:

Team or Group	Phase(s)	Responsibilities
NHS Lothian Board	a, b, c	• Investment decision maker • Oversee the project and, once operational, the performance of the facility. • Approve the final contract award • Resolve matters outside the Board's delegated authority
Finance and Resources Committee	a, b, c	• Approve the preferred bidder appointment • Approve the business case • Agree and prioritise the Capital Plan
Strategic Planning Committee	a, b, c	• Advise the Board on the appropriateness of clinical and service strategies to achieve the high level vision and aims of the NHS Lothian Strategic Clinical Framework
Lothian Capital Investment Group	a, b, c	• Oversee the NHS Lothian property and assets management investment programme
Project Steering Board:	a, b	• Establish project organisation • Authorise the allocation of programme funds

Team or Group	Phase(s)	Responsibilities
NHS Lothian and public sector partners		• Monitor project performance against strategic objectives • Resolve strategic issues which need the agreement of senior stakeholders to ensure progress of programme • Maintain commitment to the programme • Manage the governance structure • Produce the FBC document • Prepare for transition to operational phase
Project Management Executive: *NHS Lothian project leads and advisers*	a, b	• Monitor project delivery and make recommendations for approval to the Project Board. • Co-ordinate submission of papers to all governance groups as required
Service Redesign Group: *NHS services only*	a, b	• Deliver the service modernisation programme with the clinical management teams • Maximise the integration of development opportunities across directorates and with external partners
Project Delivery Group: *NHS Lothian Project Management Executive* ***plus Project Co leads***	a, b	• Manage interface between NHS Lothian and Project Co • Agree and monitor the programme, escalating issues for resolution where necessary. • Manage and report on risk • Agree responsibilities for the production of information and documentation. • Develop the content of the Project Agreement and all associated documentation • Receive and agree actions on reports from the User and Project Groups, Adviser Team and other bodies.

Figure 19: Project group responsibilities

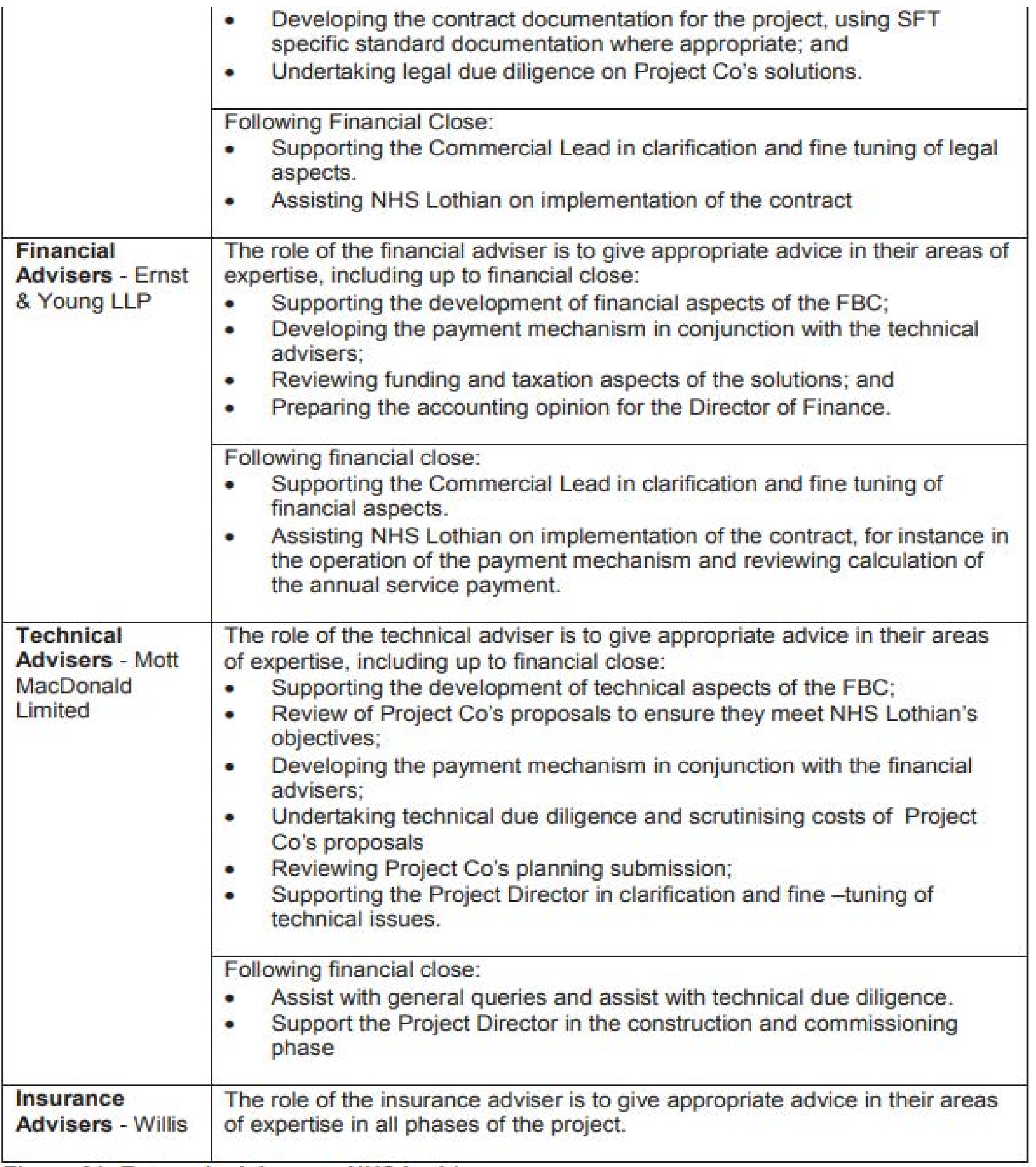
5.3.6 The FBC also detailed the role and responsibilities of the key figures with the governance of NHSL during this period:

Role	Group / individual	Summary of Role
Senior Responsible Owner (SRO)	Susan Goldsmith, 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	Brian Currie	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	Brian Currie	NHS Lothian representative who will attend and participate (but not vote) at Project Co board meetings after financial close.
Project Clinical Directors	Janice MacKenzie (RHSC) and [Vacancy] (DCN)	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 in order to deliver the associated benefits.
Head of Commissioning and Service Redesign	Jackie Sansbury	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	Iain Graham	Manages the legal, commercial and financial workstreams for NHS Lothian. Liases 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	Moira Pringle	Responsibility for all finance aspects relating to NHS Lothian's capital plan / programme, and lead financial input into the project.
Contracts Manager	Stuart Davidson	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.[16]

Figure 20: Key NHS Lothian personnel responsible for delivering the project

5.3.7 The FBC outlined the team of external advisors that were supporting the NHSL Project Team through this period. The table below sets out what the roles and responsibilities were of these advisors both before and after financial close:

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
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
Insurance Advisers - Willis	The role of the insurance adviser is to give appropriate advice in their areas of expertise in all phases of the project.

Figure 21: External advisers to NHS Lothian

5.3.8 The FBC detailed the support to these governance functions which were a range of reports, including the Project Progress (dashboard), Risk Register Report, Financial Report and a range of supplementary reports. In terms of responsibility under the Project Agreement, in the construction and commissioning phase, the Project Company were responsible for providing information on their progress against the programme. While in the operational phase the Project Company reporting, formed part of the performance management and payment mechanism arrangements as a part of the Project Agreement, managed through NHSL's Contract Manager.

5.3.9 All reports were commissioned on behalf of the Project Steering Board by the Project Management Executive and submitted for approval. Regular progress reports were submitted to the Lothian Capital Investment Group and the Finance & Resources Committee as part of internal governance requirements.

5.4 Workstreams/Groups

5.4.1 Within this period (January 2013 to February 2015), the governance structure of NHSL had within it the following workstreams/groups:

"Client" Consultation/Operational Groups and Workstreams

Name	**Role**	**Who the workstream/group reported to structure/comments**
Legal and Commercial Workstream	Worked on the legal agreement and land matters supported by MacRoberts. Incorporated the funding/ finance workstream (see right). Supported by Ernst & Young to provide financial advisory services for the	Reported to Project Core Team. In early stages of NPD procurement there was a separate funding workstream led by Carol Potter (Associate Director of Finance) together with

	pre-construction and procurement phases. In particular, prepared the Finance Model, Financial elements of tender documents and financial appraisal procedures	Ernest Young and SFT. Then this was incorporated into Legal and Commercial.
Procurement Workstream (2012 to 2013)	Internal meeting including relevant external advisors (financial) for development of the commercial aspects prior to procurement	Reported to Project Core Team. Used to be called the Commercial Workstream
IPCT Lead Workstream	Infection control nominated IPCT nurse attended project design development workshops etc	Reported to the project Core Team
Design and Construction	The Project Team would assist in the evaluation of the RDD packs submitted by IHSL. The team would advise on issues surrounding the proposed design and check for compliance with current standards and regulations and Financial Close documents. Addressed all technical non – clinical issues in relation to procurement of the facility	Reported to Project Core Team. Led by Project Director
Facilities Management (FM)	Assisted and advised NHSL to ensure the reference design took due cognisance of how FM services can be effectively delivered during	Project Core Team (attended by workstream leads to monitor progress of each workstream).

	the operational phase. During the NPD procurement process and until Financial Close, the FM workstream worked with the design team and NHSL to develop FM Service Level Specifications (SLS), tender documentation, payment mechanism and interface agreements, which ensured the new facility was effectively and efficiently maintained	
Clinical Support	Clinical Management Team which was responsible for ensuring that design and planning reflect clinical operational need and best practice. They ensured that an efficient, practical, functional facility was achieved through the construction phase.	Reported to the Programme Steering Board through reports from the Lead and/or Project Director
Clinical Services Commissioning	Responsible for the overall NHS commissioning and service migrations to the Facility and decommissioning of the old facilities. This included aligning familiarisation and commissioning of the building, the equipment and the services to ensure the building is ready for occupation.	Reported to the Programme Steering Board through reports from the Lead and/or Project Director. Led by Head of Commissioning

RHSC and DCN Steering Board Commercial Subgroup (2014 to 2015)	Contract negotiation	Reported to Programme Steering Board and onto the Finance & Resources Committee.
Art and Therapeutic Design Steering Group (2014 to 2019)	This was a group set up to agree the charity funded art and therapeutic design enhancements to the RHCYP and DCN building. Its remit was to decide on projects which would improve the environment and experience of the building for patients, families and staff.	Led by Project Manager (Sorrell Cosens). Reported to the Steering Group
Information and Communication Technology (ICT)		Reported to the Programme Steering Board and onto the Finance & Resources Committee. Led by Clinical Support Project Manager
Communications Task Group 2009 to 2019	Internal management meeting. Remit was to build specific communication strategy and deliverables based on NHSL communication strategy	
Equipment Group (2013 to 18)	Was responsible for determining the facility-wide equipment requirements. This group was tasked with confirming the users' ultimate equipment requirements for inclusion	Reported to RHSC/DCN Commissioning Group**.**

	within the procurement model. This role also considered the replacement and transfer strategies in place within the RHSC and DCN facilities in the term leading up to facility hand-over. The Equipment work-stream assisted in the evaluation of the RDD packs submitted by IHSL	
Community Benefits (2014 to 2019)	Working group which managed the delivery of the Community Benefits provision by IHSL and their supply chain.	Reported to the Programme Steering Board and onto the Finance & Resources Committee. Jointly managed with IHSL's supply chain. Early successful engagement with schools, for example, counted towards Community Benefits Targets in Project Agreement
Interior Design (2014)	Design Review Process	Reported to the Project Director and then to the Project Steering Board
Legal and Insurance PB to FC (2014) This was related to the Legal and Commercial Workstream It involved specific insurance advice, but that feed into the legal and	Procurement stage – contract negotiation discussion	Reported to Project Steering Board and on to Finance & Resources Committee through the Director of Capital Planning and Projects.

commercial negotiations.		
Little France Campus Working Group (2013 to 2016)	Supported the operational running of the RIE site during five years as the major programme of works began in support of RHSC/DCN Reprovision	Principally this a management group established to connect the operational relationship between RHCYP/ DCN and RIE. Was not part of the governance regimes. Included in the RHCYP/DCN project agreement and participation formally agreed by Consort
Redesign Steering Board (2012 to 2016)	Responsible for agreeing and overseeing the overall project redesign plan for the future provision of the hospital services. Service redesign not building design	A service management board established to report to the respective Senior Management Teams/Service Directors and the project's Programme Steering Board. Redesign in this context is about the clinical service model, not the building design. (i.e., how patients are to be treated under various conditions and what staffing is required).
Project Teams Meetings (2012, 2013, 2014, 2015, 2018)	Internal teams catch ups	
NHSL Consort (2010, 2013 to 2017)		This was the management team engaging with Consort management (i.e., the PFI

		operator for the Royal Infirmary of Edinburgh-RIE). A forum to ensure progress with the interface arrangements, clinical enabling works (such as Critical Care, Pharmacy, etc in the RIE) and external enabling works (e.g., flood protection, site service removals, etc). In the latter stages, SFT also attended some of the NHSL/Consort meetings.

Management of Client Groups/Workstreams and External Consultation

Name	**Role**	**Who the workstream/group reported to structure/comments**
Project Core Team /Project Management Executive	Workstream leads reported to this group. Leads were - Strategic Management, legal & Commercial, -Facilities Management -Design and Construction Not a specific workstream. Liaised with all workstreams to monitor progress and ensure project proceeding.	External Advisors attended when required
Core Evaluation Team (2012 to 2014)	Internal meeting – Procurement stage	Internal meeting, with advisor input, to bring together procurement scores, agree feedback and

		prepare reporting – to the programme steering board and onwards to Finance & Resources Committee
Charities Forum (2014 to 2019)	Stakeholder engagement with charities with an interest in RHSC	This was a communications and engagement forum. It did not report directly to any group or committee. Relevant matters were in reports to Programme Steering Board.
Joint Commissioning Meeting (2014 to 2018)	Meetings with SPV and supply chain for design and commissioning. Established to inform the Project Director and Head of Commissioning	Unresolved issues escalated to Programme Board
Design Steering Group (2014)	To ensure that the design sign off programme was met and reported any key issues to the Project Delivery Group. Developed the Design with the preferred bidder pending financial close	Unresolved issues escalated to the Programme Board
Project Delivery Group	Meeting with IHSL and NHSL to develop project for financial close	NHSL who attended reported to Core Group.
Project Management Group	Meeting with IHSL and NHSL to develop documentation for financial close	NHSL who attended reported to Core Group.

Interface IHSL NHSL Consort/Interface NHSL Consort (2014 to 2019)	Construction phase interface working group. Managed the documentation required to progress works at the interface	Did not report directly to any group or committee. Relevant matters would be taken in reports to Programme Steering Board. NHSL Board sat between Consort and IHSL in terms of risk transfer and PPP contracts, picking up liabilities for any areas not covered by commercial parties.
Project Stakeholder Board (2011 to 2013)	Informed RHSC and DCN stakeholder groups and organisations of progress	An information exchange meeting. Did not report directly to any group or committee. Relevant matters would be taken in reports to Programme Steering Board.
Capital Management Group (2011, 2013, 2015)	Internal informal weekly meeting reviewing progress and issues affecting projects at RIE	Informal discussion and updating meeting. Did not report directly to any group or committee. Relevant matters would be taken in reports to Programme Steering Board.

5.5 Key Stage Reviews

5.5.1 During this period a number of key stage reviews took place:

- Pre-Issue of invitation to Participate in Dialogue (ITPD): 7 March 2013
- Pre-Close of Dialogue: 13 December 2013
- Pre- Preferred Bidder Appointment: 28 February 2014

- Pre- Financial Close 11 February 2015

Please see section 27.8 of this paper for full details of these.

5.5.2 In providing comment on the ITPD documentation in February 2013, SFT focussed on the issues that were of particular interest to them “rather than providing you [NHSL] with a detailed review which your advisors will have done.” For the ITPD KSR, SFT were expecting NHSL to confirm to SFT that they had taken advice from the NHSL advisors as to the appropriateness and effectiveness of the documentation. SFT sought assurance that the advisors had provided NHSL with confirmation that the KSR complied with all procurement requirements and that the advisors had not advised NHSL of any areas of potential procurement challenge.

5.5.3 The final KSR occurred following submission of the FBC to CIG and in advance of Financial Close.

5.5.4 During this period of the project, the Inquiry can find no discussion regarding the four KSRs within the private or public minutes of the NHSL Board, Joint Management Team minutes, Corporate Management Team minutes or Finance and Performance Review/Resources Committee minutes. Reports submitted to the Finance & Resources Committee in advance of meetings for consideration of Committee members provided updates on the RHCYP/DCN project. These would include the different stages of KSRs that SFT would undertake at the various project milestones and the stage of any discussion on these with SFT.

5.5.5 In general, KSRs would be discussed between NHSL and SFT at the RHCYP and DCN Working Group. This was an informal workstream which had the remit to review and deliver the Key Stage Review documents. There would be ongoing discussions via emails between SFT and NHSL to resolve any outstanding issues with a KSR before it was signed with any recommendations.

5.6 Case Example of Issues Raised

August 2013: Concern of Medical Consultants

5.6.1 On 16 August 2013, Tim Davison, Chief Executive of NHSL, sent an email to Iain Graham, Brian Currie, Susan Goldsmith, Alan Boyter, Fiona Mitchell, and Edward Doyle, all NHSL. This email referred to an informal meeting with RHSC consultants in which they had expressed concern "about the capacity and design of the new hospital", the lack of a "service strategy" and "most audibly, their feeling of being disconnected from influencing what was happening." The consultants felt disengaged from the design process. Following on from the email from Tim Davison on 16 August 2013, a meeting was arranged on 6 September 2013 with key members of the Project Team to discuss these issues.

5.6.2 Prior to the meeting with Tim Davison, Janice Mackenzie Clinical Director, NHSL in an email to Iain Graham, Director of Capital Planning & Projects dated 4 September 2013, responded to each of the points raised by the consultants.

5.6.3 Janice Mackenzie, and other project team members acted as the conduit to consultants from any issues relevant to them arising during dialogue. The project dashboard prepared for the Programme Steering Board meeting on 25 October 2013 stated that Janice Mackenzie and Jackie Sansbury attended the Medical Staff Committee on 23 September 2013 and presented the Service Redesign Strategy following concern expressed to the Chief Executive.

5.6.4 The issues raised were addressed at the Medical Staff Committee. Any actions from that Committee were dealt with by the appropriate project workstreams. NHSL have advised the Inquiry that at this time in the project timeline, the ITPD was in the process of being finalised and competitive dialogue would start early the following year. The design was not finalised at this stage and there were further interactions with clinicians throughout the procurement process through to award of preferred bidder up to financial close and beyond.

5.6.5 It is not clear why the consultants did not raise their issues with the RHSC Service Redesign Group or Janice Mackenzie directly. Janice Mackenzie's email

dated 4 September 2013 outlined the multiple routes and opportunities for staff to raise concerns namely:

- Project Team regularly attended the Medical Staff Committee, Clinical Management Team meetings and arranged site liaison
- Regular Open Meetings were held for all staff to update them on the project.
- The Project Stakeholder Board had clinical representation

5.6.6 NHSL do have a policy that applied to clinical and medical staff groups (see section 36 of this paper). This in effect means that any issue can be raised with management by anyone even if there are clear communication channels or working arrangement in place. Therefore, it was not outwith the norm for a medical consultant to raise concerns with the Chief Executive in this manner.

6. Financial Close - revised Contract Completion Date (March 2015 to July 2019)

6.1 Overview of the period

6.1.1 The period of construction saw the Project Team decanting from NHSL premises into bespoke temporary facilities "on site" within the Multiplex construction offices at Little France.

6.1.2 The collocation included both NHSL's technical team and NHSL's technical advisors, Mott MacDonald. This arrangement permitted NHSL's technical team to attend the RHCYP and DCN site for design development work, which was continuously undertaken.

6.1.3 The same organisational structure and approach to that during dialogue and preferred bidder stages were followed. However, the focus moved to the Reviewable Design Data (RDD) process, where the Project Team's work was limited to ensuring designs met the operational functionality test (as defined in the contract). They also now started to address the operational teams – at RHSC, DCN, RIE and corporately – on the detailed planning for the new service and commissioning the new facility.

6.1.4 There were also regular engagements with IHSL, their funders and advisors, the Independent Tester, as well as progress meetings with Multiplex and IHSL managers.

6.1.5 In February 2019 the Independent Tester (Arcadis NV) issued a Certificate of Practical Completion. This meant the construction phase came to an end and the operational phase started; the hospital was handed over to NHSL and it began making unitary payments of £1.35 million per month.

6.1.6 The hospital was due to open on 9 July 2019, but final compliance checks conducted by the Institute of Medicine on the instruction of NHSL revealed that the ventilation system within the Critical Care department did not comply with the current guidance.

6.2 Governance Structure

6.2.1 Within this period the governance structure within NHSL, in relation to the above workstreams and groups remained as detailed in the period January 2013 to February 2015 (section 5 of this paper).

6.3 Workstreams/Groups

6.3.1 Within this period (March 2015 to July 2019) the governance structure of NHSL had within it the following workstreams/groups:

"Client" Consultation /Operational Groups and Workstreams

Name	Role	Who the workstream/group reported to structure/ comments.
Legal and Commercial workstream	Worked on the legal agreement and land matters supported by MacRoberts. Incorporated the funding/ finance workstream (see right). Supported by Ernst & Young to provide financial advisory services for the pre-construction and procurement phases. In particular, prepared the Finance Model, Financial elements of tender documents and financial appraisal procedures	Project Core Team
Design and Construction	The Project Team assisted in the evaluation of the RDD packs submitted by IHSL. The team advised on issues surrounding the proposed design and checked for compliance with current standards and regulations and Financial	Reported to Project Core Team. Led by the Project Director

Name	Role	Who the workstream/group reported to structure/ comments.
	Close documents. Aim was to address all technical non – clinical issues in relation to procurement of the facility	
Child & Adolescent Mental Health Service (CAMHS) Operational Commissioning Group (2016 to 2018)	Remit was to develop and deliver commissioning requirements for CAMHS and decommissioning of existing buildings used by CAMHS.	Reported to RHSC/DCN Commissioning Group. Met throughout 2016 and 2017 monthly.
Clinical Support	Clinical Management Team which was responsible for ensuring that design and planning reflected clinical operational need and best practice. They had to ensure that an efficient, practical, functional facility was achieved through the construction phase.	Reported to Project Core Team Led by Clinical Project Director
Clinical Management Suite Group	Remit was the commissioning planning and move management planning of the clinical management suite (offices for the hospital)	Reported to RHSC/DCN Commissioning Group.
Clinical Moves Group	Remit was Commissioning planning and move management planning of the clinical areas generally across the hospital.	Reported to RHSC/DCN Commissioning Group.
Critical Care Group	Remit was commissioning planning and move management	Reported to RHSC/DCN Commissioning Group.

Name	Role	Who the workstream/group reported to structure/ comments.
	planning of the critical care clinical area across the hospitals (Note adult Critical Care – for DCN – located in RIE).	
DCN Operational Commissioning Group (2016 to 2020)	Managed the commissioning process for DCN including ensuring the HR workbooks were completed and provided updates on key issues. This included ensuring staffing recruitment, training and familiarisation process was undertaken	Reported to RHSC/DCN Commissioning Group.
RHSC Operational Commissioning Group (2016 to 2021)	Manage the commissioning process for RHSC including ensuring the HR workbooks are completed and provided updates on key issues.	Reported to RHSC/DCN Commissioning Group. Met throughout 2016 and 2017 monthly. Co-chairs Edward Doyle and Janice Mackenzie
DCN Theatres Operational Commissioning Group (2016 to 2018)	Involved completing DCN Theatres Workbook and to provide updates on staffing, equipment and technical specifications.	Reported to RHSC/DCN Commissioning Group. Met throughout 2016 and 2017 monthly. Co-chair Ashley Hull
RHSC Theatres Operational Commissioning Group (2016 to 2018)	Involved completing RHSC Theatres Workbook & providing updates on staffing, equipment and technical specifications.	Reported to RHSC/DCN Commissioning Group. Met throughout 2016 and 2017 monthly. Co-chair Ashley Hull

Name	Role	Who the workstream/group reported to structure/ comments.
eHealth Commissioning Group	To develop and deliver commissioning requirements for eHealth (including medical records)	Reported to RHSC/DCN Commissioning Group. Met throughout 2016 and 2017 monthly. Co- chairs Sharon Rankin and Wayne Clemiston
Equipment Group (2013 to 18)	This was responsible for determining the facility-wide equipment requirements. This group was tasked with confirming the users' ultimate equipment requirements for inclusion within the procurement model. This role also considered the replacement and transfer strategies in place within the RHSC and DCN facilities in the term leading up to facility handover. The Equipment work-stream assisted in the evaluation of the RDD packs submitted by IHSL	Reported to RHSC/DCN Commissioning Group.
Family Support and Charities (2016 to 2019)	The remit was stakeholder engagement with charities with an interest in RHSC and DCN.	Reported to RHSC/DCN Commissioning Group. Met every two months during 2016. Co-chair: Sorrel Cosens
Facilities Management Commissioning	Remit was to develop and deliver commissioning requirements for Facilities Management.	Reported to RHSC/DCN Commissioning Group.

Name	Role	Who the workstream/group reported to structure/ comments.
Group (2016 to 2021)		Met throughout 2016 and 2017 monthly. Co-chair Danny Gillan
Imaging Operational Group	Remit was the commissioning planning and move management planning of the imaging (e.g., Xray, ultrasound, etc.) areas and services generally across the hospital. including the staffing recruitment, training and familiarisation process is undertaken – the HR workbooks.	Reported to RHSC/DCN Commissioning Group**.**
Support Services Sub Group (2016)	Sub group of Facilities Management.	Reported to Facilities Management Commissioning group.
Paediatric Critical Care Operational Group (2016 to 2018)	Remit was the commissioning planning and move management planning of these clinical areas generally across the hospital. including the staffing recruitment, training and familiarisation process is undertaken – the HR workbooks.	Reported to RHSC/DCN Commissioning Group**.**
Pharmacy Operational group	Remit was the commissioning planning and move management planning of these clinical areas generally across the hospital. including the staffing recruitment, training and familiarisation process is undertaken – the HR	Reported to RHSC/DCN Commissioning Group**.**

Name	Role	Who the workstream/group reported to structure/ comments.
	workbooks.	
Paediatric Psychology and Liaison Service (PPALS) Operational Commissioning Group	Remit was the commissioning planning and move management planning of these clinical areas generally across the hospital. including the staffing recruitment, training and familiarisation process is undertaken – the HR workbooks.	Reported to RHSC/DCN Commissioning Group**.**
Radiology Commissioning Group	Remit was the commissioning planning and move management planning of these clinical areas generally across the hospital.	Reported to RHSC/DCN Commissioning Group**.**
Art and Therapeutic Design Steering Group (2014 to 2019)	This was a group set up to agree the charity funded art and therapeutic design enhancements to the RHCYP and DCN building. Its remit was to decide on projects which would improve the environment and experience of the building for patients, families and staff. Sorrell Cosens was the Project Manager.	Reported to the Steering Group
Communications task Group 2009 to 2019	Internal management meeting	Relevant matters would be taken in reports to Programme Steering Board.
Digital Transformation (2015 to 2016)	Remit was the planning and implementation of the changes from entirely paper-based records system into paper light. This became the Digital Transformation Board in 2019.	Programme Steering Board

Name	Role	Who the workstream/group reported to structure/ comments.
Communities Benefits (2014 to 2019)	Working group to manage the delivery of the Community Benefits provision by IHSL and their supply chain.	This group did not report directly to any group or committee. Relevant matters would be taken in reports to Programme Steering Board. Jointly managed with IHSL's supply chain. Early successful engagement with schools for example counted towards Community Benefits targets in Project Agreement.
Little France Campus Working Group (2013 to 2016)	To support the operational running of the RIE site during the next five years as a major programme of works begins in support of RHSC/DCN Reprovision	This group did not report directly to any group or committee. Relevant matters would be taken in reports to Programme Steering Board by Head of Commissioning. Included in the RHCYP/DCN project agreement and participation formally agreed by Consort
Redesign Steering Board (2013-2016)	Was responsible for agreeing and overseeing the overall project redesign plan for the future provision of the hospital services.	This was service redesign- not building redesign.
Technical Delivery Group	NHSL and IHSL/Multiplex meeting to work through changes to the contract brief and specifications as a result of their ongoing development.	Did not report directly to any group or committee. Relevant matters would be taken in reports to Programme Steering Board by the programme director
Project Team	Internal teams catch ups	Did not report directly to any

Name	Role	Who the workstream/group reported to structure/ comments.
Meetings (2012, 2015, 2018)		group or committee. Relevant matters would be taken in reports to Programme Steering Board by the programme director.

Management of Client Groups/Workstreams and External Consultation

Name	Role	Who the workstream/group reported to structure/comments.
Project Core Team/Project Management Executive	Workstream leads reported to this group. Leads were -Strategic Management, legal and Commercial, -Facilities Management -Design and Construction Not a specific workstream. Liaised with all workstreams to monitor progress and ensure project proceeding.	External Advisors attended when required
RHSC/DCN Commissioning Group 2016 to 2019	Remit was to work with the Project Team and Head of Commissioning to bring new hospital into use, equipping it and preparing it for occupancy and to provide clinical services. When it was first set up the aim was to have this ready for the public by Sept/Oct 2017	Reported to Programme Board. Met throughout 2016 and 2017 monthly. Chaired by Fiona Mitchell. Co-chairs of the sub groups attend this meeting and provide an update from their own groups.

Name	Role	Who the workstream/group reported to structure/comments.
Stakeholder and Engagement Groups	This was a variety of consultative groups as part of wider engagement by Project Team and Board including charities and patient representatives.	Not part of formal governance or directly part of project design development.
Charities Forum (2014 to 2019)	Stakeholders' engagement with charities with an interest in RHSC	
Joint Commissioning Meeting (2014 to 2018)	Meetings with SPV and supply chain for design and commissioning. Established to inform the Project Director and Head of Commissioning	Unresolved issues escalated to Programme Board
IHSL Board to Board (2017 to 18)	Senior level contract management meeting between IHSL and NHSL	Met infrequently
Interface IHSL NHSL Consort/Interface NHSL Consort (2014 to 2019)	Construction phase interface working group. Managed the documentation required to progress works at the interface.	NHSL Board sat between Consort and IHSL in terms of risk transfer and PPP contracts, picking up liabilities for any areas not covered by commercial parties.
Capital Management Group (2011, 2013, 2015)	This was an internal informal weekly meeting reviewing progress and issues affecting projects at RIE	

6.4 Full Business Case Addendum

6.4.1 A Full Business Case Addendum was produced by NHSL which detailed the changes to the FBC since it was presented to the NHSL internal governance process and the Scottish Government Health and Social Care Directorates in August 2014. This involved changes to funding competition and financial costs and in particularly

the final interest rates at financial close. The Financial Case part of the FBC was amended accordingly.

6.4.2 The Management Case was updated in the FBC addendum to show the developments that had happened since the FBC submission which were:

> "• SFT have nominated Tony Rose as Public Interest Director for IHS Lothian Limited; and
> • The chairmanship of the Project Steering Board will pass to the Director of Acute Services as the client, recognising responsibility for the operational facility once it opens."

6.4.3 The Finance & Resources Committee approved the Full Business Case (FBC) Addendum for submission to the Board on 11 March 2015 and stated:

> "The Committee agreed to note that the pre-financial close stage review was completed by Scottish Futures Trust and that the recommendations from that review were being actioned. It was noted that financial close was achieved following changes to the standard form NPD Articles of Association and Project Agreement and agreed the submission of the Addendum to the full Business Case to Lothian NHS Board for approval and onward submission to the Scottish Government Health & Social Care Directorates."

6.4.4 At a private meeting of the NHSL Board on 1 April 2015, the Board approved the submission of the FBC Addendum to the Scottish Government Health and Social Care Directorate.

6.4.5 The FBC Addendum was only taken to CIG for noting and not approval.

6.5 Governance escalation from identification of the ventilation issue in critical care to decision to delay opening by Cabinet Secretary

6.5.1 The independent validation engineer, IOM, commissioned by NHSL to carry out final checks on the ventilation system began doing so during the week commencing 17 June 2019. The Project Director received a verbal summary of the IOM report on 24 June which he then advised the Steering Group of the same day, The issues log report was received from IOM on 25 June and the Project Director issued it to the members of the Project Steering Group that day.

6.5.2 From 25 to 28 June, the Project Team undertook the following:

- reviewed for technical clarity what IOM measured and confirmed those results,
- assessed the contractual and legal position, and
- investigated possible immediate technical solutions (if any).

6.5.3 A meeting took place on 28 June 2019 between NHSL, IHSL and Multiplex to follow up on the emerging issues in the building. Ventilation was discussed in relation to the theatres and the theatre corridor but not the ventilation in critical care. An action plan was put in place to address these issues which involved twice daily calls from 1 July to monitor progress. The aim was to ensure that the theatres were ready for use when the services moved to the new hospital. The Chief Executive of NHSL was briefed on 1 July regarding the action plan.

6.5.4 On 1 July the Project Director was informed that the IOM conclusions in their report were accurate and that enquires had not identified a quick solution. He therefore verbally advised the Medial Director that the ventilation in critical care was not compliant with SHTM 03-01. Following this, the Medical Director in turn informed the Chief Executive and the other Executive Directors of NHSL of what she had been advised and the impact on the opening of RHCYP/DCN on 9 July.

6.5.5 An internal NHSL meeting was held on 2 July, chaired by the Chief Executive, to discuss the critical care ventilation issue and possible courses of action. Following the meeting, the Chief Executive arranged a call for later that same day with the Director General for Health and Social Care within the Scottish

Government and the Chief Executive of NHS Scotland and briefed the Chair of the NHSL Board. During this call, various options were discussed including (a) going ahead with the move and decanting patients if works became disruptive and (b) a partial and phased move.

6.5.6 On 2 July 2019, NHSL also involved HFS and HPS and a meeting was arranged for the next day. A further meeting of NHSL personnel and representatives from the Scottish Government took place in the afternoon of 2 July to explore options.

6.5.7 On 3 July 2019 NHSL set out to the Scottish Government the options that had been considered together with NHSL's favoured approach and the rationale behind this. The Scottish Government instructed the Chief Executive of NHSL during the evening of 3 July that any planned communication by NHSL should not go ahead until further notice.

6.5.8 On 4 July 2019, the Scottish Government advised NHSL of the Cabinet Secretary's decision to halt the move to the new hospital with an emailed letter and the Scottish Government then issued a media release shortly afterwards.

6.6 Case Examples of issues raised during this period

A: Ventilation issues in haematology/oncology ward

6.6.1 On 7 February 2017, Dorothy Hanley, Children's Services - Service Lead for Redesign and Commissioning, NHSL emailed Brian Currie, Project Director, NHSL and others to raise that in terms of the Scottish Health Technical Memorandum 03-01, the haematology oncology ward (a neutropenic patient area) should have a different air change rate from other types of wards and queried whether this was factored into documentation. The matter was referred to Kamil Kolodziejczyk at Mott Macdonald who confirmed that (a) the neutropenic patient ward required 10ac/h and + 10 pressure, as per Dorothy Hanley's email and SHTM 03-01 and (b)there were 17 bedrooms (15 single and two multi bed areas) in the haematology and oncology ward. On the version of the environmental matrix at that time, this ward was stated as having the same design parameters as any other single/multi bed area, namely 4ac/h and balanced negative pressure.

6.6.2 On 7 February 2017, following discussion, the matter was escalated to Graeme Greer (Associate, Mott Macdonald) and Janice Mackenzie, NHSL as the air changes within the neutropenic patient ward were not compliant with SHTM 03-01 and Sub Section D of BCRs (C1.4 Haematology and Oncology Clinical Output based Specification). The suggestion was made that this matter be raised with David Martin and Colin Grindlay of Multiplex to advise that the project company's design should comply with these documents.

6.6.3 On 23 February 2017, there was a meeting between Ronnie Henderson, Dorothy Hanley, Janice Mackenzie, Clinical Director, (who were both Project Team members) and the nominated lead consultant, charge nurse, consultant microbiologist and IPCN to discuss the ventilation in the 12 single rooms within the haematology/oncology ward. Before the contractors proceeded, the clinical team wished to have a discussion around any operational issues and a balance of the potential risks to patients. The view of the clinical team, microbiology and IPCN at this time was that the matter could be managed through specific standard operating procedures.

6.6.4 Board preparation for a RHSC/DCN principals meeting in February 2018 set out the issues in a "non-exhaustive list of potential non-compliance schedule". This stated that Multiplex had installed a non-compliant system in relation to bedroom ventilation pressure and air change rate rooms for neutropenic patients, but NHSL would be able to operationally manage the issue. This document commented that the impact to the Project Company would be "major" if NHSL altered the position on the operational workaround. It commented that the Project Company's position was that this was non-negotiable, but the Project Board's position was that it was negotiable. The document stated that the Project Board can compromise and accept the Project Company change and commented that this would have reduced operational flexibility but it was manageable.

6.6.5 NHSL confirmed to Multiplex in March 2018 what was required in terms of ventilation in the haematology/oncology ward. The Project Company responded with a Project Company Change which requested that NHSL accept their position on single rooms and that they did not propose to alter the design. The intention was that there would be requirement for standard operating procedures by NHSL for

management of infection by patients in these wards. It was viewed as the only option at this time.

6.6.6 By mid-2019 the situation had altered due to the hospital not being occupied as planned, therefore there was an opportunity to undertake rectifications and bring the 12 single rooms up to the required standard for ventilation. The risk appetite across NHS Scotland about the care of neutropenic patients and the potential impact of the environment had changed since 2017. The recommendation by August/September 2019 was that a Board Change should be developed and progressed to bring the 12 single rooms up to the required specification.

6.6.7 Papers to the Oversight Board dated 29 August 2019, stated that the issue regarding the air changes within the haematology/oncology ward was noted and work was ongoing with clinical leads regarding risk assessments and consideration of the issue of a board change to IHSL. The advice from the Infection Control Team was that the ventilation within the single rooms should be rectified to meet the SHTM standard for the care of neutropenic patients at the same time as the critical care work. It was noted this conflicted with the earlier view to manage the situation through SOPs and the SA1.

6.6.8 A High Value Change Notice was issued to the Project Company on 30 August 2019, signed by the Project Director, regarding the requirement to provide a ventilation system that delivered 10ac/h in accordance with SHTM 03/01.

6.6.9 At the Executive Steering Group on 23 September 2019 a risk assessment was discussed where it was clear that all clinical areas within the haematology/oncology ward (Lochranza) required to be at 10+10pa with HEPA filters. The Project Director stated that he would obtain engineering views from HFS, NHSL Facilities and Mott MacDonald about the cost, programme and operational implications of a 100% approach, as opposed to only those areas that absolutely required the 10+10 solution. It was agreed that the matter would be discussed further at a workshop session and thereafter discussed at the Executive Steering Group on 30 September 2019, before it was considered by the Oversight Board.

6.6.10 On 30 September 2019, Janice McKenzie, Clinical Director, submitted to the Executive Steering Group a supplementary risk assessment for the haematology

and oncology ward, together with other papers which explored the background to the issue. The action point from the risk assessment was that it was more pragmatic and cost effective to provide a single ventilation pressure to all spaces in the Lochranza ward (10 air changes 10 Pa pressure), and that this was not directly linked to any clinical risk associated with room function or patient risk factors. The Executive Steering Group determined if the High Value Change that had been submitted to IHSL would require to be amended to instruct this work.

6.6.11 A High Value Change Notice (Number 107 which combined the Paediatric Critical Care and Haematology/Oncology ventilation works into a single High Value Change) was issued to the Project Company on 5 December 2019 (signed by the Project Director) regarding the requirement to provide a ventilation system that delivered 10ac/h in accordance with SHTM03/01 within the single bedrooms, multi bedrooms and isolation bedrooms of the haematology and oncology wards.

Governance Aspects

6.6.12 A paper was produced for the Programme Board meeting on 20 March 2017 which referenced the meeting with the Clinical Team, Infection Control and Consultant Microbiologist regarding the ventilation in the haematology and oncology ward. This however referenced the agreement that on balance of clinical risks, the single rooms must have negative pressure. It stated:

> “To allow the clinical team to ensure appropriate segregation of neutropenic patients from those with infections (high risk with chickenpox/shingles) the flexibility of being able to use any of the single rooms within the ward is required (recognising that they will only use 10 funded beds). Therefore the rooms previously identified as being shelled should now be equipped to allow safe management of patient group through flexibility of patient placement.”

6.6.13 The dashboard paper produced for this meeting also references the meeting on 23 February 2017 and that an agreed position had been reached regarding the ventilation and a meeting with Multiplex had been held. Thereafter there does not appear to be discussion on this issue at further Programme Board meetings. There is mention at the Programme Board meeting in March 2018 that

there had been a board to board session between NHSL and IHSL held on 7 February 2018. As a result of this discussion, it was agreed to convene a Compliance Workshop to discuss key items of clinical safety.

6.6.14 The ventilation issue within the haematology/oncology wards did not appear to be discussed at the Audit and Risk Committee.

6.6.15 There is limited mention of the issues within the Minutes of the Finance & Resources Committee on 25 September 2019 in respect of the internal audit report and in minutes dated 25 March 2020 on the development of Supplementary Agreement 2. Similarly, within the Corporate Management Team ventilation of the four bedded wards was discussed at a meeting on 12 March 2018 but nothing specifically regarding the haematology/oncology ventilation.

6.6.16 The governance structure in place following the decision of the Cabinet Secretary to delay the opening in July 2019 of the Executive Steering Group and the Oversight Board allowed full oversight of the ventilation issues within the haematology/oncology wards and the work involved in Supplementary Agreement 2.

6.6.17 At NHSL Board level of governance, the Inquiry can find no mention of this issue being reported to the NHSL Board until 4 December 2019. This paper from the Director of Finance advised that while the principal issue of rectification remained the critical care ventilation, the Oversight Board were taking the opportunity to enhance the ventilation in the haematology/oncology. The paper further advised that the upgrade to the Air Handling Units for the isolations room was the subject of a High Value Change Notice which was being finalised with a view to presenting it to the Oversight Board for its agreement on 5 December 2019. A report on 12 February 2020 advised of the High Value Change that had been agreed in respect of ventilation and that it would also enhance ventilation in the haematology/oncology ward, with reference being made to lessons learned from the Queen Elizabeth University Hospital, Glasgow. A further report from the Director of Finance to the Board on 13 May 2020 advised that all ventilation checks and improvements had been conducted except in the critical care and haematology/oncology ward. This was due to these areas being subject to a High Value Change and Supplementary Agreement 2.

6.6.18 In relation to the issue of ventilation in the haematology/oncology wards, the matter was discussed at Project Team and Programme Board level in 2017 and 2018 as outlined above. There was no escalation in the governance structure beyond this until the matter was revisited in 2019 and post July 2019 when the Executive Steering Group and the Oversight Board commenced.

B. Horne Taps

6.6.19 In April 2015, the NHSL Project Team wished to instal Horne taps in the RHCYP/DCN project, but the IPCT team believed these taps were an infection risk in the clinical environment. Advice from HFS was sought to clarify the matter. This section looks at how this advice unfolded.

6.6.20 On 14 April 2015, a technical meeting was held at the Western General Hospital. Under item 2 (previous meeting minutes), Janette Richards, lead HAI-SCRIBE infection prevention and control (IPC) nurse, had an action to seek guidance from Health Facilities Scotland (HFS) to confirm the choice of tap. Janette Richards duly received confirmation from HFS that Horne taps were not compliant with SHTM-04-01.

6.6.21 In an email dated 16 April 2015, Janette Richards wrote to Gordon Reid, NHSL forwarding the view of HFS (i.e., that the Horne engineering product does not comply with SHTM-04-01) and advised that Horne taps should not be used in any NHSL project. HFS comments were advisory at that stage and they had stated that there were no plans for a formal product alert to be issued.

6.6.22 Gordon Reid forwarded a response from Horne on the use of their taps in an email dated 12 May 2015 to Brian Douglas and George Curley both NHSL. Gordon Reid stated that he was unhappy to accept the comments from Ian Stewart of HFS without further official guidance (not least given the popularity of the tap, which was used extensively in the Southern General for example).

6.6.23 By email dated 13 May 2015, Fiona Cameron, Head of Service, NHSL Infection Prevention and Control Services contacted Sandra McNamee, Associate Nurse Director, Southern General Hospital regarding Horne taps. Fiona Cameron outlined that the RHCYP/DCN project manager had queried HFS advice on these taps based on their popularity and wide installation in Southern General Hospital. Sandra McNamee replied on the same day to confirm the taps are used "all over" in the SGH with no issues identified.

6.6.24 In an email from Janette Richards dated 14 May 2015, she stated/clarified that Ian Stewart of HFS had not “objected” to the use of the Horne taps, but that a similar choice of tap would create less of a risk for the health environment. From an IPC perspective, Janette Richards explained that they take their lead from HFS as the deemed expert on such matters. She clarified that HFS had not stated that the Horne taps should not be installed but have raised concerns and identified potential risks around the use of this product.

6.6.25 On 20 May 2015, George Curley, Director of Operations - Facilities, NHSL, requested the suspension of the Horne optitherm valve tap until clear guidance was provided. On 21 May 2015, Brian Douglas stated in an email that he had raised the issue at the Scottish Engineering Technology Advisory Group, which consisted of Estates Managers from all health boards within Scotland, where it was agreed that the Water Group would investigate further. In an email dated 24 May 2015 from Gordon Reid to George Curley, Gordon Reid stated that all design teams have been told to avoid specifying Horne optitherm taps.

6.6.26 On 28 May 2015, an email sent by Hayley Kane of the Infection Control Team (ICT) in Health Protection Scotland (HPS) to Janette Richards advised that HPS supported the view that Horne taps were not compliant with existing guidance and therefore are not recommended.

6.6.27 In terms of the RHCYP/DCN design issues tracker, the issue of Horne taps was raised at Project Management Executive on 29 May 2015.

6.6.28 On 1 June 2015, Janette Richards forwarded to George Curley, via email, the HPS ICT response received regarding the use of Horne taps in new build projects. This was also passed to Janice Mackenzie the Clinical Director, NHSL and Jackie Sansbury.

6.6.29 On 2 June 2015, Maureen Brown of Mott MacDonald emailed Fiona Halcrow and Janice McKenzie and requested the information regarding Horne taps to be provided to IHSL. Maureen Brown stated she would upload the information to Aconex, along with a covering email (i.e., attaching NHS guidance and noting that due to a pseudomonas incident associated with these taps, they are not deemed appropriate for use within the RHCYP/DCN building).

6.6.30 On 4 June 2015, the RHCYP/DCN change register, had an entry for Horne taps which stated that these taps were no longer permitted throughout the hospital and that, by way of action, NHSL was to issue HFS guidance to IHSL. By 31 July 2015, that action (i.e., issuing guidance to IHSL) appeared to have been closed, a change management report having been noted and approved by the Programme Board.

6.6.31 The same day, a Project Management Group meeting was held, chaired by Wallace Weir. Under AOB (item 6.2), clarification on the use of Horne taps was sought by Maureen Brown, Mott MacDonald. Darren Pike of Brookfield Multiplex Construction Europe confirmed that Horne taps would not be specified for use in the project.

6.6.32 On 17 June 2015, Janette Richards confirmed in an email replying to Brian Douglas, Head of Operations Hard FM, NHSL that she had not raised the concerns regarding Horne taps with the NSS incident team as there had yet been no issue highlighted. She advised that there should be an inspection regime in place for the areas where these taps were found within NHSL facilities.

6.6.33 Also on 17 June 2015, Maureen Brown, Mott MacDonald circulated, via email, to Fiona Halcrow and others, an agenda for RHCYP/DCN Project Board catchup meeting. Item 7 of the proposed agenda (information to be provided to IHSL) included Horne taps.

6.6.34 In an email dated 30 June 2015 from Janice McKenzie to Janette Richards and Fiona Halcrow, Ms McKenzie stated that they have advised HIS regarding Horne taps.

6.6.35 In terms of governance the issue in relation to Horne taps was:

- discussed within the Project Team
- advice obtained from HFS
- advice obtained from HPS
- discussed at Project Board level
- recorded on the RHCYP/DCN change register
- IHSL instructed

6.7 Health Facilities Scotland (HFS) engagement during the period

6.7.1 During this period (March 2015 to July 2019) there were a few technical issues where NHSL sought the advice of HFS. It is worth noting that HFS were involved in giving advice only and were not involved in management, supervision or governance in relation to any of these issues. HFS were involved in the following matters:

(a) High voltage distribution within the building

6.7.2 HFS were contacted by NHSL on 13 June 2016 to request a review of the High Voltage installation at RHSC in Edinburgh. The cable route identified on the construction schematic drawings differed from the layout indicated on the design schematic drawings at the project financial close. The proposed layout indicated a reduction on the resilience of the high voltage installation. In addition, there were issues identified with escape travel distances, the physical location of certain electrical sub-stations in relation to theatres and the provision of adequate ventilation in the sub-stations.

(b) Theatre pressure regimes

The issue was that the strategy to deliver the pressure regimes to the theatres was not clear as at one point fire dampers had been installed rather than pressure balancing dampers. This appeared to be a site issue and was resolved by the SPV.

(c) Air change rates to four bed wards

6.7.3 On 13 June 2016, NHSL telephoned HFS seeking an opinion on ventilation for four bedded wards. HFS advised that:

> "in the ventilation guidance document, SHTM 03-01 Part A, Appendix 1, Table A indicates the air change rates and pressure regime for clinical areas within healthcare premises. There is no four-bed ward noted in Table A, however it would not be unreasonable to treat this area as one

> would a single bed ward, with respect to ventilation, as the measures for infection control would be the same. Therefore, the room should be neutral or slightly negative pressure with respect to the corridor."

NHSL requested clarity as the design/environmental matrix indicated a different regime.

(d) Air change rates to the Radiology Department

6.7.4 The design/environmental matrix indicated that the ventilation rate allowed by the contractor was 10 air changes per hour. The healthcare ventilation guidance indicates that this should be 15 air changes per hour, as biopsies were to be carried out in Radiology. HFS provided advice only and was not involved in the resolution of this matter.

(e)Theatre sockets

6.7.5 HFS provided advice only and was not involved in the resolution of this matter. The issue was that all sockets within the surgical theatres were designed and installed as "medical IT" (IT is a designation identifying the configuration of the electrical circuit) sockets. Due to matters elsewhere, which led to nuisance tripping of the medical IT circuits, it was suggested that standard sockets be supplied via an uninterruptable power supply (UPS). It was further noted that the electrical earthing was not installed as per BS 7671 or SHTM 06-01 as the relevant standards and guidance.

(f)The location of Medial IT equipment in relation to theatres

6.7.6 The physical location of the Medical IT equipment was noted to be at a different level from the theatres. This was noted to have maintenance implications and extend disconnection times of the circuits in question. HFS provided advice only and was not involved in the resolution of this matter.

(g) Water leak

6.7.7 In June and July 2018, HFS and ARHAI were separately contacted to provide support to NHSL on an SBAR following an incident where a joint on the hot water system failed, resulting in a flood at the RHCYP/DCN site. HFS advice involved infection implications relating to fungal spores associated with wet plasterboard, remedial work on wet electrical sockets, ventilation and dehumidification to dry the area. HFS provided advice only and was not involved in the resolution of this matter.

6.8 2017 Issues and Governance

6.8.1 Various emerging issues during 2017 led to doubt concerning the Project Company being able to meet the actual completion date of 12 October 2017.

6.8.2 At a Programme Board Meeting on 15 May 2017, Brian Currie, Project Director updated the Board that room reviews remained behind schedule, and stated that "a pattern of the same issues with all rooms being review is now emerging… Drawings which have been updated or changed via the RDD or change process are not being implemented and this is now resulting in clear mistakes with incorrect fixtures and fittings being installed".

6.8.3 On 12 July 2017, IHSL issued formal notification to NHSL and the Independent Tester (Arcadis) of the anticipated completion date of 12 October 2017. On 7 August 2017, Brian Currie on behalf of NHSL responded:

> "Further to this Clause 17.5 Notification, the Board has commenced relevant activities in preparation for the anticipated completion date of 12 October 2017 and is therefore incurring associated costs. Moreover, this Clause 17.5 Notification has also triggered the activities of the Independent Certifier. The Clause 17.5 Notification is not one which should be served lightly by Project Co and should be a genuine trigger to the countdown to the Actual Completion Date. In the event that the stated date of 12 October 2017 transpires to be incorrect, the Board shall require Project Co to be held to account for any costs incurred by both the Board and/or the Independent Tester in relation to all reasonable activities carried out by either the Board and/or the Independent Tester in

> preparation for the anticipated completion date beyond 12 October 2017. Moreover, on a practical level, the Board faces numerous logistical challenges firming up arrangements to decant the existing Royal Hospital for Sick Children to its new location. The Board must have absolute confidence in the anticipated completion date stated by Project Co pursuant to the Clause 17.5 Notification. A false or misleading anticipated completion date will quickly escalate to the highest levels of both the Board and Scottish Government, which shall have reputational consequences for Project Co".

6.8.4 A report prepared by Iain Graham, Director of Capital Planning and Projects, for the Finance and Performance Review Committee meeting of 12 July 2017, stated:

> "With the Construction Programme approaching conclusion, and the new hospital scheduled to open in Spring 2018, considerable effort is now taking place to ensure that all aspects of the building meet the specification set out by the Board. IHSL continue to advise that the Anticipated Handover Date of 12th October 2017 is secure but that the 'programme is running marginally behind' and 'remains challenging'. This has been reviewed by the Project Team and their analysis highlights a number of increased risks to the completion and migration timetables. In particular there are currently three key areas of design dispute between the Board and IHSL. These involve the design of the HV resilience, ventilation to some four bedded rooms and one of the MRI rooms. Despite escalation of these to formal technical review sessions and to a 'Board to Board' meeting between IHSL and NHS Lothian, resolution has not been achieved…The Deputy Chief Executive Officer has advised IHSL that should agreement not be reached in July he is likely to recommend a formal process of Dispute Resolution be initiated".

6.8.5 The possibility of Dispute Resolution Procedure was raised by NHSL to IHSL on 13 June 2017, with a view to secure the programme and resolve the outstanding disputes.

6.8.6 On 28 August 2017, IHSL in response proposed a compromise agreement to avoid a Dispute Resolution Procedure, which would: "give NHS Lothian access to the hospital at the earliest possible date with the three issues configured in the manner that NHS Lothian now desires" and an estimated practical completion date of 15 March 2018. In accordance with legal advice and with the approval of the Finance & Resources Committee, NHSL continued to favour formal Dispute Resolution Procedure.

6.8.7 NHSL and IHSL continued to engage in "without prejudice" dialogue around a list of 25 alleged non-compliances and their respective positions between August 2017 and March 2018. However, discussions reached an impasse over the four-bed ventilation dispute. This was an issue which centred upon differing interpretations of NHSL's requirements specified in the project agreement.

6.8.8 At a Programme Board meeting on 15 January 2018, the Project Director, Brian Currie, provided an update on the Dispute Resolution Procedure." Legal advice remained at this time for NHSL to pursue the Dispute Resolution Procedure and approval was subsequently sought from the Scottish Government on 8 March 2018, pursuant to paragraph 8 of NHSL's Standing Financial Instructions dated 21 June 2017 and pursuant to Lothian NHS Board Scheme of Delegation dated 7 December 2016.

6.8.9 An appendix to a paper produced by the Director of Finance, Susan Goldsmith, on 6 March 2018 for the Finance & Performance Review Committee stated:

> *"The ventilation strategy for 20 multi-bedrooms (4/3 beds) is still the subject of dispute between NHSL and IHSL and its supply chain. NHSL and Multiplex have both received favourable Opinions from respected QCs. Our view remains that NHSL are more likely than not to be successful if this dispute is determined via formal dispute resolution procedures. In our view, the prospects of success are in the region of 60 – 65%. The Independent Tester has been provided with a copy of Multiplex's QC's Opinion and it is understood that he remains positive that*

NHSL are entitled to require balanced / negative pressure to the relevant rooms relative to the adjacent corridor."

6.8.10 In response, IHSL wrote to NHSL on 22 March 2018 . They stated:

> "It remains our view that any Court proceedings will be vigorously defended by Multiplex, resulting in a long drawn out and expensive process, which depending upon the determination may not provide the Board with the facilities they require. IHSL consider that a settlement agreement can deliver a facility to the Board's technical requirements, at the earliest opportunity and at the most efficient cost to the project."

6.8.11 At an NHSL Programme Board Meeting on 21 May 2018, Chief Officer and Project Owner, Jim Crombie, provided an update:

> "Following court action preparation being completed and shared with Project Co a commercial proposal was submitted and court proceedings not progressed at this time.… A completion date of 31/10/18 has been given – this appears a credible programme".

Mr Crombie also advised that the Scottish Government wished to know how confident NHSL were in a completion date of 31 October 2018 and in response NHSL had stated that "we were more reassured than we have ever been that the programme can be achieved by IHSL".

6.8.12 A paper produced by NHSL Director of Finance, Susan Goldsmith, on 24 July 2018 for the Finance & Performance Review Committee provided:

> "The Board, with IHSL and MPX [Multiplex], has sought to agree a negotiated settlement between the parties where the parties themselves agree the allocation of responsibilities and costs as opposed to pursuing Dispute Resolution Process (DRP) or court action. A balance has been assessed between potential costs of pursuing action against the SPV [Special Purpose Vehicle] and contractor, assessment of the likely success factors, and the time involved versus the capital injection costs to avoid such steps. The solution would be enacted by a legal Settlement

> Agreement that will set out the responsibilities of each party in relation to all actions to be carried out to allow the anticipated actual completion of the facility by the end of October 2018”.

Between July 2017 and February 2019, NHSL and IHSL were engaged in negotiations towards a Settlement Agreement around the disputed issues.

6.8.13 On 25 July 2018, NHSL submitted a Supplementary Business Case to the Scottish Government to support the proposed commercial agreement. The proposal was approved by Christine MacLaughlin, Scottish Government Director of Health Finance, on 8 August 2018.

6.8.14 From July 2018, working to a renewed anticipated completion date of 31 October 2018, negotiations continued as two workstreams – the commercial agreement and the technical schedule. The position was reached whereby IHSL were to carry out the post-completion works concurrently with NHSL’s commissioning phase prior to occupation. In an update provided by Alan Morrison, Scottish Government to the Cabinet Secretary on 13 February 2018, this was highlighted as a moderate risk: “we do not typically undertake the commissioning of a hospital while the contractor is still finishing it, so there is additional risk around that arrangement.”

6.8.15 Due to further delays and discussions, Susan Goldsmith (NHSL) and Matthew Templeton (IHSL) signed the settlement agreement on 22 February 2019, concluding 20 months of negotiation.

7. Decision by Cabinet Secretary to delay opening – Hospital being fully operational (July 2019 to March 2021)

7.1 Overview of period

7.1.1 On 4 July 2019 Jeane Freeman, the then Cabinet Secretary for Health and Social Care (the Cabinet Secretary) made the decision to halt the move to the new RHCYP/DCN site. This was communicated to NHSL by letter dated 4 July 2019 from the Director General of Health and Social Care. The letter stated that the decision was taken in the best interests of patient safety and to ensure that there was sufficient time for the resolution of the ventilation issues.

7.1.2 Following a meeting on 5 July 2019 within NHSL, it was decided that an Incident Management Team (IMT) should be established. The IMT would, meet twice a week to continue to investigate issues, agree solutions and monitor action plans.

7.1.3 An IMT is typically a multi-disciplinary, and often a multi-agency group, with responsibility for investigating and managing public health incidents. This is recognised good practice and the statutory mechanism for handling situations which may have an impact on public health.

7.1.4 The first meeting of the IMT was held on 8 July 2019 when an update of the weekend's discussions with the Scottish Government was provided. Responses to a list of questions from the Director General of Health and Social Care were also developed.

7.1.5 The IMT changed its name after the first four meetings to the Executive Steering Group (see section 20).

7.1.6 Ultimately the decision made by the Cabinet Secretary to delay the move to the new RHCYP and DCN brought about a revised project management and governance structure within NHSL albeit using the existing Project Team.

7.1.7 In brief, the Scottish Government appointed a Senior Programme Director who oversaw the remedial works and subsequent negotiations with IHSL supported

by key NHSL personnel. The Project Team continued to support this, with NHSL establishing an Executive Steering Group, and Scottish Government managing through an Oversight Board. These provided an escalation route for any issues arising from technical and commercial workstreams delivering the remedial works.

7.1.8 A liaison meeting between NHSL including the Senior Programme Director and IHSL directors with their supply chain members was also established to manage the interface between the parties.

7.2 Escalation of NHSL on Performance Framework

7.2.1 If the Scotitsh Governmnet determine that an NHS board cannot address a problem without monitoring or intervention from the governemnt, it will be subject to the NHS Board Performance Escalation Framework.[17]

Stage	Description	Response
Stage 1	Steady state “on-plan” and normal reporting	Surveillance through published statistics and scheduled engagement of Annual Reviews/Mid-Year Reviews
Stage 2	Some variation from plan; possible delivery risk if no action	Local Recovery Plan – advice and support tailored if necessary. Increased surveillance and monitoring Scottish Government. SG Directors aware.
Stage 3	Significant variation from plan; risks materialising; tailored support required	Formal Recovery Plan agreed with Scottish Government. Milestones and responsibilities clear. External expert support. Relevant SG Directors engaged with CEO and top team. DG aware.
Stage	Significant risks to delivery,	Transformation team reporting to Director

[17] The framework in place in 2019/20 is at NHS Scotland and Integration Authorities consolidated financial reporting: 2019-2020 - gov.scot (www.gov.scot)

4	quality, financial performance or safety; senior level external support required.	General and CEO NHS Scotland.
Stage 5	Organisational structure/configuration unable to deliver effective care.	Ministerial powers of Intervention.

7.2.2 Due to the scale of the challenge relating to the delivery of the new hospital, NHSL, was first placed by the Scottish Government at Stage 3 on 12 July 2019.

7.2.3 The reason for this escalation was stated in the letter to NHSL Chief Executive as:

> "Whilst there have been improvements in performance in several areas of NHS Lothian's performance, at our meeting yesterday we discussed a number of challenging areas where further improvement is required and in the context of a challenging financial environment… I am concerned, however that the cumulative impact of these issues, together with the significant work required to complete the move to the new Royal Hospital for Children and Young People, will place significant pressure on the leadership capacity of the Board and that in order to fully deliver on this challenging agenda for the people of Lothian and beyond, a tailored package of support is required. I have therefore concluded, on the advice of the Health and Social Care Management Board, that NHS Lothian should now be placed at Level 3 of the NHS Board Performance Escalation Framework."

7.2.4 NHSL Board was subsequently escalated to Stage 4 in the NHS Board Performance Framework for the specific issue in relation to RHCYP/DCN on 13 September 2019. The Health and Social Care Management Board (HSCMB) considered this at a meeting on 11 September 2019. This followed the publication of both the reports from NHS National Services and KPMG and the establishment of an Oversight Board chaired by John Connaghan, SG Chief Performance Officer, NHS

Scotland. NHSL at that stage were also developing a recovery plan which was due at beginning of November 2019.

7.2.5 The key issue which appeared to have caused the escalation to Stage 4 was based on information from the independent reports and advice from the Oversight Board, which assessed that there were a broader range of issues that needed to be addressed before the new RHCYP/DCN building could be fit for occupation. The report to the HSCMB also stated that:

> "the additional leadership capacity that will be required to deliver this programme may have an impact on the broader capacity of the Board in managing the Stage 3 escalation on a number of performance areas."

The further escalation was based on the RHCYP/DCN programme and the assessment of confidence by HSCMB, in the ability of the NHSL Board to deliver the programme of work, with its partners, to rectify the issues identified and secure occupation of the building at the earliest possible timeframe and to mitigate risks in the current sites.

7.2.6 The decision on a Stage 4 escalated position sat with the Director General for Health and Social Care, as detailed in the NHS Scotland Board Performance Escalation Framework. A health board would normally be placed at Stage 4 for failing to deliver on the recovery action agreed at Stage 3 or the identification of a significant weaknesses which could pose an acute risk to financial sustainability, reputation, governance, quality of care or patient safety. In relation to RHCYP/DCN the latter considerations were applicable. The Scottish Government have advised the Inquiry that this escalation to Stage 4 had the agreement of the Cabinet Secretary.

7.2.7 In accordance with the framework, Stage 4 escalation resulted in direct oversight and guidance from the Scottish Government.

7.3 Assurance action taken by the Scottish Government/Ministers

7.3.1 The Scottish Government have advised the Inquiry that the Cabinet Secretary instructed her officials to look at how the situation with the RHCYP/DCN project happened and how it only came to light in the final days before the hospital was due to open. This included scrutiny of whether governance and oversight at NHSL were effective. She was concerned to ensure that lessons were learned from the construction of both the RHCYP/DCN and Queen Elizabeth University Hospital, Glasgow, given that problems had emerged at both construction projects. The Cabinet Secretary instructed her officials to consider the impact of the Scottish Government being at arm's length from the construction of such major infrastructure and the benefits of creating a central port that local health boards could tap into to access national and international expertise. NHSL have advised that this ultimately led to the creation of NHS Scotland Assure (see section 35 below).

7.3.2 To provide assurance, the Cabinet Secretary commissioned two independent reviews by KPMG and NHS National Services Scotland. The focus of the KPMG review was to establish what decisions were made by NHSL in relation to the air ventilation issues and any other material issues that led to the delay. The KPMG report focused in the main on error and confusion over interpretation of the relevant specifications and guidance and missed opportunities to spot and rectify these errors.

7.3.3 NHS National Services Scotland was commissioned to undertake a review of the six critical engineering systems and these were published in two separate reports in September and October 2019. One report focused on the review of water, ventilation, drainage and plumbing systems[18] and the other was a supplementary report.[19] NHS National Services Scotland were also members of the Oversight Board and provided ongoing support to NHSL and technical advice to the Scottish Government. The Scottish Government also obtained clinical support via the offices

[18] Royal Hospital for Children and Young People and Department of Clinical Neurosciences: review of water, ventilation, drainage and plumbing systems - gov.scot (www.gov.scot)
[19] Supporting documents - Royal Hospital for Children and Young People and Department of Clinical Neurosciences: review of water, ventilation, drainage and plumbing systems - supplementary report - gov.scot (www.gov.scot)

of the Chief Medical Officer and Chief Nursing Officer (the Chief Nursing Officer was also a member of the Oversight Board).

7.3.4 KPMG were instructed by the Scottish Government to establish the facts surrounding the difficulties that resulted in the hospital move having to be delayed. They were instructed by the Scottish Government to consider:

> “a) To establish 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;
> 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, the ‘project’ being the design and construction of the Hospital;
> 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, along with the escalation arrangements to NHSL and the Scottish Government.”

7.3.5 It was publicly announced on 11 September 2019[20] that an independent review of the governance arrangements for RHCYP by KPMG had found that the main issue with ventilation in critical care stemmed from an error in a document produced by NHSL at the tender stage in 2012. The announcement further stated that the KPMG report attributed this to human error and confusion over interpretation of standards and guidance. It also concluded that opportunities to spot and rectify that error were missed.

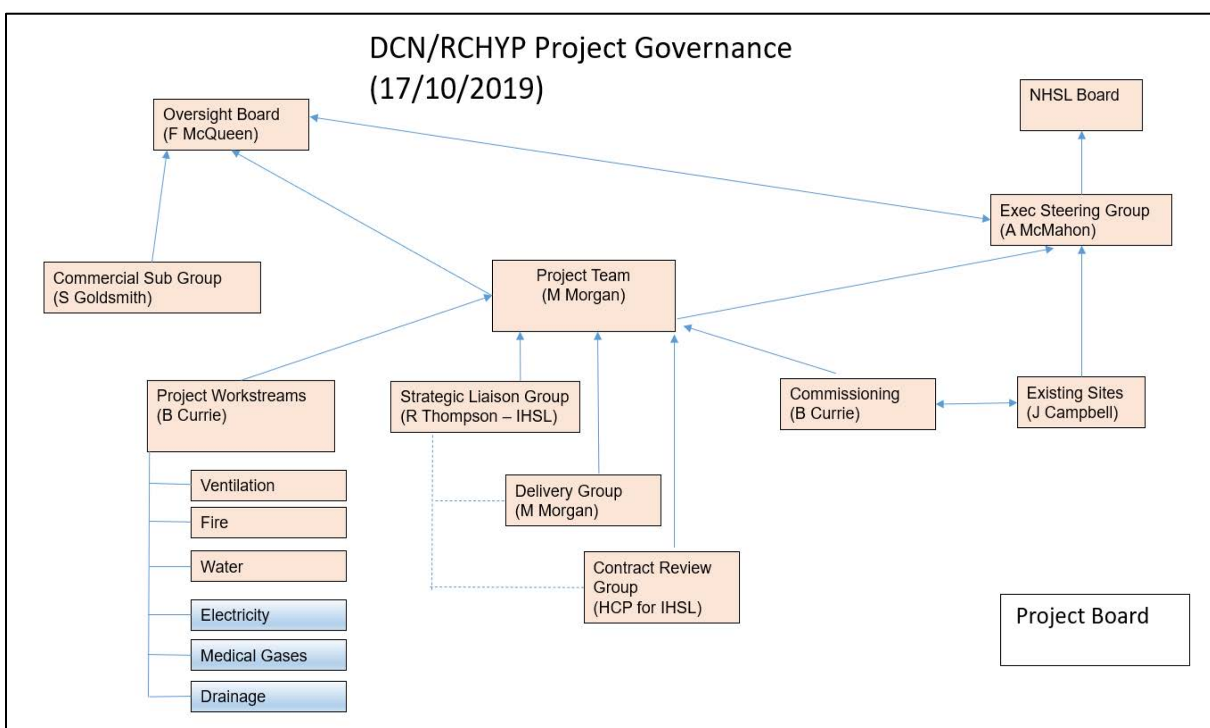
7.3.6 HFS and HPS during this period were separate divisions within NHS National Services Scotland. Though independent of the Scottish Government, they were the

[20] Update on Royal Hospital for Children and Young People - gov.scot (www.gov.scot)

Scottish Government's key technical advisors during this period from the initial notification to the Scottish Government by NHSL that there was an issue with the ventilation on 2 July 2019, through to the final recommendation that the hospital could safely be opened to staff and patients.

7.4 Overall Governance

7.4.1 The overall governance structure during this period is set out in the organigram below.



7.5 Senior Programme Director

7.5.1 Scottish Government put in place a Senior Programme Director to strengthen the management and assurance arrangements for completing all the outstanding works necessary to open the new facility.

7.5.2 Mary Morgan, Director of Strategy, Performance and Service Transformation, NHS National Services Scotland, was appointed to this role on 16 September 2019. Her appointment letter dated 23 September 2019 from the Director of Health Finance, Corporate Governance and Value (sent after her official commencement)

stated that the role would have responsibility for the actions to ensure that the facility is fit for occupation. The Senior Programme Director was expected to work as part of the NHSL team and all other actions relating to the existing site and to the service migration to the new facility, would remain the direct responsibility of NHSL.

7.5.3 The Terms of Reference for the Oversight Board were updated at a meeting on 19 September 2019 to include Mary Morgan, Senior Programme Director, who would be attending to provide the Oversight Board with advice and assurance.

7.5.4 The key elements of the remit for the Senior Programme Director included:

- Reporting to the Oversight Board Chair;
- Responsible for the actions required to ensure that the project facility is fit for occupation;
- Providing the interface between programme oversight, ownership, and delivery; and,
- Acting as a focal point between the Oversight Board, NHSL Board and Executive and the Project Director.

7.5.5 A report from the Senior Programme Director was a standing item on the Oversight Board's agenda.

7.5.6 NHSL had direct oversight of the remedial works necessary. The Oversight Board received regular updates on progress through reports and made decisions where required. The Oversight Boarded gave regular updates to the Cabinet Secretary.

7.5.7 Both the Senior Programme Director and the Oversight Board were to support NHSL during the work to complete the new facilities. They were not intended as a replacement for any governance or management processes that applied within NHSL. NHSL had representation on the Oversight Board and escalation of key issues to the Finance & Resources Committee or the Board as appropriate remained the method by which the project was governed. However, it was the Oversight Board made recommendations to the Cabinet Secretary who made the final decision on when services could be migrated to the new hospital.

7.5.8 The Project Director reported to the Senior Programme Director during this period to ensure that the facility was fit for occupation (including commissioning). The Project Director was also accountable and to the Senior Responsible Officer for all other project actions relating to the existing sites and service migration.

7.6 Oversight Board

7.6.1 Background information about the Oversight Board can be found at section 21 of this paper, which also includes details on its membership and Terms of Reference.

7.6.2 An Oversight Board meeting was held on 8 August 2019 to discuss critical care ventilation and the proposed appropriate technical specification for this type of ventilation. The Oversight Board was asked to agree the proposed Board Change which would require IHSL to:

> "Design, supply and install a ventilation system or systems capable of delivering 10 air changes/hour at +10pa as per SHTM 03-01, Appendix 1, Table A1" to certain room within RHCYP. This Board Change also stated that "all works to be carried out and monitored after and with reference to a collaborative full Stage 3 HAI SCRIBE assessment being approved by NHS Lothian".

7.6.3 The Oversight Board agreed to the NHSL Board issuing to IHSL High Value Change Notice 095 for the remedial works necessary to provide compliant critical care ventilation. This was issued on 30 August 2019. This was later combined into High Value Change Notice 107 when the issues with the ventilation in haematology and oncology became part of the scope of the work.

7.7 Executive Steering Group

7.7.1 Background information, including the membership of and Terms of Reference for the Executive Steering Group, can be found at Section 20.

7.7.2 This body effectively replaced the Project Board/Project Steering Board during this period.

7.8 Commercial Subgroup

7.8.1 This was formed to consider commercial issues and make decisions required to progress towards the hospital opening. The subgroup made recommendations to the Oversight Board and in some circumstances directly to NHSL "where such decisions have a material or contractual impact on NHS Lothian, which will then be taken through the appropriate governance route as determined by the Director of Finance."

7.8.2 This subgroup met for the first time on 15 September 2019 and was chaired by Susan Goldsmith, Director of Finance. Its Terms of Reference were agreed by the Oversight Board at a meeting on 31 October 2019 subject to the addition of Mary Morgan to the membership.

7.8.3 According to the Terms of Reference, the subgroup would report to the Oversight Board and provide advice and recommendations relating to:

- the short, medium and long-term legal and financial consequences of emerging solutions that may be employed to achieve the overall desired outcome and options for delivery of those solutions;
- the commercial implications of any legally binding agreements to be entered into by NHSL or other public sector party; and
- any circumstances under which, over the entire contract period, the risk profile of the project may be altered, or public sector liability increased.

7.8.4 The membership of the group was:

- Mary Morgan, Senior Programme Director (as required by the Oversight Board)
- Christine McLaughlin, Chief Finance Officer, Scottish Government
- Susan Goldsmith, Director of Finance, NHSL
- Peter Reekie, Chief Executive, Scottish Futures Trust
- Colin Sinclair, Chief Executive, NHS National Services Scotland

Others attended the group as needed to give advice and assurance. Susan Goldsmith as chair of the subgroup provided an update to the Oversight Board at meetings.

7.9 Workstreams/Groups

7.9.1 From July 2019, the workstreams/groups within NHSL's governance structure were

Name	**Role**	**Who the workstream/group reported to in structure.**
Ventilation Workstream	The remit was to work through the non-compliances and enhancement requirements identified by Health Facilities Scotland. Agreeing the specification for remedial work involving participation from NHSL, technical advisors (Mott MacDonald), HFS, IHSL, IHSL design & build team (IMTECH, Hoare Lee, etc), and commissioning engineers. This involved developing a revised brief, engaging with delivery designers and contractors (through IHSL) and get agreement from all experts and parties.	Reported to Project Team Led by Brian Currie, Project Director.
Fire Workstream	As above	Reported to Project Team. Led by Brian Currie, Project Director
Water Workstream	As above	Reported to Project Team. Led by Brian Currie, Project Director.
Electricity Workstream	As above	Reported to Project Team. Led by Brian Currie, Project Director

Name	Role	Who the workstream/group reported to in structure.
Medical gases Workstream	As above	Reported to Project Team. Led by Brian Currie, Project Director
Drainage Workstream	As above	Reported to Project Team. Led by Brian Currie, Project Director
Strategic Liaison Group	Senior management liaison between SG Senior Programme Director, NHSL with IHSL and supply chain representatives. To monitor progress across the workstreams and address commercial matters or issues arising.	Reported to Project Team Led by R Thomson of IHSL. This was chaired by R. Thompson from IHSL and met monthly.
Contract Review Group	To progress variations to the supply chain contracts/Project Agreement/Supplemental Agreement arising from the changes.	Reported to Project Team Led by HCP for IHSL.
Commissioning	Construction contractors and their specialist commissioning engineers, addressing specific areas or system wide balancing and outputs following works (remedial, enhancements, other works)	Led by Brian Currie. Reported to Project Team & shared information with Existing Sites Group
Existing Sites	Workstream to enable the safe and efficient delivery of services in their original premises as far as their condition permitted given the age and run down prior to the reprovision	Reported to Executive Steering Group & shared information with Commissioning. Led by J Campbell
Delivery Group	Formerly called Technical Review. Progress meetings with relevant parties post July 2019. Coordination and negotiations with IHSL	Reported to Project Team. Unresolved issues escalated to the Executive Steering

Name	Role	Who the workstream/group reported to in structure.
		Group and then to the Oversight Boarded Chaired by Mary Morgan.
Facilities Management Commissioning Group (2016- 2021)	To develop and deliver commissioning requirements for Facilities Management.	Reported to RHCYP/DCN Commissioning Group.
DCN Operational Commissioning Group (2016-20)	Manage the commissioning process for DCN including ensuring the HR workbooks are completed and provide updates on key issues.	Reported to RHCYP/DCN Commissioning Group.
RHSC Operational Commissioning Group (2016-2021)	Manage the commissioning process for RHCYP including ensuring the HR workbooks are completed and provide updates on key issues.	Reported to RHCYP/DCN Commissioning Group.
Digital Transformation Board (2019 – 2020)	Management of change process for delivering “paper light”. Internal working group progressing the technology, workforce and operational issues involved in paper light – aim was to reduce space required for medical records and improve clinical efficiency and safety	Reported to Programme Steering Board
Operational Weekly Meeting (2019-20)	Weekly look ahead in preparation for opening. Senior Programme Director and / or Service Directors involved in the planning and conducting the migration of services to the RHCYP/DCN.	

Management of Client Groups/Workstreams and External Consultation

Name	Role	Who the workstream/ group reported to structure.
Project Team	Oversight of workstreams and various Groups	Reported to Oversight Board and Executive Steering Group Chaired by Mary Morgan

7.10 Actions of Finance & Resources Committee

7.10.1 During this period the Finance & Resources Committee were still meeting to deal with business within its remit, although it did also deal with a volume of business beyond the RHCYP/DCN project.

7.10.2 With respect to the period immediately preceding the Cabinet Secretary's decision to delay the opening of the hospital, the Finance & Resources Committee were provided with an update at the meeting of the Committee on 20 March 2019. Susan Goldsmith, Director of Finance, wrote that the commercial arrangements with IHSL were now documented in a settlement agreement as at 22 February 2019. Further, the minute stated that "The Committee accepted significant assurance that the conclusion of the Settlement Agreement was in line with the previous reports to the Committee and Board." The Committee were advised that the planned full service operational commencement date was 15 July 2019.

7.10.3 At the next meeting of the Finance & Resources Committee on 22 May 2019, the RHCYP/DCN project was only mentioned briefly by Iain Graham, Director of Capital Planning and Projects to advise that:

> "the new RHCYP, DCN [and] CAMHS migration planning was continuing with a view to completion by 15 July, advertising around this was being undertaken and further information would come back to the Committee as appropriate"

7.10.4 A meeting was held on 24 July 2019 after the Cabinet Secretary's decision to delay the opening of the hospital, where it was acknowledged that internal discussion had been overtaken by the recent NHSL Board's performance escalation and reference was made to a performance recovery plan. The update in this minute by Susan Goldsmith, Director of Finance, addressed progress on technical solutions; the role of the NHSL Incident Management Team; the ongoing independent reviews by NSS and HFS; the KPMG Governance Review; operational matters and the agreement to establish an oversight assurance board which would provide assurance on key decisions for approval by the Cabinet Secretary.

7.10.5 Updates on the RHCYP/DCN thereafter became a regular agenda item at the Finance & Resources Committee meetings. These were submitted as written reports. These were first discussed by officials (such as the Director of Finance), before being discussed at the committee, where the recommendations in the reports were also considered. The committee also approved matters for submission to the Lothian NHS Board. The Senior Programme Director attended relevant Finance & Resources Committee meetings.

7.10.6 The Finance & Resources Committee meetings became more frequent during this period (during 2020 they became monthly) and regular updates on the project were provided to the Committee summarised as follows:

- 25 September 2019: A report was submitted to the committee with the reports from KPMG and NSS. The report also informed the committee that the Director General for Health and Social Care had escalated NHSL to Stage 4 of the Performance Framework, the continuation of the Oversight Board and the appointment of a Senior Programme Director. The committee were informed that the NHSL Board had added a new risk to the corporate risk register because of the delay in opening RHCYP/DCN. The committee were advised of the capital and revenue costs of keeping the existing hospital open for longer. Change notices had been issued to contractors regarding the smaller problems identified in the NSS report. The committee commissioned a brief for an internal audit review on the RHCYP/DCN project to establish a narrative of events and make recommendations for improvements in the

governance process. These were to be highlighted by the chair at the next NHSL Board meeting.

- 27 November 2019: The committee were advised that the remit for an internal audit had been discussed with the Scottish Government. Committee members accepted the governance and accountability arrangements for the payment mechanism laid out in a paper submitted to them. The committee also discussed indemnity agreement for works was discussed and options for NHSL such as change procedure and the difficulties in termination of the contract at that stage. The committee was assured that the Cabinet Secretary was aware of issues through the Oversight Board. The committee agreed that the paper could be submitted to the Board.
- 22 January 2020: An update was given on the supplementary agreement and design development. The Auditor General report was discussed, as well as progress of the internal audit on the RHCYP/DCN process. The internal audit report was intended to be submitted to the Audit and Risk Committee and to the Finance & Resources Committee.
- 26 February 2020: Updates were provided on the works being undertaken, the possible move of DCN to the new hospital and the emerging findings of the internal audit report.
- 25 March 2020, 22 April 2020, 20 May 2020, 17 June 2020, 22 July 2020, 23 September 2020, 25 November 2020, 20 January 2021: There were papers and discussions on the ongoing works, the supplementary agreement, and provisional timescales for moves.
- 22 July 2020: A paper to the committee updated members that the Children's Services outpatients were moving into the new hospital that week and that DCN services had completed their move.
- 26 August 2020: A paper was discussed by members on the internal audit report which had previously been discussed by the Audit and Risk Committee and the NHSL Board. It was noted the areas pertinent to the Finance and Risk Committee included the sign off process as well as funding and contract models. Susan Goldsmith advised members that "as a result of the outcome of the audit it was likely that the delivery model of projects would be revised and that more time would be spent at the beginning of the process making

sure commissioning and strategic planning was right for management of delivery."

- 25 November 2020: This meeting discussed costs and stated, "The Committee recognised that decision making remained with the Scottish Government Oversight Board but that it was important they were sighted on the overall costs and the final cost profile for works undertaken."
- 20 January 2021: The committee discussed NHSL's response to the audit recommendations and the approach to the proposed new process: "It was noted that governance processes had to be relevant and accessible to those working on the ground making day to day decisions in order to work. It was suggested that capacity should be built into the work plans of key clinical individuals whose input was required on projects such as these." and "The proposed process would allow scaling, was designed to work with projects of all sizes and would include an early step to identify which groups needed to be involved. This had happened previously, but the new process would make it more formal and systematic and would require a more detailed record of decisions made." This proposed approach was supported by members.
- 10 March 2021: A summary paper of the forecast costs of the RHCYP/DCN project was present to members.

7.10.7 At the meeting of the committee on 21 April 2021 they were informed that the hospital was fully open with all services moved. Members accepted the recommendations to agree the end of formal reporting.

7.11 Executive Leadership Team

7.11.1 At the inaugural meeting of the Executive Leadership Team on 16 July 2019 the situation with the RHCYP/DCN project was discussed and in particular the commissioning process, HFS involvement and the escalation of NHSL to Stage 3 on the performance framework.

7.11.2 The escalation to level 3 on the performance framework involved wider issues for the NHSL Board than the RHCYP/DCN project and therefore a recovery plan together with a Recovery Programme Board was put in place to address these.

The minutes of the Executive Leadership Team on 20 August 2019 detailed this. The Executive Leadership Team monitored progress on the issues concerned.

7.11.3 In terms of the RHCYP/DCN project, it was being governed through the Executive Steering Group and the Oversight Board together with update reports to the Finance & Resources Committee and the NHSL Board. The Executive Leadership Team therefore limited discussion on this other than updates as to current status at meetings on 20 August 2018, 17 September 2019, 15 October 2019 and 17 December 2019.

7.12 Corporate Management Team

7.12.1 On a review of the minutes, the issues with RHCYP/DCN project were not discussed by the Corporate Management Team during this period.

7.13 Scottish Government Infrastructure Investment Board

7.13.1 For the involvement of IIB during this period please see sections 26.3.8 to 26.3.9.

7.14 Health Facilities Scotland

7.14.1 For additional information on HFS involvement during this period, please see sections 29.6.13 to 29.6.18.

7.15 Heath Protection Scotland – ARHAI

7.15.1 For additional information on ARHAI's involvement during this period, please see sections 30.5.2 to 30.5.5.

7.16 NHSL Board

7.16.1 During this period, the NHSL Board received the minutes from the Audit and Risk Committee therefore would have been aware of ongoing updates and discussions from these.

7.16.2 The first NHSL Board meeting following the Cabinet Secretary's decision to delay the opening of the RHCYP/DCN was on 7 August 2019. Susan Goldsmith, Director of Finance, gave a written and verbal update on the project, which covered

the two reviews that were underway and NHSL's response to the work required by the Cabinet Secretary to address all the issues. The Board acknowledged both the capital and revenue resource implications as well as the impact on staff and patients, and queried whether additional resource was being provided. The Board discussed opportunities for lessons to be learned. The financial position regarding the delay with the RHCYP/DCN was not known at that stage.

7.16.3 Also, during this meeting, the recovery plan for the NHS Board escalation to Stage 3 in the NHS Board Performance Framework was considered, and the Board agreed to add to the Corporate Risk Register three new items:

- The addition of a risk related to the issues around the delay in moving to RHCYP/DCN
- Risk around Stage 3 Escalation
- Escalation Recovery Plans delivery

7.16.4 At the meeting of 2 October 2019 the chairman's welcome indicated that Board members had been kept informed of progress on the RHCYP/DCN project outwith the scheduled Board meeting:

> "The Chairman advised that a lot had been happening in between Board meetings and that he hoped that members had felt engaged and informed particularly in respect of issues around the Royal Hospital for Child and Young People (RHCYP) and DCN as well NHS Lothian's recovery plans."

7.16.5 The Lothian Board were provided with updates on the project (generally by Susan Goldsmith, Director of Finance) and the advance of the hospital towards opening at meetings. This was both to provide informative updates as to what had been happening, together with assurance that matters were being overseen by the Executive Steering Group and the Oversight Board. These matters were then discussed by members of the Board both in the public sessions and the private sessions.

7.16.6 Like the Finance & Resources Committee there was an increase in frequency of the Board meetings during 2020 while progress was being made with RHCYP/DCN project in order for the Board to have oversight and assurance.

7.16.7 The Lothian Board remained involved in the decision process with respect of commercial matters of the project which were discussed at the private meetings of the Board. An example is from the meeting of 4 December 2019, where members received a report on the proposed commercial agreement regarding the high value changes relating to ventilation and fire and the need for a supplementary agreement to be entered into with IHSL. This was discussed and the Minutes state that “Mrs Goldsmith reported that if the Board approved the proposals, then the circulated paper would be submitted to the Oversight Board the following morning for approval in order that the approach to the process could be formally minuted as being approved.” It was commented that:

> “The Board were reminded that the Oversight Board would meet the following day with it being anticipated that the proposals in the Board paper would be ratified by them with the Cabinet Secretary thereby being informed of this process. The Chief Executive commented at one level it had been disappointing that the decision-making process leading to occupation of the building had been taken away from NHS Lothian by the Cabinet Secretary but it was important to recognise that there were also strengths in this process in terms of Scottish Government confirmation of agreement to processes and options being deployed and delivered. The Board were assured that NHS Lothian remained the sovereign body in the process. The reference to the Oversight Board would provide several layers of governance and assurance that had not previously been available. The Board agreed the recommendations contained in the circulated paper subject to receiving approval at the Oversight Board meeting the following day. Mrs Goldsmith would circulate copies of the Oversight Board minutes to Board Members.”

7.17 Finalisation of Oversight Governance

7.17.1 The RHCYP/DCN hospital fully opened on 23 March 2021.

7.17.2 On 9 March 2021 the Cabinet Secretary was informed that the NHSL Executive Steering Group had met to consider the final validation reports in relation to the remedial works. All reports concluded that the ventilation systems were acceptable at the time of validation, were fit for purpose and would only require routine maintenance to remain of sufficient quality for their projected life. The briefing for the Cabinet Secretary confirmed that HFS had no further requirements. NHSL's Chief Executive and the Executive Team were confident that the migration of children's inpatient services could by clinically led for the week commencing 22 March.

7.17.3 The minutes of the final Oversight Board meeting on 8 April 2021 confirmed that all actions on the NSS action log were now closed and the original Terms of Reference had been fulfilled. In relation to removing NHSL from Stage 4 on the performance framework it was stated:

> "One final piece of formality was to consider the NHSL escalation to level 4. Mr Campbell stated that feedback received on the NHSL remobilisation plan referring to escalation indicated that NHSL would come off escalation for the RHCYP/DCN provided the Oversight Board was concluded and the de-escalation accepted within the minute. This position was accepted and Mr McCallum would confirm this with John Connaghan at the Scottish Government."

7.17.4 The final comments from the Oversight Board were in relation to lessons learned to be taken forward by NHS Scotland Assure:

> "The Oversight Board also discussed long term lessons learned and it was agreed that this work would be taken forward through NHS Assure, there was nothing further specifically for NHSL colleagues in relation to this.
>
> Based on the above discussion, final confirmation to stand the Oversight Board down was agreed."

7.17.5 The Oversight Board recommended to the Cabinet Secretary that she accepted the recommendation to approve the move to the new hospital as the final validation reports on the remedial work were considered to be satisfactory.

7.17.6 Mary Morgan, Senior Programme Director, received confirmation from the Director of Health, Finance and Governance, that the Scottish Government were content that she step down as Programme Director by letter dated 13 April 2021. The letter explained that this followed the successful completion of all works required to allow for the safe delivery of the hospital, the closure of the Oversight Board on 8 April 2021 and the forthcoming announcement that the NHSL Board will be de-escalated from Stage 4 of the performance escalation framework.

8. Assessments of Governance

8.1 Price Waterhouse Coopers

8.1.1 Price Waterhouse Coopers (PWC) published a final report on 13 September 2011 on “High Level review of Project Arrangements for the delivery of a new RHSC/DCN on the site of the Royal Infirmary Edinburgh.”

8.1.2 SFT had raised concerns about NHSL’s project arrangements, governance and Project Team in meeting the demands of procuring and delivering the project through the NPD route (see section 4.7). As a result, NHSL requested PWC to undertake a high-level overview of certain elements of its project arrangements.

8.1.3 The Chief Executive of NHSL had advised SFT at a meeting on 12 July 2011 that if PWC made any recommendations these would be addressed by NHSL.

8.1.4 In terms of the project resource and governance (relevant to this paper), PWC found that in 2011, the Project Director and Advisor Team and been put in place for the project’s previous capital build under Framework Scotland. The personnel continued in their roles for the NPD project even though the procurement route had changed and this excluded consideration of any alternative suppliers with suitable experience. This led to concerns being expressed by SFT over the relevant NPD experience within the team and the potential for duplication of internal and external roles.

8.1.5 The observations and recommendations made by PWC on the role of the project director and advisors were:

- “The role of the Project Director should be re-assessed to ensure the present incumbent is fully supported in all key facets of the project’s development.
- SFT has raised a concern that there exists the potential for duplication of roles within the technical advisory resource. The number and variety of appointments does appear higher than for most public sector projects. As such it will require strong control by NHSL senior management and the

Project Director to ensure that the project does not become "advisor driven" and that best value from these appointments is obtained.

- We see benefits for NHSL through a single lead advisor working under the Project Director to ensure that other advisors have specific project roles for clarity and avoidance of duplication of effort and cost. Additionally, some rationalisation of the wide range of advisors could also be considered after a full assessment of their role and relative value.
- The Project team must ensure and demonstrate a non-contestable "level playing field" during procurement of a private sector partner particularly should members of the current Consort consortium choose to enter bids. Potential bidders will already be giving consideration to whether they invest the very considerable people and cash resources to undertake a bid under such circumstances."

8.1.6 The observations and recommendations made by PWC on governance were:

- "Some key roles and responsibilities around the Project within NHSL have lacked an appropriate level of clarity until recently. Key roles in delivery and governance lie with both the Chief Operating Officer of the University Hospitals Division and the Director of Finance.
- The key delivery and governance roles to be delivered by the Director of Finance and Chief Operating Officer should be identified and allocated with clarity, to avoid conflicts or duplication. The hands on role for the Director of Finance in delivery would currently indicate the need for the "governance" roles to be with the Chief Operating Officer.
- The Project Board does not formally receive papers and minute decisions on Project Direction.
- To meet its role in moving the Project through key stages in project lifecycle NHSL must ensure that the Project Board reflects all main stakeholders with input as necessary to inform the Board or provide expert advice. The Board should increase its formal business and provide an appropriate governance trail of discussion and decision making.
- The SFT paper produced on Governance and Project Management arrangements contained a number of recognised best practice processes.

- It may be valuable to demonstrate robust governance within NHSL by benchmarking its current internal arrangements and individual roles with that paper.
- The stakeholder “map” at Appendix 2, designed for clarity, does not clearly do so. The number and level of executive bodies has been raised by interviewees as a potential hindrance in delivery of their roles. On the basis of PwC’s experience and knowledge of similar size projects it does seem overly complex.
- The current Project Governance [and] Internal Reporting Structures at Appendices 1 and 2 should be revisited to redefine more clearly the decision making and approval roles within NHSL, aiming for improved clarity and simplification. We appreciate that the balance between the cover of all key risks whilst avoiding duplication is never an easy task to achieve.”

8.1.7 In response to PWC’s recommendations, NHSL made available additional resources for the Project Team as set out in section 4.8 above.

8.2 NHS National Services Report

8.2.1 Following the decision on 4 July 2019 to delay moving to the new RHCYP/ DCN on 9 July 2019, NHS National Services 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 had been followed and were being implemented. This was published on 9 September 2019 for consideration by the established RHCYP/DCN Oversight Board[21].

8.2.2 The report noted:

> “To discharge its duties, the [NHS Lothian] 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 [with health and safety law]. …

[21] NHS National Services report dated 9 September 2019

> 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."

8.3 KPMG Report

8.3.1 An independent assessment, by KPMG LLP, of the governance arrangements surrounding NHSL's Royal Hospital for Children and Young People was published on 11 September 2019[22]

8.3.2 KPMG were instructed by NHS National Services Scotland to provide an independent assessment of the of the facts surrounding the decision to delay the hospital. From the areas that KPMG were instructed to consider and assess the one that is relevant to this paper is:

> "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"

8.3.3 The KPMG report considered the governance arrangements in place from the date of the Project Agreement on 13 February 2015.

8.3.4 The report's summary of findings stated that:

> "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."

[22] KPMG Report 11 September 2019

8.3.5 The report comments that where appropriate, external advice and guidance was sought by NHSL.

8.4 Auditor General for Scotland

8.4.1 A report by the Auditor General for Scotland called “The 2018/19 audit of NHS Lothian: Delay to the opening of the Royal Hospital for Children and Young People” was published in December 2019[23]

8.4.2 As part of the 2018/19 audit, the Auditor General submitted the accounts and the auditor’s report for NHSL under section 22(4) of the Public Finance and Accountability (Scotland) Act 2000, together with a further report, which was prepared under section 22(3) of the Act. This report was prepared by the Auditor General taking into account the annual audit report and the reviews carried out by KPMG and NHS National Services.

8.4.3 The Auditor General set out a factual account of the issues and costs incurred in relation to the delay to the opening of the RHCYP/DCN, although it touches on governance aspects only briefly:

> “The role and accountability of all parties and the effectiveness of oversight and scrutiny: Some of the issues resonate with the findings from the independent inquiry by Professor Cole into the Construction of Edinburgh Schools, published in 2017. The report recommended the need for a clear understanding among all parties of their roles and responsibilities; clear protocols regarding the escalation of significant issues; effective and independent scrutiny and inspection; sufficient oversight and quality assurance of construction works and the need for truly independent certification. It would be beneficial to better understand the support offered and the role played by the Scottish Government, the SFT, the professional advisors and the independent tester, and whether the issues that were emerging at the Queen Elizabeth hospital should have prompted greater scrutiny in Edinburgh.”

[23] Auditor General for Scotland Report dated December 2019

8.5 Grant Thornton Report

8.5.1 This report was published in August 2020 and was an internal audit report for NHSL on "Governance and Internal Controls: Royal Hospital for Children and Young People, and Department of Clinical Neurosciences Edinburgh." The scope was agreed in October 2019 following discussions at the Finance & Resources Committee and the NHSL Board.

8.5.2 A few of the observations made by Grant Thornton have been weaved into the section above relating to the Project Board. The report also made several recommendations which are as follows:

> "Recommendation 1: 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 & 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 & 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.

Recommendation 2: 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…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.

Recommendation 3: 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 [be beneficial particularly if]… 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.

Recommendation 4: 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 …
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.

Recommendation 5: 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. …

> Recommendation 6: 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 & Resources Committee (depending on delegations)"

8.5.3 In terms of ventilation issues and the connection with governance, one pattern that emerged from both the Grant Thornton audit and the KPMG report is the limitation of the discussions on technical matters at the Project Board or escalation of these. The Grant Thornton report comments in relation to the Project Steering Board:

> "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."

8.5.4 NHSL have advised the inquiry in relation to the above that the highly technical and specialised detail was dealt with by those with expertise including the technical advisers but issues were flagged, and the implications (risks) were discussed at project/ programme boards and governance framework. Governance groups were to receive and assess assurance, not to manage highly technical matters. However, the frequent reporting to such governance committees and the

NHSL Board highlighted the significance of the issued and interest of NHSL Board in resolving matters.

8.5.5 Similarly, the KPMG report comments:

> "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."

8.5.6 NHSL have advised the Inquiry in relation to these comments that as the Project Agreement was supposed to have transferred the technical (design and construction) risks to the private sector, it is natural that NHSL's key risk remained financial and therefore the focus. Where technical matters impacted on the financial and timelines for the opening of the new facility, there was a focus on such matters.

9. Part 2 - National Structural Statutory Framework

9.1 Introduction

9.1.1 The National Health Service in Scotland is established and operates under a complex legislative framework with an interlinking network of statutory duties and obligations conferred upon various bodies. The purpose of this section is not to give a detailed or comprehensive analysis of that framework, but rather to sketch out its main features to provide the reader with some context for the specific matters dealt with in subsequent parts of this paper.

9.1.2 Accordingly, parts of the National Health Service in Scotland such as Joint Integration Boards[24] that fall outwith the matters falling to the Inquiry's its Remit and Terms of Reference are not dealt with.

9.2 The National Health Service in Scotland

9.2.1 The National Health Service (NHS) in Scotland was established in 1948[25]. Services in Scotland were administratively separate from the health services provided in England and Wales. The Secretary of State for Scotland held ministerial responsibility.

9.2.2 The National Health Service (Scotland) Act 1978[26] consolidated certain enactments relating to the NHS in Scotland and as regards the provision of hospital-based healthcare within Scotland, it remains the primary statute conferring powers upon government ministers.

9.3 The Scottish Ministers

9.3.1 In 1999 responsibility for the NHS in Scotland became a devolved matter[27]. The Scottish Parliament can legislate in matters of devolved competence[28], which includes many health policy matters and the NHS[29]. For practical purposes,

[24] Under the Public Bodies (Joint Working) (Scotland) Act 2014 (legislation.gov.uk)
[25] National Health Service (Scotland) Act 1947 (c. 27)
[26] National Health Service (Scotland) Act 1978 (c.29), as amended and primarily by the by Public Service Reform Scotland Act 2010 and the Public Bodies (Joint Working) Act 2014.
[27] The Scotland Act 1998 (c.46)
[28] Section 29(1) of the Scotland Act 1998 (c. 46)
[29] See Section 30 and Schedules 4 and 5 of the Scotland Act 1998 (c. 46). The Scottish Parliament has devolved competence to legislate except in so far as matters are reserved to the UK parliament.

references to “Secretary of State” in pre-devolution legislation in matters related to health including the 1978 Act should be read as a reference to “the Scottish Ministers”.

9.3.2 Accordingly, statutory responsibility for the NHS in Scotland lies primarily with the Scottish Ministers[30]. At present the Cabinet Secretary for NHS Recovery, Health and Social Care[31] has ministerial responsibility in the Scottish Cabinet for the NHS in Scotland, which includes provision of hospital-based healthcare (sometimes referred to as secondary care).

9.3.3 The Scottish Ministers are accountable to the Scottish Parliament for exercise of their statutory functions in matters of devolved competence.

9.4 The National Health Service (Scotland) Act 1978: duties conferred upon the Scottish Ministers

9.4.1 The Scottish Ministers have a broad statutory duty at section 1 of the 1978 Act to promote in Scotland a comprehensive and integrated health service designed to secure: -

- the improvement in the physical and mental health of the people of Scotland, and
- to prevention, diagnosis and treatment of illness[32].

9.4.2 Further the Scottish Ministers are obliged to either provide or secure the effective provision of services in accordance with the provisions of the 1978 Act. Services free of charge except where legislative provision is made for the making and recovery of charges.[33]

9.4.3 In addition to that wide-ranging duty, the Scottish Ministers have a broad discretion conferred by section 1A of the 1978 Act. Section 1A provides the Scottish

All reservations are listed in Schedules 4 and 5. Of the few matters reserved to the UK Parliament are the regulation of specified “healthcare professionals” and the regulation of certain types marketing for medicines for human use.

[30] The National Health Service (Scotland) Act 1978 (c. 29)

[31] Cabinet Secretary for Health and Social Care - gov.scot (www.gov.scot)

[32] Section 1 of the National Health Service (Scotland) Act 1978 (c.29)

[33] Except in so far as the making and recovery of charges is expressly provided for by any enactment. Section 1(2) of the National Health Service (Scotland) Act 1978

Ministers with a duty to promote the improvement of the physical and mental health of the people of Scotland. In discharging their duty, the Scottish Ministers "may do anything which they consider is likely to assist discharging that duty" including provision of financial assistance to any person, entering into arrangements or agreements with any person, co-operating with or facilitating or co-ordinating the activities of any person.[34]

9.4.4 To assist in the discharge of their statutory duties, the Scottish Ministers have powers to establish health boards, special health boards and a Common Services Agency. The Scottish Ministers may confer functions of each of these bodies.

9.4.5 The 1978 Act also confers a range of specific duties upon the Scottish Ministers in relation to other services and facilities. Notably with reference to matters of interest of the Inquiry, they are under a duty to provide throughout Scotland to the extent that they consider necessary to meet all reasonable requirements, hospital accommodation and medical, nursing and other services.[35]

9.4.6 In addition, the Scottish Ministers have a statutory obligation to publish a Charter of Patient Rights and Responsibilities, which summarises the existing rights and responsibilities of people who use NHS services and receive NHS care in Scotland[36].

9.5 The Scottish Ministers: Powers to constitute Health Boards

9.5.1 The Scottish Ministers are required to constitute health boards[37] for the purpose of exercising such of their statutory functions as they may determine, and for the purpose of making arrangements on their behalf for the provision of primary medical, dental and pharmaceutical services under the 1978 Act.

9.5.2 The NHS in Scotland defines a Scottish health board as "a regional authority in Scotland with responsibility for the delivery of health services"[38]. Each health board is responsible for protecting and improving the health of the population, and for delivering frontline healthcare services in its geographic area.

[34] Section 1A(1) of the National Health Service (Scotland) Act 1978
[35] Section 36 of the National Health Service Scotland Act 1978
[36] The Patient Rights (Scotland) Act 2011
[37] Section 2(1)(a) of the National Health Service (Scotland) Act 1978.
[38] Scottish Health Board (datadictionary.nhs.uk)

9.5.3 A health board is a body corporate.[39] The Scottish Ministers appoint the health board members[40] which consists of a chair, other members and local councillor members[41]. Secondary legislation regulates health board membership and the procedures associated with appointment[42].

9.5.4 Health boards are non-departmental public bodies and are accountable to the Scottish Ministers, specifically to the Cabinet Secretary for Health. Health boards have legal personality and are entitled to enforce any rights acquired and are liable in respect of any liabilities in the exercise of those functions as if acting as a principal. All proceedings are to be brought by or against the board in its own name.[43]

9.5.5 There are currently fourteen health boards:

1. NHS Ayrshire & Arran
2. NHS Borders
3. NHS Dumfries & Galloway
4. NHS Fife
5. NHS Forth Valley
6. NHS Grampian
7. NHS Greater Glasgow & Clyde
8. NHS Highland
9. NHS Lanarkshire
10. NHS Lothian
11. NHS Orkney
12. NHS Shetland
13. NHS Tayside
14. NHS Western Isles

[39] Schedule 1, paragraph 1 of the National Service (Scotland) Act 1978
[40] Schedule 1, paragraph 2 of the National Service (Scotland) Act 1978
[41] Following nomination by local authorities in the area of the Health Board.
[42] The Health Boards (Membership and Procedure) (Scotland) Regulations 2001 (2001/302), and the Health Boards (Membership) (Scotland) Regulations 2013 (2013/334).
[43] Section 2(8) of the National Health Service (Scotland) Act 1978

9.6 Functions of Health Boards

9.6.1 Health boards are given the function of providing, to the extent that they consider necessary to meet all reasonable requirements, primary medical services as respects their area.[44] The 1978 Act gives them a number of other specific functions. For example, all health boards have a duty to promote the improvement of the physical and mental health of the people of Scotland. They have broad discretion and "may do anything which they consider is likely to assist discharging that duty". This provision mirrors that conferred on the Scottish Ministers by section 1A of the 1978 Act.

9.6.2 Other functions can be conferred (or withdrawn) by orders made by the Scottish Ministers under the 1978 Act.[45]

9.6.3 In exercising their functions, health boards are obliged to "act subject to, and in accordance with, such regulations as may be made, and such directions as may be given, by the [Scottish Ministers]; and such regulations and directions may be made or given generally or to meet the circumstances of a particular area or matter."[46]

9.6.4 Every health board is obliged to keep accounts of all money received and paid out by them. Furthermore, Health boards must send their accounts to the Scottish Ministers as directed. The Scottish Ministers sends the accounts to the Auditor General for Scotland for auditing[47].

9.7 The Scottish Ministers: Powers to constitute Special Health Boards

9.7.1 The Scottish Ministers have the discretion to establish special health boards[48] for the purpose of exercising the functions of the Scottish Ministers relating to the health services as they may determine.

9.7.2 In addition to functions that may be conferred upon them by the Scottish Ministers, the 1978 Act confers special health boards, once established, with a

[44] Section 2C(1) of the National Health Service (Scotland) Act 1978
[45] For example, see section 2A National Health Service (Scotland) Act 1978
[46] National Health Service (Scotland) Act 1978 section 2(5).
[47] Section 86 of the National Health Service (Scotland) Act 1978
[48] Section 2(1)(b) of the National Health Service (Scotland) Act 1978.

number of specific statutory functions. All special health boards have a duty to promote the improvement of the physical and mental health of the people of Scotland[49]. They have a broad discretion and "may do anything which they consider is likely to assist discharging that duty"[50] including provision of financial assistance to any person, entering into arrangements or agreements with any person, co-operating with or facilitating or co-ordinating the activities of any person. This provision mirrors that relating to the Scottish Ministers by section 1A of the 1978 Act.

9.7.3 There are currently seven special health hoards and each was established with a specific purpose. Each of the special health boards support the regional Health Boards by providing a range of specialist and national services.

9.7.4 The special health boards are as follows: -

1. NHS Healthcare Improvement Services: NHS Quality Improvement Scotland (QIS) was established as a special health hoard in 2003, then Healthcare Improvement Scotland was established by the Public Services Reform (Scotland) Act 2010, taking over the regulatory functions of the QIS[51].
2. Scottish Ambulance Service[52]
3. State Hospitals Board for Scotland[53]
4. NHS Education for Scotland[54]
5. NHS 24[55]
6. National Waiting Times Centre Board[56]: covers the whole of Scotland.
7. Public Health Scotland[57]: Public Health Scotland covers the whole of Scotland. It succeeded NHS Health Scotland which was a special health board established in 2003 and dissolved in 2020.

[49] Section 2A(1) of the National Health Service (Scotland) Act 1978
[50] Section 2A(2) of the National Health Service (Scotland) Act 1978
[51] An Operating Framework is in place between HIS and the Scottish Ministers, in addition to managing the relationship, the Framework sets out the escalation process from HIS to the Scottish Ministers. This would be undertaken when a lack of progress/response/input has been made by the service provider because of the usual HIS processes. HIS-SG-Operating-Framework-Master-copy-WEB-VERSION (1).pdf
[52] The Scottish Ambulance Service Board Order 1999 (1999/686)
[53] The State Hospitals Board for Scotland Order 1995 (1995/574)
[54] The NHS Education for Scotland Order 2002 (2002/103)
[55] The NHS 24 (Scotland) Order 2001(2001/137)
[56] The National Waiting Times Centre Board (Scotland) Order 2002/305
[57] The Public Health Scotland Order 2019 (legislation.gov.uk)

9.7.5 Special health boards are non-departmental public bodies and are accountable to the Scottish Ministers, specifically to the Cabinet Secretary for NHS Recovery, Health and Social Care.

9.8 The Scottish Ministers: Powers to create the Common Services Agency

9.8.1 The 1978 Act, [58] together with the National Health Service (Functions of the Common Services Agency) (Scotland) Order 2008[59] and the Public Bodies (Joint Working) Scotland Act 2014, provides the current statutory basis for the Common Services Agency (the Agency) for the Scottish Health Service. The purpose of the Agency is to provide a range of services to health boards[60]. The Agency is more commonly known as the National Services Scotland (NSS).

9.8.2 The Agency is a body corporate.[61] It is managed by a board appointed by the Scottish Ministers. It comprises a chair and such other members as the Scottish Ministers may appoint following consultation with the health boards[62]. Mary Morgan is the current Chief Executive at NSS.

9.8.3 The Agency is a non-departmental public body and is accountable to the Scottish Ministers, specifically to the Cabinet Secretary for NHS Recovery, Health and Social Care.

9.9 Functions of the Common Services Agency

9.9.1 The Agency is a body to which the Scottish Ministers may delegate such of their functions relating to the health service under the National Health Service (Scotland) Act 1978 as they think appropriate.[63] The Ministers may withdraw any functions delegated. In addition, the Agency must provide such services and carry

[58] Section 10 of the National Health Service (Scotland) Act 1978.
[59] SSI 2008/312.
[60] The National Health Service (Functions of the Common Services Agency) (Scotland) Order 2008/312
[61] Schedule 5, paragraph 1 of the National Health Service (Scotland) Act 1978
[62] Schedule 5 of the National Health Service (Scotland) Act 1978. Current membership of the board and other management bodies can be found here: https://www.nss.nhs.scot/how-nss-works/governance/.
[63] Section 10(3) of the National Health Service (Scotland) Act 1978. For example, see section 2A National Health Service (Scotland) Act 1978

out such tasks for bodies associated with the health service as the Scottish Ministers and those bodies may agree, and on such terms and conditions as may be agreed.[64]

9.9.2 The Agency provides a broad range of support services to health boards and special health boards. These are set out in a secondary legislation made by the Scottish Ministers under the 1978 Act.[65] These functions include:[66]

- To collect and disseminate epidemiological data and participate in epidemiological investigations;
- To provide information, advice and management services in support of the functions of Scottish Ministers, HIS, health boards and special health boards;
- To provide accommodation of the kind referred to in section 36(1) of the 1978 Act for the functions of the Agency and, if so directed by Scottish Ministers, for the functions of HIS, health boards and special health boards;[67]
- To provide legal services to health boards, the special health boards and HIS via the Central Legal Office;
- To procure equipment, supplies and services including the national procurement of clinical services, in support of the functions of the Scottish Ministers, HIS, health boards and special health boards;
- To co-ordinate personnel policies, including, to such extent as may be agreed with HIS, health boards and special health boards, arrangements for appointment, training and planned movement of staff and the organisation of and participation in training;
- To arrange for the check and pricing of pharmaceutical prescriptions;
- To provide a blood transfusion and blood fractionation service;
- To provide staff and accommodation to the Scottish Dental Practice Board;

[64] Section 10(6) of the National Health Service (Scotland) Act 1978
[65] Generally, sections 10(3) and (4) and 105(6) and (7) of the 1978 Act
[66] The National Health Service (Functions of the Common Services Agency) (Scotland) Order 2008 as amended.
[67] Article 2 of the National Health Service (Functions of the Common Services Agency) (Scotland) Order 2008 (2008/312).

- To take on lease, or purchase by agreement, moveable property and land which is required for the functions of the agency and to dispose of land no longer required;
- To detect and investigate fraud or other irregularities;
- To make arrangements for the vaccination and immunisation of persons against yellow fever.

9.10 Organisational structure of NSS

9.10.1 During 2013/2014[68], the NSS underwent an organisational restructure creating a number of Strategic Business Units (SBUs) as follows:

- Procurement, Commissioning and Facilities;
- Public Health and Intelligence;
- Central Legal Office;
- Digital and Security;
- Scottish National Blood Transfusion Service;
- Practitioner and Counter Fraud Services.

9.10.2 On 1 April 2020[69], the Public Health and Intelligence SBU was transferred to Public Health Scotland which is a special health board covering the whole of Scotland.

9.11 Health Facilities Scotland

9.11.1 Health Facilities Scotland (HFS) is a division of NSS that provides operational expertise and guidance on subjects related to healthcare facilities. It establishes professional and technical standards and best practice procedures and provides operational facilities management for NSS sites.[70]

9.12 Health Protection Scotland and Antimicrobial Resistance and Healthcare Associated Infection Scotland

[68] Page 11 of the NHS National Services Scotland 2013/14 audit (audit-scotland.gov.uk)
[69] The Public Health Scotland Order 2019 (legislation.gov.uk)
[70] For further details on HFS, see https://www.nss.nhs.scot/departments/health-facilities-scotland/

9.12.1 Health Protection Scotland (HPS) was previously responsible for coordinating health protection in Scotland, including protection against the spread of infectious disease. The Antimicrobial Resistance and Healthcare Associated Infection Service (ARHAI) was part of HPS. HPS no longer exists as an entity.

9.12.2 On 1 April 2020 the functions of HPS, minus ARHAI transferred to Public Health Scotland. ARHAI remained part of NSS and it became part of the "Centre of Excellence" in the healthcare built environment (now known as NHS Scotland Assure) following issues and incidents reported in the Queen Elizabeth University Hospital, Glasgow and RHCYP/DCN (see section 37 of this paper).

9.13 Scottish Ministers: Powers of inquiry and powers of intervention

9.13.1 In addition to their statutory powers in relation to health boards, special health boards, the Agency and other bodies established under the 1978 Act, the Scottish Ministers have specific powers of inquiry and intervention.

Powers of Inquiry

9.13.2 The Scottish Ministers may cause an inquiry to be held in any case where they consider it is advisable to do so[71] in connection with any matter arising under the 1978 Act.

Powers of Default[72]

9.13.3 If after holding an inquiry the Scottish Ministers are of the opinion that a health board, an NHS Trust, the Dental Estimates Board or Healthcare Improvement Scotland (HIS), has failed to carry out its statutory functions, or in carrying them out has failed to comply with relevant regulations, schemes, proposals or directions, they may declare the body to be in default. In these circumstances they may make a default order.

9.13.4 Where a default order is made, the members of the board or other body must vacate their office. The order must provide for their replacement and may

[71] Section 76 and schedule 12 of the National Health Service (Scotland) Act 1978
[72] Section 77 of the National Health Service (Scotland) Act 1978

contain interim provisions pending the new appointments or, as the case may be, the election of new members. These powers are also available to the Scottish Ministers in relation to matters arising under the Patient Rights (Scotland) Act 2011.

Emergency powers[73]

9.13.5 If the Scottish Ministers are of the opinion that an emergency exists, and it is considered necessary to secure the effective continuance of any service under the 1978 Act they have powers to direct that any function conferred by or under the Act on any person or body is, be performed by some other specified body or person. This direction will be in place for the duration of the emergency.

Powers in case of service failure[74]

9.13.6 The Scottish Ministers have powers of intervention in the case of a failure by a body or a person to provide an acceptable standard a service which the body or person is under a duty to provide. In terms of this section a “body” is defined as: a health board, a special health board, the Agency or HIS.[75] A “person” is defined as: an employee of a health board, special health board, the Agency or HIS; a member of staff of the Scottish Administration, or an employee of a local authority.[76]

9.13.7 The Scottish Ministers may direct that specified functions be performed for a specified period and to a specified extent by a body or person of the kind described above.

9.13.8 A body or person appointed by such a direction is called an 'appointed person' and must comply with the direction. The Scottish Ministers may vary or withdraw such a direction.[77] The powers may be exercised in case of service failure without prejudice to the default and emergency powers.[78]

[73] Section 78 of the National Health Service (Scotland) Act 1978
[74] Section 78A of the National Health Service (Scotland) Act 1978 which was inserted by section 6 of the National Health Services Reform (Scotland) Act 2004
[75] Section 78(4) of the National Health Service (Scotland) Act 1978
[76] Section 78(5) of the National Health Service (Scotland) Act 1978
[77] Section 78(11) of the National Health Services (Scotland) Act 1978
[78] Section 78B of the National Health Services (Scotland) Act 1978

9.14 The Scottish Ministers: NHS Board Performance Escalation Framework

9.14.1 The Scottish Ministers have an NHS Board Performance Escalation Framework.[79] This is sometimes described as "special measures". However, that term is specific to arrangements in England.

9.14.2 There are five stages within the NHS board performance escalation framework in Scotland, the stages are numbered 1 to 5 with 5 being the most serious. The stage that each health board is assessed at provides a description of performance and any response that is required from the Scottish Ministers. Decisions to escalate to Stage 5 are taken by the Cabinet Secretary and it is at this level where the ministerial powers of intervention are exercised (See section 7.2 of this paper for use of this Perfomance Framework in the RHCP/DCN project).

[79] Details may be found here: https://www.gov.scot/publications/nhs-healthcare-standards-nhs-board-performance-escalation-framework/. That page also lists the current status of NHS boards in Scotland.

10. NHSL Board

10.1 Background

10.1.1 NHSL is a body corporate constituted by the Scottish Ministers under the terms of National Health Service (Constitution of Health Boards) (Scotland) Order 1974 (as amended).

10.2 Membership

10.2.1 The Scottish Ministers appoint all NHSL Board members.[80] The Board is made up of executive and non-executive members and currently consists of a chair, other members and local councillor members.

10.2.2 The Chair of the Board is appointed by the Scottish Ministers.

10.2.3 There are five executive Board members, namely:

- Chief Executive.
- Director of Public Health and Health Policy.
- Medical Director.
- Director of Nursing, Midwifery and Allied Health Professionals.
- Director of Finance.

The Director of Human Resources & Organisational Development and the Director of Strategic Planning were executive Board members until 9 June 2010 when they were removed. This was carried out to create two further non-executive positions for those representing the public and patients. Not all directors within NHSL are Board members.

10.2.4 There are two types of non-executive Board members. These are stakeholder non-executives and non-executives who are appointed through the public appointment system. Both are appointed with the same responsibilities. There are currently 22 non-executive positions on Board.

[80] Schedule 1, paragraph 2 of the National Service (Scotland) Act 1978

10.2.5 The Board currently has seven stakeholder non-executive Board members. These are

- The Employee Director (who is also the staff-side chair of the Area Partnership Forum). The staff-side elect this individual.
- The Chair of the Area Clinical Forum. The various area professional forums (see Section 9 of the 1978 Act) elect this individual.
- An individual from the University of Edinburgh.
- A councillor from the City of Edinburgh Council.
- A councillor from East Lothian Council.
- A councillor from Midlothian Council.
- A councillor from East Lothian Council.

Each stakeholder will nominate an individual to be a stakeholder non-executive Board member and send this nomination to the Chair of the Board. The information is provided to the Scottish Government's public appointments unit who issue a formal appointment letter from the Cabinet Secretary to the individual.

10.2.6 Other non-executive Board members on the Board are appointed through the public appointment system. There is no limit to how many non-executives Board members which the Scottish Government could appoint through this process. The Chair of NHSL Board is usually involved in the recruitment panel.

10.2.7 Since 1 February 2020 the Cabinet Secretary has appointed a non-executive Board member to be a Whistleblowing Champion on every Board in Scotland.

10.2.8 During the lifespan of the RHCYP/DCN project the Chief Executives on the Board was James Barbour (from 1 August 2001 to 20 April 2012), Tim Davidson[81] (until 15 July 2020) and Calum Campbell (from 16 July 2020). The Chief Executive was also the Accountable Officer under the terms of the Public Finance and Accountability (Scotland) Act 2000.

[81] Tim Davidson was appointed interim Chief Executive on 1 May 2012 and the substantive on 1 August 2012.

10.2.9 Each Board member is provided with a Board Members' Handbook. They also have a responsibility to comply with the Code of Conduct for Members of Lothian NHS Board.

10.3 Guidance For Boards (General)

10.3.1 In March 2017 the Scottish Government published "On Board – A Guide for Members of Statutory Bodies"[82] (the Guide) and the purpose was to provide guidance for those appointed under statue to be members of the boards of public bodies in Scotland. This broadly described the roles of the board and the executive of public bodies. This included health boards. It covered such topics as public service delivery and reform; principles of corporate governance; roles, responsibilities and relationships; effective financial management; ethics and standards of behaviour.

10.3.2 As an overview the Guide stated that as a board member of a public body in Scotland, there are requirements to discharge specific duties in relation to effective governance and financial management of the public body. It stated:

> "Corporate governance is the way in which organisations are directed, controlled and led. It defines relationships and the distribution of rights and responsibilities among those who work with, and in, the public body, determines the rules and procedures through which objectives are set, and provides the means of attaining those objectives and monitoring performance. Importantly, it defines where accountability lies throughout the public body."[83]

The Guide commented that the results of poor corporate governance cannot be underestimated.

10.3.3 The Guide commented that the four main functions of the board of a public body are: to ensure that the body delivers its functions in accordance with ministers' policies and priorities; to provide strategic leadership; to ensure financial

[82] On Board – A guide for members of statutory bodies in March 2017,
[83] Page 16 On Board – A Guide for Members of Statutory Bodies

stewardship; and to hold the Chief Executive and Senior Management Team to account.

10.3.4 The Scottish Public Finance Manual (SPFM) is the primary document which governs all matters relating to public finance and reporting in public bodies. The Guide commented that the board must satisfy itself that the public body had proper processes, systems and controls in place and receives assurance from the Chief Executive that the Scottish Public Finance Manual was being complied with. The Manual provides guidance on the proper handling and reporting of public funds.

10.3.5 In exercising their financial powers, the Scottish Ministers issued the SPFM to provide guidance on the proper handing and reporting of public funds.[84] The purpose of the SPFM is to "provide guidance to the Scottish Government (SG) and other relevant bodies on the proper handling and reporting of public funds. It sets out the relevant statutory, parliamentary and administrative requirements, emphasises the need for economy, efficiency and effectiveness, and promotes good practice and high standards of propriety."[85]

10.3.6 The SPFM is applicable to bodies sponsored by the Scottish Government, commonly referred to as non-departmental public bodies and includes NHS bodies. The list of NHS bodies is published on the Scottish Government website[86]. The SPFM should be regarded as "applicable guidance" by all bodies the accounts of which are subject to audit by the Auditor General for Scotland[87]. This would include NHSL.

10.3.7 In addition to the SPFM, the Scottish Ministers issued sector specific guidance. The Scottish Capital Investment Manual (SCIM) "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 NHS Scotland".[88] SCIM was updated in 2017, with the previous versions last updated in 2011 and

[84] Background and applicability - Scottish Public Finance Manual
[85] Paragraph 1 - Background and applicability - Scottish Public Finance Manual
[86] National public bodies: directory - gov.scot (www.gov.scot)
[87] Paragraph 7 of the Chapter on Background and applicability - Scottish Public Finance Manual - gov.scot (www.gov.scot)
[88] Page 8 of the Scottish Capital Investment Manual

2009. In his statement to the Inquiry, dated 20 April 2022,[89] Michael Baxter, former Deputy Director (Capital Planning and Asset Management), Health and Social Care Directorate of the Scottish Government, described the purpose of the SCIM in the following terms:

> "SCIM provides guidance on the processes and techniques to be applied in the development of all infrastructure and investment programmes and projects within NHS Scotland. The guidance applies to the process of project development from inception to post project evaluation. SCIM gives guidance on issues around investment appraisal, financial (capital and revenue) affordability and procurement, project management and governance arrangements required to support the development of programmes and projects.
>
> …The principles set out in SCIM and the Policy on Design Quality are applicable to all health boards in relation to the development of all infrastructure and investment schemes regardless of their size or complexity. These are designed to provide an audit trial and assurances that appropriate steps have been followed in the investment decision making process."

10.3.8 The relevant version of the SCIM manual that applied to NHSL Board during relevant periods of the RHCP/DCN project will be reviewed in sections 29 and 30 of the paper.

10.3.9 Although it post-dates most of the key events covered by the Inquiry's remit, the Scottish Government also published NHS Scotland - A Blueprint for Good Governance (the Blueprint) in February 2019.[90] It was provided to health boards via a Directorate letter dated 1 February 2019 from the Director of Health Finance, Corporate Governance and Value.

[89] Witness Statement - Michael Baxter - 16.05.2022 | Hospitals Inquiry
[90] NHS Scotland – A Blueprint for Good Governance in February 2019. The Blueprint was updated, expanded and republished in 2022.

10.3.10 This letter stated that the “Blueprint for Good Governance draws on current best practice to ensure all boards assess and develop their corporate governance systems. The matters considered by the Blueprint are consistent with the governance reviews undertaken in both NHS Highland and NHS Tayside as well as the work of Audit Scotland and the Scottish Parliament’s Health and Sport Committee… A self-assessment tool had also been developed to allow all boards to evaluate their current governance arrangements against the Blueprint.”

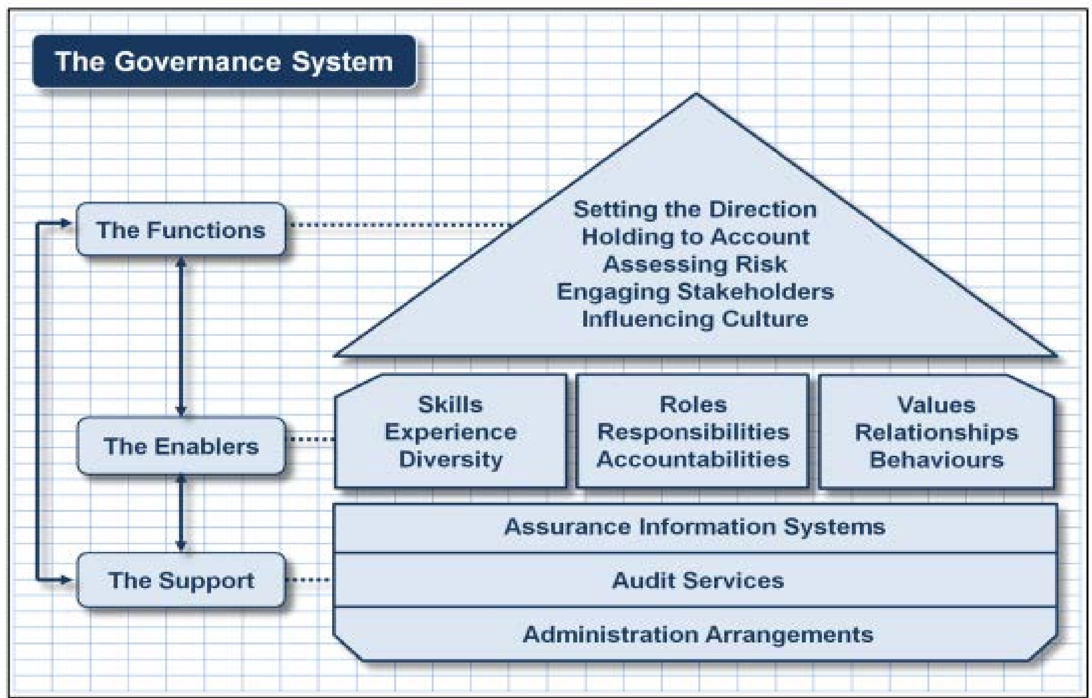
10.3.11 The Blueprint drew the distinction between corporate governance being what the board does and the day-to-day management of the organisation by the Executive Leadership Team. It described the board’s involvement as setting strategic aims; holding the executive to account for the delivery of those aims; determining the level of risk the board is willing to accept; influencing the organisation’s culture; and reporting to stakeholders on their stewardship.

10.3.12 In addition to setting out what good governance looked like, the Blueprint supported other activities of the board. It:

- Defined functions, enablers and support required for good governance.
- Described skill, experience and diversity required by NHS Board members.
- Improved induction training and development activities of board members.
- Provided a template for the design of assurance information system (to assist in holding NHS leadership to account).
- Described the expectation of the board administration function.
- Performance appraisal of board members.

10.3.13 The Blueprint model of good governance in the NHS Boards was a three-tier model.[91]

[91] Page 5 NHS Scotland – A Blueprint for Good Governance in February 2019



10.4 Roles and Responsibilities of Board Members

10.4.1 The ‘On Board – A Guide for Members of Statutory Bodies’ set out the role and responsibilities board members.[92]

[92] Page 29 On Board – A Guide for Members of Statutory Bodies

ROLE AND RESPONSIBILITIES OF THE BOARD MEMBER

The Board member

- Understands the operational environment in which their public body operates within the context of the wider public service delivery landscape;
- Attends Board meetings on a regular basis and is well prepared by reading relevant papers in advance and, if necessary, seeks further information to ensure their understanding;
- Attends training events and keeps up to date with subjects relevant to the public body's work;
- Contributes to the work of any committees that have been established by the Board;
- Represents the Board at meetings and stakeholder events when required;
- Contributes to strategic development and decision-making;
- Clarifies which decisions are reserved for the Board and which should be delegated;
- Monitors the reporting of performance and holds management to account through purposeful and constructive challenge and scrutiny;
- As necessary, seeks further information than that which is provided to give assurance on organisational performance;
- Questions and, as necessary, challenges proposals made by fellow Board members and the executive team constructively and carefully to reach and articulate a considered view on their suitability;
- Provides a creative contribution to the Board by providing independent oversight on issues of strategy, performance and resources;
- Behaves in accordance with the agreed Code of Conduct; and
- Establishes and promotes the public body's role in the community.

10.4.2 NHSL Board members are provided with a 'Board Members Handbook'.[93] This reminds members that they have a personal duty to comply with the Lothian NHS Board Code of Conduct.[94] The Commissioner for Public Standards can investigate complaints about members who are alleged to have breached their Code of Conduct.

10.4.3 NHSL maintains the NHSL Board Register of Interests to avoid any conflicts of interest. When a member needs to update or amend their entry in the register, they need to provide notification to the relevant member of staff . Members require to consider the relevance of any interests they have to any business presented to the Board or one of its committees.

[93] Board Members Handbook (nhslothian.scot)
[94] Code of Conduct (nhslothian.scot)

10.5 Standing Orders

10.5.1 Standing Orders set out how a board must conduct its business. Each board's Standing Orders are based on statutory regulations[95] and a style set of Standing Orders published by the Scottish Government.[96]

10.5.2 During the period of the RHCYP/DCN project there were several versions of the Standing Orders (SOs) in place, By way of illustration, the remainder of this section of the paper looks at the content of the SOs dated 2 April 2014 and the sections that would have been relevant to the RHCYP/DCN project.

10.5.3 Board members were required to subscribe to and comply with the NHS Lothian Code of Conduct. This Code of Conduct was in terms of the Ethical Standards in Public Life etc (Scotland) Act 2000.

10.5.4 Board meetings had to be held at least six times a year although the Chair could call a meeting anytime. Meetings must be held in public although the Board could consider items of business in private.

10.5.5 Certain items of business were reserved to the Board and could only be approved at an NHS Board meeting. This would either be due to Scottish Government instructions or a Board decision to satisfy good governance practice. Matters reserved to the Board under the Standing Orders for 2 April 2014 were:

- Approval of its standing orders.
- Establishment of and terms of reference of all its committees, as well as appointment of committee members.
- Organisational values.
- Strategic Planning for all functions it had planning responsibility for, as well as the NHSL contribution to Community Planning Partnerships through the Single Outcome Agreements, the Local Delivery Plan, and Corporate Objectives.
- Risk management.
- Health and Safety Policy.

[95] The Health Boards (Membership and Procedure) (Scotland) Regulations 2001 (2001/302), and the Health Boards (Membership) (Scotland) Regulations 2013 (2013/334)
[96] The Board adopted the style Standing Orders on 4 March 2020

- Financial plans, opening revenue and capital budgets, Standing Financial Instructions and a Scheme of Delegation and annual accounts and report.
- Capital Acquisitions and Disposals, in compliance with the SCIM. Approval of a business case item that was beyond the scope of its delegated financial authority before it was presented to Scottish Government for approval.
- Other Organisational Policy, approval of which was delegated to committees and groups within NHSL, set out in the "Procedure for the Development, Approval and Communication of NHS Lothian Policies and Procedures".
- Performance Management.
- Criminal Prosecution/Civil Litigation.
- Other items of business where the Board may be required to approve by law or by Scottish Government direction. e.g., Integration Plans for a local authority area.

10.5.6 The NHSL Board could appoint such committees as it deemed fit and appoint the Chairs of these Committee. NHSL (within this Scheme of Delegation) was made up the following committees:

- Finance and Performance Review Committee, renamed Finance & Resources Committee.
- Strategic Planning Committee – advised the Board on the appropriateness of clinical and service strategies to achieve the high-level vision and aims of the NHS Lothian Strategic Clinical Framework.
- Healthcare Governance – clinical working practices.
- Staff Governance – working practices and partnership engagement.
- Acute Hospitals Committee – service planning and resourcing.
- Audit & Risk Committee – latterly involved with commissioning an internal audit report on the project.

10.5.7 Other than reserved matters, the Board could delegate authority to its, committees, Board members or Board employees through a Scheme of Delegation

to act on its behalf. It could also delegate responsibility for certain matters to the chair.

10.6 Scheme of Delegation

10.6.1 The Board had a Scheme of Delegation (the Scheme) in place throughout the period of the RHCYP/DCN project. The Scheme had numerous versions throughout the period.

10.6.2 As a general overview, each version of the Scheme stated that it had been approved by the Board. With regard to financial control, it set out the general requirement that it was essential that expenditure levels do not exceed the agreed delegated budget and officers must ensure there was available budget in place before taking any decisions in line with their delegated authority.

10.6.3 By way of illustration of the Scheme, the remainder of this section looks at the content of the Scheme dated 25 June 2014 and the sections that would have been relevant to the RHCYP/DCN project.

10.6.4 In terms of financial governance, the Director of Finance was the responsible Director. The Scheme set out both the roles of the Board and the Director of Finance in terms of the financial governance. The role of the Board in relation to this was set out as :

- "To discharge its responsibilities in accordance with the relevant legislative requirements of the European Parliament, and the United Kingdom and Scottish Parliaments.
- To comply with any Directions or guidance issued by the Scottish Ministers.
- To conduct its activities in an open and accountable manner. Its activities and organisational performance would be auditable.
- To perform its activities within the available financial resources at its disposal.
- To conduct its activities in a manner that is cost effective and demonstrably secures value-for-money."

The role of the Director of Finance in relation to Financial Governance was set out as:

- "To provide the professional lead on accountancy and financial management.
- The provision of appropriate advice to the Board and technical expertise to the organisation towards the achievement of the financial governance objectives listed above.
- Championing the understanding of financial management issues and the principles of internal control throughout NHS Lothian."

10.6.5 The Scheme had sections which addressed approval of items to be included in the NHS Lothian Capital Programme. The sections were spilt further into "Funding of Initial Development of Concept", "Business Cases", "Use of Frameworks such as Frameworks Scotland 2 or HUB".

10.6.6 In relation to the "Funding of Initial Development of the Concept" this was the development of any concept or scheme for inclusion in the capital plan up to the approval of the Initial Agreement. It set out the budget holders likely to incur revenue expenditure and stated that the budget holder was only limited by their available budget and individual delegated authority.

10.6.7 For Business Cases the Scheme stated that they should be prepared in accordance with the SCIM. The approving bodies under the Scheme would require assurance from the process that all risks had been clearly identified and that there were controls in place to manage those risks. The Board's delegated limits for the approval of capital schemes was £5 million for non-Information Management & Technology (IM&T) schemes and £2 million for IM&T schemes. For projects beyond these limits an Initial Agreement, Outline Business Case (OBC) and Full Business Case (FBC) was to be produced and agreed by the relevant management team.

10.6.8 Following the approval of the relevant management team the following process had to occur. For schemes from £250 000 up to £0.5 million, in addition the project required to be reviewed by (a) The Capital Steering Group or the Lothian Medical Equipment Review Group or the eHealth Senior Management Team and (b) the Capital Investment Group. For schemes from £0.5 million up to £5 million in

addition the project in turn had to be approved by (a) The Capital Steering Group or the Lothian Medical Equipment Review Group or the eHealth Senior Management Team (b) the Capital Investment Group, (c) Corporate Management Team and (d) Finance & Resources Committee.

10.6.9 For schemes over the Board's delegated limit of £5 million for non-IM&T and £2 million for IM&T, following review by the Finance & Resources Committee, the business case required to be referred to the Board. The Board had to approve the Initial Agreement, OBC and FBC and provide confirmation of its support before it was submitted to the Scottish Government Health Directorate for approval.

10.6.10 "Signing of Contractual Documentation" was part of the Scheme and detailed which individuals may sign contractual documentation on behalf of the Board. In relation to contracts as a result of decisions relating to building or maintenance projects or any procurement contracts, the person needed to be satisfied that due procurement process had been followed and the terms of the contract were acceptable to the Board. The signatory did not have to have been directly involved in the procurement process but should have received a briefing report from officers involved in the procurement exercise and assurance that due process was followed.

10.6.11 In respect of the "Use of Frameworks such as Frameworks Scotland 2 or HUB", this applied where the Board was a participating member of the procurement framework arrangement. The Scheme set out the officers/groups within NHSL with delegated authority to make decisions at each stage. The Scheme stated that the same principles would apply to any other framework. If the project was within the scope of Framework Scotland, then the Board had to approve any decision to depart from this process. The Director of Capital Planning and Projects together with the Project Sponsor had authority to appoint the Project Director and Capital Project Manager for capital construction projects.

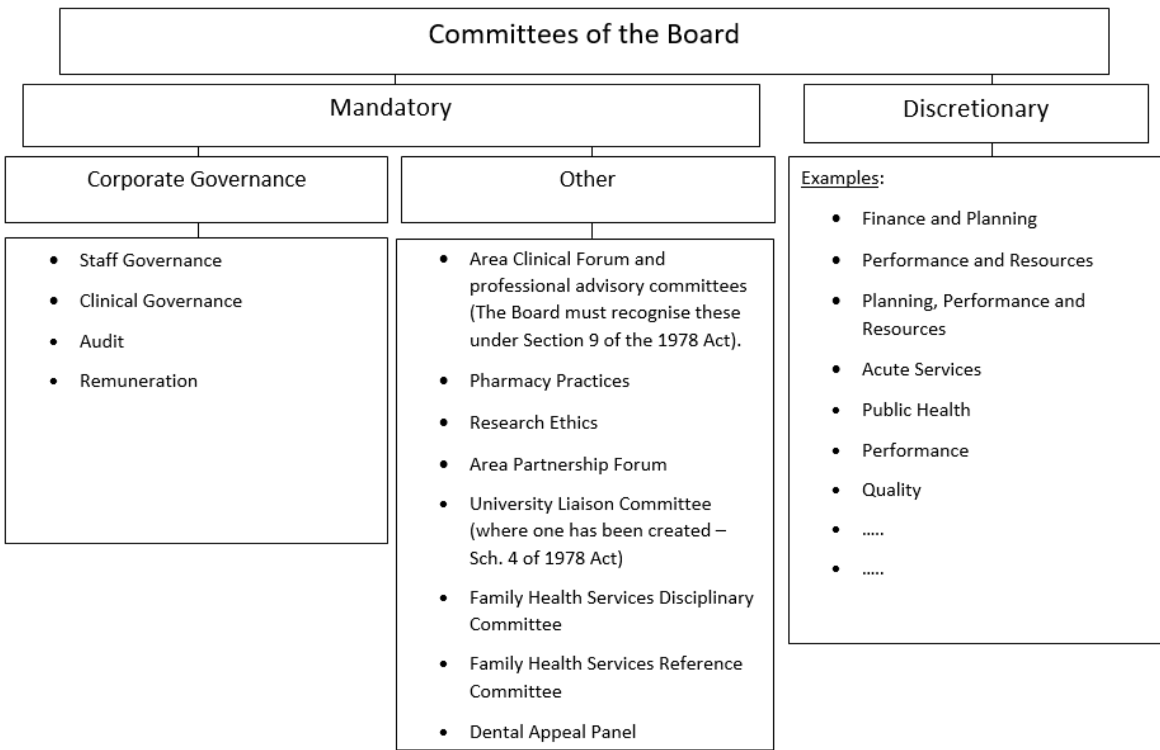
10.6.12 The Scheme outlined that the Project Director and Project Manager should have delegated authority to permit them to approve project transactions that were associated only with the project and their responsibilities.

10.6.13 In terms of approval of the Project Initiation Documentation (PID), the Project Director was to prepare the PID for approval by the Project Sponsor. Delegated authority for approving the award of professional services contracts for the project was granted to Director of Capital Planning & Projects, Director of Operations (Facilities) (for projects with a capital value up to £500k) and to the Project Director (for contracts specific to their project). The Scheme detailed further delegation in relation to the framework project.

10.7 Board Committee Structure

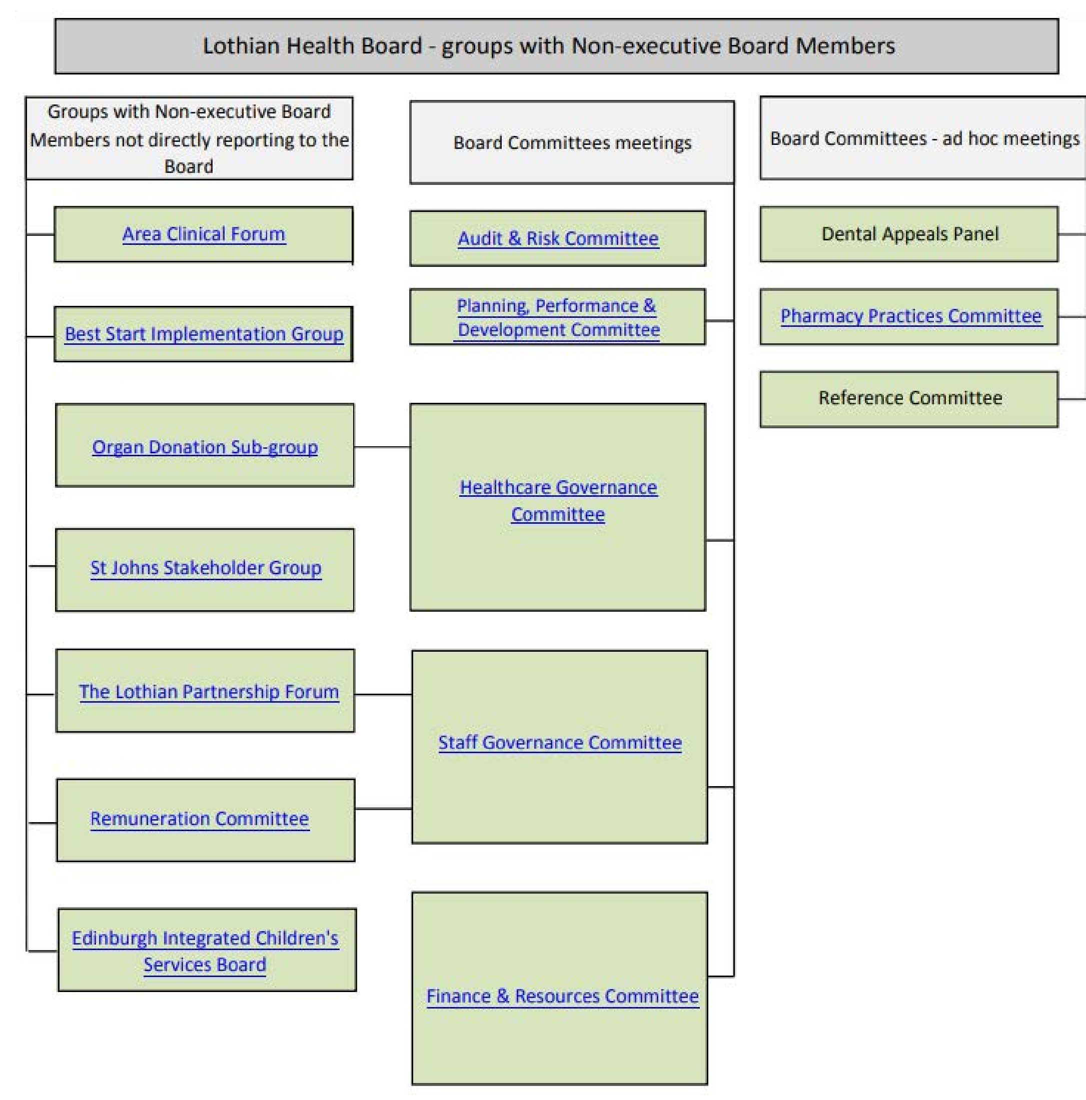
10.7.1 The Board approved the terms of reference of committees and appointed their membership, including the chair. The committees were formed under the terms of The Health Boards (Membership and Procedure) (Scotland) Regulations 2001 (2001 No. 302) and The Health Boards (Membership and Procedure) (Scotland) Amendment Regulations 2005 (2005 No. 108).

10.7.2 NHS Boards have legal duties for quality of healthcare and the governance of staff under sections 12H and 12I of the National Health Service (Scotland) Act 1978. This has informed Scottish Government policy and approach over the years, which in turn has informed how NHS Boards developed their system of governance. NHSL have advised the Inquiry that the following diagram summarises the mandatory committees of the NHSL Board.



10.7.3 By way of illustration the Committee structure in 2023 is:[97]

[97] Taken from NHSL Committees Structure (nhslothian.scot)



10.7.4 A brief description of the remit of each of the Committees in the 2023 organogram above is as follows:

- Area Clinical Forum: Statutory Professional Advisory Committee of NHSL. Membership consists of Chair and Vice Chair from these NHSL Advisory Committees: Dental, Allied Health Professions, Medical, Nursing & Midwifery Optical, Pharmaceutical, Healthcare Scientists and Psychology. Core function is to ensure coordination of clinical matters across the professional groups, share best practice, ensure clinicians engagement in service design and provide local clinical and professional perspective on national policy issues.
- Best Start Implementation Group: Main objective is to ‘lead the implementation of the Scottish Government The Best start - Five year

Forward Plan for Maternity and Neonatal services in Scotland for NHS Lothian’. Membership includes 1 non-executive member of the NHSL Board.

- Organ Donation Sub-group: Purpose is to influence policy & practice in relation to organ donation, ensure a discussion about donation features in all appropriate end of life care and to maximise the overall organs etc donated. The chair is to be an NHSL Board member.
- St John’s Stakeholder Group: Remit is further development and changes to services at the St John's site that are not delegated to the Integrated Joint Board, for example, women’s and children’s services; and related site infrastructure matters, such as car parking and transport. Membership includes three non-executive members of the NHSL Board.
- The Lothian Partnership Forum: Partnership Agreement between NHS Board, staff and trade unions to be fully involved in the formulation and implementation of change.
- Renumeration Committee: This is a sub-committee of the Staff Governance Committee, and its main function is to ensure the application and implementation of fair and equitable pay systems on behalf of the Board. It will review and agree the annual objectives of the Chief Executive, Executive [and] Corporate Directors and the annual performance assessments of the Executive Management. It receives reports on pay implications for Executive Management, has an overview of pay arrangements currently in place in NHS Scotland and reviews implications for NHSL. Membership includes five non-executive members of the NHSL Board.
- Edinburgh Integrated Children’s Services Board: Oversight of all children’s services in Edinburgh and holds senior management accountable for the delivery of efficient and effective services and improved outcomes for children and young people. It ensures partnership working arrangements with a clear oversight of a shared vision for children’ services. Membership includes three non-executive members of NHSL Board.
- Staff Governance Committee: this Committee’s main function is to support and maintain a culture within NHSL where the delivery of the highest

possible standard of staff management is the responsibility of everyone working within NHSL and based on partnership and collaboration. It scrutinises and monitors performance against the Scottish Government Staff Governance Standard. Its remit includes overseeing NHSL's whistleblowing arrangements. The Renumeration Committee reports directly to the Staff Governance Committee and the Health & Safety Committee provides assurance information to it. Membership includes four to five non-executive members (one of which must be the Employee Director) of the NHSL Board.

- Finance & Resources Committee: Overall remit is to keep under review the financial position of NHSL and to seek and provide assurance that suitable arrangements are in place to secure economy, efficiency, and effectiveness in the use and management of all financial resources and capital assets. The Committee will also provide assurance to the Audit and Risk Committee and the Board on areas such as risks being recognised, recorded and assessed and that the annual Financial Plans are subject to robust scrutiny prior to approval by the Board. Membership includes five non-executive members of the NHSL Board.
- Healthcare Governance Committee: Overall purpose is to provide assurance to NHSL that the quality of all aspects of care in NHSL is person-centred, safe, effective, equitable and maintained to a high standard. The Healthcare Governance Committee can seek assurance from the Staff Governance Committee on any staff governance issues that are relevant to its remit. Membership includes five non-executive members of the NHSL Board, one of whom will be Chair of the Committee.
- Strategy, Planning and Performance Committee: Primary purpose is to inform planning and strategy development within NHSL, supporting the continuous improvement of NHSL's health and care system and to review and monitor system performance and improvement. All non-executive Board members are members of the committee, but the executive Board members are not members but are expected to routinely attend meetings.

- Audit and Risk Committee: The remit is to support the Accountable Officer (Chief Executive) and the Lothian NHS Board in meeting their assurance needs. Its role is to investigate any activity within its terms of reference, to request any Board member or employee to attend a committee meeting, and request a written report or seek any information it requires; obtain outside legal or other independent professional advice, and to secure the attendance of outsiders with relevant experience and expertise if it considers this necessary. All members shall be non-executive members (between three and six) of the Lothian NHS Board, except for any co-opted members.
- Dental Appeal Panel.
- Pharmacy Practice Committee: It has delegated authority from the Board to consider applications for inclusion in the Pharmaceutical List in accordance with the National Health Service (Pharmaceutical Services)(Scotland) Regulations 2009 as amended. Its membership includes a non-executive Board member who is appointed chair.
- Reference Committee: In relation to General Medical Practitioners, General Dental Practitioners, Optometrists and Community Pharmacists the Reference Committee will consider any disciplinary matters that may be referred under the Discipline Committee Regulations and any cases that may be referred to the NHS Tribunal. It will also consider any referrals to the appropriate professional body. Its membership includes a non-executive Board member who is appointed by the chair.

10.7.5 Although the list above relates to 2023, many of the committees were in place throughout the period of the project with the same key functions. For the purposes of the RHCYP/DCN project, this paper will only consider those committees that had a direct managerial/governance role in relation to that project.

10.8 Reporting

10.8.1 NHSL fell under the portfolio of the Minister for Health and Social Care. The minister, together with the wider Scottish Government set the policy aims, the expected outcomes from a policy and reviewed progress of a health board.

10.8.2 The Health and Social Care Directorate is the sponsor directorate responsible for NHS Scotland. It oversees the day-to-day relationship between the minister and NHSL . The Directorate ensured that NHSL was briefed on Scottish Government policies and priorities and monitored the body's activities on behalf of the minister.

10.8.3 There was governance in place in relation to NHSL's performance and arrangements were in place (financial and operational) to monitor that. This centred around financial and performance delivery against the objectives set in NHS Board Local Delivery Plans and supporting financial plans. These were reviewed and agreed by the Scottish Government annually and monitored on an ongoing basis.

10.9 Board Consent for the RHCYP/DCN Project

10.9.1 Health boards are reliant on funding from the Scottish Government for their projects. In relation to the RHCYP/DCN project the NHS Board required to consider if the healthcare capital expenditure cost of the project fell within the Board's delegated limits. These delegated limits were set out in letters to the Chief Executives of Health Boards from the Health Finance Directorate. The letter that was applicable for the commencement of the RHCYP/DCN project was dated 19 August 2010 (which was subsequently amended by CEL 5 (2019), which specified the delegated limit for NHSL Board as £5 Million. The RHCYP/DCN project cost was considerably beyond this delegated limit.

10.9.2 Projects that were outwith the NHS Board's delegated limits were considered by CIG in terms of compliance with the SCIM (see section 25 of this paper). The IIB (see section 26 of this paper) who had responsibility for monitoring delivery of the wider Scottish Government infrastructure programme, also required to consider the RHCYP/DCN project.

10.9.3 If the project was between £5 million and £10 million following CIG approval, CIG would require to make an recommendation to the Director of Finance, Scottish Government Health and Social Care. Where a scheme had a capital cost

more than £10 million, CIG would make a recommendation to the Director General for Health and Social Care.[98]

10.9.4 The level of investment in the RHCYP/DCN project required ultimate decision making to rest with the Scottish Government.

[98] Para 17, Statement of Alan Morrison Scottish Government dated 11 April 2022.

11. Finance & Resources Committee

11.1 Overview

11.1.1 This committee was called the Finance and Performance Review Committee until 24 October 2012 when it changed its name to the Finance & Resources Committee. In terms of the Board's committee structure, this was the core NHSL Board governance committee overseeing capital programme and capital projects, including the RHCYP/DCN.

11.1.2 Iain Graham, Director of Capital Planning & Projects in his statement to the Inquiry dated February 2022, described the Finance & Resources Committee as :

"The Finance and Performance Review Committee (which changed to Finance & Resources Committee from 2012) had an overall remit to seek assurance that there are systems of control to meet the 'Duty of Best Value in Public Services', which was:

- to make arrangements to secure continuous improvement in performance whilst maintaining an appropriate balance between quality and cost; and in making those arrangements and securing that balance,
- to have regard to economy, efficiency, effectiveness, the equal opportunities requirements, and to contribute to the achievement of sustainable development (as all detailed in the terms of reference).

The Finance and Performance Review Committee would receive updates from the Project Board/Project Sponsor and monitor progress of the Project. The committee would report to Lothian Health Board."

11.2 Membership

11.2.1 Members of the Finance & Resources Committee including the chair and vice-chair were appointed by the NHSL Board.

11.2.2 Over the period of the project, membership of the committee changed several times. However, membership generally included:

- Non-Executive chair and vice-chair

- Chair and vice-chair NHSL
- Chief Executive of NHSL
- Director of Finance of NHSL
- University Board Member
- Non-Executive Board Member from one of the Local Authorities
- Medical Director NHSL
- Nurse Director

11.2.3 On 3 February 2021 (and so right at the end of the period covered by this paper) the membership fundamentally changed as it consisted solely of five non-executive members of the Board. This removed the previous requirement for the Board chair to be included in the committee membership and made membership exclusively non-executive. However, the executive officers were still expected to be invited. The Terms of Reference also stated that:

> "The Committee will normally invite the following officers to attend its meetings: Chief Executive, Deputy Chief Executive, Medical Director, Director of Nursing, Midwifery and Allied Health Professionals, Director of Finance, Deputy Director of Finance, and the Director of Capital Planning and Premises".

11.3 Reporting

11.3.1 This Committee provided oversight of the Programme Board/Project Board for the RHCYP/DCN project.

11.3.2 A document called 'Property and Asset Management Investment Programme' was prepared by the Director of Capital Planning for discussion at the Finance & Resources Committee. This provided a view of all the projects overseen by the committee and identified issues which required the committee's consideration. The Director of Capital Planning and Projects would receive an update from the Project Director and/or Programme Board in order for the report to be compiled.

11.3.3 The Finance & Resources Committee also received reports from the Senior Responsible Officer and other Project Board executives on the progress of the RHCYP/DCN project.

11.3.4 A risk register completed by the Project Director would be submitted to the Finance & Resources Committee which would inform its view regarding assurance and risk attached to the project.

11.3.5 The committee reported to the Lothian NHS Board and its minutes were submitted at the next scheduled NHSL Board meeting.

11.4 Terms of Reference

11.4.1 The Finance & Performance Review Committee's Terms of Reference as at 23 March 2005 stated that the committee's purpose was "to assist the Board to deliver its responsibilities both for the stewardship of the resources under its control, and to ensure that appropriate performance monitoring arrangements are in place to achieve agreed performance targets on a pan-Lothian basis."

11.4.2 The committee's remit varied over the period of the project; there were seven different applicable terms of reference in the period from 23 March 2005 to 3 February 2021. Not everything in the committee's terms of reference is directly relevant to the RHCYP/DCN project and therefore all the changes to the terms of reference are not discussed here. For present purposes, it is sufficient to note that broadly, until 2012, the general functions of the committee remained relatively constant and were to:

- Provide a single point of reporting and scrutiny for all aspects of performance in the NHSL, enabling the overall picture to be assessed as well as the many individual components.
- Enable a level of detailed scrutiny that would not be appropriate at full Board meetings given the breadth of their agenda.
- Enable a detailed examination and refinement of business cases before they come to the full Board for approval.
- Enable potentially contentious issues to be debated and resolved in private without premature publicity.

- Provide an opportunity to embed the necessary corporate behaviours into the organisation.
- Monitor the performance of the Operating Division
- To improve the quality of information and proposals that come to the full Board, and thus enable more strategic and better-informed discussions at full Board level.

11.4.3 The reference to the committee's involvement in business cases (third bullet point above) was removed on 25 July 2007 but was reinstated in the Terms of Reference dated 27 October 2008 with expanded details regarding the delegated authority limit and approval processes:

> "On the Board's behalf, to approve business cases of a value between £500,000 and the Board's delegated limit (£10m).
>
> The exception to this is any business cases that involve land transactions, as the detailed business cases must be referred to the Board. (per paragraph 7.2 of the Standing Orders)
>
> NB: The Strategic Capital Planning Group has delegated authority to approve business cases (within the approved capital programme) up to the value of £500,000. Operational capital committees have the authority to approve cases up to £250,000.
>
> For business cases that must be referred to the Scottish Government for approval (i.e., those higher than the Board's delegated limit), the Committee will review the business case prior to submitting the business case with the assurance that the required financial resources are available to the Board. The approval of business cases and confirmation of Board support, prior to submission of the business case to the Government, is reserved to the Board."

11.4.4 The Board's delegated limit to approve business cases was reduced to £5 million and this was reflected in the amendment to the Terms of Reference of the Finance and Performance Review Committee dated 23 March 2011.

11.4.5 With the relaunch of the Committee as the Finance and Resources Committee on 24 October 2012, there was also approved a new Terms of Reference. This was more focussed on three key areas: Financial Strategy and Planning, Property and Asset Management Strategy and Strategic/Capital Projects. The terms of reference adopted were as follows:

"Financial Strategy and Planning

- To review the development of the Board's Financial Strategy and recommend approval to the Board
- On behalf of the Board to undertake scrutiny of key financial issues/risks

Property and Asset Management Strategy

- To ensure that the Clinical Strategy is
  - Supported by affordable and deliverable Business Cases;
  - Supported by detailed Project Plans;
  - Delivered within agreed timescales and resources to secure modern, well designed, patient focussed services and facilities
- To ensure that the Board's Property and Asset Management Strategy is developed and supported and maintained and that it meets the strategic service plan's needs;
- To ensure that the property portfolio of NHSL and key activities relating to property are appropriately progressed and managed within the relevant guidance and legislative framework;
- To ensure that all aspects of major property and land issues are dealt with in accordance with due process

Strategic/Capital Projects

- To review overall development of major schemes including capital investment business cases and consider the implications of time slippage and/or cost overrun. Instruct and review the outcome of the post project evaluation;
- To approve the appointment of consultants and contractors for Capital Schemes whose value exceeds £5m;

- To receive and review reports on significant Capital Projects and the overall Capital Programme;
- To ensure appropriate governance in respect of risks associated with major Capital Projects;
- To receive reports on relevant legislation and best practice including the Scottish Capital Investment Manual (SCIM), CEIs, audit reports and other Scottish Government Guidance.

Other

- The Chairperson shall submit an Annual Report of the work of the Finance & Property Committee to the Board."

11.4.6 There were further changes to the Terms of Reference on 23 October 2013 substituting for the "Financial Strategy and Planning" section the following:

"Financial Governance

- As part of the Board's system of risk management, to provide particular oversight to the risks associated with the Board's responsibilities for financial governance, including the delivery of the statutory financial targets.
- To develop the Board's Financial Strategy, taking into account the Board's overall strategic direction and individual strategies. To recommend the final draft Financial Strategy to the Board for its approval, and to highlight to the Board any material issues as and when they arise.
- To undertake scrutiny of individual topics that from time to time have a material impact on the Board's financial performance
- To oversee the arrangements that are put in place by management to ensure that NHS Lothian remains financially a going concern over the long term, with due regard to changes in the Lothian population, the demand for healthcare services, and the trends in the Board's income and expenditure. Related to this, the committee shall have oversight of the development of shared services and will have an interest in the wider integration agenda.

- To be assured that NHS Lothian has robust arrangements in place to deliver effective procurement, and that associated policies and procedures are fully implemented.
- With regard to independent contractors (family health services), to provide oversight to the activities of the Primary Care Contracting Organisation. In the event of there being an ongoing dispute with a contractor, the committee has delegated authority from the Board to determine the Board's position on the matter."

11.4.7 In addition, in the Strategic/Capital projects section, a paragraph explaining the delegation limits (which were once again removed in the Terms of Reference dated 22 June 2016) was inserted and specified the best practice guidance and legislation the Committee required assurance and reports on.

11.4.8 The Terms of Reference remained in place until 22 June 2016 when extra paragraphs were added to the Property and Asset Management Strategy Section

"• To ensure there is a robust approach to property rationalisation
• To oversee the management of risk associated with individual projects."

11.4.9 Further changes were made to the terms of reference of the Finance & Resources Committee within the period of RHCYP /DCN project was on 3 February 2021 when the document reverted to a "Remit" and "Core Functions" framework. It had a clear remit in terms of effective procurement and achieving Scottish Government financial targets. It had a function to seek assurance that the SCIM had been followed and to review and approve business cases. This function included seeking assurance that capital projects had a Senior Responsible Officer and that such projects were delivered in line with the agreed specification, on time and on budget.

12. Lothian Capital Investment Group

12.1 Overview

12.1.1 The Lothian Capital Investment Group (LCIG) existed prior to the RHCYP/DCN project. It oversaw the NHSL property and asset management investment programme in support of the Finance & Resources Committee. There is however no mention of the LCIG in the numerous Terms of References for the Finance & Resources Committee.

12.2 Remit

12.2.1 The LCIG Terms of Reference set out its full remit. The Inquiry is only in possession of the Terms of Reference that were reviewed in 2018. They state that the key roles of the LCIG were:

a. Assurance to the Board, and to the Finance & Resources Committee, on the strategic fit, appropriateness and value for money of capital investment, property and asset management proposals presented to it.
b. Accountability by fulfilling its role as a decision-making body of the Board in respect of matters delegated to LCIG under the Board's scheme of delegation, and in making recommendations to the Board in relation to capital investment, property and asset management.
c. Advisory role to the Board in relation to capital investment or disinvestment issues.

12.2.2 Its main functions were to:

- Approve items to be included in the NHSL Capital Programme as set out in the Board's Scheme of Delegation.
- Assist Directors in the maintenance and management of the Board's Capital Resource Limit Allocation through the Property and Asset Management Investment Programme.
- Scrutinise developing capital proposals arising from the Integration Joint Boards' directions, the Lothian Hospitals Plan and from Regional developments and strategies.

- Support Directors in the development of NHSL's five-year Capital Plan.
- Scrutinise capital investments through post-project evaluation.
- Scrutinise the process associated with disposal of Board assets.

12.2.3 Two items on the list of activities within the Terms of Reference would have been directly relevant to the RHCYP/DCN project, namely:

> "Assist in the monitoring of capital expenditure and capital receipts;
>
> Act as a technical reference group to quality review projects at the following SCIM milestones: Strategic Assessment; Initial Agreement; then Standard Business (up to £500k) or Outline Business Case followed by Full Business Case (over £500k); Post-project Evaluation Report;"

12.3 Membership

12.3.1 The Terms of Reference for the LCIG specified its membership.

12.3.2 The Director of Finance was the chair of the LCIG. One of the stated activities of the LCIG was to provide any information and advice the chair may need to provide assurance to the Finance & Resources Committee and the NHS Board in relation to capital investment, property and asset management issues.

12.3.3 Membership of the LCIG was:

- Director of Finance
- Director of Operations – Facilities
- Director of eHealth
- Director of Capital Planning and Projects
- Head of Property and Asset Management Finance
- Assistant Finance Manager – Projects
- Associate Director of Operations – Facilities
- Head of Business Support and Asset Management – Facilities
- Capital Programme Business Manager
- Capital Equipment and Commissioning Manager

- Associate Director of Strategic Planning and Modernisation
- Health and Social Care Partnership – representation
- Capital Planning Senior Project Manager - Primary Care
- Associate Director of Procurement
- Strategic Programme Manager
- Capital Planning Project Manager (administration)

Relevant membership could also be drawn from the wider service to ensure discussions of issues presented to LCIG could benefit from a wide range of interests and expertise.

12.4 Reporting

12.4.1 The LCIG reported to the Finance & Resources Committee to provide assurance that appropriate governance and management arrangements were in place. The Terms of Reference of the LCIG required approval of the Finance & Resources Committee (which was given on 21 March 2018 in relation to the version of the terms of reference held by the Inquiry).

12.5 Role in RHCYP/DCN Project

12.5.1 NHSL have advised that the role of LCIG was periodic during the lifespan of the project. The role was principally in pre-consideration of business cases prior to the consideration of these by the Finance & Resources Committee and monitoring of resource need establishments for the project.

12.5.2 The Inquiry does not hold a complete set of minutes for the LCIG. From the minutes the Inquiry do hold, examples of what was discussed at LCIG regarding the RHCYP/DCN project were:

- 26 May 2011: Issue with an MRI scanner at RIE and the matter was referred to RHCYP/DCN Steering Group to consider implications of this at RIE. Primarily a revenue-based project, there would be a requirement for capital funding for the project which was being quantified.

- 30 June 2011: A revised business case was to be submitted at the next CIG. This was awaiting the Scottish Government's response to Addendum.
- 24 November 2011: Report submitted to the LCIG on the project status, and was noted.
- 8 January 2013: Schedule for anticipated business cases submitted. Noted at the meeting that the RHCYP/DCN reported directly to the Finance & Resources Committee.

12.5.3 The Terms of Reference for the Project Board dated 25 March 2013 confirmed that its usual line of reporting was to the Finance & Resources Committee and stated that one of the listed remits of the Project Board was to act as the Capital Management Group (within the meaning of Section 27 of the NHS Lothian Scheme of Delegation, and the NHS Lothian Capital Guidance Manual) for the RHCYP/DCN Project. There was therefore no direct regular oversight reporting requirement from the Project Board to the LCIG.

12.5.4 The Full Business Case stated that regular progress reports were submitted to the LCIG as part of the internal governance requirements.

13. Audit and Risk Committee

13.1 Terms of reference.

13.1.1 The remit of the Audit and Risk Committee was to support the Accountable Officer (Chief Executive) and the Lothian NHS Board in meeting their assurance needs.

13.2 Membership.

13.2.1 The NHSL Board appointed all committee members. The committee was made up of three to six non-executive members of the NHSL Board, along with 'co-opted' members. A co-opted member was "an individual who is not a member of Lothian NHS Board, and is not to be counted as part of the committee's quorum". They were appointed with approval from the Board and Accountable Officer (Chief Executive) to provide relevant specialist skills, knowledge and experience, for up to a period of one year. Executive Board Members could attend meetings to provide information or participate in discussion. The following executive Board members would normally be routinely invited to attend committee meetings:

- Chief Executive
- Director of Finance
- Chief Internal Auditor or representative
- Associate Director of Quality Improvement & Patient Safety or representative
- External Auditor or representative
- Head of Corporate Governance

13.3 Role and function.

13.3.1 The Audit and Risk Committee fulfilled its remit by:

> "1. Helping the Accountable Officer and Lothian NHS Board formulate their assurance needs with regard to risk management, governance and internal control.
> 2. Reviewing and constructively challenging the assurances that have been provided, as to whether their scope meets the needs of the Accountable Officer and Lothian NHS Board.

> 3. Reviewing the reliability and integrity of those assurances, i.e., considering whether they are founded on reliable evidence, and that the conclusions are reasonable in the context of that evidence.
> 4. Drawing attention to weaknesses in systems of risk management, governance, and internal control, and making suggestions as to how those weaknesses can be addressed.
> 5. Commissioning further assurance work for areas that are not being subjected to sufficient review.
> 6. Seeking assurance that previously identified areas of weakness are being remedied."

13.3.2 The Terms of Reference described the specific functions for the committee in relation to overall assurance on corporate governance, risk management, financial reporting and internal and external audit.

13.4 Reporting Arrangements

13.4.1 The committee reports to the NHS Board.

13.5 Risk Register

13.5.1 The Audit and Risk Committee were responsible for reviewing NHSL's corporate risk register. According to their terms of reference:

> "The committee has no role in the executive decision-making in relation to risk management. However, it shall seek assurance that:
> • there is a comprehensive risk management system in place to identify, assess, manage and monitor risk at all levels of the organisation;
> • there is appropriate ownership of risk in the organisation, and that there is an effective culture of risk management; and,
> • The Board has a clearly defined Risk Management Policy and that the executive's approach to risk management is consistent with that policy.

13.5.2 At each meeting, the committee is to receive and review a report summarising any significant changes to NHSL's corporate risk register, and what plans are in place to manage them. The committee may also elect to occasionally

receive information on significant risks held on other risk registers within the organisation. It is to assess whether the Corporate Risk Register is an appropriate reflection of the key risks to NHSL, to advise them appropriately. Clinical risks, and all matters pertaining to NHSL's legal duty to monitor and improve the quality of health care are excluded from the remit of the committee – these matters fall within the authority of the Healthcare Governance Committee.

13.6 Involvement in the RHCYP/DCN project

13.6.1 The Audit and Risk Committee discussed the RHCYP/DCN project on the following occasions:

- In the period after the project switched to an NPD model and before the Outline Business Case was approved (2010 to 2012), the committee considered the General Corporate Governance and risks associated with the project and included the project in NHSL's internal audit plan (paragraphs 13.6.2 to 13.6.5).
- In April 2019, the Audit and Risk Committee considered the external audit being conducted on the project by Audit Scotland following the Settlement Agreement (paragraphs 13.6.6 to 13.6.9).
- Following the delay to opening the RHCYP/DCN, the Audit and Risk Committee recommended that the risks associated with the delay be added to the Corporate Risk Register and commissioned Grant Thornton to conduct an internal audit (paragraphs 13.6.10 to 13.6.12).

Main Areas of Risk

13.6.2 At the committee meeting held on 11 October 2011, Susan Goldsmith gave an update on the project, highlighting the main areas of risk associated with the project which included: project governance; the role of the Scottish Futures Trust; NHSL's role as the accountable body for the project; duplication of work; multiple fees and protection of clinical dependencies throughout the process. Susan Goldsmith also referred to the PWC Report which "had highlighted a number of areas to address including project resources, duplication of advisors, whether the Board was confident that the advisors' appointments were Private-Public Partnership

proficient and clarification of roles and responsibilities of the Scottish Futures Trust and NHS Lothian." The Audit and Risk Committee asked for further assurance from NHSL regarding certain risks (described below), as well as NHSL's response to the PWC Report. Susan Goldsmith "agreed to bring forward a Board paper addressing the committee's concerns, and clearly expressing the key risks for the Board associated with the project. This would be brought to a future private session of the Board."

13.6.3 The Audit and Risk Committee sought assurance for the following risks:

- Consort and securing the land to build the additional car park and the Royal Hospital for Sick Children/Department of Clinical Neurosciences.
- Accountability of the Scottish Futures Trust, NHSL and the Scottish Government and the associated reputational and political risks.
- The decision-making process currently in place including a clear audit trail of decisions taken.
- Additional support for lead Directors during the term of the project.
- That the Board had explored all PFI opportunities prior to going ahead with the new build.
- That funding could be secured given the current financial climate.
- That during the transitory period clinical risk was monitored closely.
- Particular assurance regarding the hand over period and the fact that the RHSC was a tertiary site was required.
- Ensuring that the timetable and programmes remain on track and were not delayed.

13.6.4 The Committee "were reassured that the reporting lines between the Project Board and the Finance and Performance Review Committee had been formalised."

13.6.5 An internal audit of the RHCYP/DCN project was included in NHSL's Annual Audit Plan for 2010/2011 and 2011/2012. Mr Woods (Chief Internal Auditor) had suggested that PWC be commissioned to conduct an audit given that specialist skills were required. The minutes of the Audit and Risk committee on 5 April 2012 contain the last recorded update on the proposed internal audit:

> "Mr Woods advised that an internal audit had been listed on last year's audit plan, and he had suggested that a specialist auditor be brought in to perform the work. However, the Audit Committee had not supported that suggestion. Mr Woods understood that assurances were being taken from Gateway reviews, a specific review commissioned from PwC, and the involvement of non-executive directors at the project steering group and Finance and Performance Review Committee. Mr Martin suggested that the Finance and Performance Review Committee was the key Board committee in respect of major capital projects and that any detail report of such a nature should be reported to and through it. Concern had been expressed at Audit Committee at slipping delivery dates, continuing problems over meeting contractual enabling steps such as land swaps, and project management clashes with the emerging gateway review process of the Scottish Futures Trust. The Finance and Performance Committee reports to Audit Committee at the end of each year on whether or not it has met its remit as part of the Governance Assurance process. The chair of the Finance and Performance Review Committee has the opportunity to report to Audit Committee on key issues that arise from Audit Committee's review of the minutes. The committee agreed that it was appropriate that any progress report on the new RHSC be commissioned by Finance and Performance Review Committee at the request of Audit Committee."

Audit Scotland

13.6.6 In April 2019, the Audit and Risk Committee discussed the external audit being conducted by Audit Scotland to consider "the settlement agreement of £11.6M, the governance oversight surrounding the settlement and whether best value for money was obtained."

13.6.7 In August 2019 the Audit and Risk Committee accepted a new risk on the Corporate Risk Register associated with the delay in providing clinical care for the RHCYP/DCN. Mr. McQueen (non-executive board member) requested that Ms Bennett (Associate Director of Quality Improvement and Safety) "identify which

governance committees would have oversight of the risk ensuring that it was transparent within future reports."

13.6.8 The risk rating assigned to the RHCYP/DCN financial risk was questioned by members of the Audit and Risk Committee at the meeting held on 25 November 2019. The minutes record:

> "Mr Marriott [Deputy Director of Finance] confirmed that that risk to the organisation of not moving to the new site and double running was significant. It attributed to an additional cost of £1.4 Million per month to the organisation. Oversight of the RHSC/ DCN work remained tight with Government meeting with the Board weekly or twice weekly depending on need. Ms Gibbs [Quality and Safety Assurance Lead] agreed to consider whether as the risk moves on whether it would be beneficial to separate out the clinical care of the patients and the financial risk to the organisation to accurately reflect the level of risk associated with each element of the risk."

13.6.9 At the meeting of 26 August 2019, the Audit and Risk Committee received a report regarding "assurance on governance arrangements" that set out "the governance oversight arrangements that are in place to oversee any issues that may emerge from the Scottish Government's commissioned reviews, and the RHCYP/DCN generally." The committee accepted the report "as a source of significant assurance".

Grant Thornton Report

13.6.10 The Audit and Risk Committee commissioned Grant Thornton to conduct an internal audit on the RHCYP/DCN. Members of the Audit and Risk Committee, the Finance & Resources Committee, NHSL management and third parties had the opportunity to input or feedback at various stages of the report preparation process. The final report was formally submitted to the Scottish Government and was intended to form part of NHSL's submission to the Scottish Hospitals Inquiry.

13.6.11 The questions raised by members of the Audit and Risk Committee included:

> "• It would be helpful if the report clearly explains which individual or group has the authority to agree that the work has been completed to the required standard, before it can move on to the next stage.
> • How do the above decision-makers get assurance from advisers and any gateway reviews before agreeing to move on to the next stage?
> • What, if any, authority was given to advisers to act on behalf of the Board and its management? Did the authority to make a final decision always remain with an individual or group within NHS Lothian?
> • What is the significance of the stage of 'financial close', and what does it practically mean in terms of obligations for the contractor? What should happen before the Board agrees to 'financial close'?
> • There needs to be a reflection on the role of a governance committee (such as the Finance & Resources Committee), and the level of detail it can reasonably be expected to consider. The answers to the above questions may highlight where within the project management system any detailed issues should be identified and addressed.
> • To what extent was the project's established change control process consistently applied? Where the change control process was not applied, what were the reasons for this? What action can be taken to ensure that the change control processes always operate regardless of the circumstances?
> • Who decided to issue the environmental matrix to the contractor?
> • What were the reasons for issuing the environmental matrix?
> • Where within the system of governance and control was there a check or checks which should have detected an error with the environmental matrix?
> • What steps can we take to ensure that the process for the next formal change within this project takes into account the lessons learned from the findings to date?

• What practical steps can be taken to ensure that everyone who has a role in a capital project (such as clinicians) have the necessary knowledge, skills and experience to effectively discharge that role?
• As a general point, the management response needs to state what action is going to be taken to address all the issues which the final report may raise."

13.6.12 The Audit and Risk Committee sought assurance from NHSL's response to the internal audit. Minutes of the meeting held on 26 April 2021 record:

"10. Progress on RHCYP/ DCN Audit Actions
10.1 Ms Goldsmith presented the report. She explained that the agreed deadline for the implementation of the management response was December 2020 and she acknowledged that the timescale had not been met. This was due to the extent of the work involved in addressing the recommendations.
10.2 The committee noted the exercise that would bring a document outlining progress against the recommendation, bringing a clear way forward with key milestones. This will clearly outline the process to be followed, highlighting and identifying how each recommendation sits against national guidance and strategic direction.
10.3 Mr Marriott explained that NHS Assure was in its infancy and NHS Lothian would need to see how it links into its own internal processes. The committee agreed that a fuller discussion with examples to be worked though should be brought back to a future meeting of the Audit and Risk Committee. The Chair would take advice from Ms Goldsmith and Mr Payne on the timeline for the report. …
10.6 The committee discussed whether risk management compliance in respect of the Senior Responsible Office should be included within the report. Mr Payne explained that the Finance & Resources Committee terms of reference now includes seeking assurance regarding the Senior Responsible Officers. He advised that the Scheme of Delegation which the Board approved on 7 April includes additional controls relating to the Senior Responsible Officer.

10.7 Mr Payne advised that the scheme also transfers the authority to approve initial agreements to the Planning, Performance and Development Committee.
10.8 The committee accepted the report as a source of moderate assurance that management have started to take appropriate action on the recommendations and that some progress has been made.
10.9 The committee accepted that due to resource constraints the full completion of the management actions will not be completed until December 2021.
10.10 The committee noted that the development of the NHS Assure may have an influence on the development of the framework."

14. Corporate Management/Executive Leadership Team

14.1 Background

14.1.1 The Chief Executive had a management team comprising of senior personnel who reported to him (the directors of divisions), and it included anyone else that the Chief Executive may wish to attend.[99]

14.2 Change of name

14.2.1 The name of this team changed during the years of the RHCYP/DCN project. The 'Executive Management Team' ran from 20 October 2003 to 17 April 2012, when it was replaced by the 'Corporate Management Team' from 02 May 2012.

14.2.2 The 'Joint Management Team' was introduced by Tim Davison (Chief Executive) after his appointment in July 2012 and ran from 16 August 2012 to 05 December 2013. The Joint Management Team membership was the Corporate Management Team with the four Health and Social Care Partnership Directors included. At the Corporate Management Team on 06 November 2012, Tim Davison advised that the Corporate Management Team would now be subsumed by the Joint Management Team.

14.2.3 On 4 April 2013, Tim Davison advised that he was seeking views on how best to organise senior management meetings. He asked for views on whether the Joint Management Team should continue in its current guise or whether there were alternative suggestions for getting the best return from time spent in meetings. At the 7 November 2013 Joint Management Team meeting, Tim Davison decided to reinstate formal monthly Corporate Management Team meetings replacing the Joint Management Team. The Corporate Management Team continued to meet monthly throughout 2014 to 2019.

[99] So the senior management team and meeting arrangements changed according to the preferences of the current Chief Executive, as well as business needs etc.

14.2.4 At the Corporate Management Team on 10 June 2019, Tim Davison advised that he was seeking to move to a position of having a monthly meeting for business affecting all parts of the system and in tandem to establish a formal mechanism for Corporate Directors to deal exclusively with NHSL only business.

14.2.5 On 16 July 2019 the inaugural 'Executive Leadership Team' meeting took place, meeting in tandem with the Corporate Management Team. Both groups met twice per month on alternative weeks. This arrangement continues to date.

14.3 Remit of the different named management teams

14.3.1 NHSL has advised the management teams did not have any formally defined Terms of Refence and membership until July 2019. Therefore, the Inquiry is only in possession of Terms of Reference for 2019 onwards.

14.3.2 The Corporate Management Team provided a forum for members to consider matters within its remit and formally agree the Corporate Management Team's position. The Terms of Reference stated that it is a forum for facilitated discussion relating to system-wide topics which have an impact on operational delivery. Examples of system-wide topics are access to emergency departments, the timely discharge of patients from hospital, and the interaction between primary, community, secondary and tertiary care.

14.3.3 The Terms of Reference stated that

> "The Corporate Management Team will ensure that NHS Lothian has a holistic approach to operational planning, so that the relationship and collective effect of plans and directions from all sources (including IJB directions) is properly understood, and NHS Lothian can implement everything that it is asked to do."

14.3.4 The Corporate Management Team would not discuss:

- business which exclusively relates to national, regional, and tertiary functions and services;
- business relating to functions and services which the NHS Board has not delegated to integration joint boards; and,

- any other business which is in the remit of the Executive Leadership Team.

14.3.5 The Executive Leadership Team provided a forum for members to consider all operational matters within the scope of the NHS Board's responsibilities which do not require engagement with the Health and Social Care Partnership directors, and formally agree the executive leadership team's position. Examples included the operational implementation of Scottish Government and NHS Board strategies, plans, and policies; emerging operational matters from day-to-day activities, and legal and regulatory matters and other corporate responsibilities of the NHS Board.

14.3.6 The Terms of Reference of the Executive Leadership Team stated:

> "The Executive Leadership Team will refer issues to the Corporate Management Team where system-wide discussion with IJB Chief Officers is required, and/or to the relevant IJB Chief Officer. The members of the Corporate Management Team will routinely receive the agenda and minutes of Executive Leadership Team meetings for their information."

14.3.7 Membership for the Corporate Management Team and the Executive Leadership Team overlapped significantly. The Executive Leadership Team comprised:

- Chief Executive (chair);
- Medical Director;
- Director of Nursing, Midwifery and Allied Health Professionals;
- Director of Public Health and Health Policy;
- Director of Finance;
- Deputy Chief Executive;
- Director of Primary Care Transformation;
- Chief Quality Officer;
- Director of Human Resources & Organisational Development;
- Chief Officer (Acute Services); and
- Director of Communications, Engagement and Public Affairs.

14.3.8 The Corporate Management Team included all the above together with:

- Director for eHealth;
- Director of Strategic Planning; and
- The four Health and Social Care Partnership directors.

14.3.9 The Terms of Reference of the Corporate Management Team on 11 November 2019 and the Executive Leadership Team on 19 November 2019 added the Director of Improvement to the membership and the Terms of Reference for the Corporate Management Team on 10 August 2020 added the Employee Director.

14.4 Involvement in the RHCYP/DCN Project

14.4.1 The Management Team is reflected in the organigram governance structure under the Finance & Resources Committee (See organogram at section 16.6.1 of this paper). However, as the remit of the Project Board required it to report to the Finance & Resources Committee, it appears that the Management Team would not as a matter of course receive reports on the RHCYP/DCN project as part of the approval/escalation route.

14.4.2 When the Executive Management Team was in existence from 20 October 2003 to 17 April 2012 the minutes detailed that this team received updates on the project pre-NPD. This was from the then Senior Responsible Officer, Jackie Sansbury. These were in general regarding managing strategic capital projects including site decision, bed modelling etc. The Executive Management Team received a draft of the Framework Scotland Outline Business Case for consideration and comment in May 2008. The Executive Management Team also received progress reports when the funding changed to NPD from Jackie Sansbury and Susan Goldsmith. This included comments on the further Outline Business Case, Supplementary Agreement 6 and funding.

14.4.3 This continued during the other iterations of the Management Team.

15. Senior Responsible Officer

15.1 Overview

15.1.1 The Senior Responsible Officer (SRO) had overall responsibility for the project and was directly accountable to the NHSL Board. The role was tasked with providing strategic direction and leadership and ensured that the business case reflected the view of stakeholders. NHSL viewed this role as the key link between the system of governance and the system of management within NHSL.

15.2 Terminology

15.2.1 Although the principal title for the role was “Senior Responsible Officer”, other terms used throughout the project to refer to the Senior Responsible Officer were “Executive Director responsible to the Chief Executive and the Board for the Project” and “Project Owner”.

15.3 Personnel in Role

15.3.1 Jackie Sansbury was the Senior Responsible Officer from the start of the planning and business stages in 2006 until she stood down as Chief Officer on 30 June 2012. Susan Goldsmith, Director of Finance, was SRO from 1 July 2012 to 13 February 2015. When the Project Agreement was signed between NHSL and IHS Lothian Ltd, Jim Crombie, Director of Scheduled Care (became Chief Officer on 1 April 2015) took over the role until the end of June 2019. Susan Goldsmith briefly stepped back into the role from end of June 2019 to 12 September 2019. When the Director General for Health and Social Care escalated NHSL to Level 4 on the Scottish Government’s Performance Escalation Framework, Mary Morgan became the Senior Programme Director and reported directly to the Scottish Government though the SRO role remained and was responsible for reporting to the NHSL Board.

15.4 Remit of Role

15.4.1 In her statement to the Inquiry dated April 2022[100], Susan Goldsmith, Director of Finance at NHSL, described the role as:

> "The Senior Responsible Officer has to be someone who is very senior in the organisation who can carry the principal responsibility and accountability for delivering a project on the Board's behalf. They chair the project board and make sure that they have the appropriate resources to deliver the project. However, their principal task is owning the service change which the project is supporting or enabling."

15.4.2 Jackie Sansbury's description of the role in her statement to the Inquiry dated 25 April 2002[101] was:

> "The Senior Responsible Officer is a senior person within the organisation with the status and authority to provide the necessary leadership and clear accountability for the project's success. They will have ultimate responsibility at Board/Executive level for delivery of the project's benefits and the appropriate allocation of resources to ensure its success. As Project Sponsor I did not sit in the groups detailed at paragraph 5 above but took the output from them into the project and through NHS Lothian Committees e.g., Executive Management Team, Service Redesign, Finance and Performance Review."

15.4.3 The SRO chaired the Project Board and in the later part of the RHCYP/DCN also chaired the Executive Steering Group (see section 20 of this paper).

15.4.4 The SRO owned the overall service change which the project was supporting. The SRO ensured that the project remained focussed on success, had the resources to deliver it and considered the implications of project decisions on the wider service change and for NHSL.

[100] Witness Statement - Susan Goldsmith - 17.05.2022 | Hospitals Inquiry
[101] Witness Statement - Jacqueline Sansbury - 13.05.2022 | Hospitals Inquiry

15.4.5 In the Terms of Reference of the Project Board, the Senior Responsible Officer had delegated authority for Project Revenue Expenditure up to Financial Close to a limit of £250k.

15.5 Reporting

15.5.1 The SRO reported to the Chief Executive and through them to the NHSL Board.

16. Project Board

16.1 Background

16.1.1 This was a key project management committee which had a variety of interchangeable names during the lifespan of the RHCYP/DCN project namely 'Project Board', 'Programme Steering Board', 'Programme Board', 'Project Leadership Board' and 'Project Steering Board'.

16.2 Description of function

16.2.1 The Outline Business Case dated 12 August 2008 described the function of the Project Board as follows:

> "The complex nature of this project both in terms of the links and interdependencies with other redesign projects as well as the Local, Regional & National Strategic context is reflected in the membership of the Project Board. It has been established to ensure representation from all key stakeholders including members who can represent the views of adjacent SEAT Health Boards, partners from Education and Social as well as families and the voluntary sector. The Project Board, chaired by the Project Sponsor, provides the overall direction, management and governance for the project. Its responsibilities include:
> • Agree the levels of authority and lines of accountability for the Project Team;
> • Make recommendations through delegated authority from NHSL Board;
> • Pursue decisions with relevant executive directors when they are outwith delegated authority.
> Direct, support and monitor the progress of the Project Groups towards achieving their objectives in a timely manner;
> • Approve the resources required to support the project and submit to the ICIC Executive for approval and ensure the resources secured for this project are appropriately used."

16.2.2 Iain Graham in his statement to the Inquiry dated April 2022 described the Project Board as:

"…the key programme management committee for approving business cases and monitoring project performance and any variations required. Each Project Board/Programme Board reported to the Finance and Performance Review Committee. In the initial stages, the Project Board had a significant focus on the engagement with the wider stakeholder groups and therefore included many external representatives on it. The Project Board reviewed the detailed project and programme governance for the project delivery, and was also required to:

- Establish project organisation
- Authorise the allocation of programme funds
- Monitor project performance against strategic objectives
- Resolve strategic issues which need the agreement of senior stakeholders to ensure progress of programme
- Maintain commitment to the programme
- Manage the project management structure
- Produce the FBC document
- Prepare for transition to operational phase"

16.2.3 The Project Board were required to consider and approve the Business Cases within the RHCYP/DCN project.

16.3 Membership

16.3.1 The Terms of Reference dated 25 March 2013 set out the membership of the Project Board as follows:

- Project Owner (chair)
- Project Director
- Medical Director
- Associate Director of Finance
- Director of Capital Planning and Projects
- Representative of the Director of Communications
- Non-executive member(s) of Lothian NHS Board
- A representative from the service

- A representative from the Lothian Partnership Forum
- A representative from the South-East and Tayside Regional Planning Group (SEAT)
- An observer from the Scottish Government
- A representative from the Scottish Futures Trust

16.3.2 In July 2015, the membership was varied, by the addition of the Head of Property and Asset Management Finance, the Project Clinical Director, the Head of Commissioning and the Project Manager. The Director of Finance replaced the Associate Director given that by this point the Director of Finance was no longer SRO.

16.3.3 The Grant Thornton report (see section 8.5 of the paper) commented on the membership of the Project Board pre 2015 as follows:

> "Scottish Futures Trust 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."

16.3.4 The Grant Thornton report also highlighted that the Project Board had many attendees, and groups supporting the project, who provided them with updates or were also in attendance. The report suggested that 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 the detail.

16.3.5 In relation to the post 2015 structure of the Project Board, the Grant Thornton report commented that the Project Board at this stage had over 30 members and was too large to fulfil a steering board remit. According to the Grant Thornton report, it appeared that these meetings were more for information sharing. Whilst the disputes between NHSL and IHSL were outlined via Project Director updates at the meetings, the underpinning technical matters were not set out and discussed in detail.

16.4 Assurance

16.4.1 The Board had several Governance management functions such as the Project Dashboard and the Risk Register. The Project Board would commission reports and consider official reports on the project that were to be escalated to the Finance & Resources Committee.

16.4.2 The Programme Board also received progress reports from the Project Director at each meeting.

16.5 Terms of Reference

16.5.1 The draft Terms of Reference dated 25 March 2013 set out the remit of the Project Board at length. Notable among these terms are:

- The Board was to serve as the Capital Management Group (within the meaning of Section 27 of the NHS Lothian Scheme of Delegation, and the NHS Lothian Capital Guidance Manual) for the RHSC / DCN Project. (i.e., it has delegated authority to approve capital enabling works for the Project up to £250k, and will be the first place to review schemes higher than £250k.)

- It was to provide a forum to discuss and quickly settle any detailed implementation/design issues that may be raised by the Project Director, provided these issues are within the scope of the design/business case that the Finance & Performance Review has agreed on behalf of Lothian NHS Board.
- It was to formally approve:
  - The Project's Reference Design
  - The details of the OJEU notice and all matters relating to the implementation of the procurement process, in line with the law and Lothian NHS Board policies and procedures.
  - The selection of 3 bidders to form the shortlist.

- It was to monitor all aspects of project design and delivery, to support any performance reporting requirements that the Project Owner and Director may need to satisfy.
- It was to review of the project risk register on a regular basis and to ensure that any areas of unacceptable residual risk are being appropriately managed and resolved.

16.5.2 In July 2015 the Terms of Reference for the Project Board were updated/amended as follows:

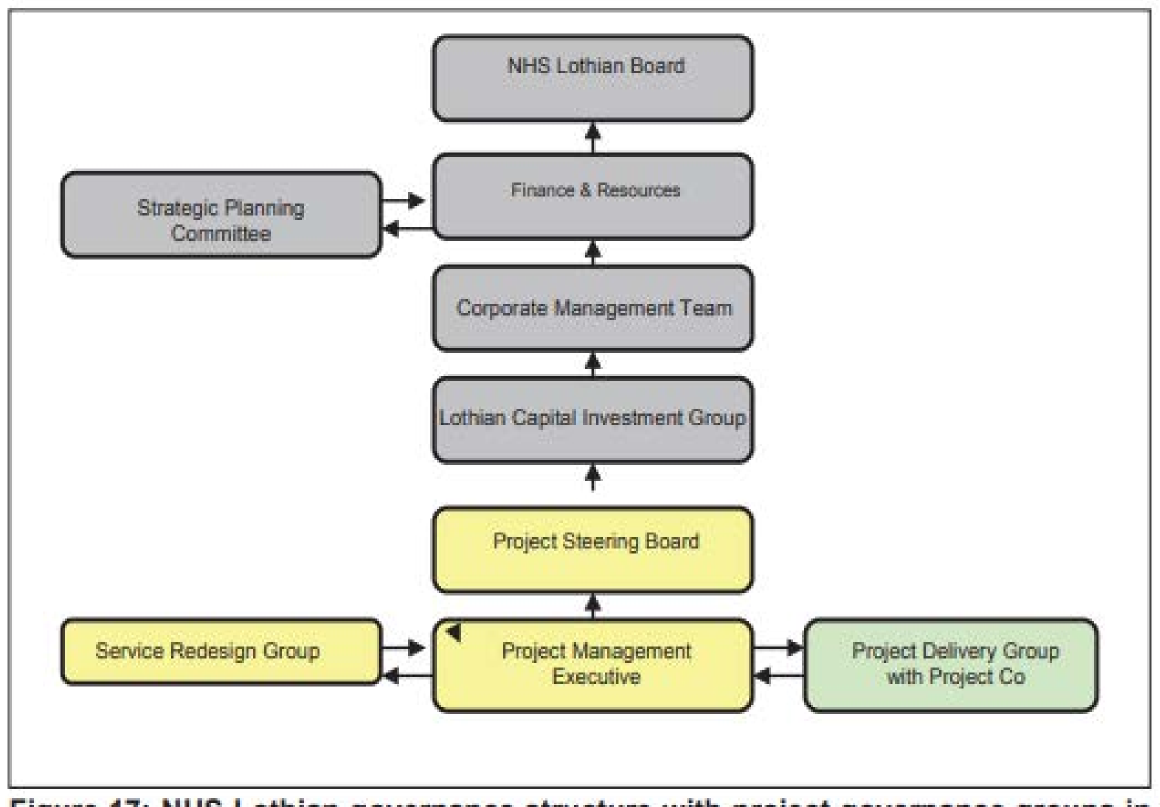
> “The Programme Board has two fundamental functions:
>
> 1. To assist the Project Owner with the decision-making process and ongoing implementation of the project.
> 2. To assist the Project Owner with preparing to meet the assurance needs of the Finance & Resources Committee, as well as any further enquiries from Lothian NHS Board with regard to the project.
>
> The Programme Board will carry out its remit through the following activities:
>
> 1. Support on Decision-Making & Implementation:
>
> • Providing a dedicated forum to test the basis of any assumptions or decisions made or to be made by the Project Owner.
> • Advising the Project Owner of any relevant issues that need to be taken into account …
> • Advising the Project Owner of the potential impact of the project and individual decisions on service users and other stakeholders, having due regard to the integration delivery principles
> • Members of the Programme Board to take away any issues relevant to their areas, and lead on engaging the relevant people, and resolving the issues in the interests of the smooth progress of the overall project.
> • To provide a forum to discuss and quickly settle any detailed implementation / design issues that may be raised by the Project Director.

• To confirm all changes approved within delegated limits by the Project Director and/or Director of Capital Planning and/or Finance Director or make recommendations for approval to changes to the [Finance & Resources] Committee. …
• To quality review any plans/papers that are pertinent to the project, before they are directed through the appropriate channels in NHS Lothian for approval.
• Review of the project risk register on a regular basis and to ensure that any areas of unacceptable residual risk are being appropriately managed and resolved.

2. Support on Assurance Needs
To provide any such information and advice that the Project Owner may require, in order to provide assurance to the Finance & Resources Committee and the NHS Board."

16.6 Reporting

16.6.1 The Project Steering Board reported to the NHSL Finance & Resources Committee.



Governance Structure of the Project Steering Board extracted from the Full Business Case

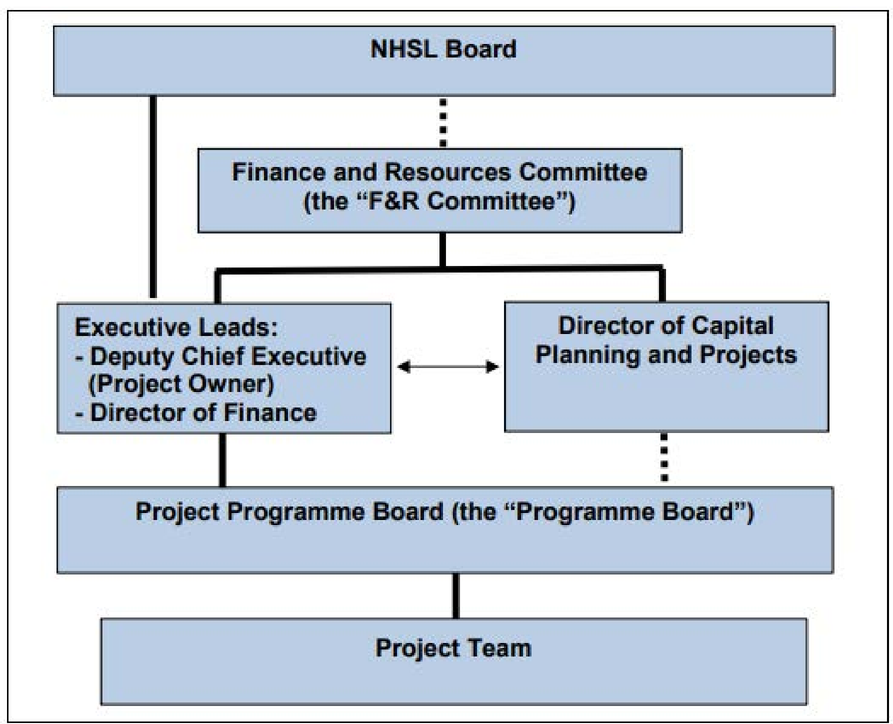
16.6.2 The diagram above shows the Project Steering Board reporting to the Lothian Capital Investment Group and then to the Corporate Management Team before reporting to the Finance & Resources Committee. This conflicts with the Terms of Reference which has the Project Board/Project Steering Board reporting to the Finance & Resources Committee. The Terms of Reference describe the reporting arrangements as :

> "The Finance & Performance Review Committee shall approve the Project Steering Board's terms of reference and will routinely receive reports. The Project Owner shall provide assurance to the Finance & Performance Committee on key aspects of project governance & internal control, and progress reports on the delivery of key project milestones.

The Project Owner shall alert the Finance & Performance Review Committee in the event of any trend towards cost escalation or delay, or any radical changes to the objectives of the Project. The Project Owner shall make recommendations to the Committee on action to take in these circumstances."

16.6.3 NHSL witnesses have confirmed to the Inquiry that the Project Board reported to the Finance & Resources Committee. It appears that only relevant progress reports on the Project where necessary were sent to the Lothian Capital Investment Group (see section 12 above). The remit of the Project Board in 2013 also sets out that it will serve and has the capacity to sit as the Capital Management Group for the project (it had delegated authority to approve capital enabling works for the Project up to £250k*)*. This may have mitigated the involvement of the Lothian Capital Investment Group (although this Group would have been involved if the capital scheme expenditure was between £250k and £500k).

16.6.4 In contrast to the evidence submitted to the Inquiry regarding the Project Board reporting directly to the Finance & Resources Committee, is the reporting structure set out in the KPMG report[102], namely:



[102] KPMG Report 11 September 2019 section 6

Reporting structure within NHS Lothian from KPMG report

16.6.5 The KPMG report described that if matters required to be escalated, they would be typically referred to the Director of Finance/Deputy Chief Executive as Senior Responsible Officer or the Director of Capital Planning and Projects – the "Executive Leads". The respective Executive Lead would escalate this to the NHSL Board and inform the Finance & Resources Committee if the issue had an impact on financing or duration of the Project.

17. Project Director

17.1.1 The Project Director role was described in the FBC for the RHCYP/DCN project as having:

> "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."

17.1.2 NHS Lothian's Scheme of Delegation also described the nature and responsibility of the Project Director role in general within the context of the Board's capital programme as:

> "The Project Director will be an individual who has adequate knowledge and information about the organisation and its functions and services to make informed decisions on behalf of the Senior Responsible Officer. The Project Director is responsible for the ongoing day-to-day management and decision-making on behalf of the Senior Responsible Officer to ensure success. The Project Director is also responsible for the development, maintenance, progress, and reporting of the business case to the Senior Responsible Officer."

17.1.3 Isabel McCallum was the Project Director from April 2006 to 8 August 2009. Brian Currie took over the role on 9 August 2009.

17.1.4 The Project Director reported to the Senior Responsible Owner .

17.1.5 In the early part of the RHCYP/DCN project (around 2011), SFT had concerns regarding the relevant experience of the Project Team, which included the Project Director, (see section 4.7 of this paper) and this was reflected within recommendations made in the PWC report (see section 8.1).

17.1.6 Brian Currie, Project Director, NHSL in his statement dated April 2022 to the Inquiry described the role as:

> "In my role as Project Director I was responsible for aspects of project delivery on behalf of NHS Lothian within the defined scope, quality and timescale of the Project. I led NHS Lothian Project Team of twelve managers across various disciplines. I was involved with the procurement and management of technical, legal and financial advisors. I liaised with a variety of internal and external stakeholders. I led the redirection of the Project from a capital funded procurement route utilising a national established procurement framework (Framework Scotland) and NEC 3 form contract to a revenue funded NPD (non-profit distributing) project from November 2010 onwards. I led the Project Team through the development of the reference design process utilising a full external design and management team. I led the Project Team on the NPD procurement processes through PQQ (pre-qualification questionnaire), Competitive Dialogue, Preferred Bidder and Financial Close stages. I then led on the construction and commissioning phase to complete a phased operational handover in March 2021."

17.1.7 In terms of the Terms of Reference of the Project Board, the Project Director had delegated authority for Project Revenue Expenditure up to Financial Close, to a limit of £150k.

17.1.8 The Grant Thornton report stated that "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."

18. Project Managers

18.1.1 Within the RHCYP/DCN the Project Director had Project Managers who reported to him. These included project managers in areas such as capital planning, equipment, facilities management, IT and commissioning for each of children's services, neurosciences services and child and adolescent mental health services.

18.1.2 NHS Lothian's Scheme of Delegation also described the nature and responsibility of the Project Manager role as:

> "The Project Director or the Senior Responsible Officer will assign an individual or individuals to the role of Project Manager. Larger projects may have more than one Project Manager. Those individuals should have the necessary knowledge, skills and experience to carry out the role. The Project Manager will lead, manage and co-ordinate the project activities and the project team (if one exists) on a day-to-day basis. The Project Manager will be responsible and accountable to the Project Director for the successful day-to-day delivery of the project."

18.1.3 The OBC also described the role of the Project Manager with reference to the role of the Capital Project Manager:

> "The role of the Project Manager is to operationally manage the project and ensure all key milestones are met. This includes ensuring a robust Project Management structure is in place with all members of the team and Project Groups having clear goals and remits. The role encompasses:
>
> - Developing a robust Project Management structure
> - Preparing all formal project documents, including Project Initiation Document, OBC & FBC
> - Developing high-level Project Plan/timetable
> - Managing the Project Team
> - Monitoring progress against the Project Plan, identifying exceptions and ensuring corrective action is taken if needed
> - Reporting progress to Project Director.

The role of the Capital Project Manager is to manage the project design and construction to ensure that the project requirements are delivered as specified and that transition from construction to commencement of the service is effective and efficient. The role encompasses:

- Providing input to the OBC and FBC
- Leading the Project Team in drawing up design brief
- Leading the Project Team in procurement of consultants & contractors
- Leading the development of and delivering commissioning strategy for systems
- Assisting with development of equipment requirements
- Assisting with development of training packages for the project
- Assisting with development of migration plans & managing their implementation."

19. Workstream Groups/Project Team

19.1.1 In addition to the Project Director and the Project Managers, a Clinical Director was also a member of the Project Board. The Clinical Director led many clinical teams and on engagement with NHSL clinical staff. These teams would report to the Clinical Director.

19.1.2 The Grant Thornton report observed that “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.”

19.1.3 All these directors and managers oversaw various groups and workstreams within the project and were collectively referred to as the “Project Team”. The KPMG Report stated “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”.

19.1.4 These workstreams and groups constantly evolved through the lifespan of the RHCYP/DCN project and are examined at the different stages in sections 2.6 to 7 of this paper.

19.1.5 NHSL has advised that escalation within this structure was through the respective Project Team lead to the Project Director, and onto the Project Board and Senior Responsible Officer. The groups and workstreams established under this structure were often informal workshops to engage with staff with outcomes annotated on plans or emails rather than formal minutes. Many groups were “single item” agendas and disbanded when the matter was progressed or resolved. Matters were more complicated by the fact that over the lifespan of the project similar or the same names were applied to different groups.

19.1.6 Where clinical or other service leads were involved in groups, consultation with their colleagues on the subject matter at hand may have been carried out

through departmental management structures, professional groups or other informal discussions. As such, project matters would occasionally be noted in minutes of NHSL Groups outwith the project; but information fed back into the Project Team through the Project Team lead for the subject or those project working groups which initiated the matter. Within the Project Team, internal or external advice would be sought through formal meetings or informal discussions, emails or other mechanisms.

20. Executive Steering Group

20.1 Background

20.1.1 This Executive Steering Group (the Group) existed only from 12 August 2019 until 8 March 2021. It was part of the different structure put in place by both NHSL and the Scottish Government to resolve issues and work towards the opening of the RHCYP/DCN, following the decision on 2 July 2019 to delay its opening. .

20.1.2 The Group was initiated as an Incident Management Team to support the Chief Executive and Senior Responsible Officer in addressing the issues that led to the delay in the hospital opening. It changed its name after the first four meetings to the Executive Steering Group. It was established to provide a forum for NHSL Executive Management to consider all business relating to and addressing the delay to the RHCYP/DCN.

20.1.3 This Group generally replaced the Project Steering Board during the period and provided information to the Oversight Board.

20.1.4 The Group addressed issues which related to staff communication and management of contingency arrangements, until the Scottish Government Oversight Board confirmed the transfer of services to the new hospital could take place. It also monitored the rectification of works and commissioning and validation. The Executive Steering Group was then stood down.

20.2 Membership

20.2.1 Membership of the Executive Steering Group was:

- Director of Finance, NHSL
- Medical Director, NHSL
- Nurse Director, NHSL (Chair)
- Chief Executive NHSL
- Director of Human Resources and Operational Delivery, NHSL
- Chief Operating Officer, Acute NHSL
- Director of Communications, NHSL
- Director of Capital Planning and Projects, NHSL

- Project Director, NHSL
- Director of Facilities
- Lead Consultant Microbiologist
- Lead Infection and Prevention Control Nurse
- Programme Manager
- Deputy Chief Executive

20.2.2 The Group generally met once per week.

20.3 Term of Reference

20.3.1 The Executive Steering Group's Terms of Reference were approved on 26 August 2019.

20.3.2 The remit of the Group within the Terms of Reference was:

> "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."

20.3.3 Further information on this Group is provided at section 7.7 of this paper.

21. Oversight Board

21.1 Background

21.1.1 The Oversight Board was in existence from 8 August 2019 to 8 April 2021.

21.1.2 The Scottish Government established the Oversight Board after the Lothian NHS Board was put in Stage 4 of the Performance Escalation Framework and the decision on 2 July 2019 to halt the move to the new hospital. As such it was not part of the governance architecture of Lothian NHS Board. However, the Board's secretariat provided the administrative support.

21.1.3 The Oversight Board provided a forum for the Scottish Government and NHSL Executive Management, (together with input from National Services Scotland and Health Facilities Scotland), to consider all business relating to and addressing the delay to the RHCYP/DCN project. The Oversight Board was stood down once the transfer of services occurred and ceased to meet.

21.1.4 The Board provided advice to the Cabinet Secretary for Health and Social Care.

21.2 Membership

21.2.1 Membership of the Oversight Board was:

- Chief Finance Officer, Scottish Government (until 19 December 2019)
- Chief Medical Officer, Scottish Government (until 5 April 2020)
- Chief Nursing Officer, Scottish Government (until 14 January 2021)
- Director of Finance, NHSL
- Executive Medical Director, NHSL
- Nurse Director NHSL
- Chief Executive, Scottish Futures Trust
- Chief Executive ,NHS National Services Scotland
- NHSL Joint Staff Side representative
- Capital Accounting and Policy Manager, Scottish Government February 2021

21.2.2 The Chair of the Board was Christine McLaughlin, Chief Finance Officer, Scottish Government to 3 October 2019. Fiona McQueen, Chief Nursing officer, Scottish Government, took over as Chair from 7 October 2019. Alan Morrison, Capital Accounting and Policy Manager, Scottish Government chaired the final two meetings of the Oversight Board.

21.2.3 A number of personnel attended Oversight Board meetings to provide advice and assurance. Those that attended during the entire lifespan of the Oversight Board were:

- Mary Morgan , Senior Programme Director
- Brian Currie, Project Director, NHSL
- Jacqui Reilly, HAO executive lead for NHS National Services and SRO for centre of excellence
- Gordon James HFS Scotland, NHS National Services Scotland
- Eddie McLaughlin, Assistant Director, Engineering, Environment and Decontamination, HFS Scotland
- Iain Graham, Director of Capital Planning and Projects NHSL
- Jim Miller, Director of Procurement, Commissioning and Facilities NSS

In addition, others joined the meeting as follows:

- Judith Mackay, Director of Communications, NHSL, attended from 22 August 2019;
- Louise Aitken, Scottish Government Communications, from 5 September 2019 to 12 November 2019;
- Matthew Neilson Associate Director, Strategy, Performance and Communications, NSS, attended once on 27 August 2020; and
- Richard McCallum, Interim Director of Health attended from 25 February 2021.

21.3 Terms Of Reference

21.3.1 The Oversight Board's Terms of Reference described the scope of its works as:

> "The Oversight Board will provide advice in relation to:
> - Advice on phased occupation;
> - Advice on the proposed solution for ventilation in critical care areas and on any other areas that require rectification works;
> - Advice on facility and operational readiness to migrate;
> - Gain information and give advice to NHSL 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"

21.3.2 Further information on this Board is provided at section 7.6 of this paper.

22. Key NHS Personnel and Roles

22.1.1 A number of NHSL employees had key roles and responsibilities throughout the lifespan of the RHCYP/DCN project and membership of several committees and groups at different levels of governance. This section highlights those known to the Inquiry. It is acknowledged that the personnel listed may have been involved with other groups and workstreams.

22.2 Head of Capital Planning and Projects

22.2.1 Iain Graham was Head of Capital Planning and Premises Development from 8 January 2007 to 31 May 2009. The name of the role changed to Director of Capital Planning and Projects on 1 June 2009. This role was responsible for the delivery of NHSL's overall capital development programme which included acute and community hospitals, primary care and support premises across Lothian delivered through a variety of capital and revenue funded procurement.

22.2.2 In his statement to the Inquiry, dated April 2022,[103] Iain Graham described the role that the Director of Capital Planning and Projects had in the RHCYP/DCN project as follows :

> "provide support from a capital planning/built environment project management perspective for the Project, oversight of the relevant resources and to support the work being done on the early business cases. My role was mainly to support the Project Director, …the NHS Lothian Board and the Executive Directors of NHS Lothian on project governance through regular reporting, either directly or through the Project Sponsor …and sponsor departments. Sponsor departments are the internal NHS Lothian client departments which were to be provided at the new facility through the Project."

The role also included interacting with various departments in the Scottish Government from a financial planning and construction programming perspective

[103] Witness Statement - Iain Graham - 18.05.2022 | Hospitals Inquiry

and being the lead on the procurement for the legal and commercial workstream for the Project.

22.2.3 The FBC described the role as:

> "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."

22.2.4 The Director of Capital Planning and Projects:

- sat on the Lothian Capital Investment Group (see Section 12 of this paper)
- sat on the Project Board (see section 16 of this paper).
- attended the Project Working Group.
- was a member of the Executive Steering Group from 12 August 2019 to 8 March 2021 (see sections 20 and 7.7 of this paper)
- attended the Oversight Board (see sections 21 and 7.6 of this paper)

22.3 Director Of Finance

22.3.1 The Director of Finance was Jon Matheson from August 2000 to 27 June 2008. Dawn Carmichael was acting in the role from 28 June 2008 to 31 October 2008. Susan Goldsmith was in this role from 1 November 2008 until she retired in May 2022. In her statement to the Inquiry dated April 2022,[104] she described the role as:

> "As Director, my primary responsibility is to support the financial stability of NHS Lothian ensuring that financial targets are met. This includes overseeing the financial planning and management of the revenue budget for NHS Lothian which is currently £1.7 billion. I am also responsible for

[104] Witness Statement - Susan Goldsmith - 17.05.2022 | Hospitals Inquiry

Operational Financial Management including salaries and wages administration, financial services, corporate reporting and internal audit. I also oversee the capital programme and major capital projects, which included the project for RHCYP and DCN."

22.3.2 As Director of Finance, Susan Goldsmith was:

- a member of the Finance & Resources Committee from 1 November 2008 to 2 February 2001 (see section 11 of this paper).
- chaired the Lothian Capital Investment Group (see section 12 of this paper).
- was the Senior Responsible Officer from 1 July 2012 to 13 February 2015 and from end of June 2019 to 12 September 2019 (see section 15 of this paper).
- chaired the Project Board (see section 16 of this paper).
- was a member of the Executive Leadership Team, Corporate Management Team (from 2/5/12- 6/11/12 and then from 13/1/14 to present) and the Executive Management Team and the Joint Management Team (see section 14 of this paper).
- sat on the NHSL Board from 1 November 2008 (see section 10 of this paper)
- was a member and chair of the Executive Steering Group from 12 August 2019 to 8 March 2021 (see sections 20 and 7.7 of this paper)
- was a member of the Oversight Board (see sections 21 and 7.6 of this paper)
- post July 2019, chaired the Commercial sub-group (see section 7.8 of this paper)
- was a member of the Strategic Liaison Group.

22.4 Project Director

22.4.1 Brian Currie was Project Director from 9 August 2009. This role is discussed in section 17

22.4.2 The Project Director:

- Was a member of:
    - the Project Board (see section 16 of this paper)
    - the Executive Steering Group from 12 August 2019 to 8 March 2021 (see sections 20 and 7.7 of this paper)
    - a member of the Business Case Workstream Progress Group
    - was a member of the Strategic Liaison Group within period Dec 2010 – Dec 2012
    - the Project Management Executive
    - the Peer Review Workstream
    - the Design Group.

- chaired the Project Working Group.
- attended the Oversight Board (see sections 21 and 7.6 of this paper)
- after July 2019 led various workstreams including ventilation, fire, water, electricity, medical gases and drainage.
- led the commissioning workstream within period Dec 2010 – Dec 2012.
    - chaired the Communications Group (Task Group 3)
    - led the Design and Construction workstream

22.5 Project Clinical Director

22.5.1 Janice McKenzie joined the Project Team in 2011 on a part time basis to provide clinical input alongside her role as Chief Nurse. By 2012 she had become full time on the project as Clinical Director until she retired in 2019. In her statement to the Inquiry on 20 April 2022[105] she described her role as:

> "The key responsibilities of my role were to provide professional and clinical leadership and advice to a range of people including the project team, technical advisers and architects. I led the clinical input into the design of the new hospital working with a wide range of clinical and professional teams to ensure the clinical design of the wards/departments met the clinical requirements."

22.5.2 The FBC described the role as:

> "*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 in order to deliver the associated benefits.*"

22.5.3 Janice McKenzie in her role as Clinical Project Director:

- sat on the Project Board (see section 10 of this paper).
- Chaired the Clinical Support Workstream

22.6 Head of Commissioning and Service Redesign

22.6.1 Jackie Sansbury was involved in the project from around 2006 in her role as Director of Strategic Planning. This included the strategic business case for the new hospital and writing the Initial Agreement in the procurement process. She became the Senior Responsible Officer or Project Sponsor from 2006 to 2012.

[105] Witness Statement - Janice MacKenzie - 09.05.2022 | Hospitals Inquiry

22.6.2 In 2013 she became the Head of Commissioning on the RHCYP/DCN project from 2013 until her retirement in 2019. In her statement to the Inquiry dated 27 April 2022,[106] Jackie Sansbury described the role as:

> "As Head of Commissioning my role was to get the hospital equipped and ready, to support the staff in the old hospital getting them ready to move, to carry out the move and then to evaluate the move at the end."

22.6.3 The FBC described the role as:

> "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."

22.6.4 Jackie Sansbury in her role as Director of Strategic Planning and the Chief Operating Officer:

- Was a member of
  - the Finance & Resources Committee from 1 September 2003 to 30 June 2012 (see section 11 of this paper).
  - the Executive Leadership Team and the Corporate Management team from 2 May 2012 to 6 November 2012 (see section 14 of this paper).
- sat on the NHSL Board from 1 September 2003 to 9 June 2010 (see section 10 of this paper)

22.6.5 As Head of Commissioning, Jackie Sansbury:

- sat on the Project Board (see section 16 of this paper).
- led the Clinical Services Commissioning workstream.

[106] Witness Statement - Jacqueline Sansbury - 13.05.2022 | Hospitals Inquiry

22.7 Project Manager

22.7.1 The Project Manager for the re-provision of RHCYP/DCN project was Sorrel Cosens until November 2015. She reported to the Project Director. She described her role in the project in her statement to the Inquiry dated April 2022 as

> "My role as Project Manager for the Project principally involved: development of the £250m Business Case to secure Scottish Government approval; co-ordination of the procurement processes for £150m contract to design, build and maintain the hospital for 25 years; stakeholder engagement to secure approval and funding commitments from other NHS Boards; patient involvement through the Young People's Advisory Group and the Neurosciences Reference Group; co-ordination of charity/third sector contributions to the Project (value c.£10m); project governance and risk management." [107]

22.7.2 As Project Manager, Sorrel Cosens:

- sat on the Project Board (see section 16 of this paper)
- facilitated the Risk Workshop within period Dec 2010 – Dec 2012
- was a member of the Executive Steering Group from 12 August 2019 to 8 March 2021 (see sections 20 and 7.7 of this paper).
- Led the Art and Therapeutic Design Steering Group (2014-2019)
- Co-chaired Family Support and Charities Workstream

[107] Witness Statement - Sorrel Cosens - 17.05.2022 | Hospitals Inquiry

23. External Project Advisors

23.1 Overview

23.1.1 Project Advisors provided support to NHSL to deliver the project by providing advice and delivering supporting services to NHSL.

23.1.2 Mott MacDonald and Davis Langdon (up to 2012) were part of the Project Management Executive. They also were part of workstream groups, workstream leads and the Project Delivery Group.

23.1.3 In his witness statement to the Inquiry dated 28 March 2022, Richard Cantlay of Mott MacDonald emphasised that SFT, NHSL and the Scottish Government were responsible for decision-making for the project. For example, "SFT and NHSL were responsible for making the decision to proceed with the reference design approach," while Mott MacDonald had prepared advisory papers regarding the use of a reference design, following the decision to fund the project through an NPD model.[108]

23.1.4 The diagram from the OBC at section 4.3.1 of this paper shows how workstream groups, workstream leads and the Project Management Executive fitted within the governance structure during the procurement phase.

23.1.5 The FBC provided the following general description of roles and responsibilities of its Project Advisors:

Role	Responsibilities
Project Manager – Mott Macdonald	The project manager will 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.

[108] Witness Statement - Richard Cantlay - 20.05.2022 | Hospitals Inquiry, para 25 p.12

Role	Responsibilities
	Following Financial Close: • Supporting the Commercial Lead in clarification and fine tuning of legal aspects. • Assisting NHS Lothian on implementation of the contract
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
Insurance Advisers - Willis	The role of the insurance adviser is to give appropriate advice in their areas of expertise in all phases of the project.

23.2 Role of Advisors 2011-2015 (Outline Business Case and Procurement)

23.2.1 According to the OBC, “The Project Team is supported by external advisers to assist initially with the preparation of the reference design and as well as the procurement and delivery of the NPD project.”

23.2.2 Mott MacDonald Limited (MML) were NHSL’s technical advisors. They were appointed in terms of a contract signed on 13 June 2011 and 11 October 2011, with a service commencement date of 22 March 2011.

23.2.3 This was not MML’s first involvement in the wider project for a new children’s hospital. MML had been involved at an earlier stage when the project was to be capital funded. MML was originally the New Engineering Contract (NEC) Supervisor appointed under the under Frameworks Scotland agreement. That appointment was terminated when the project switched to being funded through NPD, and MML was reappointed through a different procurement route, namely the OGC Catalyst framework agreement for Multi-Disciplinary Services. According to a High Level Review of Project Arrangements conducted by PWC, MML’s previous involvement in the project was a key reason for their re-appointment for the role. According to NHSL their recent track record on Forth Valley health PPP and Richard Cantlay’s direct experience were also important factors.

23.2.4 As technical advisor, MML advised NHSL on how to set out the technical specifications for construction works, prepared all the technical schedules and drafted the invitation to participate in dialogue (ITPD). MML drafted the documents with input from MacRoberts and Ernst & Young. Thomson Gray, acting through MML, were cost consultants.

23.2.5 MML engaged with NHSL to appoint a number of sub-consultants, also with previous experience of the project. On 10 May 2011, Davis Langdon was appointed by MML as a sub-consultant with a project management and technical advisory role. MML and Davis Langdon appointed a Reference Design Team made up of sub-contractors, with a member from NHSL taking a project interface role. This project interface role was taken by Neil McLellan and Graham Gilles.

23.2.6 During this phase of the project the OBC was being finalised and preparations made for procurement. According to a Project Execution Plan, dated September 2011, NHSL’s Project Director led the Project Team, made up of the

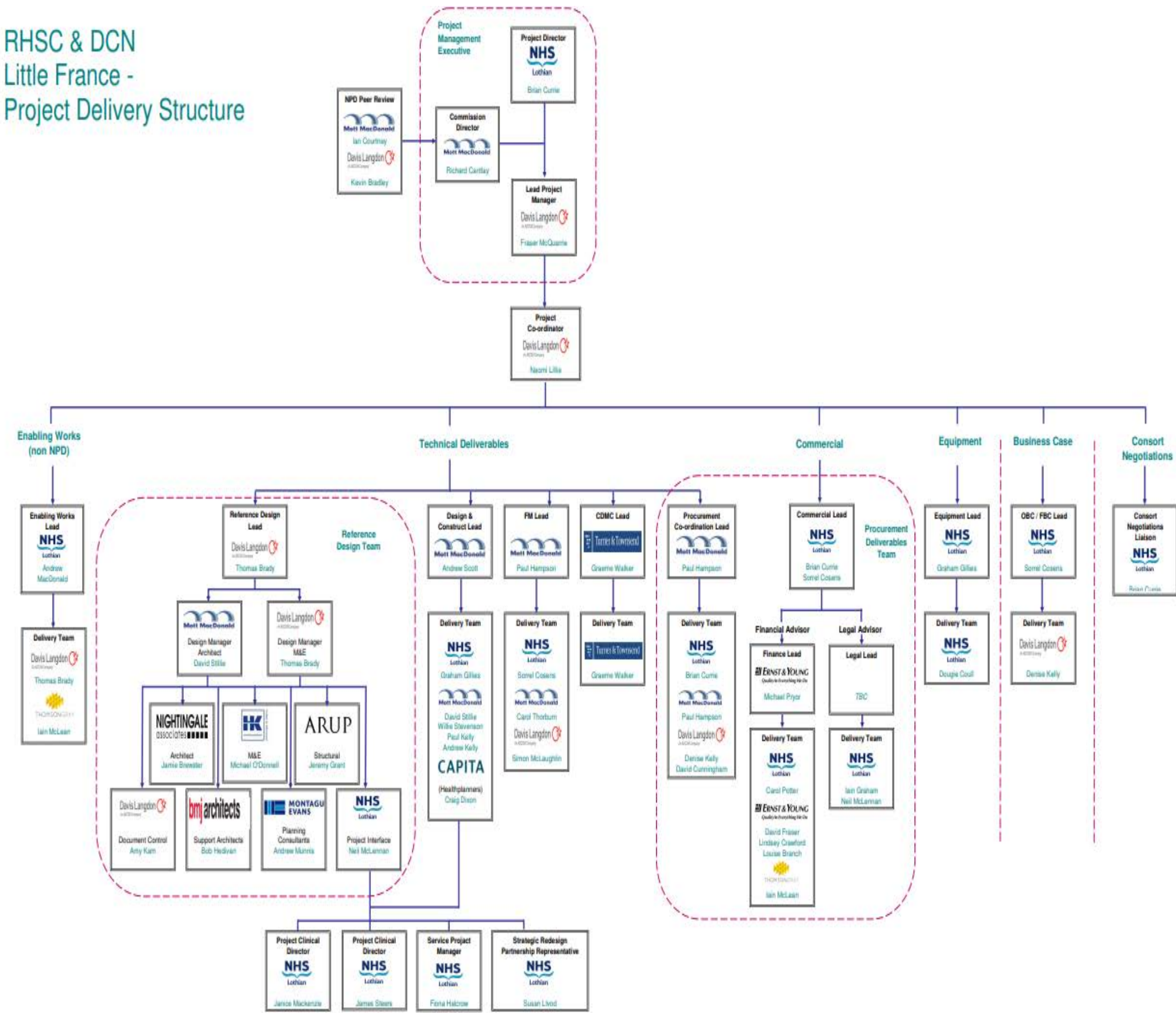
NHSL Project Delivery Team and the Advisory Team. The Project Director was supported by the Commission Director and Commission Manager from MML and Lead Project Manager from Davis Langdon. Together they made up the Project Management Executive. NHSL's delivery team worked with advisors on a number of groups and workstreams, including the Business Case Task Group, and the Procurement, Commercial, Design and Construction and Facilities Management workstreams.

23.2.7 Richard Cantlay, Mott MacDonald Limited, in his statement to the Inquiry dated 25 May 2002 stated:

> "The governance arrangements for the delivery of the project are set out in line with MML's externally accredited Business Management System. I am obliged to add the caveat that this only relates to MML's service delivery and not the overall project. Every commission MML undertakes has a Project Director and a Project Manager, who are responsible for the application of the Business Management System. Andrew Scott has confirmed the MML Project Director was Alistair Cowan and subsequently Andrew Oldfield. The Project manager was initially Andrew Scott, then, Kenny Falconer and later Graeme Greer. I acted as liaison and Strategic Technical Adviser at a senior level in the project. Below was a virtual army of bodies."[109]

23.2.8 The organisations and individuals involved in this phase changed at various points. However, for present purposes, it is sufficient to note the Project Delivery Structure outlined in the September 2011 Project Execution Plan prepared by Mott MacDonald and Davis Langdon was as follows:

[109] Witness Statement - Richard Cantlay - 20.05.2022 | Hospitals Inquiry, para 26, p.12



23.2.9 The Project Execution Plan outlined the roles of project advisors during this phase of the project:

> "2.5.1.2 Technical Advisory team comprises of the following companies:
> Mott MacDonald Limited has been appointed as the lead consultant and will deliver the following services:
> - Lead Strategic advice
> - NPD Procurement advice
> - Facilities Management advice
> - Design and Construction advice
>
> 2.5.1.3 Davis Langdon
> Davis Langdon has been appointed as a sub-consultant to Mott MacDonald Limited and will deliver the following services:

- Project Management services
- Reference Design Management and coordination
- NPD Procurement support
- Facilities Management advice

2.5.1.4 Thomson Gray Partnership
Thomson Gray Partnership has been appointed as a sub-consultant to Mott MacDonald Limited and will deliver the following services:
- Cost Advisory services (excluding Facilities Management)
- Whole Life Costing

2.5.1.5 Turner & Townsend
Turner and Townsend has been appointed as a sub-consultant to Mott MacDonald Limited and will deliver the following services:
- Construction Design Management and Health and Safety advice"

23.2.10 Ernst & Young were appointed by NHSL as Financial Advisors to the project. According to the Project Execution Plan of September 2011:

"The Financial Advisor is engaged to provide financial advice to NHSL in preparing the OBC, including affordability and VFM analysis, and throughout the NPD procurement process, preparing financial elements of bid documentation and financial appraisal of bids."

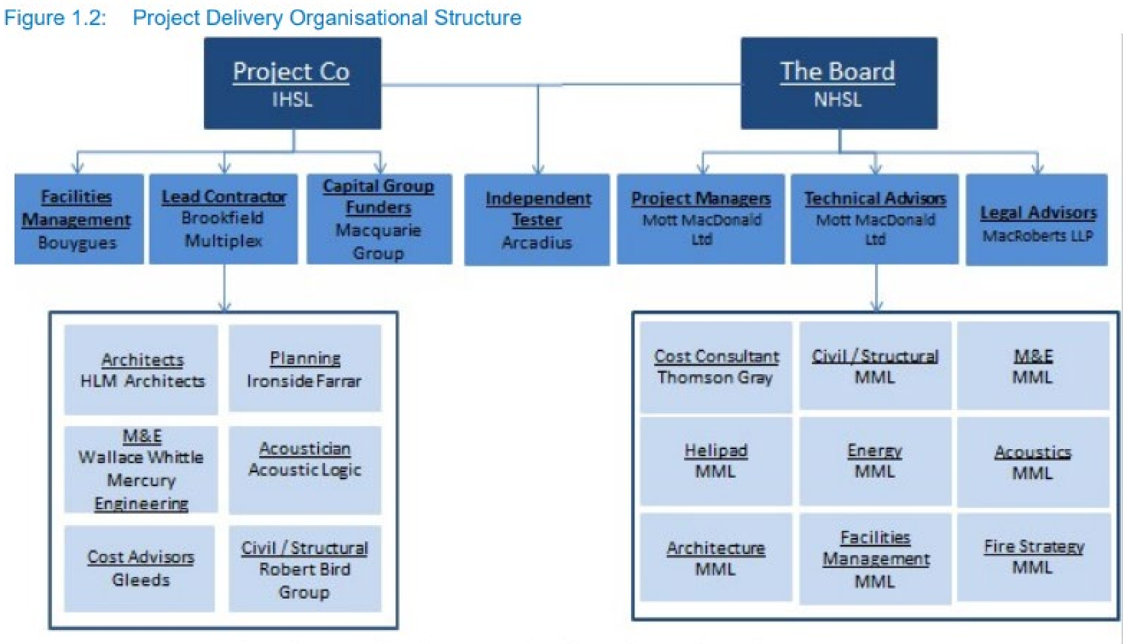
23.2.11 NHSL appointed legal advisors, MacRoberts. According to the OBC:

"NHS Lothian's Legal Advisors, MacRoberts, were appointed prior to OBC submission to provide the following legal advice up to and including financial close.
• Procurement under the NPD model of PPP
• Advice on the legal requirements related to NHS Lothian's existing PFI contracts at Little France.
• Advice on other legal and commercial issues related to this project, including advice in relation to organisations covered by the Charities Acts."

23.3 Project Advisors 2015-2019 (Construction)

23.3.1 The Project Delivery Organisational Structure showing the role of Project Advisors and the Project Company was as follows for the construction phase:

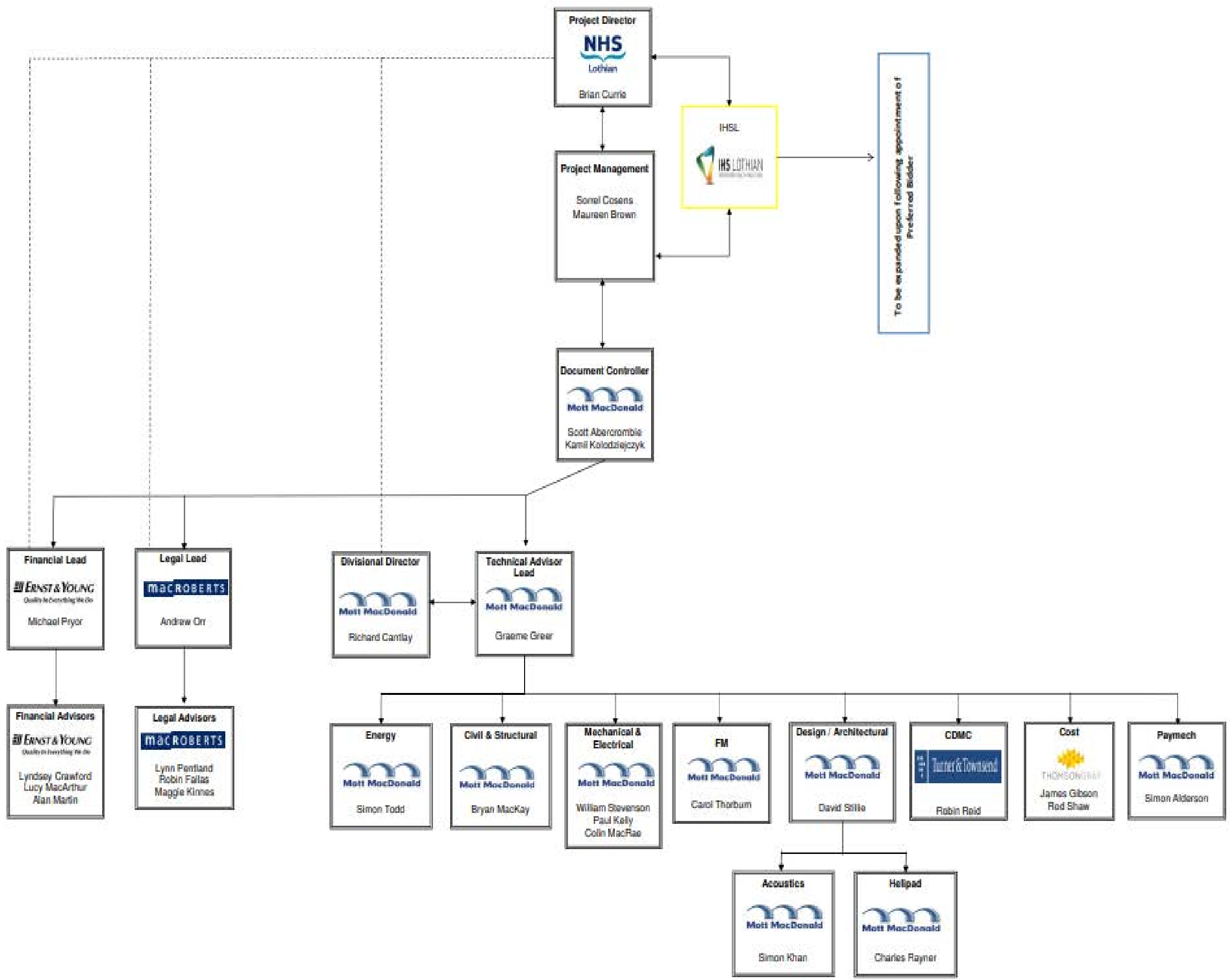
Figure 1.2: Project Delivery Organisational Structure



23.3.2 Mott MacDonald Limited was appointed as the lead consultant and were to deliver the following services:

- Project Management services;
- Lead Strategic advice;
- Facilities Management advice;
- Design and Construction advice, including:
  - Architecture
  - Mechanical and electrical
  - Civil structures
  - Helipad design advice
  - Acoustic design;
- Fire strategy advice;
- Energy.

23.3.3 The NPD Project Partners Project Delivery Structure showing the relationship between NHSL's advisors and NHSL was as follows:



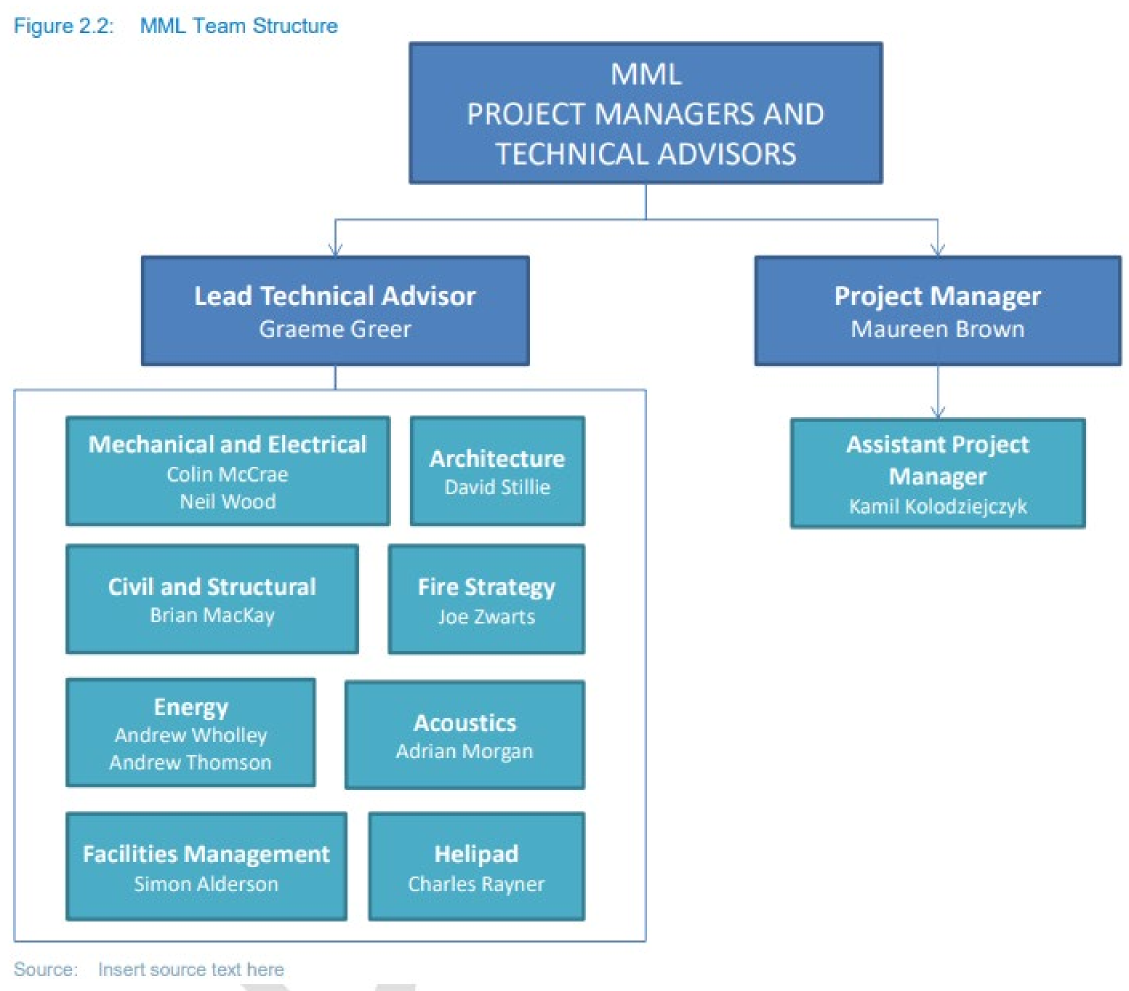
Role	Organisation	Name
Project Director	NHSL	Brian Currie
Project Management	NHSL	Sorel Cosens
	Mott MacDonald	Maureen Brown
Document Controller	Mott MacDonald	Scott Abercrombie
		Kamil Kolodziejczyk
Financial Lead	Ernst & Young	Michael Pryor
Financial Advisors	Ernst & Young	Lyndsey Crawford
		Lucy MacArthur

Role	Organisation	Name
		Alan Martin
Legal Lead	MacRoberts	Andrew Orr
Legal Advisors	MacRoberts	Lynn Pentland
		Robin Fallas
		Maggie Kinnes
Divisional Director	Mott MacDonald	Richard Cantlay
Technical Advisor Lead	Mott MacDonald	Graeme Greer
Energy		Simon Todd
Civil and Structural		Bryan MacKay
Mechanical and Electrical		William Stevenson
		Paul Kelly
		Colin MacRae
FM		Carol Thorburn
Design/Architectural		David Stillie
• **Acoustics**		Simon Khan
• **Helipad**		Charles Rayner
CDM	Turner and Townsend	Robin Reid
Cost	Thomson Gray	James Gibson
		Rod Shaw

23.3.4 Mott MacDonald’s team structure is shown below. This diagram shows a different individual, Neil Wood, in the role of Mechanical and Electrical Advisor compared to the previous diagram, aside from Colin Macrae who was named previously.

2.1.2 Mott MacDonald Limited

Figure 2.2: MML Team Structure



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23.3.5 Other advisors having roles and responsibilities during this period included:

> "1.3.2.3 Thomson Gray
>
> Thomson Gray has been appointed as a sub-consultant to Mott MacDonald Limited and will continue to deliver the following services:
>
> - Cost Advisory services (excluding Facilities Management);
> - Whole Life Costing.
>
> 1.3.2.5 Legal Advisers – MacRoberts LLP
>
> The Legal Adviser was engaged to provide Legal Services to NHSL in connection with the RHSC + DCN – Little France Project, including in relation to the procurement stage of the Project, post-contract award and operational issues as well as site and project-specific issues."

24. SEAT NHS Boards (South-East and Tayside Regional Planning Group)

24.1 Overview

24.1.1 Regional Planning was introduced as a requirement for NHS bodies in 2004 to support NHS boards to collaborate at regional level. There are 3 regions: South-East, North and West. SEAT is the relevant region for the purposes of the RHCYP/DCN Project.

24.2 **Purpose and Structure**

24.2.1 SEAT (South East and Tayside) Regional Planning Group is the collaborative mechanism between NHS Borders, Lothian, Fife, Forth Valley and Tayside for the planning of services which span more than one health board area and where there is benefit to patients in a partnership approach.[110]

24.2.2 Representatives from partner boards attend regional planning meetings, take proposals and assumptions through their own boards to allow any necessary decisions within their own systems of governance, e.g., Outline Business Case and Full Business Case. The SEAT Regional Planning Group brings together boards to confirm a collective regional position and agreement, informed by individual board positions.

24.2.3 The Chief Executives of NHS Borders, NHS Fife, NHS Forth Valley, NHS Lothian and NHS Tayside make up the executive membership of the SEAT Regional Planning Group. Members are accountable for decisions both to their local board and to the Chief Executive of the NHS in Scotland. Once decisions are reached each board is bound by collective responsibility. SEAT will invite other organisations or offices to attend meetings as it sees fit.

[110] South-East and Tayside Regional Planning Group – Annual Report 2008, para 4 – idcplg (scot.nhs.uk)

24.3 **Functions of SEAT**

24.3.1 According to its Terms of Reference SEAT's remit was to assist NHS Scotland in delivering the following objectives:

- To plan, fund and implement services across NHS Board boundaries.
- To harness and support the potential of Managed Clinical Networks.
- To develop integrated workforce planning for cross-board services.
- To facilitate the commissioning and monitoring of services which extend beyond NHS boundaries, services between members and out with the region on an inter-regional or national basis;
- To harmonise NHS Board service plans at the regional level.
- To plan emergency response across NHS boundaries.
- To support the delivery of NHS Boards' duty to co-operate for the benefit of the people of Scotland.

24.3.2 SEAT would agree a workplan, decided at the annual regional planning workshop, of prioritised services and issues. Members then presented same to their respective boards for approval.

24.3.3 A framework of priorities and investments was maintained containing all projects and approvals. In addition, an annual report would be prepared outlining SEAT activities to be issued to all members and partner organisations.

24.4 **Role in RHCYP/DCN Project**

24.4.1 The SEAT Annual Report 2008 noted: [111]

> "The new hospital will provide a modern environment with appropriate facilities for children relative to their age and clinical condition. Work is now underway in developing the Full Business Case for the end of 2009 including an ongoing review of the bed model which will determine the final number of beds in the new hospital. The Reprovision Project team are working with SEAT Boards on the Full Business Case with ongoing

[111] South-East and Tayside Regional Planning Group – Annual Report 2008, p.17

discussions between the SEAT Directors of Finance and Planning to agree the financial implications for the other SEAT Health Boards."

24.4.2 In her statement to the Inquiry dated May 2022, Jackie Sansbury commented: [112]

> "SEAT had a direct interest in the development of this new hospital as patients from their geographical board areas utilised the services of the Children's hospital. Regional Planning was the mechanism for health boards to collaborate where services were delivered across a number of health board areas. I was the Director of Planning for SEAT from 2005-2008, where my role was to support planning for the services that delivered for more than one health board. This included regional services such as cancer services and children's services. The other members who sat on SEAT were the Chief Executives and Directors of Planning from each health board. I also think there was a Medical Director, a Nurse Director and a Finance Director each from one of the participating health boards. SEAT remained involved throughout the Project because, as users, they sent patients to the service and would have to review and approve our business case to allow it to proceed".

24.4.3 Jackie Sansbury presented the OBC to SEAT for noting on 28 April 2008. The minutes note the planned funding arrangements for the RHSC, of which SEAT/ boards were assumed to be making a capital contribution of £28 million. Discussions were noted around the inequity of capital funding arrangements between Glasgow and Edinburgh Projects and that the scale of individual boards revenue contribution would have a substantial impact on their recently submitted five-year plans, which did not include the RHSC provision.

24.4.4 At the "Getting ready for Stage 2 Royal Hospital for Sick Children Edinburgh Business Case" workshop, on 23 January 2009, discussions centred around operational matters, for example patient flows, birth rates and staffing issues. The

[112] Witness Statement - Jacqueline Sansbury - 13.05.2022 | Hospitals Inquiry

business case itself did not appear to have been discussed, more the implications of the new facility being planned.

24.4.5 The SEAT Annual Report 2011/12 detailed:[113]

> "The following areas of work have not been initiated by SEAT but still require regional collaboration or contribution across the region:
>
> - Reprovision of Royal Hospital for Sick Children, Edinburgh – due to a change in the funding arrangements for the new Sick Children's hospital, the new hospital is not expected to be built until 2017. SEAT receives regular updates on progress with the project.
> - Reprovision of Clinical Neurosciences, Edinburgh – the new department of Clinical Neurosciences will be incorporated in to the new build for the Sick Children's Hospital on the Royal Infirmary site."

24.4.6 The 2013/14 Annual Report similarly detailed:[114]

> "Reprovision of Royal Hospital for Sick Children , Edinburgh and the Department of Clinical Neurosciences - SEAT has supported regional engagement in reviewing workforce models for the new build and ensuring a programme of detailed discussions on the Full Business Case."

Business Cases

24.4.7 NHSL was responsible for and led the business case for the new hospital, with SEAT serving as a conduit and facilitator to bring together representatives from partner boards to contribute to and inform the service, workforce and financial planning for the new hospital.

24.4.8 At the stage when the project was to be capital funded, SEAT had a central role from a funding perspective. Following the decision to move away from capital

[113] SEAT Annual Report 2011/12, section 5 Regional Liaison Activities – Final SEAT Annual Report 2011_12.pub (scot.nhs.uk)
[114] SEAT Annual Report 2013/14, section 6 Regional Liaison Activities - https://www.nhsborders.scot.nhs.uk/media/215703/SEAT-Annual-Report-02-Oct-2014.pdf

funding, the project remained a substantive agenda item on the SEAT Directors of Finance and Directors of Planning meetings

24.4.9 As principal stakeholders in RHSC, CAMHS and DCN, NHS Borders, Dumfries and Galloway, Fife and Forth Valley Health Boards had a role in the project governance and sign-off of the service model, preferred option and revenue costs outlined in the business case.

24.4.10 The OBC for the RHCYP/DCN contained at Appendix 2, letters of support for the project from NHS Borders, NHS Dumfries and Galloway, NHS Fife, NHS Forth Valley and University of Edinburgh.

24.4.11 As the FBC described services to patients from the Borders, Fife, Dumfries and Galloway, Fife, Forth Valley and Tayside, those NHS Boards also approved the elements that described the impact on their population and finances.

24.4.12 NHSL required NHS Borders, NHS Dumfries and Galloway, NHS Fife and NHS Forth Valley to sign up to their share of revenue costs for the project before the FBC was submitted to CIG . The methodology to apportion costs proposed in the OBC was based on the East Coast Costing Model. NHS Borders, NHS Dumfries and Galloway, NHS Fife and NHS Forth Valley approved the methodology of the OBC in principle, and committed to working with NHSL to agree the activity data that would determine their FBC costs. NHSL’s partner Boards in the delivery of RHCYP/DCN were required to confirm their FBC funding contribution.

24.4.13 The FBC stated “Through the South-east and Tayside (SEAT) group, NHSL have shared, scrutinised and agreed to the running costs of the proposed model with the partner Boards.” The letters of support for the FBC from the Boards were attached at Appendix 1 of the FBC and confirmed the financial contributions from these partner Boards.

24.4.14 The FBC stated that the project was a substantive agenda item on the SEAT Directors of Finance and Directors of Planning meetings. A representative of this group sat on the Project Steering Board. As principal stakeholders in the project NHS Borders, NHS Dumfries and Galloway, NHS Fife and NHS Forth Valley, through

SEAT, participated in the development and sign-off of the service model and associated revenue costs.

24.4.15 On 28 April 2017, the SEAT Regional Planning Group was rebadged as the East Region, with the East Region Programme Board noting a refreshed version of the Framework of Governance. NHSL had been a member of the South East and Tayside Regional Planning Group since its inception, and as it is now known since 2017, the East Region Planning Group. The Regional Planning Group provides a formal forum for its constituent Boards to agree and deliver an annual workplan developed through a combination of agreed regional and Board priorities and implementation of government policy.

25. Scottish Government Health Capital Investment Group

25.1 **Purpose and Structure**

25.1.1 According to terms of reference dated 1 December 2015, the Scottish Government's Capital Investment Group's (CIG) role was to oversee the approval process for business cases across NHS Scotland where the value of the capital project was greater than the Board's delegated limit, which is currently £10 million for NHSL.

25.1.2 CIG allocated and managed capital resources for investment, oversaw business cases and the approval process, monitored delivery and provided guidance in relation to capital investment projects. However, CIG did not have the delegated authority to approve projects or expenditure. CIG made recommendations to officials with the appropriate delegated authorities, usually the Director General for Health and Social Care, who would then make the final decision.

25.1.3 CIG provided the necessary assurances to both Scottish Ministers and Scottish Government Health and Social Care Management Board that proposals are robust, affordable and deliverable, and that they are in line with wider NHS policy.

25.1.4 The goal of CIG in accordance within the 2015 terms of reference was to act as a catalyst for the development, promotion and distribution of best practice and guidance within capital planning and development. A particular focus of this was the review of project evaluation and ensuring lessons learned and best practice were being widely shared across NHS Scotland.

25.1.5 According to the 2015 terms of reference, CIG membership comprised of representatives from various Scottish Government divisions and directorates:

- Health Finance and Infrastructure,
- Performance and Delivery,
- Healthcare Quality and Strategy,
- Chief Medical Officer Directorate,
- Chief Nursing Officer Directorate,

- Population Health Improvement,
- Analytical Services,
- Primary Care Division,
- Joint Improvement Team,
- Health Finance,
- eHealth and
- Chief Dental Officer
- A representative from the Scottish Futures Trust.

25.1.6 The Deputy Director of Capital and Facilities chaired CIG meetings, which took place every three weeks and were planned in sufficient time to allow for NHS Scotland Boards to plan for the submission of documentation.

25.1.7 The role of Deputy Director (Capital Planning and Asset Management), and therefore Chair of CIG, was held by Mike Baxter from February 2009 to December 2014, following which Alan Morrison took over for the relevant period.

25.2 **Approval of Business Cases**

25.2.1 The 2015 terms of reference set out CIG procedures in relation to business cases as follows:

> "Business Cases are received by the SGHSCD a minimum of 4 weeks prior to the relevant CIG meeting. The Deputy Director (Capital and Facilities) as CIG Chair will determine which Business Cases are to be included on the agenda for the forthcoming CIG meeting. They will then be circulated to CIG members and any other relevant colleagues (as determined on a case by case basis) for comment.
>
> On circulation of a Business Case, the Health Finance and Infrastructure Division will set deadlines for CIG members to respond with queries for the relevant NHS Scotland Board. Members are required to respond with queries in accordance with these deadlines and this is essential to the effectiveness and efficiency of the process and critical to meeting the

overall deadline of all comments being fully closed out by the CIG meeting.…

Once responses are received from the NHS Scotland Board, these will be distributed to query originators for review as appropriate. This will either result in a query response being deemed satisfactory and approved or in a further round of queries / responses with the NHSScotland Board. …

The CIG members, acting as a group, decide whether or not to recommend approval the project, and if endorsed, make the appropriate recommendation to the Director of Finance, eHealth and Analytics or Director General of Health and Social Care, or seek the appropriate clarification from the NHSS body on issues to be resolved prior to a recommendation for approval. …

Once a Business Case is approved it will be formally minuted and updated on the CIG Project Tracker by the Health Finance and Infrastructure Division. The approval/rejection of a business case will be formally notified in writing to the appropriate NHSScotland Body. The letter will be issued by the appropriate official within SGHSC with delegated authority to approve the proposed scheme."

25.2.2 In his statement to the Inquiry, dated 20 April 2022, Mike Baxter stated that it was common for business cases to be subject to a process of development following initial review and the whole process could take many years.

25.2.3 The 2015 Terms of Reference detailed that following approval of the final business case the CIG remains involved in order to:

- Monitor completed projects, using a project tracker, to ensure the relevant NHS Scotland Boards are complying with the Scottish Capital Investment Manual (SCIM) requirements for project evaluation.

- Check that an 'Evaluation Plan' has been included within the full business case which sets out the plan for carrying out the post-project evaluation and post-occupancy evaluation.
- Monitor the submission of project completion evaluation reports, to be submitted on completion of the facilities and confirm that they provide an assessment of the success of the project.
- Monitor the submission of post-project evaluations, to be submitted no later than 12 months after completion and confirm that they provide an initial evaluation of the service and investment objective outcomes.
- Monitor the submission of post-occupancy evaluations, to be submitted after completion in accordance with SCIM guidance and confirm that they provide an assessment of the longer-term service benefits and investment outcomes.
- Monitor the submission by each NHSScotland Board on an annual basis of a summary report for project evaluations for projects <£5m (and therefore not required to be submitted to CIG in full).
- Contribute to, and ensure that, the Scottish Government Health Finance and Infrastructure Division produce a 'key lessons' document annually, based on all project evaluations received.

25.3 **Overview of Role in the RHCYP/DCN Project**

25.3.1 Reprovision of the Royal Hospital for Sick Children came to the attention of the CIG in 2006, at which time (May 2006) it was recommended that the initial agreement should be approved and proceed to the next stage of the business case process. At that stage the project was still intended to be capital funded with a value in the region of £60m.

25.3.2 The next stage of CIG involvement with the reprovision of the Royal Hospital for Sick Children Project was at the OBC stage which originally took place in June 2008. At that time CIG recommended approval of the OBC and the Project proceeded to an FBC in 2010.

25.3.3 However, following the decision of the Scottish Government in 2010 to deliver the project via the NPD model, the project was extended to include the DCN.

As a result, a further OBC was submitted to the CIG in January 2012 for the proposed RHCYP/DCN. Due to an outstanding issue in relation to specific site options at Little France the OBC was not recommended for approval at that stage. Following confirmation of planning approval in principle, and approval by the funders of the existing PFI contract at the Little France site, the OBC was recommended for approval by CIG and communicated to NHSL in September 2012 allowing the project at that stage to proceed to a FBC by November 2013.

25.3.4 NHSL provided, what they believed to be, the finalised version of the FBC ahead of a CIG meeting on 26 August 2014. The FBC was not approved at that time, with Mike Baxter writing to Brian Currie on 17 September 2014 requesting information in relation to “accommodation within the new facilities being shelled initially”. Within this letter, CIG requested activity projections which supported the future need and a timeline for bringing the areas into service. Those queries were subsequently satisfied, and CIG provided their recommendation to approve the FBC to Director-General Health and Social Care in December 2014. The RHCYP/DCN project is briefly mentioned at the CIG meeting of 3 February 2015 to mention that the case is moving forward positively with financial close expected imminently. The decision to approve the FBC was formally communicated to NHSL by the Director-General Health and Social Care by letter dated 10 February 2015.

25.3.5 The CIG discussed the RHCYP/DCN project at the meeting of 28 April 2015 at which time it was noted that there had been a change in the finance costs showing a saving of £75 million over the period of the contract. Therefore, it was agreed that the FBC should be amended to reflect that by way of an addendum.

26. Scottish Government Infrastructure Investment Board

26.1 Background:

26.1.1 The Infrastructure Investment Board (IIB) was established in response to recommendations of the Public Audit Committee (PAC) following studies by the PAC and Audit Scotland into the Scottish Government Capital Programme. The IIB was co-ordinated by the Infrastructure Investment Unit, Scottish Government.

26.1.2 The IIB played a role in the Integrated Assurance Framework which was implemented by the Scottish Procurement and Commercial Directorate of the Scottish Government. The Integrated Assurance Framework and associated project assurance plans would:

> "provide IIB with a view of planned, project specific assurance activity intended to support successful delivery of each project.
> IIB will receive routine update reports on the progress of major investment projects against their delivery and assurance plans along with the Delivery Confidence Assessment from the most recent Gateway Review."

26.1.3 In 2011, the IIB comprised of the following members:

- SG Director-General Finance (Alyson Stafford);
- SG Director of Commercial and Procurement (Alastair Merrill);
- SG Deputy Director of Capital and Risk Division (Kirstin Baker);
- SG Director-General Communities and Governance (Paul Gray);
- a senior economist nominated by the Chief Economic Advisor (Gary Gillespie);
- the Chief Executive of the Scottish Futures Trust (Barry White);
- the Director of Transport Scotland (David Middleton); and
- a non-Executive Director (Andrew Thin).

26.2 Functions of the Board

26.2.1 According to its terms of reference, the IIB would:

> "scrutinise development and delivery of the Scottish Government's capital programme, with a view to ensuring the following outcomes are delivered:
>
> - improved cost and time estimating for capital projects;
> - improved project and programme management and governance at portfolio level;
> - improved post project evaluation; and
> - improved prioritisation process across the programme as a whole.
>
> 3. Specifically, IIB will:
>
> - provide strategic scrutiny of high-value major infrastructure projects at an early stage of development;
> - use robust management information to review the governance and delivery of the capital programme, including the Infrastructure Investment Plan, and, where appropriate, specific major projects;
> - provide advice to Ministers about capital investment priorities to inform Ministerial decision-making;
> - review portfolio-level governance and decision-making structures for capital projects to ensure these are fit for purpose; and
> - explore options for implementing new financing models (working with SFT).
>
> The IIB may choose to focus on different roles at different times of the legislative and budgetary cycles….
>
> 6. IIB will review projects at an early stage of development, examining key aspects of the strategic business case such as:
>
> - contribution to the delivery of the strategic outcomes outlined in the National Performance Framework;
> - the strength of the business case and business need;
> - value for money;
> - affordability and financing options; and

- project governance and assurance.

26.2.2 All Scottish Government funded capital and revenue financed investment projects were within the remit of IIB, except for Local Government and Scottish Water. IIB focused on projects with a capital value of over £100 million, and which were at the strategic business case stage. For capital projects above £50 million, IIB would have sight of overview information and would call in such projects on a case-by-case basis if thought necessary.

26.2.3 In cases where the IIB has made recommendations to the Senior Responsible Officer (SRO), the SRO is expected to provide an update on the progress of recommendations. The IIB "will have the option to submit advice to the Principal Accountable Officer and ministers if it is not content with the actions taken in response to its recommendations."

26.3 Role in relation to the RHCYP/DCN project

26.3.1 The IIB provided scrutiny of the RHCYP/DCN project at the Business Case Stage of the project following the decision to fund the project through the NPD model. An IIB discussion on the RHCYP/DCN Project took place on 26 September 2011.

26.3.2 In October the IIB sent its draft conclusions to NHSL, Scottish Government Health Directorate (SGHD) and SFT, for feedback. A key area of further discussion was about the progress of negotiations with Consort over 'interface' issues. Consort controlled the land that the RHCYP/DCN would be built on and had a PFI contract for managing the Royal Infirmary Edinburgh which the new RHCYP/DCN would connect to. There were several issues to resolve contractually, which was being done through Settlement Agreement 6 (SA6). The discussion focused on whether there was an alternative to requiring the contract with Consort to be signed before the OJEU could be issued, which could cause significant slippage of the programme. And furthermore, whether that alternative would provide acceptable mitigation of risk.

26.3.3 The IIB's final recommendations were sent to NHSL on 17 November 2011. The recommendations related to strategy, governance and financing, cost and value for money. Regarding strategy:

"1) IIB Welcomes the integration of the RHSC and DCN on the same site, as this should generate cost efficiencies as well as clinical synergies

2) IIB considers that it is essential that all interface issues with the existing PFI contract – land and all enabling works to allow the effective operation of the new hospital, including its integration with the existing Edinburgh Royal Infirmary – are worked through and appropriate risk mitigation put in place before the OJEU notice is issued. …"

26.3.4 Regarding governance:

"4) IIB recommends that the wider project team should include personnel with in-depth and up-to-date skills and experience relating to the procurement and ongoing management of revenue-funded contracts. Given the size of the project, it is critical that this experience comes from the client team, as this team has to be able to manage advisory input to the project, both in terms of costs and strategic input.

5) IIB recommends in line with the recommendations of the Gateway Review report that delegated powers for the Project Board for the project are clarified such that they can take decisions in the procurement process so that these do not always have to be referred to the NHS Lothian Finance and Performance Committee.

6) IIB recommends that the Scottish Government review assurance processes for major projects such as the RHSC/DCN with a view to making these more streamlined."

26.3.5 Regarding financing, cost and value for money:

"7) IIB recognises that preparing a 'reference design' for the project is likely to have benefits in this case, particularly considering the work undertaken to date, and recommends that the project team works closely

> with SFT to assess bids in relation to whole life costs, to ensure value-for-money."

26.3.6 The IIB's recommendations were discussed at the Project Board meeting on 25 November 2011. It was noted that "SFT continue to advise that a 'universal' step in right should be secured also. NHSL continue to discuss with Consort but who have repeatedly stated that this is unacceptable."

26.3.7 NHSL's response to the IIB's recommendations were outlined in an action plan, included as appendix 5 of the OBC. Regarding recommendation 4 that "the wider project team should include personnel with in-depth and up-to-date skills and experience relating to the procurement and ongoing management of revenue-funded contracts" NHSL responded:

> "NHSL to supplement existing client team with experienced PFI/PPP person as a secondee for a period of up to 24 months to Financial Close."

26.3.8 Regarding the recommendation that the Project Board should be able to make decisions in the procurement process without needing to refer to the NHSL Finance and Performance Committee, NHSL responded that this had been agreed by the Finance and Performance Review Committee, and there would be a delegation of authority to the Project Board which would simplify decision-making.

26.3.9 NHSL confirmed it would continue to work closely with SFT on finance, costs and value for money. No action was required on the other recommendations which were supportive of NHSL's approach.

26.3.10 The IIB had no further involvement in the project until late 2019. Following the decision to delay opening the hospital, a meeting was scheduled for 29 October 2019 to discuss a paper: "Risk Register – Edinburgh Children's Hospital – Lessons Learned". The paper contained observations for discussion by the IIB, on the topics of technical complexity, time pressure, construction quality, clarity of guidance and contract restrictions. The paper noted that the Cabinet Secretary for Health and Sport proposed to create the Scottish Centre for Reducing Infection and Risks in the Healthcare Built Environment, and that the centre would require:

"national expertise to be available to inform building projects from initiation through construction and ongoing monitoring is in place to ensure health systems are safe. This team will work with colleagues in assuring the appropriate levels of compliance. This means that designers, architects, engineers, facilities managers, planners, Infection Prevention and Control (IPC) professionals and other healthcare staff work together to deliver and maintain facilities which are safe at the initiation of these clinical services and can then be monitored to ensure they remain safe."

26.3.11 The paper concluded that while the centre "will have an understandable focus on health facilities, the option to extend its remit beyond the health sector should be considered."

26.4 Oversight and advice provided to Scottish Government

26.4.1 In its draft conclusions, the IIB had also commented "that it would be helpful for SGHD to work with other Divisions managing NPD projects so that mutual support can be offered, and best practice shared."

26.4.2 Victoria Bruce from the Infrastructure Investment Unit shared the IIB's findings in a follow up email to Mike Baxter dated 10 October 2011. This included conclusions regarding "programme scrutiny and governance".

26.4.3 The IIB noted that the Capital and Facilities Division of the SGHD had been given more control in relation to the project lifecycle following a reduction in the Health Board's delegated limits and that this "was allowing SGHD to challenge Boards about their investments and assist in capital planning."

26.4.4 The IIB noted *the* "good work taking place to reduce carbon emissions from the estate" commenting that it "was important to focus on how the estate could improve care and the quality of the patient experience."

26.4.5 Regarding Post Project Evaluations, the IIB noted that "it was Mike Baxter's view that 6-12 months after project completion was about the right time to undertake these, and then a further review should be undertaken around 2-3 years after occupation."

26.4.6 Regarding capacity to delivery revenue financed projects the IIB noted: “it was felt helpful to consider delivery structures on a regional basis. It was also necessary to recycle the experience of managing revenue financed projects across NHS Boards.”

26.4.7 The IIB shared its final recommendations with the SGHD after the SGHD and NHSL had been given an opportunity to provide feedback on the draft recommendations and conclusions.

27. Scottish Futures Trust

27.1 Background and Structure

27.1.1 The Scottish Futures Trust (SFT) is an executive non-departmental public body of the Scottish Government. This means that it is a body which has a role in the processes of national government but is not a government department or part of one and operates at arm's length from ministers.[115] SFT was established by the Scottish Government in 2008 to improve public infrastructure investment and it describes itself on its website as an "infrastructure centre of expertise".[116]

27.1.2 The SFT is a company limited by shares and was incorporated on 10 September 2008. The Scottish Ministers are the sole shareholders[117]. SFT' s activities are mainly funded by a grant from the Scottish Government. The SFT budget for 2022-23 had 83% of the total budget sourced from Scottish Government grants[118].

27.1.3 The SFT activities are overseen by a board and the board members are appointed by Scottish Ministers. The SFT' s Annual Report for 2017[119] states that:

> "The Board is the principal decision- making forum, it has overall responsibility for leading and controlling the Group and is accountable to the Group's sole shareholder, the Scottish Ministers, for financial and operational performance. The Board approves Group strategy and monitor performance."

27.1.4 The 2017 Annual Return also differentiates between the role of the Chairman and the Chief Executive in that they have a clear division of responsibilities:

> "The Chairman leads the Board and ensures the effective engagement and contribution of all the directors. Executive Directors have responsibility for all the operational business and acts in accordance with

[115] Public bodies - GOV.UK (www.gov.uk)
[116] About Us - Scottish Futures Trust
[117] In its first annual return for period ending 10/9/2009, the company consisted of two ordinary shares, both of which were held by the Scottish Ministers.
[118] Our Budget - Scottish Futures Trust
[119] Annual Report and Group Financial Statements for year ending 31 March 2017 at p. 25.

> the authority delegated from the Board. Responsibility for the implementation of policy, strategy and operational management is delegated to the executive directors.”

The Annual Return for the year ending 31 March 2020, details a change in this structure as this authority and responsibility was delegated to the Chief Executive rather than the Executive Directors.

27.1.5 The Scottish Government and Scottish Ministers consider and agree the SFT’s five-year corporate plan. This is a high-level agreement of the overall activities of the SFT in terms of what the company aims to achieve over a five-year period. Following this, SFT have operational independence as the Board put in place the annual business plan and oversee the activities of SFT.

27.1.6 In terms of accountability, the Scottish Ministers can make queries regarding the activities of the SFT, and the Scottish Parliament can also seek information from the Scottish Ministers about the SFT.

27.1.7 Until 2017 the Chief Executive of SFT was Barry White. During this period Peter Reekie was the Director of Finance and Structures, Director of Finance and Investments and the Deputy Chief Executive. Peter Reekie became the Chief Executive in 2017.

27.2 Function of SFT

27.2.1 The Management Statement and Financial Memorandum agreed between Scottish Government and SFT on 26 October 2009 was the overall governing document throughout the period of the RHCYP/DCN project. It provided that:

> “The aim of the Scottish Futures Trust is to improve the efficiency and effectiveness of infrastructure investment in Scotland by working collaboratively with public bodies and commercial enterprises, leading to better value for money and providing the opportunity to maximise the investment in the fabric of Scotland and hence contribute to the Scottish Government’s single overarching purpose to increase sustainable economic growth.”

27.2.2 The SFT works closely with both public and private sectors to deliver better value for money on all public sector infrastructure investment across the country. The SFT acts across all phases of the infrastructure investment cycle: needs identification, options investigation, investment appraisal, procurement, financing, design, construction, life cycle management / maintenance and disposal with a particular focus on planning financing and procurement.

27.2.3 The Management Statement sets out how SFT aims, objectives and targets support the strategic aims of the Scottish Ministers to increase sustainable economic growth, the conditions under which public funds are paid to SFT and how SFT is to be held to account for its performance.

27.2.4 As the SFT is a centre of infrastructure expertise, it has the key task of assisting government departments at both local and national level to manage their infrastructure business by innovation in operation, brokering collaboration on individual projects and helping bodies manage their assets more effectively. SFT publish guidance and work with bodies to implement best practice.

27.3 Role in RHCYP/DCN Project

27.3.1 The Scottish Government introduced the non-profit distribution public private partnership model (NPD) in the draft 2011-12 budget. The Independent Budget Review Group had the task of informing decision making due to anticipated reductions in available resources. The Group recommended an alternative finance model which included the NPD model and an enhanced role for SFT in terms of the model.

27.3.2 SFT had two distinct roles in supporting the NPD finance model :

(a) Project assurance
(b) Guidance and advice

These roles were performed at three levels (i) support to Scottish Ministers and to the Capital and Risk Division of the Scottish Government at a strategic programme level, (ii) portfolio level support to sponsor departments in the delivery of revenue

funded projects and (iii) project level support to individual teams. SFT was also responsible for appointing a Public Interest Director to each project (further described above at section 22.13).

27.3.3 On 22 March 2011 the Scottish Government set out in a letter to all NHS Boards' Chief Executives and Directors of Finance, the Scottish Government funding conditions for delivering projects through the NPD model which also contained an instruction to Boards to work with SFT. This letter stated that the programme is being supported by SFT which "provides a valuable centre of expertise and advice on the development, funding, structuring, procurement, and management of these projects. Procuring bodies are therefore asked to work closely with SFT throughout the development of the project. SFT's approval will be required at specific points…in order for the project to proceed to delivery".

27.3.4 The letter indicated how the approval of SFT in the project was intertwined with approval of the Scottish Government for review funding namely:

- Revenue support will be provided to the procuring body from The Scottish Government up to an agreed level based on the agreed project scope, using the standard form NPD contract developed by SFT.
- Any derogations from the standard NPD contract would require sign off from the Scottish Government on the advice of SFT.
- In order for the project to enter procurement, the procuring body must satisfy both the Scottish Government and SFT that it has sought to minimise construction costs and operating costs within the agreed project scope and has undertaken a whole of life cost analysis.

The letter also set out SFT key workstreams and SFT's role in the NPD investment programme at programme, portfolio and project levels.

27.3.5 Fundamentally, compliance by procurement authorities with SFT's project assurance process was a condition of the receipt of revenue funding from the Scottish Government as set out in the letter of March 2011.

27.3.6 This letter from the Scottish Government was followed by a letter dated 1 June 2011 from Peter Reekie, then Director of Finance and Structures, SFT to Jackie

Sansbury, Director of Strategic Planning, NHSL providing further information on funding and some further details on the role of the SFT. In relation to the latter, the role of SFT in supporting the Scottish Government's Capital Investment Group (CIG) in the approval of the OBC and the FBC would consist of comments on whether, from the perspective of the SFT, there were any issues which should be rectified prior to approval. SFT were willing to work with NHSL ahead of submission of the business cases to develop the documents.

27.3.7 The Chief Executive of SFT set out the role of SFT in the RHCYP/DCN project and the governance structure of this in a high-level information note dated 21 July 2011 to the Chief Executive of NHSL. This followed a request at a meeting on 12 July 2011 for SFT to capture in writing the nature of the role of SFT in the project. This note stated that SFT had a significant role in supporting the Scottish Government in considering certain approvals in large revenue funded procurements.

27.3.8 The document explained the two roles of SFT:

- The support role where SFT would provide advice to NHSL drawing on its expertise in infrastructure procurement. SFT intended to fulfil this role by attendance at key project meetings (the working group and the Project Board) as part of NHSL governance of the project. In addition, SFT intended to provide ad hoc support to NHSL on other tasks by agreement.

- The oversight role where SFT intended to act as "a guardian for value for money" for the Scottish Government. They intended to operate this role in practice by the undertaking of key stage reviews for the project (addressed in section 22.9 above) and inputting into CIG when it was considering both the OBC and the FBC in respect of the project. SFT also had membership of the IIB which allowed the body to be part of a general oversight role in relation to all infrastructure procurement in Scotland.

27.3.9 The oversight role of SFT performed on behalf of the Scottish Government was also envisaged to involve providing a standard NPD project agreement and any proposed derogation or changes to this standard contract would require the agreement of SFT. This was to provide assurance that the terms of the contract

remained standardised and were not damaging to public sector interests. The view was that to have standard contract terms which were acceptable to investors, banks etc had the dual purpose of reducing both the time taken for procurement, and legal costs. In financing terms, the SFT reserved the right to call for a debt funding competition during the preferred bidder period and approval of interest rate term swap at financial close.

27.3.10 The note of the Chief Executive set out a dispute resolution procedure which involved escalation at the first stage to the Chief Executives of SFT and NHSL and the Finance Director of NHS Scotland. Further levels of escalation were to the IIB and finally to the Scottish Ministers:

> "...In the unlikely event that agreement on key issues cannot be reached then a three-way discussion would take place between the Chief Executives of SFT and NHS Lothian and the Finance Director of NHS Scotland. Beyond that, referral to firstly the Infrastructure Investment Board and secondly Ministers remain as options should very significant issues remain unresolved."

27.3.11 Peter Reekie, now Chief Executive of SFT, in his statement to the Inquiry dated 8 November 2022, described SFT's role as

> "…in other areas such as the design and implementation of the funding competition (not of the project itself), SFT worked closely alongside NHSL and its advisors in a role that could be described as a partner in decision-making and direction. In other areas, notably the design and technical development of the project itself, SFT was not integral and did not partner NHSL in terms of decision-making and direction. In these technical areas, and in the conduct of the procurement process, including developing the procurement documents, conducting the competitive dialogue and the various stages of evaluation, NHSL planned and undertook the necessary activities supported by its advisors. SFT had some oversight of this, as did senior NHSL personnel and Scottish Government through the Project

> Steering Board, and SFT undertook its assurance role through the KSR process."

27.3.12 The view of SFT was that the support role provided by SFT was more significant for the RHCYP/DCN than other NPD projects as (a) this was the first acute healthcare project in the NPD programme and certain aspects such as the payment mechanism were being refined (b) the site for the RHCYP/DCN build overlapped the existing Royal Infirmary of Edinburgh which was a PFI project and SFT expertise was used to assist in resolving the site issues and (c) SFT had concerns regarding the PPP experience on the NHSL Project Team (see para 22.5 above).

27.3.13 In her statement to the Inquiry dated April 2022, Sorrel Cosens, NHSL, described SFT's involvement as

> "SFT established a close working relationship with NHS Lothian… the approach was for them to work alongside us as 'critical friends' to the project team."

27.4 Questions re SFT's role in the project.

27.4.1 When the note on the role of the SFT was received by NHSL, they had questions regarding the roles that SFT had in both supporting the Scottish Government as well as NHSL and to what extent these roles were complementary. There was a concern that the proposed involvement of SFT in KSRs might delay progression of the project on KSRs, see section 27.8 of this paper)..

27.4.2 In January 2011 , NHSL wished clarification over SFT's role and at a meeting Iain Graham, NHSL expressed that he did not feel the role was clear. His wish at that stage was for Donna Stevenson, Associate Director, SFT to be on the Project Team in a role like Ernst & Young's advisory role. Donna Stevenson advised that while SFT was committing a considerable resource to the project, their role was distinct from the NHSL team leading the project.

27.4.3 The PWC report on 'NHS Lothian High Level review of Project Arrangements for the delivery of a new RHSC/DCN on the site of the Royal Infirmary

of Edinburgh' dated 13 September 2011, in relation to NHS Lothian working with SFT commented:

> "We have noted from our discussions and review of papers that the development of the SFT role and relationship with NHSL and Project management and advisors has taken time and has been subject to a number of differences of opinion on certain issues. There is evidence of a lack of clarity on roles and ineffective communication to date, although there is anecdotal evidence from our interviews that this issue has improved recently."

27.4.4 The PWC report also made a number of observations and recommendations in relation to the role of SFT in the NHSL project which were in the following terms:

- "The position of the Project as one which progressed down one procurement route (capital D[esign]&B[uild]) then re-diverted onto a new one (NPD) has potentially added to a reluctance to give up on work already done by NHSL. The difficulties of not having had input by SFT from project inception is also evident.
- "To ensure receipt of further 'expert' advice NHSL should engage further and openly with SFT to understand available expertise, agree appropriate terms of reference and protocols for the Project support.
- "We are aware that the Director of Planning at NHSL has put forward draft Terms of Reference for SFT but these have not been responded to at the time of reporting. These may prove useful for future SFT involved projects with other public bodies.
- "The role of SFT as project assurers/auditors will require requisite audit skills that may need further development and embedding. It is vital that the SFT clearly separates its advisory support role from the formal assurance/audit role provided for the SGHD. In particular the need for timing of and outputs from, various reviews should be clearly understood and programmed with consideration given to International Standards of Auditing (ISA) pertaining to Non-Audit Assurance Engagements (NAAE).

- “It is clear that SFT contains a wealth of relevant delivery experience that NHSL can 'tap into’. We would comment that the opportunity to formally ‘second’ expert staff into project teams, importantly under NHS Lothian direction, should continue to be considered.”

27.4.5 The Grant Thornton Report (see section 8.5 for more details) at paragraph 315 stated:

> “Between 2010 and 2014 Scottish Futures Trust were represented on the NHSL 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".

27.4.6 In his witness statement dated 28 April 2022, Peter Reekie, Chief Executive of SFT stated :

> “In my view there was no actual or potential conflict of interest arising from SFT's dual roles in the Project. For an actual or potential conflict of interest to arise, one must be able to define and identify two separate interests that were or could potentially be seen to be in conflict with one another. SFT had a single interest in the Project, which was to maximise value for money and deliver a workable programme.”

27.5 SFT review of the Project Design

27.5.1 SFT undertook a value for money review of the project design. Included in this review were two workshops, involving SFT staff who were aware of the project. They also employed Atkins Consultants Limited to provide advice in an advisory role in relation to the design.

27.5.2 In a meeting dated 1 February 2011, Donna Stevenson while stating that SFT supported the concept of a reference design, expressed surprise at the extent of the design development being proposed. She recommended that there was a learning opportunity from a project in Northern Ireland.

27.5.3 SFT recognised that they did not have the expertise to independently review the design aspect of the project as stated in the letter of 14 July 2011:

> "SFT requires external support from an experienced healthcare planner or designer able to credibly challenge the accommodation schedule and design development process undertaken at a high level and provide support and assistance to the Project through checking of assumptions against leading practice and use of relevant benchmarks."

27.5.4 In this letter dated 14 July 2011, SFT sought to invite firms to send a proposal to provide advice to SFT in relation to the first acute health project within the NFS programme announced by the Scottish Government – the RHCYP/DCN. This was to support the SFT's responsibility to Scottish Ministers to maximise value and it was considered that the review of the design and cost efficiency against relevant benchmarks was central to this role. This was a value for money review of the design to support the consideration by CIG of the OBC. It was intended by SFT to carry out an independent review of the design proposals being put forward. The letter commented that the review process would be shorter on this project as opposed to other projects due to the advanced nature of the design work already carried out. The programme objectives of the exercise were stated to be:

- "A design proposal that meets the strategic needs for efficient and effective long-term service delivery identified as part of the Initial Agreement and any other associated documentation.
- A design that eliminates unnecessary space, maximises potential sharing of space between user departments and fully integrates with an efficient service strategy.
- A design specification that minimises the whole life costs of the building, including both the upfront capital cost per square metre and the ongoing maintenance and lifecycle costs. The design specification should also achieve the appropriate sustainability targets."

27.5.5 The purpose of the review sought by SFT was "to identify any potential divergence with the objectives… and ensure these have been properly considered

by the Project Team.… Any unresolved issues following discussions with the Project Team where SFT feels that the objectives could be better and more efficiently met will be escalated by SFT."

27.5.6 SFT commissioned the services of Atkins Consultants Limited to:

- Review documents including the Initial Agreement (not defined in the letter inviting tenders from consultants to carry out the independent design review dated 14 July 2011), options appraisals which had been undertaken and the design development decision making process;
- Carry out a limited number of interviews with key members of the project and advisory teams;
- Review comparisons with external benchmarks for space and unit (m^2) costs made by the Project Team including the relevance of benchmarks selected, whether additional benchmarks would add value, and the completeness/consistency of reporting against benchmarks;
- Attend workshops with the Project Team;
- Understand and challenge key design assumptions that drive space and specification/cost requirements;
- Feedback of review/challenge to the Project Team; and
- Preparation of a brief report summarising observations made.

27.5.7 The review was completed on 12 December 2011. It contained 20 principal recommendations which SFT endorsed. SFT invited written responses from NHSL to each of these recommendations. The output from the review was the Project Review Report dated 22 December 2011 which included the Atkin's report and the recommendations and responses were part of SFT's response to the OBC (see section 22.7 above).

27.6 SFT involvement in the Outline Business Case

27.6.1 As part of its assurance role and in addition to the Key Stage Review Process (see section 22.9 above) SFT were also involved in the OBC and FBC in an oversight role and in providing comments to the Scottish Government's Health and Social Care Directorate. It was a funding condition attached to NPD projects that the

project scope is agreed between the procuring authority and the Scottish Government with a view to capping funded construction costs as part of the OBC approval. The Scottish Government were supported in this with a value for money review of the project design instructed by SFT as outlined above.

27.6.2 SFT were involved in the preparation of the OBC and provided comments on the financial case in the various drafts. This commenced on the 26 August 2011 when the first draft was shared with SFT and continued over the next few months. On 28 November 2011, Andrew Bruce, Associate Director, SFT provided further observations on the finance chapter and raised with NHSL that as part of the SFT scrutiny of the OBC if the matters remained unresolved, they would highlight them to CIG. Rather than hold up the submission of the OBC to the Scottish Government, SFT suggested ongoing engagement to resolve the issues prior to final approval of the OBC. In this email Andrew Bruce expressed the view that he felt it would have been beneficial for the dialogue to have commenced with SFT on these matters earlier in the process. This was found to be “unhelpful “ by NHSL who were of the view that although the first draft on the financial chapter was incomplete they had consistently shared information when available and it was inevitable with the complexity of the project, introduction of the NPD financial process, and the changes requested by SFT that the financial case would take time to develop. The view of NHSL was that they had “maintained dialogue with both SFT and the SGHD on the key issues during this time.”

27.6.3 In an undated letter to Mike Baxter, the Chair of the Capital Investment Group, SFT provided feedback and comments to CIG following their consideration of the OBC which NHSL had submitted to CIG on 22 December 2011. Prior to this letter, SFT had issued a product review report to CIG on 22 December 2011. This report included the Atkins’ report who SFT described as “consultants for the review.” The recommendations from that product review together with NHSL’s response to them were attached as an annex to the undated letter to CIG. The undated letter to CIG stated that the recommendations of the Product Review formed the basis of the comments in relation to the OBC.

27.6.4 In relation to Resourcing, SFT commented:

We have had a number of discussions with the Board regarding resourcing of the Project with particular reference to the level of PPP experience, as required by the March Letter. At the most recent meeting between the respective Chief Executives of the Board and SFT, there was a clear commitment to augment the team with someone with PPP commercial experience and SFT agreed to provide some suggestions in that regard.

Recommendation: That an appropriate additional resource to provide commercial PPP experience as part of the project team should be in place before the commencement of competitive dialogue. [Note: it would be preferable if this were pre-OJEU but that might not be realistic.]

It will also be important moving forward that the Board ensures that it has sufficient resources to deal with the finalisation of approval of and then implementation of the Enabling Works in tandem with the detailed development of the procurement documentation and the conduct of the dialogue phase."[120]

27.6.5 The OBC was approved by NHSL Board on 25 January 2012 and by the Scottish Government/Scottish Ministers on 18 September 2012

27.7 Key Stage Reviews – Background

27.7.1 It was a condition of Scottish Government funding support that the SFT undertook Key Stage Reviews (KSRs) of the project at key stages of the procurements. This was to provide an assessment of the readiness and whether the project had applied best practice (including an assessment of SFT Value for Money) before the build could move onto the next stage in the procurement process. It was an independent assurance review of a project.

27.7.2 The KSR process was described in the funding letter dated 22 March 2011 from the Scottish Government as:

[120] On these concerns, see further section 30.7

> "Key Stage Review provides a structured, independent 'due diligence' review of projects, supporting Project Managers and Sponsors at commercially critical procurement stages. Key Stage Reviews help to ensure that procuring authorities are sufficiently advanced in their project development and have put in place the necessary delivery arrangements and documentation in order to secure high quality, sustainable bids. They also ensure that authorities are adequately resourced to effectively and efficiently carry out the procurement, construction and operational stages of the projects. Key Stage Reviews are a formal requirement for all projects delivered through the NPD model and will be conducted by SFT."

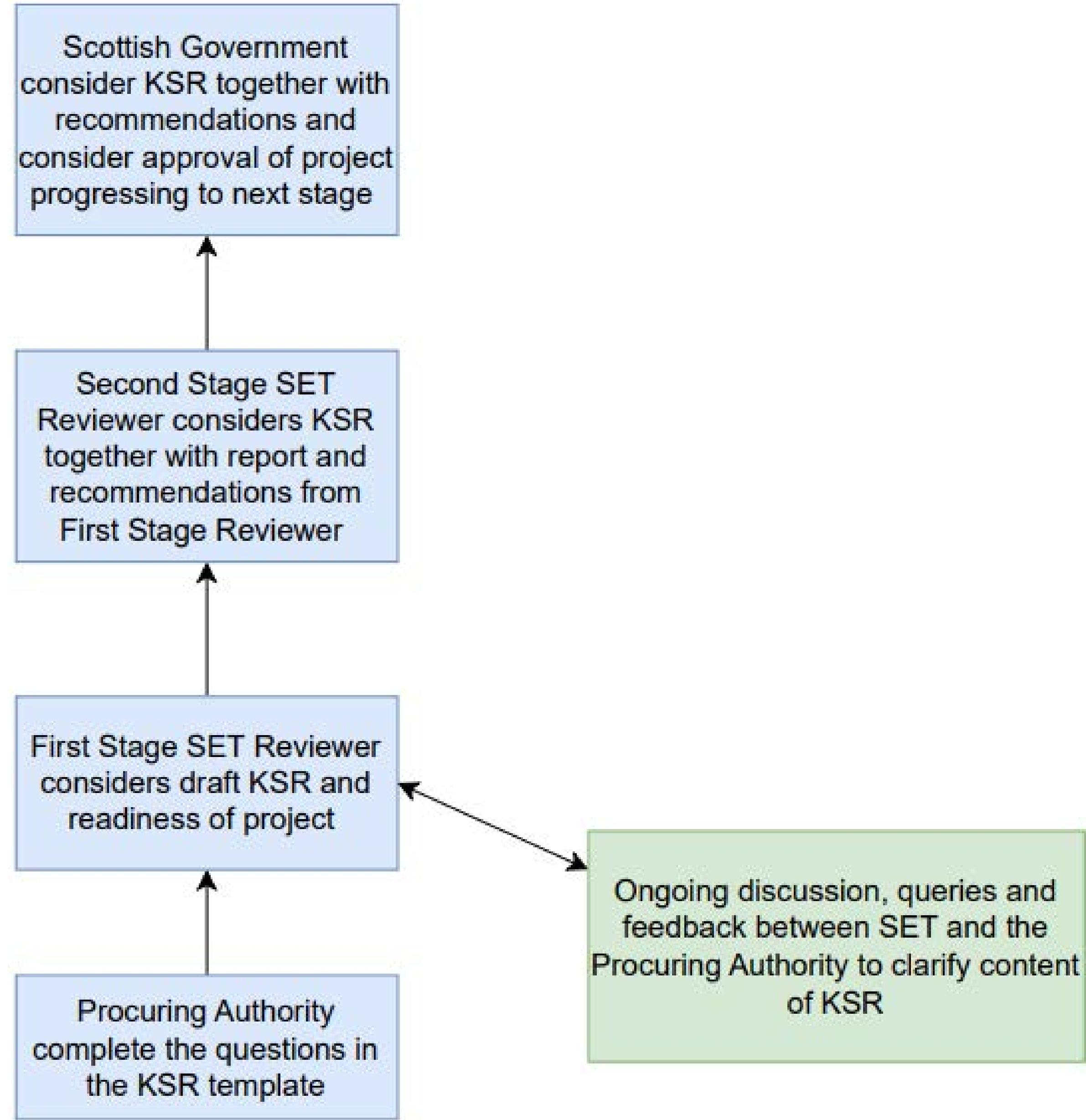
27.7.3 The KSRs included questions that were designed to prompt NHSL to reflect on whether it believed the design was sufficiently developed to move onto the next stage. Where SFT had genuine concerns regarding a project's readiness to proceed, the aim would be to discuss this and resolve the issues, until the project was in a place where SFT could approve the KSR and the project could move onto the next stage. The KSR process was never intended to be a detailed audit.

27.7.4 While SFT was involved in providing a high-level review of the OBC and providing comments to the Scottish Government, the intention was that the KSR process should commence after the OBC had been approved and before key stages in the project. The reality was that the OBC and the first KSR were developed towards readiness for submission in tandem.

27.7.5 These KSRs occurred at the following five stages within the RHCYP /DCN project:

- Pre-OJEU Notice
- Pre-Issue of invitation to Participate in Dialogue (ITPD)
- Pre-Close of Dialogue
- Pre- Preferred Bidder Appointment
- Pre- Financial Close

Process



27.7.6 Each KSR was an assessment of whether the project was suitably developed in terms of project readiness, affordability, value for money and commercial robustness. An information document on the key stage review process was produced by SFT dated December 2011 (the 2011 document). The 2011 document stated that the review process was at no cost to the Procuring Authority and was undertaken by the member of SFT who normally provided support to the

project (known as the reviewer) The KSR process involved the assessment of the readiness of the project against a pro-forma list of questions at each key stage of the procurement.

27.7.7 If there were issues that SFT had regarding the project, but they were not material enough to stop the project proceeding to the next stage, they would be recorded as recommendations to address in the KSR.

27.7.8 It was not envisaged within the 2011 document that a formal submission would be required from NHSL, but rather that a project team would be required to provide the reviewer with information that allowed them to complete the list and compile a report. A reviewer could have confirmed with the project manager certain points or that there were no issues preventing the project progressing to the next stage. From this information, the reviewer prepared a short report with recommendations addressing whether the project was ready to proceed to the next stage of the procurement or whether actions required to be taken by NHSL to allow this to happen. The responses to the pro-forma list and the report were scrutinised by a member of the senior management team at SFT before being issued to the Scottish Government and copied to NHSL. NHSL were asked to confirm that they were not aware of any additional information that would materially change the report or recommendations. The Scottish Government, as part of the overall sign-off, determined on what basis the project should proceed to the next stage, having considered any recommendations made in the KSR report.

27.7.9 The 2011 document envisaged that the timeframe for completing the review and submission of the KSR report would be pre-agreed with the Scottish Government in order for it to be integrated with any other approval process. A health board required to seek formal approval from the Scottish Government before proceeding to the next stage.

27.7.10 In terms of the RHCYP/DCN project, the member of the SFT team who normally provided support to the project was Donna Stevenson (the reviewer). A senior member of the SFT management team who reviewed and challenged the contents of each Key Stage Review and signed it off before it was issued (the

Second Reviewer) was Tony Rose for the first four KSRs. The second reviewer for the final KSR was Colin Proctor due to Tony Rose being conflicted for the final KSR.

27.7.11 Originally it was envisaged that the KSRs would be carried out by staff who were independent from those SFT staff directly involved in the project. NHSL raised concerns with SFT at a meeting of the Project Working Group on 25 August 2011 that there were issues regarding accountability and governance as the personnel from SFT supporting the project were undertaking the reviews.

27.7.12 The requirements for KSRs to be conducted by persons not directly involved in the project was removed as the KSR process evolved. SFT's guidance 'Project Assurance' dated May 2013 stated:

> "In addition, in line with SFT's evolving approach to supporting the revenue funded investment programme the approach to carrying out validation was remodelled during 2011 to remove the burden on project teams in providing additional background information together with completed KSR checklists to reviewers unfamiliar with the specific circumstances of each project. These KSR checklists are now completed by the relevant SFT staff member as part of his or her ongoing project support role. This reduces the overall delay impact of reviews and ensures that the review process is integrated into the overall project development. It also allows relevant aspects of the review to be considered on an ongoing basis. In order to preserve the integrity of independent assurance each KSR report is separately reviewed and signed off by a member of the SFT senior management team unconnected with the project."

27.7.13 The remit of Donna Stevenson, Associate Director, SFT did not cover technical issues. She attended the Project Team Working Group and had no issues with the governance structure that NHSL had put in place for the project build. In her view her role as first reviewer was "to ask NHS Lothian the position on the technical elements to allow them to reflect and respond on the issues that were raised. Both myself and the second reviewer would then consider the adequacy of the response in the context of the KSR."

27.7.14 NHSL early in the process sought clarity around the KSR process. A letter dated 16 June 2011 from Susan Goldsmith, Director of Finance, NHSL to Peter Reekie, SFT in response to the letter dated 1 June 2011 indicated that that NHSL wished to discuss with SFT the implications of the parallel KSR process.

27.7.15 During 2011 the process for the Key Stage Review and their relation was still being developed between the Scottish Government and SFT as the NHSL project was live. One area was the relationship between the assessment of the OBC and the first KSR and the desire that these should not overlap while the KSR should ensure the issues raised regarding the OBC were addressed. There was also identified the need to develop checklists for assessments of OBC and the FBC by the CIG.

27.7.16 Iain Graham Director of Capital Planning and Projects, NHSL described the KRS process in his statement to the Inquiry dated 27 February 2023:

> “In relation to KSRs, NHS Lothian provided information to SFT, mainly Donna Stevenson. From recollection, we had weekly meetings or certainly very frequent meetings with Donna with all the Project and workstream leads: technical, financial, legal and commercial which also involved NHS Lothian’s external advisors from time to time. Donna would go through a list of questions or any issues, some of which were related to the specific KSR, some of which were other points of interest from an SFT perspective. We would provide Donna with any information she requested. After any meeting we would receive an email from Donna laying out exactly what information she thought we should provide to SFT. NHS Lothian would respond with the requested information or obtained assurances from our advisers. When it came to the time to complete the KSR, we (SFT and NHS Lothian) would go through the information together. I cannot recall if we went through the documentation line by line but we certainly went through the documents and we were then presented with the final version of the relevant stage KSR and NHS Lothian identified actions before the KSR was signed off by SFT”

27.8 Key Stage Review – Stages

27.8.1 The dates that each of the KSR were completed were as follows:

Key Milestone	KSR	Date	Second Reviewer
Issue of OJEU Notice	Pre-OJEU Key Stage Review NPD KSR1 – Pre-OJEU	4 December 2012	Tony Rose
Issue of Invitation to Participate in Dialogue	Pre-ITPD Key Stage Review – Pre-ITPD KSR	7 March 2013	Tony Rose
Close of Dialogue	Pre- Close of Dialogue Key Stage Review NPD KSR 2 – Pre-CoD	11 December 2013	Tony Rose
Preferred Bidder Appointment	Pre-Preferred Bidder Appointment Key Stage Review	28 February 2014	Tony Rose
Financial Close	Pre-Financial Close Key Stage Review NPD KSR 4– Pre FC	11 February 2015	Colin Proctor

Pre – OJEU KSR – KSR1

27.8.2 As noted above, Atkins Consultancy Limited were appointed by SFT to provide an independent review of the proposed design and an external benchmark on value for money. Subsequently, Atkins produced a report which contained 20 principal recommendations, all endorsed by the SFT. Subject to approval of the OBC, the intention was that SFT would carry out the pre-OJEU KSR where they would consider the progress which NHSL had made in addressing the 20 recommendations. SFT expected all the Recommendations to be capable of being addressed by the time the ITPD documentation had been finalised by NHSL. SFT proposed, therefore, to consider at the Pre ITPD KSR (KSR 2) whether the recommendations had been satisfactorily addressed by the development of the Reference Design and the Board’s requirements and as reflected in the ITPD documentation.

27.8.3 The first draft of the Pre-OJEU KSR was scheduled for 28 September 2011 and had to be completed before procurement commenced with publication in the

OJEU. The approval process comprising of comments, queries and feedback from SFT on the KSR, together with the OBC continued throughout 2012.

27.8.4 KSR 1, was completed on 4 December 2012 and confirmed that the project was ready to proceed to the next stage subject to a number of recommendations which had listed target completion dates which were mostly at Pre ITPD KSR stage.

Pre – ITSD KSR – KSR 2

27.8.5 Following the completion of KSR 1, work towards completion of the KSR 2 began between NHSL and SFT. This process also included commenting on the ITPD documentation that was being prepared by NHSL.

27.8.6 This included a Pre-ITPD Key Stage review meeting on 15 February 2013 where each of the outstanding issues were discussed. Following this meeting Donna Stenson of SFT provided a note of outstanding issues to Brian Currie, Project Director, NHSL. SFT's view at this stage was that good progress was being made although there were still issues to be resolved and finalised. As part of the KSR 2 process, SFT would be seeking confirmation that NHSL and their advisors were satisfied regarding the ITPD documentation.

27.8.7 KSR 2 was completed on 7 March 2013. This included reference to the pre-OJEU KSR and detailed how these recommendations from that KSR had been addressed. KSR 2 confirmed that the project was ready to proceed to the next stage subject to a number of recommendations which had listed target completion dates which varied between "before the issue of the ITPD documentation", "by 31 March 2013" and those which would be ongoing to a further stage.

27.8.8 On 12 March 2013, Brian Currie, Project Director, NHSL confirmed with Donna Stevenson, SFT that they had satisfied those recommendations within the pre-ITPD KSR, that required conditions to be met prior to the issue of the ITPD documentation. This included:

> "On behalf of NHSL, I can confirm that following extensive review by the project team, the ITPD documentation is considered to be clear, complete, consistent and in compliance with all procurement legislation and

requirements in line with good practice and advice and that the Board's advisors have, and will continue to, provide a professional service within the scope of their appointments in this regard. “

Pre- Close of Dialogue- KSR 3

27.8.9 A report dated 25 May 2013 by Sorrel Cosens presented to the Project Steering Board on 31 May 2013, advised them of progress with competitive dialogue. At this stage the programme for the evaluation of tenders was that there would be an extraordinary Finance & Resources Committee meeting for week commencing 6 January 2014 to approve the preferred bidder. SFT were asked to confirm their requirements for the two KSRs within this timescale.

27.8.10 Discussion between NHSL and SFT towards finalisation of KSR 3 and review of various drafts of the KSR continued during 2013. This included a meeting on 22 November 2013 and the production of a checklist of outstanding issues as far as SFT were concerned on 25 November 2013.

27.8.11 KSR 3 was completed on 13 December 2013. This included reference to the pre-ITPD KSR and detailed how these recommendations from that KSR had been addressed. KSR 3 confirmed that the project was ready to proceed to the next stage subject to a number of recommendations which had listed target completion dates.

Pre – Preferred Bidder KSR – KSR 4

27.8.12 By this stage in the timeline, the final tender evaluation was underway. As with other KSRs, there was ongoing discussion between NHSL and SFT regarding matters SFT had raised or sought further clarification on for KSR 4 to be completed.

27.8.13 KSR 4 was completed on 28 February 2014. KSR 4 confirmed that the project was ready to proceed to the next stage subject to several recommendations.

Pre-Financial Close KSR – KSR 5

27.8.14 The purpose of this pre-financial close KSR was to assist health boards in considering what needed to be put in place in terms of staffing and resources ahead of the construction and operational stages of their PPP projects, to support and manage their PPP contract going forward.

27.8.15 The aim was for this KSR to be completed by September 2014, but KSR 5 was finally completed on 11 February 2015. This included reference at Annex A to the pre-close of dialogue KSR and detailed how these recommendations from that KSR had been addressed. KSR 5 confirmed that the project was ready to proceed to the next stage subject to several recommendations. One of these was that the Board reconsider the proposed change to the Senior Responsible Officer. The KSR detailed roles and responsibilities during construction, commissioning, and operational phases of the project. SFT were of the view that this was a key role on the project and that continuity was vital. It was the intention of NHSL to retain all the key individuals from Project Team post financial close other than the Senior Responsible Officer. At the stage of completion of KSR 5, the Board intended to change the Senior Responsible Officer from the Director of Finance to the Director of Scheduled Care.

27.8.16 On 30 July 2018, Donna Stevenson, SFT confirmed to Brian Currie, NHSL that SFT would not carry out any further KSRs. She advised that the validation process would revert to Gateway reviews post completion of the procurement.

27.9 Standard Form Documents

27.9.1 SFT produced Mandatory NPD Articles of Association. The first version was produced in July 2011 and a second version was produced in June 2012. Amendments to standard form NPD Articles of Association were issued on 9 February 2015. These were required to be adopted by the NPD Project Companies before they enter into the Project Agreement.

27.9.2 SFT prepared and provided to NHSL a set of funding conditions reflecting what was contained in the letter from the Scottish Government dated 22 March 2011

(see para 27.3.3). These set out the funding conditions which related specifically to the project and were attached to an approval of an OBC.

27.9.3 As part of the development of NPD, SFT worked with the Scottish Government to develop the standard form contract documents and the guidance to be used by NHSL and other authorities procuring NPD projects. This included a standard form contract together with guidance relating to the use of the standard form documents (project assurance guidance and value for money assessment guidance).

27.9.4 The approval of SFT was required for amendments to the standard form documentation which would have to be justified based on project specific issues. This process of applying to SFT for approval of amendments was known as “the contract derogations process”. Within the conditions of funding contained in the Annex to the letter from the Scottish Government dated 22 March 2011 (see para 22.3.3) paragraph 1(b) of the Annex stated

> "Derogations which relate to the underlying principles of the standard form NPD/hub DBFM contract, as noted below, will require sign off from Scottish Ministers, who will take advice from SFT."

The derogation process itself was set out in the ‘Standard Project Agreements (hub DBFM & NPD Model) User's Guide Version 2: June 2012.

27.9.5 The reasoning behind the derogations process was that it allowed SFT, on behalf of the Scottish Government, to ensure that the public sector across Scotland contracted with the private sector on revenue funded NPD projects in a consistent manner and based on standard terms and conditions, which were understood and generally accepted by the market. It also aimed to ensure that an appropriate risk allocation between the public and private sectors and the NPD principles were maintained across all projects. Confirmation that all derogations had been approved by SFT was part of the KSR process in the RHCYP/DCN build. These were recorded on SFT’s Master Derogation’s Log together with the reason for approval.

27.9.6 SFT’s derogation process only applied to the elements of the contract included in the standard form. So that process did not apply to project specific

elements of the project, including for example many parts of the Schedule to the Project Agreement setting out the requirements of NHSL or any proposals to derogate from technical standards.

27.10 Other Guidance and Advice provided by SFT

27.10.1 SFT have informed the Inquiry that provided advice and guidance to the Project Team throughout the procurement, but particularly during the period between the decision to procure the project using the NPD model and the issue of the OJEU. This advice and guidance included dealing with issues associated with the existing Royal Infirmary of Edinburgh. This advice and guidance was provided primarily by Donna Stevenson (then Associate Director) and Andrew Bruce (then Associate Director). The following paragraphs outline what SFT have advised they were involved with in terms of advice.

27.10.2 SFT provided advice and contractual/commercial support in relation to the procurement, including the form of Pre-Qualification Questionnaire (PQQ) and the tendering process. This support was provided by Donna Stevenson.

27.10.3 SFT took part in discussions between NHSL and the Scottish Government on technical changes to public sector funding prior to the FBC being completed and facilitated the issue of the revenue funding letter of support from the Scottish Government.

27.10.4 SFT also provided support on the financial aspects of the procurement strategy, PQQ, OJEU, payment mechanism and evaluation approach. This included providing support on the standard term sheet to be issued to bidders and working alongside NHSL and Integrated Health Solutions Lothian to jointly manage the funding competition and agree the preferred funders for the Project. This support was provided by Andrew Bruce, SFT.

27.10.5 SFT, as commercially minded members of the Project Steering Board also attended the Steering Board Commercial sub-group which was formed to have a commercial dialogue with IHSL to achieve Financial Close.

27.10.6 SFT's involvement continued after Financial Close. SFT continued to be represented on the Project Working Group and the Project Board/Project Steering Board.

27.11 Membership of CIG

27.11.1 An SFT team member, Colin Proctor, sat as a member of CIG from around 2011.

27.11.2 This role included participation in the review of the Scottish Capital Investment Manuals (SCIM). In 2011/2012, a review of the SCIM was led by the Scottish Government. SFT provided input to this review. In 2012, SFT had some involvement in elements of a SCIM manual update, again principally by way of comment on work being led by the Scottish Government. Mike Baxter of the Scottish Government requested that SFT undertake a technical review of the SCIM guidance relating to the NPD programme. SFT also provided input into the finalisation of the Business Case Checklists.

27.11.3 In 2012 there were further updates to the SCIM when SFT provided support to the Scottish Government in relation to the change in arrangements with the KSRs. In 2014/15 SFT had an involvement in a fuller review of the SCIM, although this update was not completed until after the RHCYP/DCN project reached financial close.

27.12 Public Interest Director

27.12.1 Public Interest Directors (PIDs) were appointed to the boards of all companies established to deliver NPD projects in Scotland and SFT was responsible for nominating the PIDs. The PID roles were created to improve the transparency of the companies delivering the NPD projects and to ensure that the non-profit distributing attributes were protected. Overall, the PID's role, as an independent company director, was to monitor compliance with the core NPD Principles, good governance and to bring an independent and broad view to the board. The PID was also charged with bringing to the board's attention refinancing opportunities and other cost efficiency opportunities. The PID was subject to all the usual fiduciary duties which apply in law to board directors.

27.12.2 The mandatory Articles of Association (referred to above at paragraph 22.8.1) included a requirement for there to be a “B Shareholder”, which is the client Public Authority for the NPD Project. The Articles required that the "B Shareholder" appointed an individual identified by the nominator to act as the "B Director", which was the technical definition of the PID. The Articles specified that the nominator was SFT, or such other person as may be nominated by the Scottish Ministers from time to time. PIDs were nominated by SFT by following the process set out in the Articles. They were then appointed as the PID on the company board.

27.12.3 At its March 2013 meeting, the SFT Board agreed to nominate staff members to the PID roles for NPD projects. The decision to nominate SFT employees into these roles was made due to the availability of suitable SFT employees with strong director and/or project finance experience. It was also felt that suitable SFT employees would understand the background and ethos of the role. SFT leadership nominated suitable members of its senior staff with relevant experience and understanding for the role of PID for each project in the programme.[121]

27.12.4 The PID's job description provided that the appointee acted in the interests of the company (with fiduciary responsibilities) and fulfilled a number of specific functions under the NPD structure to improve transparency and value for money. These duties were in addition to the standard responsibilities of directors and trustees. The PID's roles and responsibilities were also set out in their associated appointment letter.

27.12.5 There was no reporting requirement between the PID and SFT, other than in very specific instances. The only reporting requirement was in circumstances where the PID had raised with the other directors any concerns about being prevented or hindered in performing their key roles or their key tasks if such concerns remained unresolved. In those circumstances, the PID required to report these to the Authority and SFT. There could, of course, be instances where there

[121] SFT now recruits persons specifically to serve as PIDs. The last round of such recruitment in 2021 included the possibility of appointment to the RHCYP/ DCN project company: publicinterestdirectoropportunitiesinscottishinfrastructurecompanies.pdf (scottishfuturestrust.org.uk).The results of that recruitment exercise can be found here.

would be discussions between SFT and the PID but during these conversations the PID acted in their capacity as a director of the Company.

27.12.6 The separation of the roles of the PID and SFT was also evident when Freedom of Information Requests and confidentiality were considered. The PID held all correspondence and documents relative to their role as PID on SFT's computer/document systems. Copies of that documentation could not be accessed by other SFT employees (except with approval) and were not subject to FOI requests made of SFT. PIDs act under their Director’s Duties owed a duty of confidentiality to the Company for which they were PID. They did not share information about the company with SFT.

27.12.7 On 4 July 2017, SFT wrote to all its PIDs (including Tony Rose) to formalise the communication and reporting requirements.

27.12.8 The NPD projects provided for the PID roles to be remunerated. The remuneration associated with PID roles undertaken by SFT employees was paid to SFT, as the roles were carried out during their SFT contracted working hours.

27.12.9 SFT nominated Tony Rose as the PID for the RHCYP/DCN. Kerry Alexander of SFT emailed Brian Currie of NHSL on 15 January 2015. NHSL, as the B Shareholder, proceeded to appoint Tony Rose as the PID, by a letter of appointment to the mandated Articles.

27.12.10 Tony Rose was the PID for IHSL during the period 12 February 2015 to 23 July 2019. Vivienne Cockburn was the PID for IHSL during period 23 July 2019 to 30 June 2021. Peter Reekie wrote to IHSL on 16 July 2019 to request that Tony Rose be removed with immediate effect from the role of B Director / PID for the RHCYP/DCN project. The letter confirmed that SFT wished to nominate Vivienne Cockburn, Director of Management and Investments at SFT, as the new B Director for the project.

28. Gateway Review

28.1 Overview

28.1.1 Gateway Reviews were an Office of Government Commerce tool adopted by the Scottish Government for major projects involving significant public monies.

28.1.2 They were a short, focused review of a programme or project. They were conducted on behalf of the Project's Senior Responsible Owner (SRO). The reviews occurred at key decision points in the project's lifecycle and were carried out by a team of experienced practitioners, independent of the programme or Project Team.

28.1.3 They applied to all programmes and projects that had a budget of £5 million or over that were delivered by organisations which fell within the Scottish Public Finance Manual.

28.1.4 Gateway Reviews were managed by the Scottish Government's Programme and Project Management Centre of Expertise and designed to support the Scottish Government Infrastructure Investment Board's remit of ensuring that project delivery was appropriately monitored and supported.

28.1.5 The Gateway Review process was said to allow projects to be more effective in delivery of benefits, together with more predictable costs and outcomes. These included:

- Identifying if adequate skills, business resources and experience were deployed;
- Ascertaining if all the stakeholders fully understood the programme or project;
- Identifying any problems early;
- Identifying if the risks were being managed;
- Indicating if the programme or project could progress to the next stage of development or implementation;
- Identifying if more realistic time and cost targets could be achieved;
- Identifying if a governance structure was in place and whether all those involved were clear about their roles and responsibilities; and

- Improving knowledge, management and delivery skills among staff through participation in Review Teams.

28.2 Timing of Reviews

28.2.1 Gateway Reviews were carried out in advance of the key decision points within a programme or project's lifecycle. Each Review was a snapshot of the project as it was at the point the review takes place. In relation to projects, these were:

- Gateway 1 (Business Justification): This first project review came after the Strategic Business Case had been prepared. It focused on the project's business justification prior to the key decision on approval for development proposal.

- Gateway 2 (Delivery Strategy): This review investigated the OBC and the delivery strategy before any formal approaches were made to prospective suppliers or delivery partners. The review may have been repeated in long or complex procurement situations.

- Gateway 3 (Investment Decision)**:** This review investigated the FBC and the governance arrangements for the investment decision. The review took place before a work order was in place with a supplier and funding and resources committed.

- Gateway 4 (Readiness for Service): This review focused on the readiness of the organisation to go live with the necessary business changes, and the arrangements for management of the operational services.

- Gateway 5 (Operations Review and Benefits Realisation): This review confirmed that the desired benefits of the project were being achieved, and the business changes were operating smoothly. The review was repeated at regular intervals during the lifetime of the new service/facility.

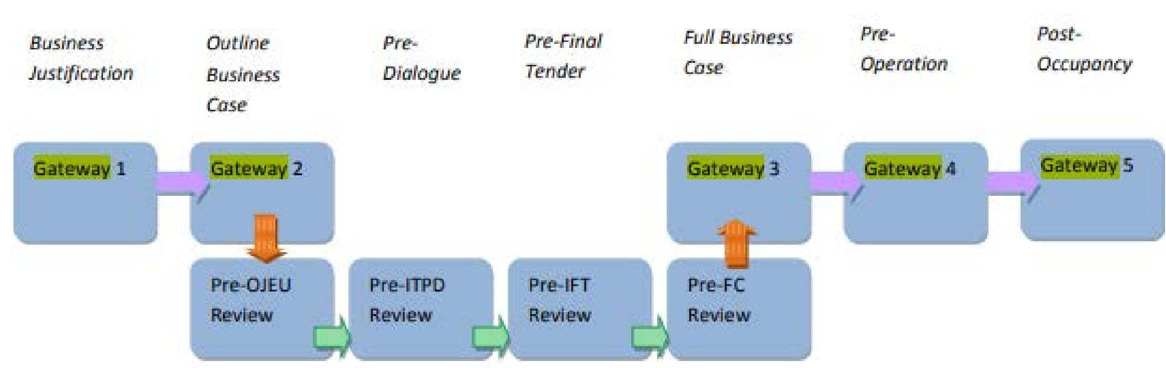
28.2.2 The recommendations from a review were based on the evidence presented and on the interviews that took place. The report would be provided to the SRO, the Health Board and the Director General at the Scottish Government. The report would also be part of the CIG's consideration of the project.

28.3 Gateway Reviews and Key Stage Reviews

28.3.1 On 22 March 2011 the Scottish Government set out in a letter to all NHS Boards' Chief Executives and Directors of Finance, the Scottish Government funding conditions for delivering projects through the NPD model.

28.3.2 In terms of assurance, the letter stated that the Gateway Reviews and the KSRs by SFT are "separate and complementary tools which will help to ensure the successful delivery of major capital projects." At this point (March 2011) it was envisaged by the Scottish Government that an NPD project would require to undertake both review processes.

28.3.3 For procuring bodies this meant the following process of both Gateway Reviews and KSRs would be undertaken.



These reviews were undertaken on projects in parallel and resulted in a burden on procuring bodies who had to deal with two forms of independent review at two different times which caused delay.

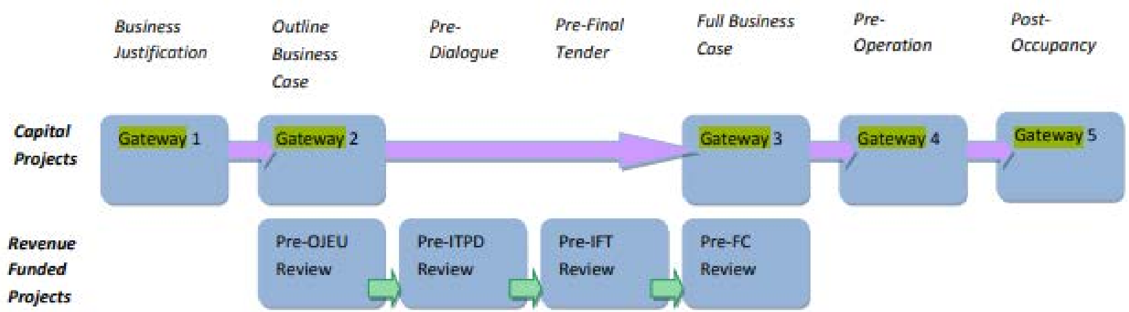
28.3.4 By letter dated 4 July 2012, Michael Baxter, Directorate for Health Finance and Information wrote to NHS Boards advising of the revision of arrangements for assurance on major projects within NHS Scotland. A distinction was drawn between those projects financed publicly through Framework Scotland and those delivered through Revenue Finance (such as the NPD model). For Framework Scotland projects, Gateway Reviews were to continue but for NPD projects Gateway Reviews would no longer to apply and KSRs were to be the process used to assess those projects moving forward. The letter stated:

> "It is important to stress that this is not a dilution of project assurance but simply an attempt to reduce potential duplication and to streamline the overall assurance process by incorporating key requirements from Gateway Review, Key Stage Review and best practice into an integrated project validation model in respect of these projects."

However, the letter did caveat this position by stating that NPD models could return to Gateway Reviews at a later stage:

> "It is the intention that since the KSR process currently centres around key procurement stages, NPD projects where appropriate would go through a further in advance of operational readiness (equivalent to a Gateway Review Gate 4)."

28.3.5 Due to the criticism of the parallel approach, SFT and the IIB piloted the Independent Assurance Framework (IAF) which was designed to provide a more streamlined approach to project assurance and remove duplication. The IAF was intended to seek the most appropriate assurance plan for each project upfront. IAF applied to large scale capital and revenue funded projects and was a mix of Gateway and KSRs which incorporated relevant aspects of both assurance tools into a single review. The IAF pilot was formally adopted by the IIB in 2011 and consisted of the following stages:



The pilot was completed in Autumn 2013.

28.4 Gateway reviews in RHCYP/DCN Project

28.4.1 Two Gateway Reviews were undertaken on the RHCYP/DCN Project prior to the change to NPD funding and the change to KSRs.

Gateway Review 1

28.4.2 Gateway Review 1 on "Business Justification" was carried out from 18 June 2008 to 20 June 2008 and a report produced. At this point Jackie Sansbury was the SRO who receive the report. The overall report status was "Amber".

28.4.3 The conclusion of the report was:

> "The Review Team finds that considerable work has been done to achieve a very sound base from which to take this project forward. There have been various issues around stakeholder management and requirements for the outline business case but these have all been well managed and satisfactorily resolved.
>
> Perhaps as a result of the heavy focus on completion of the OBC and the project team's relative inexperience in procurement of major capital projects, which has been recognised by Lothian Health and the SRO, there has been less attention to planning for the delivery phase. We therefore make a number of quite urgent recommendations that we

believe will quickly strengthen the project and ensure more effective progress through the next stage."

Ref No.	Report Section	Recommendation	Status (R.A.G.)
R1	**Policy and business context**	Ensure that the best practice guidance in Achieving Excellence in Construction is applied as appropriate to the project.	Green
R2	**Business case and stakeholders**	Mitigate risk on the impact of timing of capital receipts by liaising with Scottish Government on the potential for capital brokerage.	Green
R3		Prepare full benefits management plan.	Amber
R4		Prepare a more detailed time plan for the remainder of the project.	Amber
R5	**Risk management**	Develop the Project Risk Register and Issues Log.	Amber
R6	**Readiness for next phase**	Within a period of three months, establish a new Project Board with appropriate user and supplier representation and clear levels of delegation and responsibilities.	Amber
R7		Within three months take action to appoint a fully dedicated and experienced Project Director to take overall responsibility for delivery.	Amber
R8		Within three months initiate procurement of consultancy support for a full project management service.	Amber
R9		Review resourcing of the Core Team and identify the full resource implications of all project related activities.	Amber

28.4.4 In terms of the summary of recommendations table, governance did feature as an area requiring attention. In relation to the Project Board the Gateway Review team commented:

"The current structure for governance of the project has a Project Board with a membership of more than 30, meeting quarterly to receive an update on progress and give comments. Our evidence is that this has worked effectively to date as part of the project's stakeholder management but clearly it is not an effective governing structure for a project of this size and complexity…We are of the opinion that the current meeting should be continued as a stakeholder forum as it is generally welcomed by those we have interviewed. For better governance of the

> project however, we believe a new Project Board should be constituted for the next stage. This should have a much smaller membership, possibly not more than seven, representing key users and suppliers at a senior level."

28.4.5 The Project Director at this stage was Isobel McCallum and, although the Gateway Team found that the quality of work undertaken was a credit to all those involved in gathering outline clinical requirements and had been achieved with a strong team ethos, they commented that: "There is widespread evidence of the need for an individual with good experience and appreciation of all aspects of project delivery, to operate as a single focal point, reporting directly to the SRO, fully dedicated to the project and taking full responsibility for the day-to-day management and delivery of the project. This would give leadership and clarity to the team and remove much of the ambiguity around roles and responsibilities… We cannot over emphasise the importance we would place on securing the right individual for this post and the criticality we see to delivering a successful outcome." They also found that there was also a need to strengthen the skills and experience of the Project Team.

28.4.6 In response NHSL created a Gateway Review 1 Action plan dated 30 June 2008. This advised that NHSL proposed to keep the current Project Board as a stakeholder board and establish a Core Project Board with smaller membership. There was also an intention to submit a paper to the Executive Management Team to support the job description for the Project Director post.

Gateway Review 2

28.4.7 Gateway review 2 on "Delivery Strategy" occurred from 23 February 2010 to 25 February 2010 with the final report being issued on 9 March 2010. The overall delivery confidence assessment of the report was Amber.

28.4.8 In their concluding remarks, the Gateway Review Team recognised that the project was severely delayed by the initial decision to combine with the DCN and the subsequent recoupling. In terms of governance the team commented:

"By comparison with our last Review the Core Project Team are now well resourced with experienced and competent construction professionals, complementing the work and strong support of clinical, management and Partnership colleagues. An advisory team is also in place and overall there is more assurance around the ability of the team to deliver."

The Amber status was due to the challenging schedule of activities that NHSL faced at that point in time to be completed in a short period which included Consort enabling works, resolution of the road lay out and construction costs.

Ref No.	Report Section	Recommendation	Status (C.E.R.)
R1	Assessment of the Delivery Approach	**Ensure full support is given to early completion of the client Project Brief.**	C
R2	Business Case and Stakeholders	**The project should take steps to ensure better understanding, buy-in and senior ownership of FBC compilation.**	C
R3		**Prepare a new Benefits Realisation Plan reflecting more fully the improvements that will derive directly from the new facility.**	E
R4	Risk Management	**Ensure that Core Team members and senior groups are more fully engaged in the Risk Management process.**	C
R5	Readiness for Next Phase	**Ensure early decision on FM plan for the new building and that NHSL E&F team continue to be fully engaged with the delivery team.**	E

28.4.9 In response NHSL created a Gateway Review 2 Action plan to take forward the recommendations.

Gateway Review 2 resubmission

28.4.10 Due to the change in financing from capital funding utilising Framework Scotland to revenue funding using NPD, and as this required a reorganisation of the project structure and a further OBC, the Gateway Review 2: Delivery Strategy was carried out again by the Gateway Review Team.

28.4.11 This was carried out between 5 September 2011 and 7 September 2011 and the final report issued on 19 September 2011. The overall delivery confidence assessment was Amber/Red.

28.4.12 The Gateway Review Team's conclusion was the reconstituted project although having made good progress in taking forward the requirements of the new form of procurement, there was a tight timescale to issue a OJEU notice later in 2011. While the Gateway Team regarded that as achievable, there was a critical dependency for NHSL to conclude negotiations with Consort to secure the lane, access routes and other enabling agreements to allow the new development to be undertaken. This element was more uncertain due to the complexity.

28.4.13 In terms of governance, the Gateway Team commented:

> "It is recognised that the Consort situation has necessitated a high level of attention from the Project Board in particular and not allowed that body to adopt a properly strategic role in the governance of the NPD project. Plans are already underway to prepare the Board for a more appropriate role in the next phase and we would support these initiatives as there is a clear need to create greater separation between the day to day management of the project and a more senior Board that can lead, guide and challenge the work of the Project Team.
>
> These changes would also help to clarify the differing roles of SFT, being supportive in an advisory capacity, at the Project Team level and fulfilling their governance responsibilities at the Project Board.
> We see further opportunities to extend the membership of the Board with appropriate Clinical membership and also to take more frequent advice direct from external advisers when the need arises.
> …
> Whilst the Workstream arrangements have been able to make satisfactory progress on the work to date, we have heard that the structure is seen as over complicated and not conducive to effective communication across the whole team. We recognise the problems this has created and support

the moves that have already been initiated to rationalise the project structure at the working level.
We would strongly recommend taking this rationalisation further with the establishment of a single, fully integrated Project Team led by the Project Director and comprising appropriate NHSL staff and external Advisers. This Team would meet regularly to manage all aspects of the project and submit reports and papers to the Project Board where key decisions are necessary. The core meeting may well set up other sub-groups but all aspects of progress would be reported to the full Team."

29. National Services Scotland: Health Facilities Scotland

29.1 Background

29.1.1 National Services Scotland (NSS) was constituted on 1 April 1974 pursuant to s.19 of the National Health Service (Scotland) Act 1972. Its statutory basis is currently section 10 of the National Health Service (Scotland) Act 1978. Although known as NSS, its statutory title is the Common Services Agency.

29.1.2 This section examines Health Facilities Scotland (HFS), which was part of NSS during the RHCYP/DCN project, before the creation of NHS Scotland Assure and the restructuring when HFS became part of NHS Scotland Assure (see section 38).

29.2 Where HFS sats within the structure of NSS.

29.2.1 The structure of NSS is noted above at section 9.10. HFS sat within the Procurement, Commissioning and Facilities business unit during the RHCYP/DCN project.

29.3 Role and Structure of HFS

29.3.1 HFS provides operational expertise and guidance on subjects related to healthcare facilities. It establishes professional and technical standards and best practice procedures and provides operational facilities management for NSS sites.

29.3.2 HFS was divided into four teams: Property & Capital Planning; Engineering, Environment & Decontamination; Facilities Services and Operational Facilities Management.

29.3.3 The Director of Facilities oversaw the work of HFS. The Assistant Director of Facilities Services led both Operational FM and Facilities Services. The Assistant Director Projects was a temporary role supporting the development of the Centre of Excellence for Reducing Risk in the Healthcare Built Environment (now NHS Scotland Assure).

29.4 Role in HFS in creating and issuing advisory guidance.

29.4.1 HFS adapts UK-wide guidance including Health Facilities Notes, Health Technical Memoranda, Planning Notes, and Technical Notes, for use in Scotland. HFS is also responsible for issuing Fire Codes and is the technical author for the Scottish Capital Investment Manual published by Scottish Government.

29.4.2 Guidance issued by HFS is, with very few exceptions, advisory. However, Scottish Government Health and Social Care Directorate letters (including Chief Executives Letters, Health Department Letters, Management Executive Letters) can make compliance mandatory.

29.5 Relationship and communication between HFS and Health Boards (before NHS Scotland Assure).

29.5.1 HFS provided health boards with advice and support when asked. This support was generally in relation to the interpretation of guidance, or advice and support where guidance does not cover a specific issue, or where a board was considering a significant deviation from the guidance.

29.6 Outline of HFS involvement in RHCYP/DCN Project

29.6.1 HFS Capital Project Team (CPT) provided support to the RHCYP/DCN when the Project was initially being taken forward using the Frameworks Scotland procurement route, from November 2008 until December 2010. The CPT supported NHSL in appointing a Principal Supply Chain Partner and four Consultants. At this time, HFS engaged with the then RHSC Project Team, NHSL Capital Planning Team and, where requested, their appointed Frameworks Scotland Consultants.

29.6.2 CPT provided further ad hoc advice and support to NHSL in relation to project delivery matters, Frameworks Scotland process and contracts. The CPT did not provide technical support. The CPT ended their engagement with the project when the decision was made for it to switch to the NPD procurement route managed by the Scottish Futures Trust.

29.6.3 Before the project switched to the NPD procurement route, HFS facilitated an AEDET workshop on 12 August 2010. AEDET stands for Achieving Excellence in Design Evaluation Toolkit, which was developed by the Department of Health, England to assess how well a healthcare building complies with best practice. At this stage the design not yet reached stage E (Technical design) of the RIBA plan of work and so engineering aspects could not be assessed.

29.6.4 Following the switch to the NPD procurement route HFS received a request from Mott MacDonald to carry out an ‘end-up review’, which appeared to refer to the ‘tripartite design review’. The request was received by Neil Gardiner, (Capital Projects Advisor, Property & Capital Planning, HFS) who contacted Peter Henderson (Principal Architect, Property and Capital Planning, HFS).

29.6.5 The 'tripartite design review' referred to the NHS Scotland Design Assessment Process (NDAP) facilitated by Health Facilities Scotland (HFS) and Architecture and Design Scotland (A&DS) under the tripartite working partnership with SGHD. The NDAP brought together "two complimentary areas of consideration in the design of healthcare buildings" including:

> "healthcare specific design aspects – the areas generally covered by guidance issued by Health Facilities Scotland - and general good practice in design considering the human experience of being in and around buildings, sustainability and the effective and efficient use of resources directed towards achieving whole life value for money."

29.6.6 The NDAP became a mandatory part of the business case approval process from 1 July 2010 under CEL 19 (2010). Transitional arrangements meant that this only applied to new Projects which had not yet submitted an Initial Business Case, while those that had not received approval of their OBC by 1 July 2010 would be "considered for the assessment process on a case by case basis". Since the RHCYP project had already been through the Initial Business Case by this time, the NDAP was not mandated (see section 34 of this paper for additional information).

29.6.7 In 2011, HFS was asked by Mike Baxter to comment on an Independent Design Review commissioned by SFT. The review was undertaken by Atkins Consultants Ltd and assessed "the capacity of the project to deliver value for money by meeting the strategic aims of the programme; by making best use of space and opportunities for maximising sharing with other assets; and by minimising the whole-life costs." It did not focus on or contain information relating to the technical aspects of engineering systems.

29.6.8 Peter Henderson (Principal Architect – Property and Capital Planning, HFS), commented on the Atkins Design Review. Henderson wrote that his comments "mostly reinforce Atkins' comments rather than adding anything new as I haven't seen the latest detailed drawings or specification information." He also wrote: "it would be useful for the Board/Design Team to produce a comprehensive schedule of the guidance documents they are following in order for future bidders to be clear on the standards that they are expected to comply with."

29.6.9 In January 2015, during the final stages of the preferred bidder phase of the project, HFS were called upon by NHSL to advise on ventilation for isolation rooms and single bed rooms.

29.6.10 Between 2017 and 2019, when the hospital was being constructed, NHSL asked HFS for advice on various technical engineering matters relating to either design or installation topics. This included: high voltage distribution within the building; theatre pressure regimes; air change rates to four bed wards; air change rates to the radiology department; theatre sockets; the location of Medical IT equipment in relation to theatres; and a water leak. HFS provided advice only and was not involved in the resolution of these matters.

29.6.11 In June 2019 NHSL asked HFS for support in assuring that independent verifiers were auditing the ward environment appropriately. An audit verification was carried out in June 2019.

29.6.12 In July 2019 HFS and ARHAI were asked to meet with NHSL and the Scottish Government to discuss issues, mainly with ventilation, which had been discovered at the RHCYP/DCN project. The opening of the hospital was then delayed by the Cabinet Secretary.

29.6.13 NSS was asked to create a proposal for work required to support NHSL to provide assurance to the Scottish Government that the hospital complied with relevant standards and guidance. This proposal was accepted by the Scottish Government and led to a two-stage review of the project, focussing initially on aspects with direct implications for infection control, and then aspects with direct patient safety implications not related to infection.

29.6.14 According to NHS NSS,

> "The commission from SG (provided by letter to NSS Chief Executive in July 2019) to conduct a review of RHCYP & DCN effectively extended HFS' remit to include providing assurance to SG that the building complied with relevant standards and guidance in the six topic areas covered. This was part of work already begun to create a new national

body for this purpose, which later became known as NHSScotland Assure."

29.6.15 The Scottish Government established an Oversight Board in August 2019 to support NHSL in delivering the new hospital. The NSS Chief Executive became a member of the Oversight Board, and other HFS staff were available as necessary to support in an advisory basis (see sections 21 and 7.6 of this paper).

29.6.16 From July 2019 to September 2019 HFS worked with NHSL on developing an action plan for the remedial works required, and finalising the report for the review of water, ventilation, plumbing, and drainage systems, which was submitted to the Scottish Government on 9 September 2019. On 22 October 2019 the second report, covering fire, electrical, and medical gas installations, was submitted to the Scottish Government Oversight Board.

29.6.17 On the request of the Oversight Board, HFS continued to support NHSL in the implementation of their action plan.

29.6.18 NHSL combined the report and action plan findings into an action tracker which was then managed to completion. HFS remained engaged through this process to be able to assure the Oversight Board that the issues identified had been managed in accordance with the review brief.

30. National Services Scotland: ARHAI

30.1 Background

30.1.1 Health Protection Scotland (HPS) was established on 1 April 2005 in response to growing awareness of public health threats, for example from bioterrorism. HPS replaced the Scottish Centre for Infection and Environmental Health. HPS was responsible for coordinating health protection in Scotland, including protection against the spread of infectious disease.

30.1.2 In 2005 the Scottish Executive Health Department entered a Memorandum of Understanding with HPS setting out their respective roles and responsibilities. That Memorandum stated that:

> "SCIEH in the past had a role mainly of surveillance and of the provision of expertise by request. This was done primarily in support of the health protection activity of the 15 NHS area boards. HPS, on the other hand, will have a proactive role, co-ordinating health protection activity in Scotland and promoting and assuring the quality of local and regional health protection arrangements."

30.1.3 In response to the 2015 "Review of Public Health in Scotland: Strengthening the Function and re-focusing action for a healthier Scotland", the Public Health Scotland Order 2019 provided for the creation of a new body, Public Health Scotland (PHS), on 1 April 2020.

30.1.4 The intention was for the whole of HPS to move across to PHS when it was set up. This changed after the Scottish Government proposed to set up a Centre of Excellence for Reducing Risk in the Healthcare Built Environment, in response to the issues experienced at the Queen Elizabeth University Hospital, Glasgow and RHCYP /DCN. It was decided that a division of HPS, ARHAI (Antimicrobial Resistance & Healthcare Associated Infection) Scotland, would remain within NSS in order to contribute to the proposed Centre of Excellence, given its expertise in healthcare associated infections and infection prevention and control.

30.1.5 ARHAI is now part of the NHS Scotland Assure Directorate strategic business unit. The SG Healthcare Associated Infection Policy Unit (HAI PU) is the lead commissioner for ARHAI.

30.2 Structure of ARHAI

30.2.1 This section addresses the structure of ARHAI[122] pre-NHS Scotland Assure and during the period of the RHCYP/DCN project. The Inquiry is aware that has changed following the creation of NHS Scotland Assure.

30.2.2 Governance for the Healthcare Associated Infection programmes within HPS was through a Programme Board chaired by a lay member. The Programme Board reported to the Scottish Government's Chief Nursing Officer Directorate.

30.2.3 Beneath the Programme Board were 5 programmes, each with its own governance board, although programmes (i) and (ii) below had the same governance board):

v. National Policies, Guidance and Outbreaks;
ii. Infection Control in the Built Environment and Decontamination;
iii. Community Antimicrobial Resistance and Healthcare Associated Infection;
iv. Scottish Surveillance Healthcare Associated Infection;
v. Scottish One Health Antimicrobial Use and Antimicrobial Resistance.

30.2.4 Beneath the Programme Board there were also various groups providing governance, expertise and stakeholder input (including from the Scottish Government) to an area of ARHAI's work.

30.2.5 ARHAI's staff is (and was at time of the RHCYP/DCN project) multi-disciplinary and includes nurses, healthcare scientists, data managers, clinical microbiologists, and pharmacists. ARHAI's nursing staff are specialist infection prevention and control nurses. Most obtain an MSc in infection prevention and control prior to joining ARHAI, and they may do further training by way of continuing

[122] References in this section to ARHAI should, pre-April 2020, be taken as references to HPS (ARHAI's predecessor).

professional development on specialist areas of infection risk, e.g., water systems and ventilation.

30.2.6 The structure at as October 2020:[123]

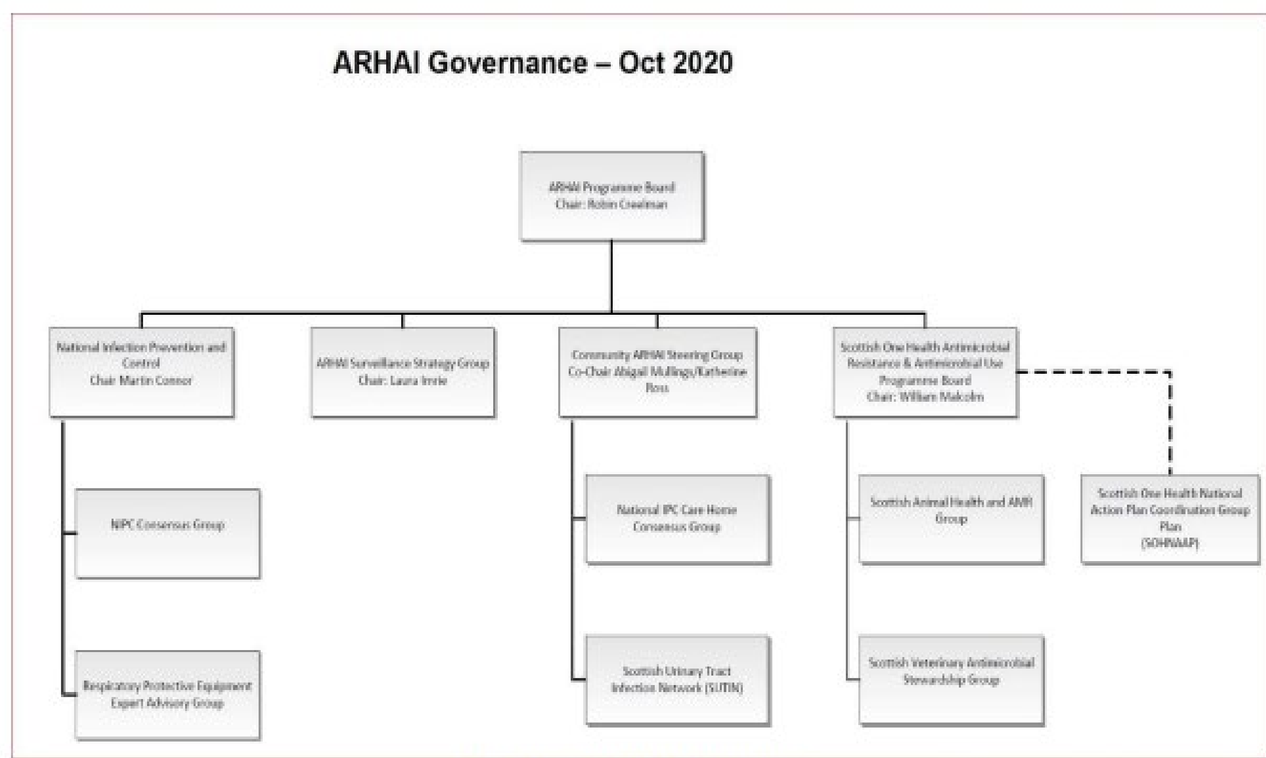


Figure 5: ARHAI Governance

30.3 Role of ARHAI in producing healthcare infection guidance.

30.3.1 ARHAI produces or contributes to guidance related to Healthcare Associated Infection. ARHAI's clinical staff provide clinical IPC support to HFS for its Guidance on request.

30.4 Relationship and communication between ARHAI and NHS Boards

30.4.1 ARHAI only provides support to NHS Boards on request (outwith their support for implementation of national IPC programmes and planned projects including Key Stage Assurance Reviews – see section 35.5). However, NHS Boards are required to undertake a number of activities such as submitting surveillance data,

[123] The National Infection Prevention and Control group referenced in the diagram is now referred to as "ARHAI Scotland Clinical Assurance Oversight and Advisory Group".

adhering to the National Infection Prevention and Control Manual and reporting incidents and outbreaks using the ARHAI Hospital Infection Incident Assessment Tool (HIIAT). These activities are co-ordinated by ARHAI.

30.4.2 The HIIAT should be used by IPCTs or Health Protection Teams (HPT) to assess every healthcare infection incident i.e., all outbreaks and incidents in any healthcare setting.[124] A scoring system is used to determine if the incident or outbreak is green, amber or red. All incidents and outbreaks reported to ARHAI are included in the ARHAI Healthcare Associated Infections Annual Report (in summary form), regardless of their HIIAT score.

30.4.3 The HIIAT score is determined by the Problem Assessment Group or the Incident Management Team.

30.4.4 As of April 2016, a Healthcare Infection, Incident and Outbreak Reporting Template (HIIORT) must be completed for all incidents irrespective of scoring (red, amber or green). The IPCT or HPT may also:

- send a press statement (holding or release) to ARHAI;
- request support from ARHAI as required and;
- follow local governance procedures for assessing and reporting.

30.4.5 The HIIAT is then reviewed and reported at least twice weekly for amber incidents and daily for red incidents or as agreed between the IMT and ARHAI. The HIIAT remains amber or red when there is ongoing risk of exposure to new patients or when the IMT assessment indicates that two or more risks are moderate or when any risks are determined to be major.

30.4.6 ARHAI share relevant information with HAI PU.

[124] National Infection Prevention and Control Manual: Appendix 14 - Healthcare Infection Incident Assessment Tool (HIIAT) (scot.nhs.uk)

30.5 Outline of ARHAI (and its predecessors) involvement in RHCYP/DCN Project

30.5.1 In 2015 NHSL contacted HPS with a request for information about taps, after an issue was discovered with taps at the Queen Elizabeth University Hospital. In 2018 HPS was informed of a flood in RHCYP/DCN.

30.5.2 In 2019 HFS and HPS was asked to input into a discussion between NHSL, HFS and SG (Health Finance and Infrastructure) after the issue with ventilation in the Critical Care Department was discovered.

30.5.3 Subsequently NSS received a commission from the SG to undertake an external series of checks, led by Health Facilities Scotland and Health Protection Scotland, to ensure that the relevant technical specifications and standards applicable to the new Edinburgh Children's Hospital were being followed and implemented.

30.5.4 The resulting "Review of Water, Ventilation, Drainage and Plumbing Systems" was published on 9 September 2019.

30.5.5 During the period of remedial works from August 2019 to March 2021, NHSL submitted one HIIAT to ARHAI in relation to the RHCYP. This related to an environmental incident involving a water leak that caused mould growth in the walls of an outpatient area (dental surgeries 1, 2 and 3). This was reported as it was an "exposure incident". A review of patients who received treatment since October 2020 was undertaken.[125]

[125] This incident is discussed in PPP 7 at paragraphs 7.2.1 to 7.2.6.

31. Architecture and Design Scotland

31.1 Background

31.1.1 Architecture and Design Scotland (ADS) is an Executive Non-Departmental Public Body established as the national champion for good architecture, design and planning in the built environment.

31.1.2 The sponsor body for ADS is the Scottish Government's Architecture and Planning Division.

31.2 Role and function of body.[126]

31.2.1 ADS operates within the Scottish Government's policy framework on architecture and design, the aim of which is to raise the quality of new development and support the Scottish Government's National Outcomes for the built environment.

31.2.2 ADS works with the Scottish Government Health Directorate to assist NHS Scotland in addressing design quality issues in the procurement of healthcare building projects, the summary objectives of which are to:

- raise the level design quality achieved through infrastructure investment
- increase the capacity of health boards and central agencies in respect of the above; and
- assist in sharing good practices.

31.2.3 They do this through three activities:

- Engaging with partner organisations and central procurement agencies to assist them in their work and in raising design awareness of 'external' parties involved in delivery.
- Providing, in partnership with HFS, a co-ordinated assessment of the potential quality of proposed projects to support those responsible for decision making within the Business Case process.

[126] A Policy on Design Quality for NHS Scotland 2010, Appendix B pp.7-9

- Assisting in building a body of knowledge and evidence of good practice in both process and produce across NHS Scotland.

31.2.4 ADS are a statutory consultee in the town planning process.

31.3 Role in design assurance and review of the Atkins report.

31.3.1 ADS was part of the ‘tripartite working partnership’ with Scottish Government Health Directorate and HFS, responsible for conducting the NHS Scotland Design Assessment Process (NDAP) outlined in CEL 19 (2010). However, as previously noted, an NDAP in relation to the RHCYP/DCN project was not mandated due to interim arrangements in place at the time.

31.3.2 While ADS played a role in design assurance it did not consider technical aspects of building services or aspects of the design directly relevant to the remit of the Inquiry. The involvement of ADS can be summarised as follows:

- ADS undertook a design review workshop in 2010, before the project switched to an NPD model.
- ADS commented on the reference design submitted with the Planning Application in summer 2011. They attended meetings with the Project Team and City of Edinburgh Council (CEC) Planning to ‘explore the range of design options’..
- ADS commented on the reference design submitted for the Atkins review, an Independent Design Review commissioned by SFT which assessed ‘the capacity of the project to deliver value for money by meeting the strategic aims of the programme; by making best use of space and opportunities for maximising sharing with other assets; and by minimising the whole-life costs’.
- ADS were involved in the project as a statutory consultee in the CEC town planning process. ADS attended meetings with bidders and CEC during the competitive dialogue stage of the procurement process.

32. Scottish Government

(Please note that this section is not a comprehensive explanation of all the Scottish Government's functions in relation to health matters, but rather focuses on those that are related to the RHCYP/ DCN project.)

32.1 Strategic context for the project

32.1.1 The Scottish Government is responsible for setting national strategy for health and infrastructure. The Scottish Government's vision was for '"sustainable, quality health care services and works to deliver a healthier future for everyone." The strategic context for the hospital was "taken forward in line with all national policy, local strategy and NHS guidance including but not limited to:

- "NHS Scotland's Quality Strategy to deliver person-centred, safe, effective, efficient, equitable and timely healthcare, and the implementation plan, 2020 Vision.
- The directive on inpatient accommodation, where all patients will be accommodated in single rooms unless there are clinical reasons for multi-bedded rooms to be available.
- The recommendation that care for children and young people up to age 16, and age 18 for mental health and some complex and chronic conditions, should be provided in age-appropriate facilities.
- Better Health Better Care, with its emphasis on improving quality, addressing excessive variation in practice, and ensuring the highest standards of patient safety.
- The policy to have two Paediatric Intensive Care Units in Scotland, commissioned under NHS National Services;
- The requirement that all NHS Boards contribute to the greenhouse gas emissions reduction targets set in the Climate Change (Scotland) Act 2009."

32.1.2 'Better Health Better Care', which outlined the SG approach to ensuring the highest standards for patient safety, described the role of the Scottish Patient Safety Alliance, and the HAI Task Force which had been in place since 2003, and outlined

various actions for frontline staff in particular to improve medication safety and reduce HAI risk.[127] 'Better Health Better Care' did not identify the link between building services and patient safety.

32.2 Scottish Government Health Directorates (renamed Scottish Government Health and Social Care Directorates)

32.2.1 The Scottish Government (SG) directorate responsible for healthcare infrastructure are the Health and Social Care Directorates (SGHSCD) (formerly the Scottish Government Health Directorate, SGHD) which is a group of 13 Scottish Government Directorates responsible for the NHS in Scotland. Each directorate has responsibility for a different function relative to NHS' delivery of health and social care in Scotland.[128]

32.2.2 The name and number of directorates in the SGHSCD has changed over time. The basic structure relevant to the RHCYP/DCN project has remained essentially the same in that Capital and Facilities within the Directorate for Health Finance has been ultimately responsible for NHS infrastructure projects. The Directorate for Health Finance has undergone some name changes and an additional level of governance was added in 2017. This is represented in the diagram below.

Cabinet Secretary

May 2007 – September 2012: Nicola Sturgeon (Health and Wellbeing)
September 2012 - November 2014: Alex Neil (Health and Wellbeing)
Nov 2014 – June 2018: Shona Robison **(**Health and Sport)
June 2018 – May 2021: Jeane Freeman (Health and Sport)

↓

Director General Health and Social Care
2009: Kevin Woods
2010 - 2013: Derek Feeley

[127] "Better Health Better Care: Action Plan", Scottish Government, 2007, Better Health, Better Care: Action Plan (www.gov.scot).
[128] Witness Statement - Michael Baxter - 16.05.2022 | Hospitals Inquiry

2014 – 2018: Paul Gray

Directorate:

Directorate for Health Finance (2009-2010)

Health Finance and Information (2011 – 2012)

Finance, EHealth and Pharmaceuticals (2013)

Finance EHealth and Analytics (2015)

Health Finance (2016)

Directorate for Health Finance (2017-2018)

Health Finance, Corporate Governance and Value (2019 – 2021)

Director:

2009 – 2015: John Matheson

2016 – 20?: Christine McLaughlin

20?? – present: Richard McCallum

Additional governance level added in 2017?

Health Finance and Infrastructure (2017-2020)

Health Infrastructure, Investment and PPE (2021)

Division:

Capital Planning and Asset Management (2010)

Capital and Facilities (2011-2020)

Capital Planning and Facilities (2021)

Deputy Director:

2009 – 2014: Mike Baxter

2014 - 2023 : Alan Morrison

32.2.3 The Health Finance Directorate (now called the Directorate for Health and Social Care Finance and Governance) was responsible for Health Infrastructure, Investment and Public Private Partnerships, as they applied to NHSScotland.

Between February 2009 – December 2014 Mike Baxter was Deputy Director for Capital Planning and Asset Management/Capital and Facilities and chaired the CIG. In his statement dated 6 May 2022 to the Inquiry, Mike Baxter explained:

> "in that role I had responsibility for the Scottish Government's infrastructure investment policy for the area of health and social care. That role included:
> • Allocating and managing the capital resources made available to NHSScotland to invest in modern, fit for purpose assets.
> • Oversight of business case and approval processes and monitoring the delivery of major investment projects developed by NHSScotland Boards (time and cost).
> • Providing appropriate guidance to NHSScotland in relation to the above.
> • Leading input to Government Spending Reviews and annual budget cycles for health infrastructure.
> • Providing the policy context to support the strategic planning, acquisition, management and the efficient disposal of physical assets required to support the delivery of healthcare services by NHSScotland.
> • Supporting the efficient delivery of capital investment through the development and implementation of effective and efficient procurement approaches.
> • Establishing arrangements to support collaborative procurement of imaging equipment across NHS Scotland.
> • Supporting the development and delivery of major capital projects including those being developed through private finance, such as Non-Profit Distributing Model (NPD), a Scottish derivative of Public Private Partnership (PPP).
> • Providing advice internally to those within Scottish Government Health and Social Care Directorate (SGHSCD), Ministers and those on NHS boards on capital investment, asset management and related issues."[129]

32.3 Involvement of the Scottish Government Health Directorate/Health and Social Care Directorates in the project.

[129] Witness Statement - Michael Baxter - 16.05.2022 | Hospitals Inquiry, pp.1-2.

32.3.1 In November 2010 SGHD made the decision to change the funding route for the RHCYP/DCN project, using an NPD model rather than a capital model. According to Mike Baxter:

> "The decisions post-2010 in relation to the funding model to be used and the procurement process to be followed were taken by the Scottish Government as a direct response to the significant reduction in capital funding available from the UK Government. All major capital projects not yet legally committed were reviewed to assess options for deliverability through the NPD model in order that public capital funding could be best deployed against those projects and programmes for which the NPD model would have been unsuitable. This exercise was supported by SFT, at a Scottish Government level, as an input to the Scottish Parliament budget process. From this exercise, a £2.5 billion programme of NPD projects was developed, covering all major elements of the public sector, of which £750 million related to health (including RHSC/DCN)."[130]

32.3.2 SGHD was responsible for issuing guidance to Boards in relation to their governance as well as investment in large infrastructure projects (see section 4.3). The Scottish Capital Investment Manual (SCIM) included guidance on the procurement process, the business case process and commissioning process. Health boards were required to submit Business Cases to CIG for review and provide an appropriate response to comments and feedback before CIG could recommend that the SGHD approve the Business Case and, consequently, funding for the project. In this respect SGHD also engaged with the IIB which provided assurance to the Scottish Government and its Procurement and Commercial Directorate (see section 21 of this paper). During procurement for example, Mike Baxter explained:

> "SGHSCD's involvement was in relation to compliance with the SCIM, through CIG and Scottish Government more generally through the oversight of the Scottish Government's Infrastructure Investment Board

[130] Witness Statement - Michael Baxter - 16.05.2022 | Hospitals Inquiry, p.15.

(IIB) which had responsibility for monitoring the delivery of the wider Scottish Government supported infrastructure programme."[131]

32.3.3 On 18 September 2012 Derek Feeley, (Director-General for Health and Social Care at the Scottish Government and Chief Executive of NHS Scotland wrote to Tim Davidson, Chief Executive NHSL, with confirmation that the OBC had been approved. On 10 February 2015, Paul Gray (Director General for SGHSC) confirmed approval of the FBC and award of funding for the Project.

32.3.4 Throughout the project, Scottish Government representatives attended Project Board meetings in an observer capacity given their roles in the approval of projects as members of the CIG. Up to December 2011 these meetings were initially attended by Norman Kinnear, the PPP Facilitator and Major Capital Projects Advisor. Mike Baxter then took on the Scottish Government observer role in the Project Board meetings. Mike Baxter advised NHSL by email dated 10 February 2012 that the representation by Scottish Government on the Project Board is in the role of observer to avoid conflict between decision making and approval process.

32.3.5 According to the KPMG Report (see section 35.5 of this paper):

> "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.
> 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), to allow 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."

32.3.6 On 25 September 2018, when the Special Purpose Vehicle, IHSL was at risk of insolvency, the SG Director of Health Finance, Christine McLaughlin, contacted the Director General of the Exchequer:

[131] Witness Statement - Michael Baxter - 16.05.2022 | Hospitals Inquiry, p.15.

"The Health portfolio has no prior experience of dealing with a SPV who may go into liquidation or what happens when a revenue financed project is terminated before the building is complete. We have recently discussed the matter with Scottish Futures Trust and Peter Reekie has offered to provide whatever assistance is necessary, but given the reputational and operational risks for Scottish Government of the hospital being delayed further, I would be interested in getting your view as to whether we need to do anything further to ensure that the risks are properly managed".

32.3.7 Shortly before the settlement agreement was signed, on 25 January 2019, the Director General of Health and Social Care, Paul Gray directed all NHS Boards to confirm that their critical ventilation systems were compliant with SHTM. This was to provide assurance in response to an ongoing HAI incident at the Queen Elizabeth University Hospital.

32.3.8 The Cabinet Secretary made the decision to delay opening the hospital following the discovery of issues with the ventilation system. This included the establishment of an Oversight Board to oversee and support completion of the RHCYP/DCN project and provide assurance (see section 0 of this paper.)

32.3.9 On 12 July 2019 the Director General for Health and Social Care, made the decision to escalate NHSL to Stage 3 of the "NHS Board Performance Escalation Framework", and on 13 September to escalate NHSL to Stage 4. This was done with agreement from the Cabinet Secretary (see section 7.2 of this paper.).

32.3.10 In general, there were also governance arrangements in place to monitor NHSL's financial and operational performance. According to Mike Baxter, "This centred around financial and performance delivery against the objectives set in NHS Board Local Delivery Plans and supporting financial plans, which were reviewed and agreed by the Scottish Government annually and monitored on an ongoing basis."[132]

32.4 Grant Thornton findings and recommendations

32.4.1 The Grant Thornton report (see section 8.5 of this paper) noted:

[132] Witness Statement - Michael Baxter - 16.05.2022 | Hospitals Inquiry, pp.15-16.

"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."

32.4.2 The recommendation regarding NHSL framework for decision-making was:

"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 & 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."

32.4.3 NHSL Management's response was:

> "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."

33. Other Governance Tools

33.1 Overview

33.1.1 Good project governance is about creating clear lines of accountability, reporting and communication to enable effective project and risk management. A governance structure should ideally enable the flow of critical information from those implementing tasks “on the ground”, through project managers, up to key decision-makers. These project management tools in the RHCYP/DCN project included trackers or logs, risk registers and project dashboards.

33.1.2 Mott MacDonald (with sub-consultant Davis Langdon up to 2012) and Integrated Health Solutions Lothian played key roles in Project Management, maintained trackers and managed documents, and were responsible for maintaining a communication strategy with NHSL.

33.1.3 The following sub-sections describe the type of information contained in the project management plans. It does not consider or provide any assessment on whether and to what extent plans were followed, were adequate or appropriate. However, further detail about how certain issues relevant to the Inquiry were managed at different phases of the project (for example, procurement and post-financial close) is contained in research papers or Provisional Position Papers of the Inquiry.

33.2 Mott MacDonald’s Project Execution Plans

33.2.1 Mott MacDonald and Davis Langdon provided details about project management and communication strategy in the ‘Project Execution Plan’ (PEP), developed in 2011 for the business case and procurement phase of the project, and in 2014 – 2015 for the construction phase of the project.

33.2.2 The Project Execution Plan outlined:

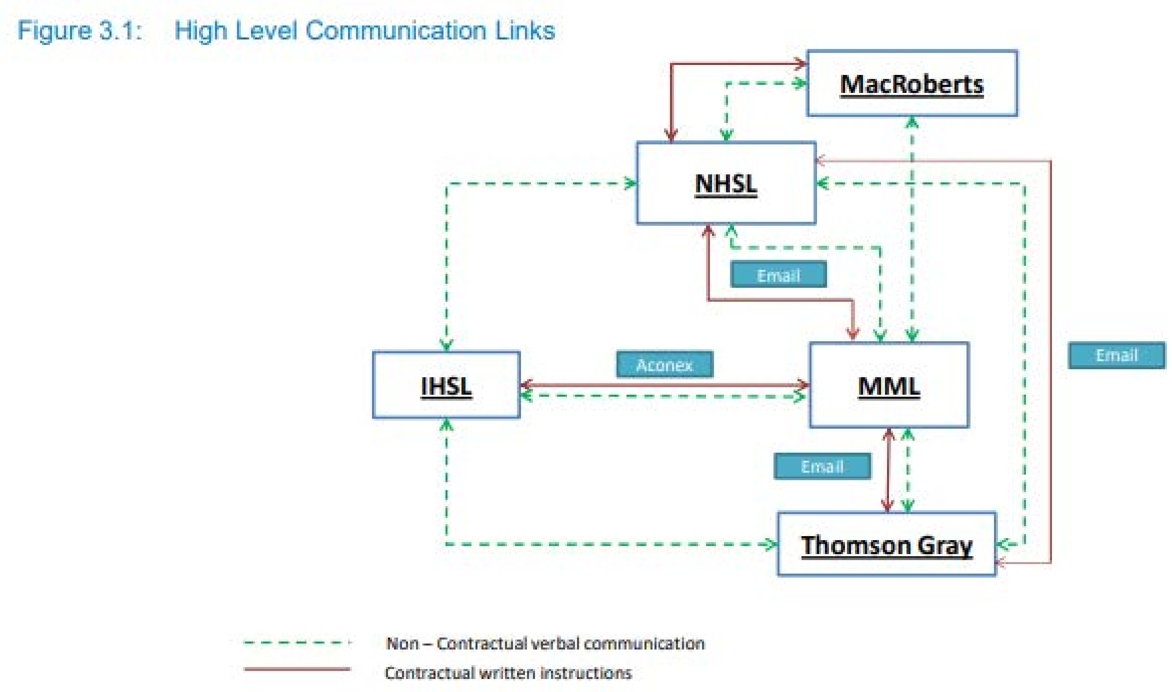
- project introduction including the project brief and scope, project delivery, project organisational structure, Project Team, including roles and responsibilities, and workstreams;
- project meeting strategy;

- project communication;
- programme, progress and reporting;
- risk management,
- design management and sign-off process;
- budget and cost management;
- health and safety and
- governance and audit.

33.2.3 The 2015 version also included sections on construction phase processes and commissioning.

33.2.4 Both the 2011 and 2015 documents explained the lines of communication (which were to follow the organisational structure as set out in organograms), project contact directory, use of software for collaboration, the change control procedure, stakeholders, programme reporting and tracking and risk management.

33.2.5 According to the 2015 PEP, the communication links for the project could be illustrated as follows:



33.2.6 The 2015 Project Execution Plan (April and June versions) described the change control process to be followed for consultants and subconsultants, Board

Changes and Project Co Changes, including flowcharts and diagrams for illustration. These were complex processes.

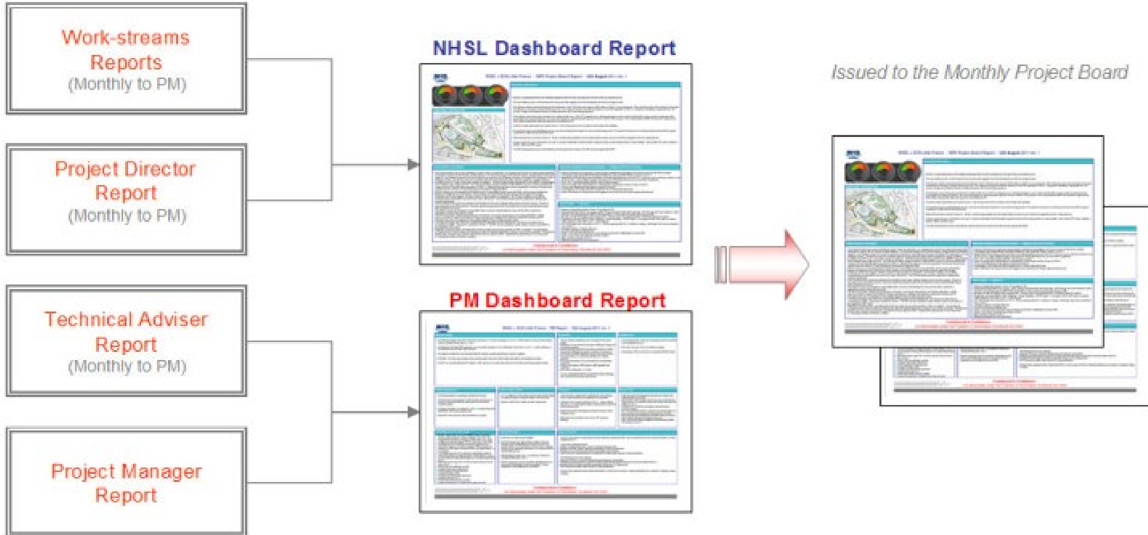
33.2.7 The 2015 Project Execution Plan also included a description of the Review Procedure for Reviewable Design Data (RDD). (The RDD process in practice is described elsewhere in a research paper by the Inquiry team).

33.2.8 The documents also provided detail on key milestones, progress monitoring and reporting, and action tracking. According to the 2011 plan,

> "DL [Davis Langdon] will provide and update the programme for all Progress meetings tracking project development and identifying potential matters arising which may affect the identified milestones recorded above. In the event that changes to the programme are necessary these will be considered as part of the work-stream Progress Meeting and approved for implementation by the NHSL Board."

33.2.9 Mott MacDonald took over the role of Davis Langdon in 2012.

33.2.10 The following diagram provided in the 2011 plan illustrated the programme reporting structure for the project:



33.2.11 During the construction phase of the project Mott MacDonald owned a number of trackers they would update and share via email with members of the NHSL Project Team. Aside from the Request for Information Tracker, none were to be shared with a third party.

Table 4.2: Management Trackers

Tracker Name	Brief Description	Issued by MML to NHSL	NHSL Shared Drive	MML PiMS Link
Change Control	Captures all internal Board proposed changes and Change requests.	Fortnightly	K:\RHSC and DCN NPD\Design\Change Control	Change control.
RDD Tracker	Records all incoming RDD Packs from IHSL, the dates the packs are issued to the Project Team, the date in which NHSL needs to respond to IHSL and the status NHSL are assigning to the drawing.	Weekly	K:\RHSC and DCN NPD\Design\RDD Process\RDD Tracker Folder	RDD Tracker.
PG RDD Tracker	Records all incoming PG Packs from IHSL, the dates the packs are issued to the User Groups, the date in which NHSL needs to respond to IHSL and the status NHSL are assigning to the drawing.	Weekly	K:\RHSC and DCN NPD\Design\RDD Process\RDD Tracker Folder	PG RDD Tracker.
User Group Meeting Tracker	Records the time and date of all user group meetings, including who has confirmed attendance and the address each pack is to be delivered to.	Monthly	-	User Group
Request for Information	Records all requests for information from NHSL to IHSL.	Weekly	K:\RHSC and DCN NPD\Design\RDD Process\RFIs	RFI Tracker.
Design Issues	Captures all comments from the Board RDD meetings that are deemed 'not relevant' by IHSL and, therefore, will be ignored if recorded onto the RDD documents.	Weekly	K:\RHSC and DCN NPD\Design\RDD Process\RDD Tracker Folder	Design Issues
Hospital Wide Changes to Equipment	Captures changes to equipment identified during the RDD reviews that affect the entire hospital.	As required	TBC	Hospital wide

Please note of all of the above trackers, the RFI Tacker is the only tracker shared with IHSL. All others are for NHSL internal use only and must not be shared with a third party.

33.2.12 Trackers were used to monitor the progress of different workstreams. The owner of the tracker had the responsibility of updating and circulating the tracker to group members. The trackers were discussed at meetings, actions noted and followed up at subsequent meetings. NHSL's representative would report back any issues to the core group which in turn would feed in to the Project Steering Group. The risk register would also be updated accordingly.

33.2.13 The trackers changed over time depending on the stage of the project but included, for example:

- RDD (Reviewable Design Data) Tracker.
- PG (Production Group) RDD Tracker
- RHSC Design Issues Tracker

- Change Request Log
- RFI (request for information) Register
- Change Control Register

33.2.14 The RDD Tracker was a spreadsheet showing the documents submitted by Project Co as part of the original Reviewable Design Data pack, as well as the re-submitted RDD pack, along with reference information (title, document number etc) and:

- the date the document was issued to the team
- meeting date
- date of a response by Project Co
- the date the document was returned to Project Co
- status (A, B or C status, indicating whether the document was approved or not)
- the date of the amended drawing
- notes.

33.2.15 The PG (Production Group) RDD Tracker contained similar information to the RDD tracker but listed the documents considered during each production group review and provided notes or updated status from that review. This tracker grew over time with new tabs added for each production group review. This tracker did not in practice contain a lot of information, for example the notes columns rarely contained any data.

33.2.16 The RHSC Design Issues Tracker was used to record and describe issues emerging with various elements of the design as construction progressed. The tracker was also used to allocate actions to resolve the issue, prioritise the issue, allocate to a workstream and Board Lead, and show the current status. This tracker contained information relevant to issues being investigated by the Inquiry, for example, the Environmental Matrix, Room Data Sheets, Ventilation (compliance of single room ventilation design with SHTM 03-01), and Air Changes.

33.2.17 The Change Request Log tracked the requests that NHSL made to make changes to the design, providing details on the change request, including the room it related to, a description of the change, whether it involved additional cost or savings, whether it was approved or rejected, and comments.

33.2.18 RFI (request for information) Register contained requests for information required by one party from another party to proceed on an issue. The register described the issue, a subject and RFI number, date issued and action due date, who the issue was raised by and who it was assigned to, the response or comments, and whether the action was open or closed.

33.2.19 The Change Control Register contained all of NHSL changes, including reference information, the date the change was issued, a title and description of the change, the level of change (low, medium or high value), expected and actual response date, the estimated cost of the change provided by NHSL and by Project Co (these differed), and the fee type (for example whether it was design only or design and build).

33.2.20 Note that the list of trackers above is not a definitive list of all trackers used by MML. Other parties would also have had internal trackers to monitor workstreams.

33.2.21 The risk management approach outlined in the 2011 Project Execution Plan was as follows:

> "Risks will be identified through a combination of risk workshops, work-stream development activities, design and scoping production, policy requirements and through management activities. The risks identified are to be managed in pro-active manner in accordance with the mitigation strategy agreed for each risk identified. The risk register remains a live document which must be regularly reviewed and updated by all parties. Risk will be categorised and quantitively scored in accordance with the probability and impact scoring matrix. Following identification and risk assessment each risk will be ranked to understand the key risks within the project, in order that these can be priority managed. Mitigation strategies will be developed for each of the key risks and will be assigned to

> individual work-stream leads for action. Risks will be reviewed and reported to DL [Davis Langdon] on a monthly basis for inclusion within the updated register.
> The outputs of the risk management process will also be considered by the commercial work-stream. Ernst & Young will be responsible for monitoring financial risk, and DL will be monitoring project risks and facilitate monthly risk management workshops.
>
> Any new risk to the project should be raised via the appropriate notification system and assessed during future workshops."

33.2.22 According to the OBC, under 'Management Case', the approach to risk "was developed based on the SCIM guidance with expert support from the Technical Advisor and Financial Advisor teams." A copy of the full project risk register as it then stood was appended to the Outline Business Case.

33.2.23 The Risk Management Approach changed during the Construction Phase: "Commercial and project risks will be identified and managed at the Project Management Executive (PME) meeting." NHSL would monitor risks. Mott MacDonald would manage the Design Issue Tracker "that will be reviewed monthly by the NHSL team at a Design Board Steering Group meeting."

34. Part 3 – NHS Scotland Design Assessment Process

34.1 Background

34.1.1 Around 2009 to 2010, there were discussions between the Health Finance Directorate of the Scottish Government, Architecture and Design Scotland (ADS) and Health Facilities Scotland (HFS) that the design policy was being applied unevenly across health boards and a process should be introduced that would improve compliance.

34.1.2 The process developed was that the Initial Agreement, Outline Business Case and Final Business Case were each to be subject to a design review, by ADS and HFS, prior to submission to the Capital Investment Group. This was named the NHS Scotland Design Assessment Process (NDAP)

34.2 Guidance on NDAP

34.2.1 The Supporting Guidance for Design Assessment in the Business Case Process (the NDAP Supporting Guidance) was introduced as part of the Scottish Capital Investment Manual. The Scottish Capital Investment Manual "must be followed in respect of all infrastructure investment by NHS Scotland bodies" [CEL 19 (2009) at para. 1]. Accordingly, as part of the Scottish Capital Investment Manual, the NDAP was mandatory.

34.2.2 The opening line of the NDAP Supporting Guidance stated that: "From the 1st July 2010 an assessment of design quality will become part of the business case approval process."

34.2.3 NDAP and the Scottish Government's requirement for design in healthcare builds was set out in 2010 Policy on Design Quality for NHS Scotland. The NDAP process was conducted by HFS and Architecture and Design Scotland and its purpose was to ensure the build provided the balance of technical requirements, met clinical needs and fulfilled aims of the 2010 Policy.[133]

[133] A Policy on Design Quality of NHS Scotland 2010

34.2.4 NDAP commenced at Initial Agreement stage with the development of design standards that were used to provide the key criteria for a future NDAP review. Thereafter, formal NDAP reports were submitted to CIG prior to consideration of the Outline and Full Business Cases. Interim NDAP reports/responses could also be submitted to CIG (on request) at strategic design stage.

34.2.5 The SCIM was clear that CIG approval was conditional on the level of support verified in the formal NDAP report sent at OBC or FBC submission.

34.2.6 Alan Morrison in his statement to the Inquiry dated 11 April 2022 said:

> "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."

34.3 Transitional Arrangements

34.3.1 As noted above the NDAP became a mandatory part of the business case approval process from 1 July 2010. However, transitional arrangements meant that this only applied to new Projects which had not yet submitted an Initial Business Case, while those that had not received approval of their Outline Business Case by 1 July 2010 would be "considered for the assessment process on a case-by-case basis".

34.3.2 Since the RHCYP/DCN project had already been through the Initial Business Case by the time the NDAP process was introduced, the NDAP was not mandated in terms of the transitional arrangements.

34.3.3 There were discussions among the Project Team, HFS and SFT as to whether an NDAP would be required for the RHCYP/DCN project given that the design had been reviewed by Atkins at the OBC stage. There were also discussions on 6 February 2012 between project advisors.

34.3.4 Michael Baxter provided further evidence to the Inquiry on NDAP in relation to the RHCYP/DCN project at the hearing on 16 May 2022. In relation to the introduction of NDAP into the business stage process he commented,

> "and the point that I made earlier in my evidence is that this was obviously introduced at a point in time and the idea was not about retrofitting to projects that had already passed progressive stages."[134]

34.3.5 He confirmed that a decision on whether an NDAP was to take place would have been largely down to himself in consultation with others.[135]

34.3.6 The independent Atkins review of the design was arranged by SFT. The independent design review report was also provided to ADS and HFS for comment with the awareness of the Scottish Government.

34.3.7 Mike Baxter in his statement to the Inquiry in April 2022, stated:

> "In December 2011, I had requested the SFT Atkins Design Review Report to be shared with HFS and A&DS to ensure there was an alignment of processes that had existed at the earlier stages of the RHSC project and those subsequently introduced as part of the Design Quality Policy for NHS Scotland introduced … in 2010. I have no recollection of the nature of the follow up to this request."[136]

34.3.8 At the hearing on 16 May 2022, Michael Baxter was asked what he saw as the relationship between the SFT design review by Atkins and the NDAP process as set out in the 2010 policy. He confirmed that "On review of the material, I would've seen them as complementary and therefore the sharing of information would've been important to make sure that anything-- everything that needed to be covered was covered."

34.3.9 It was also confirmed that an NDAP process did not occur, but Michael Baxter's view was that an equivalent process and the substance of an NDAP was being achieved by HFS involvement on the project.[137]

34.4 Process

34.4.1 The NDAP is conducted by ADS and HFS.

[134] Transcript - Michael Baxter - 16.05.2022 | Hospitals Inquiry page 47.
[135] *Ibid* page 78.
[136] Witness Statement - Michael Baxter - 16.05.2022 | Hospitals Inquiry
[137] Transcript of Michael Baxter's evidence to the Inquiry dated 16 May 2022 page 175.

34.4.2 In summary, amongst other things the NDAP assesses whether health boards are using the appropriate guidance. However, this assessment was in the context of (i) the health boards themselves being responsible for identifying any derogations, and (ii) the assessment being only “a high-level verification” with the “in-depth consideration of technical and other standards” continuing to be a matter for the Project Team.

34.4.3 The NDAP is formally initiated by the submission of a form by a health board (in the NDAP Supporting Guidance at Appendix B). Assessments then take place at the 3 business case stages: Initial Agreement, Outline Business Case, and Final Business Case. The NDAP’s role ends on the approval of the full business case by the Scottish Government Capital Investment Group. Health boards are required to submit documentation for each stage, as set out in Appendix A of the NDAP Supporting Guidance. More detailed documentation is required to be submitted for the OBC and, to an even greater degree, for the FBC.

34.4.4 The outcome of the assessment is set out in a “brief report”, and the project must be either jointly supported or jointly not supported. Where it is supported, the support may be qualified by essential recommendations, advisory recommendations, or notes of potential to deliver good practice. HFS then sends the recommendation to CIG. CIG is only able to approve the project if it is either supported without qualification or with notes of potential to deliver good practice, or if evidence is provided as to how essential or advisory recommendations are being addressed.

34.5 If NDAP had been carried out

34.5.1 In his statement to the Inquiry dated 11 April 2022,[138] Alan Morrison, Scottish Government stated:

> “On 5 July 2019 I emailed Susan Grant of HFS in relation to NDAP. Susan responded to my email later that same afternoon… 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

[138] Witness Statement - Alan Morrison - 1 of 2 - 16.05.2022 | Hospitals Inquiry and Witness Statement - Alan Morrison - 2 of 2 - 16.05.2022 | Hospitals Inquiry

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."

35. NHS Scotland Assure- Centre of Excellence

35.1 Background

35.1.1 In response to events at RHCYP/DCN and the Queen Elizabeth University Hospital in Glasgow, the 2019/20 Programme for Government[139] stated:

> "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."

35.1.2 In March 2020 a target operating model was submitted to the Scottish Government in respect of the creation of the new body which at that stage was called 'Quality in Healthcare Built Environment'. The name was later changed to 'The Centre for Excellence' and ultimately to 'NHS Scotland Assure'.

35.1.3 The aim in designing the new body was to deliver a coordinated approach and improve the management of risk in the healthcare build and refurbishment environment in Scotland and provide greater confidence to stakeholders. The functions of NHS Scotland Assure were designed to adhere to the Healthcare Improvement Scotland Quality Management Framework which is a reference tool for evaluating and improving healthcare.

35.1.4 In creating a model for NHS Scotland Assure, extensive stakeholder engagement activities, user research and national events were undertaken and a range of health sector and partner roles were represented on the Programme Board which developed the new body. The aim was to understand what was already being carried out across the system (locally, regionally and nationally), the context of these roles, and how the new body could support personnel in the roles. The key principles for the design of the new body based on this user research were (i) connecting national to local, (ii) accessing expertise and (iii) collaborating across the system.

[139] Scottish Government 2019/20 Programme for Government P.17

35.1.5 In the interim while the new body was being set up, HFS and ARHAI supported NHS Scotland projects through an Interim Review Service. This was to provide reassurance to the Scottish Government that ongoing builds and refurbishments projects were being delivered in accordance with guidance and were both fit for purpose and free from risk of harm.

35.2 Launch

35.2.1 NHS Assure launched on 1 June 2021 with a phased approach due to the Covid 19 pandemic. The vision for the new body was "To be an internationally recognised national centre for reducing risks in the healthcare built environment and ensuring they are safe, fit for purpose, cost effective and capable of delivering sustainable services over the long term."

35.2.2 The Director of Health Finance and Governance wrote to NHS Board Chief Executives and others by letter dated 27 May 2021 [140]advising of the launch of NHS Scotland Assure as part of the services delivered by NHS National Services Scotland.

35.2.3 At the launch the then Cabinet Secretary for Health and Social Care, Humza Yousaf, stated:

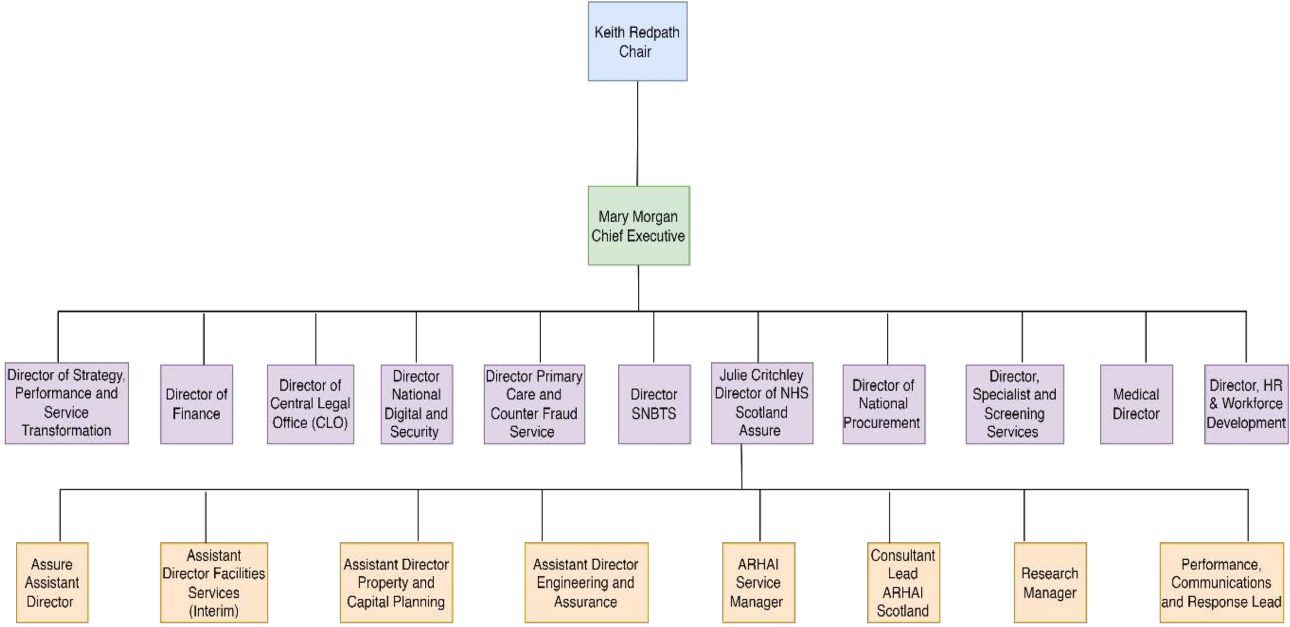
> "NHS Scotland Assure will support a culture of collaboration and transparency to provide the reassurance patients and their families deserve to feel safe in our hospitals. This service is unique to Scotland and is leading the way in risk and quality management across healthcare facilities.
>
> "With services designed with patients in mind, we can make a real, positive difference to people's lives."

35.2.4 When NHS Scotland Assure was launched, HFS and ARHAI were absorbed into it.

[140] DL(2021)14 - NHS Scotland Assure: quality in the healthcare environment

35.3 Structure and Relationships

35.3.1 NHS Scotland Assure is part of NHS National Services Scotland. Formerly part of the Procurement, Commissioning and Facilities Business Unit, it is now a separate business unit within NSS. ARHAI and HFS fall within the umbrella of NHS Scotland Assure. It is accountable to the NSS Executive Management Team, NSS Board and the Scottish Government.



Organigram showing NHS Scotland Assure within NHS National Services Scotland

35.3.2 NHS Scotland Assure works with NHS Boards through ongoing discussion of any issues during a healthcare build. Its functions will cover the full lifecycle of a healthcare build.

35.3.3 The Chief Nursing Officer wrote to health boards on 27 May 2021, indicating that from the 1 June 2021, all NHS Board projects that require review and approval from the NHS Capital Investment Group (CIG), will need to engage with NHS Scotland Assure to undertake key stage assurance reviews (KSARs see further section 35.5). Approval from the 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 has been followed. The Scottish Government may also commission NHS Scotland Assure to undertake reviews on other

healthcare built environment projects. This does not change accountability for the projects; NHS Boards remain accountable for their delivery. NHS Scotland Assure will be accountable for the services it provides that support delivery of the projects.[141]

35.3.4 NHS Scotland Assure is involved in a compliance, monitoring and advisory role and does not have any role in undertaking inspections. HIS continues to undertake the inspection of NHS Hospitals and related services through the Healthcare Environment Inspectorate. NHS Scotland Assure will ensure inspections are supported by relevant expertise.

35.3.5 NHS Scotland Assure is accountable to the Scottish Government. The Scottish Government fund NHS Scotland Assure and are effectively "their client". It has a relationship with both the Health Finance, Corporate Governance and Value Directorate and the Chief Nursing Officer's Directorate.

35.3.6 Stakeholders engage with NHS Scotland Assure through a stakeholders' network. There are four substantive Advisory Groups. These are: Scottish Property Advisory Group (SPAG), Scottish Engineering Technology Advisory Group, Scottish Facilities Management Advisory Group and NHS Scotland Environmental Sustainability Group. Other subgroups are accountable to these Advisory Groups. The Regional Strategic Facilities Group was a body in which the Chairs of the Advisory Groups met. It has now moved to a National Strategic Facilities Group.

35.3.7 The National Strategic Facilities Group (NSFG) is chaired by the Director of NHS Assure and the Vice Chair will be nominated on a two-yearly basis from the Chairs of the Strategic Advisory Groups. The membership of the NSFG comprises of one key facilities lead from each NHS Board; Director and Assistant Directors of NHS Scotland Assure; Chairs of each of the Advisory Groups and representation from the Scottish Government. Others such as programme leads, consultants etc will be invited when required.

35.3.8 The purpose of NSFG is "to provide collaborative leadership, assurance, compliance and vision for Estates and Facilities Services across NHS Scotland

[141] DL(2021)14 - NHS Scotland Assure: quality in the healthcare environment

Boards ensuring that these services remain fit for purpose, identify, and prioritise service risks through workplans and align with National Scottish Government Strategy, Health and Social Care Delivery Plans and Regional Delivery Plans."[142]

35.3.9 NSFG meetings will consist of:

- Update from NHS Scotland Assure on related national innovation, policy or development issued outside the remit of the Advisory Groups workplans
- Update from the Scottish Government on national directives, information and direction
- One to two topics from each of the Advisory Groups.

The intention is that the roles of the Advisory Groups will be reviewed annually to ensure the objectives of the groups continue to be relevant and based on priorities.

35.3.10 The NSFG reports to both the Chief Executives Group and the National Infrastructure Board. The Chief Executives Group is the Chief Executives of all Scottish health boards and the National Infrastructure Board is a Scottish Government Board involved in the healthcare environment.

35.4 Functions

35.4.1 NHS Assure will provide a range of functions and services in relation to healthcare builds. These are:

- Guidance. It develops and maintains guidance on healthcare builds to ensure they are free from avoidable risk and infection. This includes producing the standards against which compliance in healthcare builds is measured. In producing guidance NHS Assure has regard to developments from other organisations and countries. By taking an evidence-based approach throughout, it ensures that guidance is up to date with scientific and technical developments.

[142] A43407892 Draft terms of reference for NSFG

- Compliance/Assurance. NHS Scotland Assure monitors compliance with relevant guidance and ensures that health boards demonstrate compliance at key stages of the lifecycle of a healthcare build or a major refurbishment where the value of the project requires submission to CIG. Other projects which are complex due to the needs of patients utilising the service may be reviewed regardless of the financial value e.g., oncology, theatre and critical care units. This compliance monitoring will take the form of Key Stage Assurance Reviews (see section 35.5 above), which provide assurance to the Scottish Government Health and Social Care Directorates.

- Communications. NHS Scotland Assure ensures that information flows between key partners across the NHS. This can take many forms including conferences and networking events. It shares developments in research guidance with boards where this may be relevant due to an ongoing build or development. It also ensures that any lessons learned are shared across the NHS.

- Intelligence. NHS Scotland Assure supports health boards in the monitoring and managing of risk in builds. It gathers data and analytics and analyses information about the build environment to provide a preventative approach to risk. The intention is to assist Boards in management of this area to enable decision making on such areas as the environment, safety targets etc.

- Knowledge Management. NHS Scotland Assure shares updates in research, guidance and best practice with health boards. It targets specific boards where the updates are specific to ongoing and completed projects. It supports health boards in evaluating projects to inform any lessons learned and ensures these are disseminated across the NHS.

- Expertise. Ensures Boards have the right staff and skills for build projects and that staff have access to national training and support to assist them in their roles. Coordinates experts on subject matters to support Boards based on need and to manage risk. This workstream collaborates with the

Workforce Planning and Development Service to identify and improve any gaps in subject matter expertise.

- Research Development and Innovation. NHS Scotland Assure develops and provides direction/commission for quality research. This research is evidence based and will develop into guidance and practice. The intention is to allow knowledge gaps to be filled and to use this research to manage the risk in healthcare builds.

- Response. To respond to issues in the build. Assess the risk against current estate and projects and provide a coordinated response.

- Workforce Planning and Development. Provide specialist workforce education development, assess the skills required across Boards and address workforce shortage both immediate and anticipated. Supports the workforce in acquiring the necessary knowledge and skills.

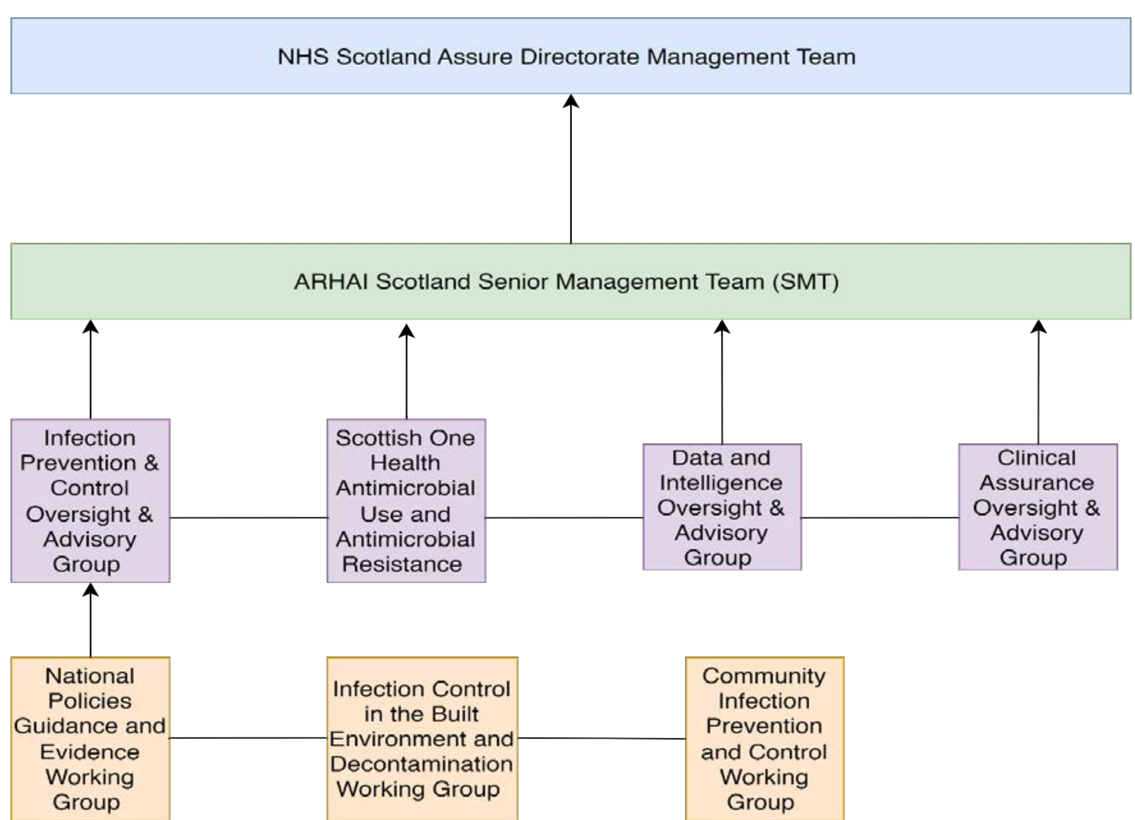
35.4.2 Additionally NHS Scotland Assure also provides services on heath publications and guidance; health board decontamination support and advice; engineering support and assurance that engineering services are safe for patients and staff; equipping services; facilities services including all aspects of property management to ensure safety and compliance of NHS buildings; reporting of incidents and alerts; property and capital planning support and expert services (which includes a range of construction and professional services frameworks, an advisory service, a design assessment and an end to end equipping service); advice and guidance to support NHS Scotland's climate and environmental sustainability commitments; and training conferences.

35.4.3 The ARHAI group of NHS Scotland Assure aims to protect the people of Scotland from infection and antimicrobial resistance. It provides the following services:

- Provides evidence-based guidance and expert advice on infection prevention and control to reduce healthcare associated infection;
- Provides interpretation and guidance of infection prevention and control in the built environment and decontamination;

- Improving health and wellbeing by implementing the Scottish One Health Antimicrobial Resistance programme;
- Undertakes data and intelligence on healthcare associated infection to inform clinical practice;
- Provides guidance on infection prevention and control to care homes and community settings; and
- Provides expert infection prevention and control advice to a healthcare environment.

35.4.4 The current ARHAI governance structure is as follows:



35.4.5 The ARHAI structure aims to have stakeholder input at key stages. The three working groups comprise of internal and external stakeholders and use expert opinion to consult and develop evidence-based materials. The Oversight and Advisory Groups are comprised of internal programme representatives and external stakeholders. They provide oversight and an advisory role for the priority

programmes and raise any risk. The ARHAI Senior Management Team provides programme governance and assesses and mitigates risk. It reports and escalates risk and issues to NHS Scotland Assure Directorate Management Team, the top level of governance within NHS Scotland Assure.

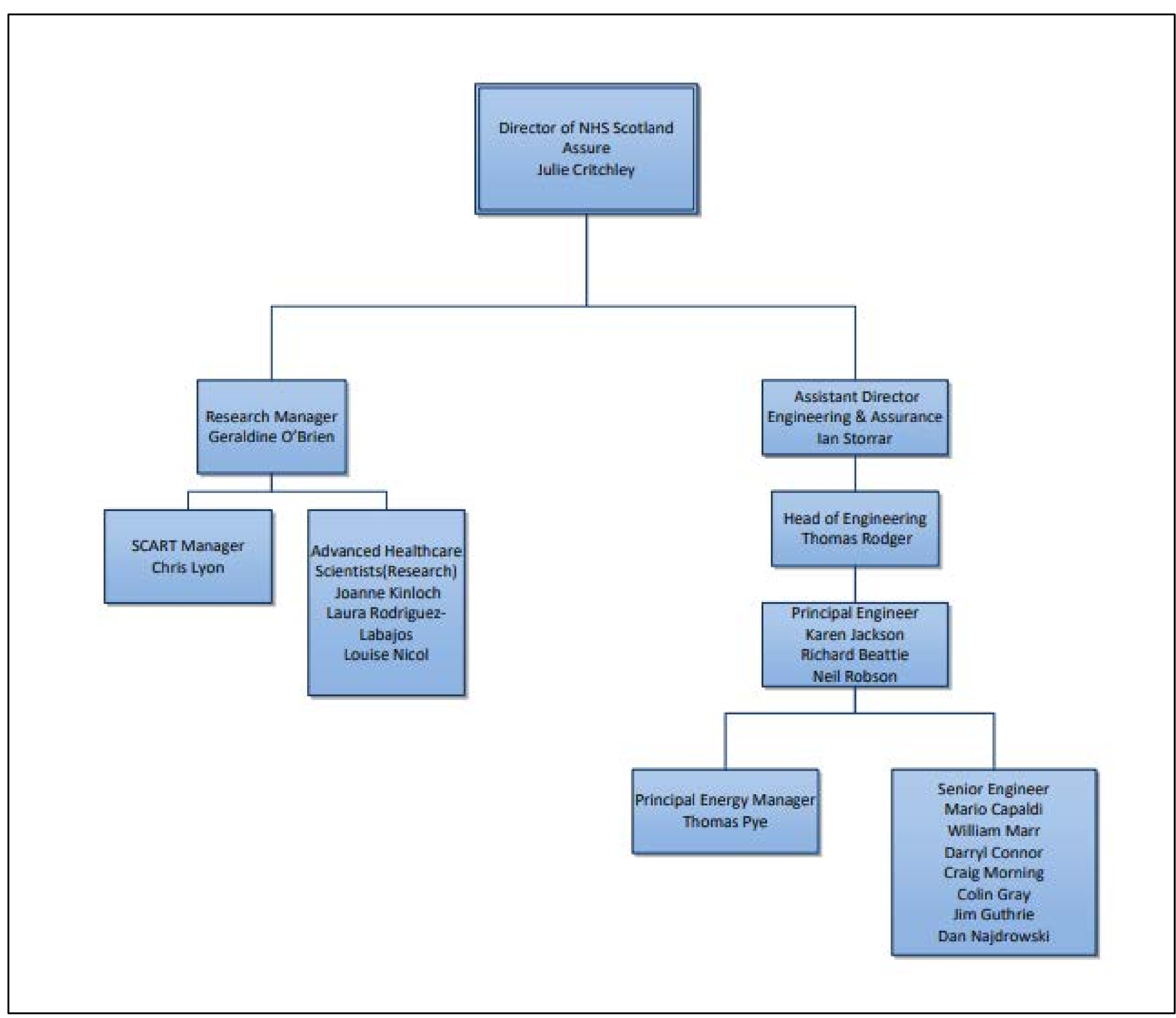
35.4.6 The letter from the Director of Health Finance and Governance dated 27 May 2021 advised that NHS Scotland Assure has a multi-disciplinary team with subject matter experts in the fields of infection prevention and control, medical microbiology, specialist engineering, science, hard and soft facilities and building management.

35.4.7 The letter also set out that NHS Scotland Assure will have (i) a leadership role in supporting NHS Boards as they deliver oversight in new build and refurbishments, (ii) a quality management system to strengthen infection prevention and (iii) a guidance role regarding incidents and any outbreaks across health and social care.

35.5 Key Stage Assurance Reviews

35.5.1 A Key Stage Assurance Review (KSAR) is conducted by the Assurance function/workstream of NHS Scotland Assure. It delivers an independent peer review, where staff outside a health board's project use experience and expertise to examine the progress of the project and the likelihood of a successful delivery. This includes examination of the work of consultants and contractors to the project. A KSAR is used regardless of the particular procurement route and is mandatory for projects requiring CIG approval.

Organigram of the Engineering and Assurance team

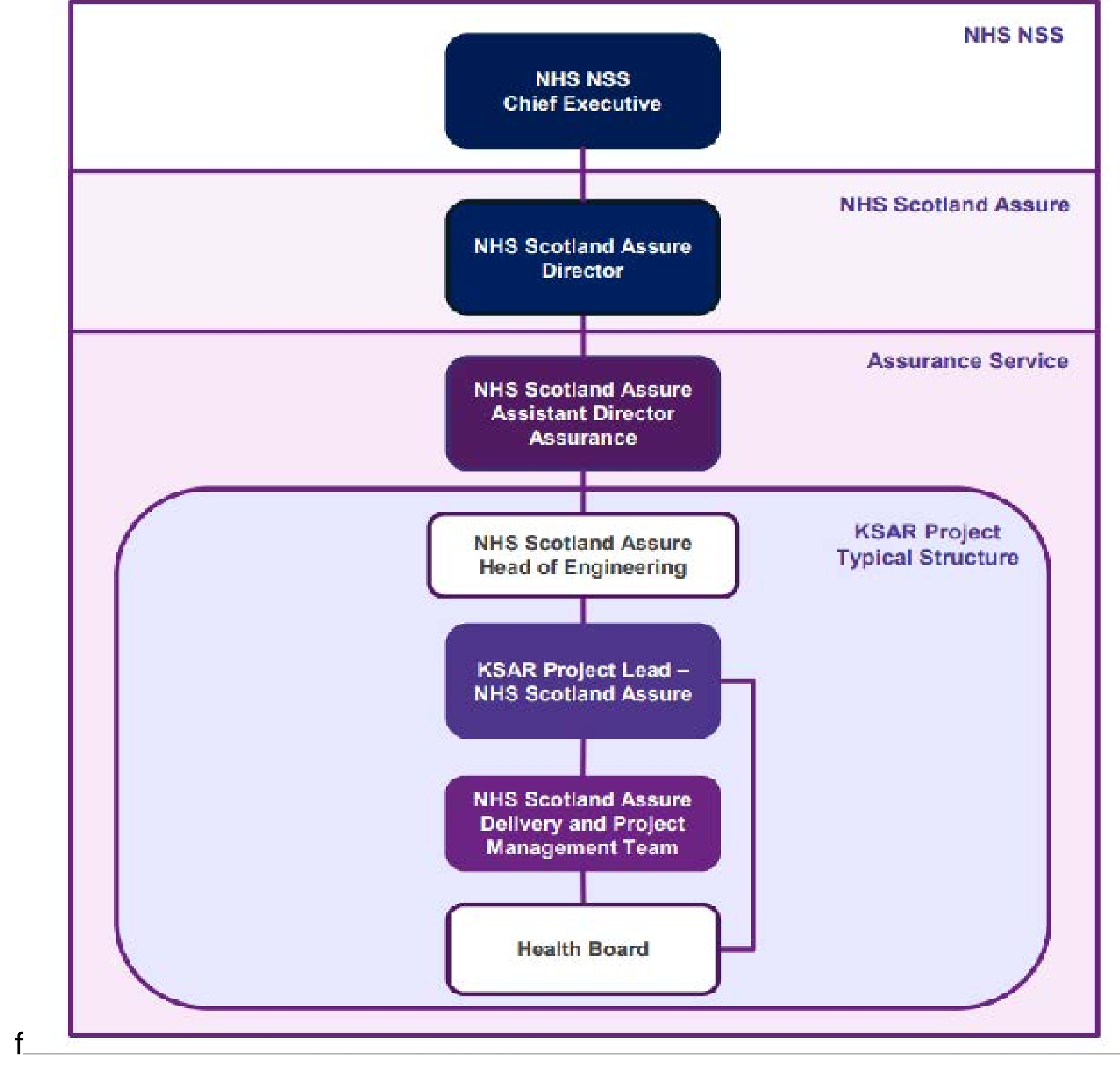


This Assurance team is supported across the business by subject matter experts and the programme management office.

35.5.2 Key Stage Assurance Reviews ensure that infection prevention and control is a key consideration in a healthcare build in respect of the following areas: water and drainage, ventilation, electrical, medical gases installation and fire. This is to ensure they are designed, installed and functioning from the initial build and throughout that build's lifetime with this key consideration.

35.5.3 Each KSAR project is allocated a KSAR lead from the NHS Scotland Assure Assurance Team. The KSAR lead reports to the NHS Scotland Assure Head of Engineering, who in turn reports to the Assistant Director for Engineering and Assurance. If there is a requirement for escalation during any KSAR, this is done via

this route. Any subsequent escalation is via the NHS Scotland Assure Director, who in turn will report to the NSS Chief Executive and Scottish Government as required. This is set out in the chart below.



35.5.4 Regular liaison takes place between the NHS Scotland Assure Head of Engineering and CIG. NHS Scotland Assure also prepare a regular exception report to Scottish Government which includes any details of significant KSAR risks.

35.5.5 In terms of oversight, health boards are kept informed of the status of a KSAR via regular dashboard reports. Should any matters require further escalation then this is usually via the Senior Responsible Officer within a health board's project.

35.5.6 Importantly NHS Scotland Assurance does not work in an inspection capacity during a KSAR, but rather will operate in an advisory, assurance and

compliance capacity and will work with health boards. It does not remove any legal or contractual obligations from health boards, designers or contractors. It is described as a complimentary review and does not replace the responsibilities of the health board or their need to have an effective framework in place to provide assurance and governance of their project.

35.5.7 There is no intention of the KSAR overlapping with the NDAP process described in section 34 and they are complementary to each other. The KSAR looks at certain areas of the build and the NDAP process looks at the wider aspects of a build e.g., environmental, modern building. The KSAR Workbooks describe this as :

> “The NDAP, working with Health Boards, will set the principles of the design solution, whereas the KSAR will provide a detailed technical review of the specifics of the design solution. Where possible the two reviews will be aligned to avoid duplication of work. For example, in instances where the NDAP has reviewed detail at a technical level, this will be used by the KSAR team rather than being separately requested and reviewed.”[143]

35.5.8 For information on NDAP and its involvement in the RHCYP/DCN project see section 34 above.

35.5.9 NHS Scotland Assure will conduct a review at each stage in the health care build, namely:

- Initial Agreement (no longer undertaken as a compulsory stage– see below)
- Outline Business case
- Full Business Case
- Construction
- Commissioning
- Handover

They have produced a workbook for each stage. These contain questions for each of the installation areas with a specific set which focusses on infection, prevention and

[143] Initial Agreement KSAR Workbook, Page 7

control. These are not designed to be prescriptive, and the review team may decide to look at a particular area further. The workbook provides a framework for clinical specialisms, facilities and operational management to manage the build.

35.5.10 The Initial Agreement KSAR will look at the approach taken at design commencement and whether there is an understanding of the patients using the facility and whether their needs for quality and safety have influenced the design especially in respect of Infection Prevention and Control. The KSAR workbook also sets out the relevant guidance that applies together with the need to meet statutory requirements and the use of mandatory NHS tools such as the Activity Data base and the Achieving Excellence Design Evaluation Tools.

35.5.11 Recently NHS Scotland Assure have moved away from having an Initial Agreement KSAR as it was felt it occurred too early in the process to be of value. The workbook remains available for Boards to use as a tool and to start gathering evidence for the next KSAR.

35.5.12 The Outline Business Case KSAR [144]and the Full Business case KSAR[145] investigate the approach taken by the health board in development of the design in terms of both the patients using the facility and expectations for appropriate quality and safety standards which will influence the design of the accommodation. For the OBC KSAR it provides assurance that the build can proceed to FBC and at FBC stage this assurance is around proceeding to the Construction phase. Like the Initial Agreement KSAR at the stages of the design development the necessary guidance and statutory requirements must be met (unless derogations are set out by the health board and agreed).

35.5.13 At the FBC KSAR there will be an additional checking of the design calculations and solutions adopted. This is a more in-depth assessment of the design and may take longer than previous KSARs. The level of checking will be fixed by the review team following on site discussions.

[144] Outline Business Case KSAR Workbook
[145] Full Business Case KSAR Workbook

35.5.14 The workbooks set out the initial questions which the review team will use to assess the build project and the information the team will utilise during their KSAR. This includes the planned approach for managing the design process to ensure successful compliance with agreed and approved standards. For subsequent KSARs this will involve an evaluation of changes detailed from previous KSARs and verification that CIG, NDAP and ADS recommendations have been implemented. The questions cover the areas of project governance and general arrangements, water and internal plumbing/drainage systems, ventilation, electrical, medical gases, fire, IPC built environment, with numerous points and assurances sought under each area.

35.5.15 The next KSAR stage is construction.[146] At this stage the workbook states that the review is designed to provide independent assurance to the Scottish Government that:

> “The construction phase is fully defined, and effectively utilises national guidance and construction techniques required to deliver a building which comply with relevant national guidelines and meet the needs of patients who will be using the facility.
> The construction and commissioning teams are skilled in the necessary construction methods and understand the required outcomes.”

In addition, there is listed guidance and statutory requirements which the build must comply with.

35.5.16 A Construction KSAR is site based and the review teams will consist of experienced operational estates professionals and experienced IPC clinicians. They work together with the health board’s Project Teams including their clinicians and the appointed consultants and contractors. The number and timing of the reviews during the construction stage will be decided upon a project-by-project basis. The initial questions within the Construction Workbook are set out under the same broad area headings as before but are more focussed to provide assurance around the construction within these areas.

[146] Construction KSAR Workbook

35.5.17 The Commissioning KSAR[147] takes a different form from the other KSAR as it is a site-based audit of the processes and documentation involved in the commissioning phase. It is described as an "independent peer review" where NHS Scotland Assure experts in particular subject matter review and assess the proposed pre-commissioning and commissioning documentation and any commissioning test results available. Any areas of concern will be immediately raised with the health board.

35.5.18 This KSAR will also check the commissioning and result of any solutions adopted by a health board following discussions with a health board and relevant stakeholders. The questions under each topic area within the workbook set out the information that will usually be reviewed during the site visit and it is expected that the construction stage should effectively be complete by the time of the commissioning KSAR to ensure the report is accurate.

35.5.19 The Handover KSAR[148] is the final one and, like the preceding Commissioning KSAR, will take the form of a site-based audit of the processes and documentation. Subject matter experts from NHS Scotland Assure will review and assess the proposed pre-handover and handover stage documentation. This KSAR will also undertake an appropriate level of checking of the commissioning results, as installed drawings, health and safety documentation, manufacturer's literature and any solutions adopted. Again, the number and timing of this stage review(s) will be determined by the particular project.

35.5.20 In addition to the usual broad heading of questions within the workbook relating to water systems, ventilation systems, plumbing and drainage, fire safety, electrical systems and medical gases, it will also include consideration of any other building or engineering component critical to the welfare and safety of a particular patient cohort and ensure that the requirements of Infection Prevention and Control Guidance have been implemented in order that services are delivered safely.

35.5.21 The KSAR process is aligned to the typical Scottish Capital Investment Manual (SCIM) stages. As part of the KSAR process, there are no compulsory

[147] Commissioning KSAR Workbook
[148] Handover KSAR Workbook

meetings with the health board and meetings are scheduled as required. In a typical KSAR process this will resemble:

- KSAR “kick off” meeting.
- Regular workshops with the health board to discuss observations that arise from the review.
- Final “wrap up meeting” to discuss finding of KSAR and any action plan.

35.5.22 After every KSAR at every different stage of a build, an independent assurance report is drafted and shared with the health board together with an observation list. The intention of this practice is that:

- personnel on the project have appropriate skills and experience
- clinical staff and stakeholders understand the project aims and status
- correct management structures are in place to ensure appropriate infection prevention and control measures are designed into the project to reduce risk of any transmission.
- provide assurance that a project can progress onto the next stage of development with emphasis on safety of patients and staff who will use the facility
- provision of advice and guidance to programme and project teams by fellow practitioners.

35.5.23 The KSAR produced by the review team is reviewed by the health board who provide any necessary feedback and a check for factual accuracy. Following this, health boards draft an action plan (if required), together with the support of NHS Scotland Assure if requested in response to the findings of the review.

35.5.24 The key stage assurance report and action plan are submitted to the CIG together with a recommendation from NHS Scotland Assure Assurance Services regarding whether the project should proceed to the next stage of the procurement structure. These documents are also shared with other NHS Scotland Assure services together with lessons learned.

35.5.25 By Directorate letter dated 6 February 2023, Alan Morrison, Deputy Director of Health Infrastructure, Investment and PPE wrote to NHS Board Executives and others and confirmed,

> “This DL covers the commissioning, completion, and handover part of the process and notifies you that all building projects going through a KSAR, should not open to patients or the public until you receive a ‘supported status’ from NHS Scotland Assure.”

It recommended that Project Teams liaise with KSAR teams to ensure that their capital projects are completed satisfactorily and that their supported status is achieved. This letter expanded the role and support of the KSAR team in the project right up the build opening to patients and the public.

35.6 Compliance and Enforcement

35.6.1 Edward McLaughlin, NHS National Services gave evidence to the Scottish Hospitals Inquiry at the hearing on 9 May 2022 that:

> “…in 2019, the Scottish Government asked NSS to put together a proposal for a national body that would ensure that all projects, all construction projects, were delivered compliant with all appropriate standards and guidance.”[149]

35.6.2 Alan Morrison’s, statement dated 11 April 2022 to the Inquiry states:

> "NHSSA's engagement does not change accountability for the project. Health Boards remain accountable for their delivery and NHSSA will be accountable for the services it provides to support delivery of the Health Board's project."[150]

35.6.3 While the KSARs undertaken by the assurance workstream of NHS Scotland Assure set out the guidance that a health board must comply with in a build

[149] Transcript – Edward McLaughlan – 09.05.2022 at column 7. See also witness statement of Susan Grant for hearing commencing 25 April 2023 at paragraph 81.
[150] Witness Statement - Alan Morrison - 1 of 2 - 16.05.2022 | Hospitals Inquiry and Witness Statement - Alan Morrison - 2 of 2 - 16.05.2022 | Hospitals Inquiry

and requires a health board to justify any derogations from this guidance, this may not capture the situation where a health board is unaware that their build has derogated from guidance. The review team do not necessarily check every line of every procurement document submitted during a KSAR to ensure every piece of data listed complies with guidance. It will depend on the type of evidential documents that are submitted by a health board.

35.6.4 While it cannot provide an absolute assurance, the KSAR process does aim to reduce the risk of errors in a build. The approach adopted by the KSARs and NHS Scotland Assure ensures early engagement and support for the board from the beginning of the process. The documentation or evidence that NHS Scotland Assure wish submitted ensures that boards are considering various crucial elements of infection prevention and control and entering early discussions with the review team and their own personnel. It ensures that the health board have a robust internal process for scrutiny and validation around their own documentation. NHS Scotland Assure personnel believe the systems and processes that are now in place should minimise any such errors occurring in the first place and mitigate any risk.

35.6.5 If a health board lists a derogation from guidance, there will be a discussion around the reasons for this and whether the appropriate teams are in agreement e.g., clinical. In terms of enforcement a health board will not be allowed to move onto the next stage in the procurement process e.g., outline business case to full business case until a KSAR is signed off. If a derogation is something that the KSAR review team do not agree with, then it will entered as an essential recommendation and the health board will be asked to provide a letter that they have undertaken all essential recommendations. If a matter is not resolved, then the build will not be allowed to open. There is no formal appeal for a health board who continue to disagree with KSAR recommendations. The approach is to resolve matters through discussion. If this didn’t happen, a health board could ultimately take the matter to the Scottish Government.

35.6.6 The NHS Scotland Assure KSAR process is relatively new and given the length of time large build projects do take, not many health boards have undertaken the process yet from beginning to end. The process is constantly evolving and being refined from consultation and feedback received from boards.

36. Whistleblowing

36.1 Introduction

36.1.1 The Inquiry has not been informed of any whistleblowing from a member of NHSL directly related to matters falling within the remit of the Inquiry.

36.1.2 However, given the specific reference to "implementation of whistleblowing policies" in the Inquiry's terms of reference, it is convenient to set out here the policies that NHSL had in place in relation to whistleblowing.

36.2 Policies

36.2.1 From September 2005, NHSL had in place a "Freedom of Speech Policy and Procedure". This policy was in place to address those occasions where staff had concerns about what was happening at work and where the NHSL grievance procedure and wider polices such as race equality and equal opportunities would not be appropriate.

36.2.2 The policy stated that NHSL was committed to achieving the highest possible standards of care and high ethical standards in the delivery of health care and that freedom of speech was encouraged through the framework laid down in this policy. It stated:

> "The purpose of this policy is to ensure employees have a proper and widely publicised procedure for voicing complaints about issues such as:
>
> - malpractice or ill treatment of a patient/client/customer by a member of staff;
> - repeated ill treatment of a patient/client/customer, despite a complaint being made;
> - a criminal offence has been committed, is being committed, or is likely to be committed;
> - suspected fraud;
> - disregard for legislation, particularly in relation to health and safety at work;
> - the environment has been, or is likely to be, damaged;

- breach of Standing Financial Instructions;
- showing undue favour over a contractual matter;
- showing favour to a job applicant;
- a breach of a code of conduct;
- information on any of the above has been, is being, or is likely to be concealed."

36.2.3 In 2016 this was replaced with the 'Whistleblowing Policy and Procedure', which echoed the NHSL commitment to achieving the highest possible standards of care in the delivery of health care. The purpose of this policy "is to ensure employees have a proper and widely publicised procedure for voicing whistleblowing concerns."

36.2.4 The policy was intended to provide the basis by which concerns can be fairly and effectively raised and responded to. It stated:

> "NHS Lothian is striving to create a climate which ensures employees have absolute confidence in the fairness and objectivity of the procedures through which their concerns are raised and are assured that concerns raised will be acted upon."

36.2.5 The policy provided the same non exhaustive list of examples of potential whistleblowing issues as detailed in the 2005 policy, with two additional issues:

- systematic discrimination
- management instructions which are contradictory to safe and effective person-centred care.

The policy directed that if a member of staff felt that something was of concern, and they felt that it was something which NHSL should know about or investigate, they could use the procedure contained within the policy.

36.2.6 The policy provided different levels of escalation or alternatives should a member of staff feel they were unable to raise their concern with the management level named. Ultimately, the policy provided details of a national alert telephone line if a member of staff felt unable to raise their concerns through NHSL. This was run by

the Whistleblowing Alert and Advice Services for NHS Scotland (AALS) through the Scottish Government Health Directorate.

36.3 Awareness

36.3.1 Prior to 2013, human resources policies were publicised to members of staff through an 'Employment Policies Manual'. This was first complied in 2005 and distributed to all NHS workplaces with regular updates issued. This manual was withdrawn in 2013 with the development of the HR Online website which sat within the NHSL intranet. Thereafter, staff were directed to HR online to ensure they were accessing the most up to date version of the policies and guidance.

36.3.2 NHSL communicated polices to members of staff in a variety of ways namely using a bulletin to all staff entitled 'Team Brief', intranet content and information cascaded to staff through the management structure.

36.4 Speak Up

36.4.1 In 2019 NHSL introduced Speak Up, an initiative designed to encourage staff to feel safe and supported in raising concerns. This was introduced so that staff who had a concern could discuss this confidentially and receive advice and guidance on what to do next to address this. This may be about personal issues or wider service delivery. The member of staff may be directed to their line manage, or if appropriate, to the whistleblowing policy.

36.5 Other routes for staff concerns

36.5.1 Other than whistleblowing, during the period of the project there were other avenues which staff could utilise to raise concerns about the project. These are outlined below:

36.5.2 NHSL had in place Incident/Adverse Event Management Policies throughout the period of the project. An adverse event or incident is defined as "an event that could have caused, or did result in harm to people, including death, disability, injury, disease or suffering and/or immediate or delayed emotional reactions or psychological harm". This also included harm to all or parts of NHSL as an organisation e.g., system failure, service disruption. The policy required NHSL to

report and review adverse events and near misses (where a harmful outcome was avoided either by chance or intervention.) Any review undertaken was to focus on learning and best practice.

36.5.3 Partnership working was a feature of NHS Scotland's approach to employee relations with the Scottish Government, NHS employers, trade unions and professional organisations working together to reach agreement on issues which would affect them. Within NHSL there was an NHS Lothian Partnership Forum. This is chaired jointly by the Chief Executive and a non-executive Employee Director who met with the trade union/employee representatives and management. In addition, there were other local partnership forums where any concerns regarding the RHCYP/DCN could have been raised by staff. These were:

- Royal Infirmary of Edinburgh Partnership Forum. After 2016 this became the Women and Children's Services Partnership Forum
- Western General Hospital Partnership Forum
- Corporate Services Partnership Forum.

36.5.4 Within the RHCYP/DCN project there were a number of local health and safety committees namely:

- Royal Hospital for Sick Children Health and Safety Committee.
- Western General Hospital Health and Safety Committee.
- Corporate Services Health and Safety Committee.
- Royal Infirmary of Edinburgh Health and Safety Committee.

which sat below the NHS Lothian Health and Safety Committee and together ensured compliance with the NHS Lothian Health and Safety Policy. Reports were provided on a quarterly basis from the health and safety management system and the information was reviewed and summarised by each of the local health and safety committees to determine local levels of assurance. These were reviewed by the NHS Lothian Health and Safety Committee to provide assurance at a wider corporate level. In terms of the policy, members of staff were instructed to immediately notify their manager/supervisor of all health and safety hazards that they identify. Where a member of staff believed it was inappropriate to raise a legitimate concern with their

manager that is in the public interest they could raise it in terms of the Whistleblowing Policy.

36.5.5 It was open to members of staff throughout the RHCYP/DCN project to raise concerns, ideas or seek clarification through user groups and workstreams or in response to newsletters which invited staff comment, inductions and familiarisation visits.

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Provisional Position Paper 10

Term of Reference 2: The Contractual and Funding Structure Relating To The Royal Hospital for Children and Young Persons/ Department of Clinical Neurosciences Project

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Glossary

Bouygues	Bouygues Energies & Services FM UK Limited, the facilities management contractor appointed by IHSL. See section 6.
CAMHS	Child and Adolescent Mental Health Services. One of the units for the provision of such services by NHSL, known as the Melville Unit, is located in RHCYP.
Capital expenditure	Spending by a public authority from its own financial resources that produces or enhances an asset such as hospitals, schools or roads. Also referred to as "capital spending" or "spending from the capital budget".
CIG	Capital Investment Group. The Scottish Government Capital Investment Group oversees the approval process for business cases across NHS Scotland where the value of the capital project is greater than the Board's delegated limit.[1]
DCN	Department of Clinical Neurosciences
FBC	Full Business Case; see section 5
IHSL	IHS Lothian Limited, the SPV/ Project Company established to carry out the RHCYP/ DCN project.

[1] For further details see here: https://www.pcpd.scot.nhs.uk/Capital/Approval.htm.

MSFM	Management Statement and Financial Memorandum of Scottish Futures Trust; see paragraph 3.3.3.
Multiplex	Brookfield Multiplex Construction Europe Limited, the construction contractor appointed by IHSL. See section 6.
NHSL	NHS Lothian Health Board
NPD	Non-Profit Distributing. See fuller discussion in section 3
OBC	Outline business case. The Outline Business Case identifies the preferred option for implementing a strategic / service solution, demonstrating that it provides value for money and the supporting commercial and management arrangements to be put in place to successfully implement that option. It is a key stage in the approvals process for projects.[2] See section 4.
PA	Project Agreement – the agreement between NHSL and IHSL dated 12 and 13 February 2015 for the design, build, finance and maintenance of the new RHCYP/ DCN building at Little France.
PFI	Private Finance Initiative – see paragraph 3.2.1
PPP	Public Private Partnership - see paragraph 3.2.1

[2] Further details can be found in the Scottish Capital Investment Manual: https://www.pcpd.scot.nhs.uk/Capital/scimpilot.htm.

Revenue expenditure	Expenditure by a public authority on its day-to-day operations. This type of expenditure does not normally lead to the creation of an asset (see capital expenditure above).
RHSC	Royal Hospital for Sick Children – the predecessor to the Royal Hospital for Children and Young Persons
SFPA	Standard Form Project Agreement – see paragraph 3.6.1
SFT	Scottish Futures Trust – see paragraph 3.3.3.
SGHSCD	Scottish Government Health and Social Care Directorate
SPV	Special Purpose Vehicle. The project company set up specifically for the purpose of carrying out a project under the NPD model (and most other privately financed contract models). Sometimes referred to as the "Project Company" or "Project Co".

1. Introduction

1.1 Purpose Of This Paper

1.1.1 This Provisional Position Paper has been produced to assist the Chair in addressing the terms of reference of the Scottish Hospitals Inquiry, specifically term of reference 2:

> "To examine the arrangements for [the]…contractual structure adopted for the financing and construction of the buildings, to determine whether any aspect of these arrangements has contributed to such issues and defects [as are subject to the Inquiry's investigations]."

1.1.2 For the purposes of this paper, the "issues and defects" subject to the Inquiry's investigations are those in relation to the adequacy of the ventilation system at the Royal Hospital for Children and Young People and Department of Clinical Neurosciences (RHCYP/ DCN) in critical care areas that gave rise to the decision on 4 July 2019 that the move of services from the Royal Hospital for Sick Children to RHCYP/ DCN should be halted.

1.1.3 The paper outlines the Inquiry Team's understanding of the contractual structure, the financing model adopted and the structure and the financing arrangements that were put in place in relation to the RHCYP/DCN project. It follows on from a draft that was distributed to core participants with knowledge of the contractual and financial structures in relation to that project. Comments were provided by all, namely IHS Lothian, NHS Lothian, the Scottish Futures Trust and the Scottish Government.

1.1.4 The Inquiry has carefully considered the comments received, together with the supporting material submitted and other material held by it. It has reviewed and revised the draft accordingly to produce this Provisional Position Paper.

1.1.5 As a result, the views expressed in this Paper are firmer than those set out in the draft. It follows that the Chair will be invited by the Inquiry Team to make findings

in fact based on the content of this paper. However, while the views may be firmer, that should not be equated with “final”. The Inquiry’s investigations are not yet concluded and, at the time of publication, there is to be a hearing dealing with matters arising in relation to the Royal Hospital for Children and Young Persons/ Department of Clinical Neurosciences commencing on 26 February 2024. Evidence at that hearing and submissions made following it (as well as any other evidence received) may require the Inquiry to reconsider matters set out in this paper. Nonetheless, in the absence of such evidence or submissions, it is likely that the contents of this paper will be used as a basis for the Inquiry’s report.

1.1.6 It should be noted at the outset that this paper looks at the contractual structure and financing arrangements at a general level, and the comments made herein should be read on that basis. It therefore follows that nothing in this paper supersedes any specific comments made in relation to particular parts of the contractual structure and financing arrangements made by the Inquiry elsewhere.

1.2 Provisional Conclusions

1.2.1 On consideration of the material that it has (including comments received on the original draft), the Inquiry would provisionally conclude that there is no evidence that in and of itself the contractual structure for the financing and construction of the buildings adopted in relation to the RHCYP/ DCN project directly contributed to the issues that arose in relation to RHCYP/ DCN that are the subject of the Inquiry’s investigations. It is important to clarify exactly what is meant by this.

1.2.2 Firstly, the issues that arose in relation to the RHCYP/ DCN project that are of interest to the Inquiry are, in the words of Term of Reference 1, ““issues in relation to adequacy of ventilation…adversely impacting on patient safety and care which arose in the construction and delivery of…RHCYP/DCN”. That should not be taken as reflecting a conclusion that no other issues or defects arose or exist in relation to the RHCYP/ DCN building. The Inquiry has published another provisional position paper dealing with some of the other issues that arose in relation to the building.[3] However, for present purposes the provisional conclusion set out above may perhaps be re-

[3] Provisional Position Paper 7 – non-ventilation issues

phrased as being that "the contractual structure adopted for the financing and construction of the buildings did not contribute to the issues arising in relation to, and any defects in, the ventilation system at RHCYP/ DCN."

1.2.3 Secondly, this paper, and the conclusion set out above, relates to the generality of the contractual structure. The question for consideration is were the relationships between the various parties, and the arrangement and organization of those relationships, as set out in the contractual documents in some way a contributory factor to the issues and defects that arose in relation to the project. This paper, and the conclusion, relates to the formal legal structure adopted for financing and construction.

1.2.4 Thirdly, there is evidence that the complexities of the contractual and financial structure made finding solutions to issues that arose during the project more challenging. It will be evident from what follows in this paper that NPD is a very complex structure with many organisations having a role and interests that are not always necessarily aligned. In this, the NPD model is not significantly different from the other variants of PFI/PPP (see discussion in Chapter 3). However, the Inquiry has been informed that delivering the rectification works to the ventilation system to enable the hospital to open was more challenging because of the nature of the NPD model.

1.2.5 It therefore follows that this paper, and the conclusion set out above, does not relate to matters such as how those relationships worked in practice; nor does it relate to the interpretation and application of specific provisions of the contract relating to for example the standards that the ventilation system to be installed in the buildings. Similarly, matters such as any claimed incompatibility between the NPD model and technical guidance applicable to healthcare projects are outwith the scope of this paper.

1.2.6 A supporting provisional conclusion is that the contractual and financial structure followed both the applicable guidance and what was, at the time, accepted practice. The basic structure, the allocation of risk within that structure and the financing arrangements as set out in the project agreement and other documentation initially entered for the purposes of the project were in line with what might have been expected. The risk allocation and financing arrangements were varied during the

project, and the changes are noted in sections 8 and 9 of this paper. It should be stressed that this paper deals only with the changes to the financing structure made by the agreements dealt with in those sections, and does not deal with broader questions as to the manner in which the terms of those agreements dealt with the ventilation issues that are the subject of the Inquiry's investigations.[4]

1.2.7 Given these provisional conclusions, the matters covered in this paper are dealt with relatively shortly. While the Inquiry invites corrections or clarifications of the matters set out in this provisional paper generally, a specific issue on which it invites comment is whether there is evidence that would contradict the factual basis set out below or the provisional conclusions set out above. The Inquiry will consider any evidence submitted that purports to displace the provisional conclusions.

1.3 Structure Of This Paper

1.3.1 The next section of this paper sets out the evolution of the arrangements for the financing of the project, from which it will be apparent why this paper focuses on the NPD model of procurement. The paper then sets out the background to, and a description of, the non-profit distributing (NPD) model of financing and procuring public infrastructure before moving on to describe how NHS Lothian sought to implement that model in the specific context of the RHCYP/ DCN project. It looks at the structure of both the project agreement and the various financing agreements that were put in place. The contractual payment mechanism is then examined before, as noted above, dealing with the implications of later agreements on the matters dealt with in the paper.

1.4 Capital Expenditure vs Revenue Expenditure

1.4.1 A recurring theme in this paper is the distinction between capital expenditure (capital spending, spending from the capital budget) and revenue expenditure (revenue spending, spending from the revenue budget). This paper is not concerned with the intricacies of public sector finances as they existed during the project (or

[4] On which see Provisional Position Paper 8 - Narrative concerning the Construction Phase of the Royal Hospital for Children and Young People and the Department of Clinical Neuroscience.

today). However, given that the expressions are used frequently in this paper a brief explanation is in order.

1.4.2 Capital expenditure is expenditure from a public authority's own resources that results in the creation or enhancement of an asset. In the public sector this is normally a hospital, a school, a prison or a road for example.

1.4.3 Revenue expenditure is expenditure from the authority's own resources for the purposes of the day-to-day operations of that authority that does not normally result in the creation of an asset. A simple example of revenue expenditure would be the wages and salaries of staff.

1.4.4 At a very high level, during the events narrated in this paper, expenditure by public authorities was categorised as being either "revenue" or "capital". Traditionally, construction of a new hospital would be an item of capital expenditure. However, methods of using private finance to meet the costs of construction (discussed in section 3) enabled the costs of construction to be met from revenue expenditure, essentially by spreading those costs over a period of time during which the company contracted by the authority would operate and maintain the hospital (and be paid for doing so). This enabled classification of the expenditure as revenue payments for a "service" (i.e., the operation and management of a facility made available to the public authority) rather than simply construction. This in turn enabled the Scottish Government to fund additional infrastructure investment. This is because using these contracts means construction costs are not charged up-front against its capital budget or met from capital borrowing.[5]

[5] Audit Scotland, Privately Financed Infrastructure Investment p.13 The accounting treatment of privately financed projects changed in 2014 – see section 3.7

2. Evolution Of Financial Structure Of The RHCYP/ DCN Project

2.1 The evolution of the financial structure for delivery of the Royal Hospital for Children and Young Persons/ Department of Clinical Neurosciences project is, briefly, as follows.

2.2 Agreement by the Scottish Government Capital Investment Group (CIG) for NHS Lothian (NHSL) to proceed to develop an outline business case for the reprovision of the Royal Hospital for Sick Children (RHSC) was given on 21 June 2006. Thereafter, an initial outline business case for a replacement for the Royal Hospital for Sick Children (RHSC) was originally approved by CIG in August 2008, though it subsequently went through various iterations until being finalised on 27 September 2012.

2.3 The reprovision of the RHSC was originally envisaged as being delivered through the Health Facilities Scotland framework as a design and build project.[6] This approach would have meant that the entire cost of the building of the new hospital would have been funded directly by the Scottish Government as an item of capital expenditure.

2.4 An initial proposal for the re-provision of the Department of Clinical Neurosciences (DCN) was approved by the Scottish Government in July 2008. This allowed NHSL to develop an outline business case and options appraisal for the redesign and re-provision of DCN in Edinburgh. That initial outline business case was approved by NHS Lothian (NHSL) in December 2009, but did not proceed to Scottish Government for approval because of issues relating to the availability of capital for the purpose of funding that project. The preferred option set out in that initial outline

[6] OBC paragraph 1.4.

business case was a joint RHSC and DCN build at Little France.[7] The rationale for a joint build was "the opportunity to deliver economies of scale in clinical departments with high-tech and high-cost equipment such as radiology and operating theatres. While patient pathways do not cross in these areas, staff pathways are made more efficient by co-location of the RHSC, CAMHS and DCN components."[8]

2.5 The Scottish Government Draft Budget for 2011 – 12, published in November 2010, announced that both projects would be delivered using the Non-Profit Distributing (NPD) revenue funded model.[9] This decision was taken against a background of lack of availability of capital funding to meet the cost of this project (and others).[10] This represented a fundamental change to the procurement method for the project[11] that gave rise to some concerns on the part of NHSL[12]

2.6 Those concerns notwithstanding, in March 2011 NHSL submitted a Business Case Update to supplement the outline business case in respect of RHSC and the DCN Initial Agreement to the Scottish Government, setting out the options for delivering both re-provision projects on the Little France site using an NPD procurement route. This update identified a joint build of RHSC and DCN as the preferred option for the project. The Scottish Government gave approval to develop an OBC for this project in July 2011.[13]

[7] OBC paragraph 1.3.

[8] OBC paragraph 1.17; on the rationale generally see paragraphs 1.13 – 1.17.

[9] Scottish Government, *Scotland's Spending Plans and Draft Budget 2011-12* Chapter 8 Health and Wellbeing, What the Budget Does section: "We will also ensure the delivery of a range of other health projects, including the Royal Sick Children's Hospital and Department of Clinical Neurosciences in Edinburgh through the NPD approach outlined in chapter 3.": The project is also mentioned in the "New investment financed through the Non-Profit Distributing model" table in Chapter 3.

[10] See *Scotland's Spending Plans and Draft Budget 2011-12* Chapter 3. See also Written statement of Susan Goldsmith paragraph 10.

[11] OBC paragraph 1.5

[12] Written statement of Susan Goldsmith at paragraph 11; Transcript – Susan Goldsmith – 17.05.2022 at column 26 onwards.

[13] OBC Paragraph 1.6.

2.7 The Outline Business Case for the preferred option using the NPD route was approved by NHS Lothian Board on 25 January 2012 for submission to the Scottish Government. NHSL received confirmation from the Scottish Government of the approval of the OBC on 18 September 2012. The Outline and Full Business Cases are discussed further at sections 4 and 5 below.

2.8 From that point, the project proceeded as an NPD project. Accordingly, the contractual and financial structures adopted for the financing and construction of the RHCYP/ DCN project is determined by that model. The next section of this paper provides a general description of the non-profit distributing (NPD) model of financing and procuring public infrastructure generally, before turning to how NHSL sought to apply the principles of the NPD model in its outline and full business cases for the project and the ultimate contractual and financial structure adopted.

3. The Non-Profit Distributing Model Of Financing Infrastructure

3.1 Paying for Infrastructure

3.1.1 In general, governments can fund public infrastructure projects from its own money (usually referred to as using the capital budget), borrowing, or using private finance. It was considered at the time that the last named was the best option.

3.1.2 The Scottish Government had no power to borrow for the purposes of capital expenditure until 12 December 2014.[14] Accordingly, that route was not open at the time.

3.1.3 The Scottish Government capital budget was under considerable pressure. Scotland's Spending Plans and Draft Budget 2011 – 12 stated:

> "Under the current funding arrangements for Scotland, the pace at which the Scottish Government can implement its infrastructure plans largely depends on the allocation of capital budgets from HM Treasury at each Spending Review. …As a result of the decisions taken by the UK Government in the 2010 Spending Review, the capital budgets available to the Scottish Government will fall by 36 per cent in real terms by 2014-15 compared to the current financial year (2010-11). …This scale of reduction…will inevitably slow the pace of implementation of the Government's infrastructure programme."[15]

[14] The date on which section 32 of the Scotland Act 2012, allowing borrowing by the Scottish Ministers subject to HM Treasury's controls and limits. See also Audit Scotland, Privately Financed Infrastructure Investment at p. 8.

[15] Scotland's Spending Plans and Draft Budget 2011-12 (webarchive.org.uk), Chapter 3, The Outlook for Capitals Budgets section. For (critical) commentary on budgetary drivers behind the use of private finance see, for example, Hellowell and Pollock, Non-Profit Distribution: The Scottish Approach to Private Finance in Public Services, Social Policy and Society Volume 8 Issue 3 (2009) p.406 - 408

3.1.4 The document went on to note that “funding infrastructure investment through public capital ensures the lowest cost of finance for a typical project”.[16]

3.1.5 Thus, in the absence of borrowing powers of its own, the Scottish Government therefore proposed to turn to private finance to provide the funds required to construct the RHCYP/ DCN. At the risk of oversimplification, at the time, if resort was not had to private finance, the project would not have taken place as planned.

3.2 Private Finance Initiative (PFI)

3.2.1 Use of private finance in infrastructure projects in Scotland was not new. While the private sector has long been involved in capital projects as a contractor, its greater involvement in providing both finance and capital works and service provision was formalised by the introduction by the UK Government in 1992, of a scheme known as the ‘Private Finance Initiative” (PFI). The first PFI project in Scotland was the construction of the Skye Bridge which was completed in 1995.[17] In 1997 the Labour government introduced the term ‘Public Private Partnership’ (PPP), which tended to be used interchangeably with ‘PFI’.[18] In practice, PPP is often used as an umbrella term describing many different models, of which PFI is just one, and all privately financed projects share a number of features.[19] These are discussed further in section 3.4. However, for the present it should be noted that all PPP projects essentially require investment by lenders to fund the construction of an asset (in this case, a hospital) which is then operated and maintained for the benefit of the relevant public authority (NHSL), all by a project company. This arrangement lasts for a set period (in this case 25 years) during which the public authority pays for the use of the building usually in the form of a monthly “service payment”, effectively repaying the capital

[16] Scotland’s Spending Plans and Draft Budget 2011-12 (webarchive.org.uk), Chapter 3, Using Every Policy Lever To Expand The Capital Programme section

[17] Audit Scotland, Privately Financed Infrastructure Investment at p. 8,.43.

[18] Scottish Parliament Finance Committee, The Scottish Parliament - Finance Committee Report, para 26.

[19] Audit Scotland, Privately Financed Infrastructure Investment pp. 9 – 10. This paper does not deal with all variants of privately financed public sector projects. For example, the Hub model, which tends to be used for smaller infrastructure projects, is one that is not relevant to the current discussion.

costs over that period. Thus, the costs to the public authority are revenue costs, not capital costs as noted at paragraph 1.4.4.

3.2.2 In Scotland's Spending Plans and Draft Budget 2011 – 12, it was noted that around £5.5 billion of capital investment had been delivered in Scotland through PFI, particularly in the education and health sectors.[20]

3.3 Introduction of Non-Profit Distribution (NPD) and the Scottish Futures Trust

3.3.1 The PFI model was subject to several criticisms, including the cost of financing, the scale of repayments and the potential for excessive profits to the private sector.[21] Partly in response to these criticisms,[22] the NPD (initially known as NPDO for Non-Profit Distributing Organisation) model was developed. This is a form of PPP first developed by Argyll and Bute Council as an alternative to the traditional PFI model. Argyll and Bute Council developed the model when they were appraising options to deal with the backlog in maintenance of the Council's school estate. The model was adopted by the Labour Government, and the first NPD project was signed in 2005.[23] NPD was further developed as the preferred revenue-financed procurement model by the Scottish National Party (SNP) after it was elected to the Scottish Government in 2007. By 2008, NPD was the "default assumption for privately financed projects",[24] and the November 2010 announcement stated that the Scottish Government "has

[20] Scotland's Spending Plans and Draft Budget 2011-12 (webarchive.org.uk) Chapter 3, Revenue financed investment section. Cf Audit Scotland, Privately Financed Infrastructure Investment p.16 which refers to £5.6 billion.

[21] See Audit Scotland, Privately Financed Infrastructure Investment p.21; Scotland's Spending Plans and Draft Budget 2011-12 (webarchive.org.uk) Chapter 3, Revenue financed investment section.

[22] Argyll and Bute Council, "Submission" - Finance Committee Inquiry into methods of funding capital investment projects.

[23] Audit Scotland, Privately Financed Infrastructure Investment, pp. 7-8.

[24] A position supported by only a minority of the Scottish Parliament's Finance Committee in its 8th Report, 2008 - The Scottish Parliament - Finance Committee Report footnotes 1 and 2. The assumption that NPD should be used was reiterated in the Value for Money Assessment Guidance: Capital Programmes and Projects October 2011: value-for-money-guidance-final-version-october-2011 (scottishfuturestrust.org.uk)

made it clear that it supports the Non-Profit Distributing (NPD) model to deliver revenue financed investment.”.[25]

3.3.2 The development of the NPD model was closely linked to the establishment and work of the Scottish Futures Trust (SFT). The SFT played a key role in developing contracts and documentation, advising on, providing assurance for and generally facilitating use of the NPD model.[26]

3.3.3 The SFT was established in 2008 as a private limited company wholly owned by Scottish Ministers.[27] It is also a non-departmental ‘arm’s length’ public body. The relationship between the Scottish Government and the SFT was formally defined within a Management Statement and Financial Memorandum which was signed in 2009.[28] The Memorandum does not describe the SFT’s role with regard to development of the NPD model specifically, rather it states that one of the SFT’s objectives is to “innovate and bring fresh approaches and models for infrastructure investment”.[29] It also states that a guiding principle of the SFT should be “Government policy and priorities for infrastructure investment and related topics”,[30] which included the use of the NPD model as a revenue-finance option. The only explicit reference to NPD in the SFT’s constitution documents is in its Memorandum of Association which states: “The Company's objects are to encourage, facilitate, plan, fund, procure and deliver assets, infrastructure and other projects initiated or pursued wholly or partly by or for the benefit of governmental bodies, local authorities, other bodies wholly or partly funded through public funds, and *non-profit distributing bodies*, in Scotland”.[31]

3.3.4 According to Audit Scotland, the SFT “acts as a centre of expertise on infrastructure investment, for example advising the Scottish Government on likely

[25] Scotland’s Spending Plans and Draft Budget 2011-12 (webarchive.org.uk) Chapter 3, Revenue financed investment section.

[26] Audit Scotland, Privately Financed Infrastructure Investment p.12

[27] Ibid

[28] In the 2022/23 financial year, the statement and memorandum was effectively replaced with a new framework agreement.

[29] MSFM paragraph 2.2.1(iii)

[30] MSFM paragraph 2.3.1(ii)

[31] SFT’s Memorandum of Association paragraph 3..

levels of market interest when the pipeline of infrastructure investment is being developed. The SFT's responsibilities, with respect to NPD and hubs include: developing overall programme approaches for effective delivery, including a set of standard contractual documents; advising on and organising the funding and financing of projects; advising on project delivery; providing project validation through scrutiny and diligence checks; and encouraging collaborative working."[32]

3.3.5 SFT's role in relation to this project is explored further in Provisional Position Paper 9 - The Governance Structure within the project to construct the Royal Hospital for Children and Young People and Department of Clinical Neurosciences, Edinburgh.

3.4 Characteristics of NPD

3.4.1 NPD shares some of the same characteristics of conventional PFI. Under both models, a special purpose vehicle (SPV) is established to design, construct and operate an asset, the SPV being typically composed of equity investors, which may include financial investors, construction contractors and others.[33] Projects are mostly financed by private debt.[34] The following diagram from Audit Scotland provides a comparison between the PFI and NPD models:

[32] Audit Scotland, Privately Financed Infrastructure Investment, p.12.

[33] Though in the case of the RHCYP/DCN project, this did not apply – see discussion of IHSL corporate structure in section 6.4

[34] Indeed, Hellowell and Pollock describe NPD as a "close relative of PFI": Hellowell and Pollock, Non-Profit Distribution: The Scottish Approach to Private Finance in Public Services, Social Policy and Society Volume 8 Issue 3 (2009) p.406

The NPD model compared with the PFI model
There are greater attempts to fix private sector returns at the start of NPD contracts than under PFI.

Features of the contracts	PFI	NPD
The SPV is set up to build, manage and maintain the assets over the lifetime of the contract	The private sector formed the SPV. Members held dividend-bearing shares in the company, meaning they could receive additional income when the company was profitable, or a surplus was being held. The private sector exercised total control of the SPV with no public sector involvement.	The SPV shares are non-dividend bearing. This means the private sector cannot generate additional profits by issuing dividends and is investing only what it lends. The public sector is represented on the SPV board by a Public Interest Director (PID), who has voting rights. The PID also holds veto rights over certain board decisions.
Surpluses generated by the SPV	Surpluses generated could be paid out as dividends to the SPV shareholders.	Surpluses are unlikely to be distributed until near the end of the contract and are not to be paid out until a range of project costs are met. Any surpluses at the end of the contract go to the public sector or a designated charity. This means that direct private sector returns are agreed when the contract is signed.
Repayment of loans	A source of private sector returns, alongside dividend payments. The majority was issued as fixed rate senior debt.	The main source of private sector returns, the majority of which is issued as fixed rate senior debt.
Private sector profits	Varied depending on the ability of the SPV to generate surpluses and pay out dividends.	Capped and agreed at the outset of the project when the debt is issued.
Refinancing gains	Refinancing decisions were taken by the project company.	The PID has effective control over refinancing decisions and any gains would be shared by shareholders, including the public sector.
Common features that contribute to effective contracts	Risk allocation: transferring appropriate risk to the private contractor. Whole-life costing: ensuring contracts and payments take into account the capital cost, as well as operational, maintenance, repair, upgrade and disposal costs. Performance-based payments: ensuring that the public sector receives specified services.	

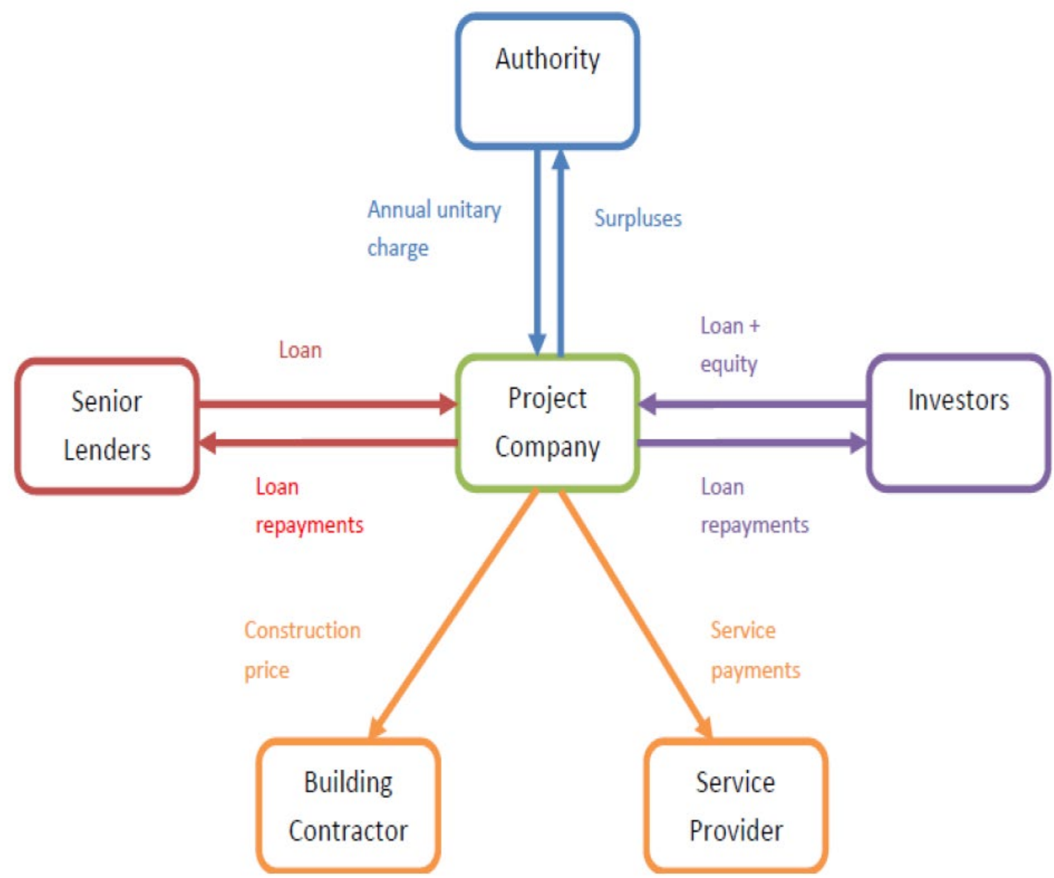
Source: Audit Scotland analysis of the Scottish Futures Trust's NPD guidance documentation

Source: Audit Scotland "Privately financed infrastructure investment: the non-profit distributing (NPD) and Hub models", 2020. Note that the reference to the PID having effective control over refinancing decisions was superseded by changes to the Standard Form Project Agreement which changes were adopted in this project.

3.4.2 As can be seen from the above, the key difference between the NPD model and the PFI model is that in the former, private sector profits are capped and agreed at the outset of the project. The early NPDO project under Argyll and Bute Council involved diverting all surpluses generated during the concession period to a charity

devoted to educational aims,[35] but the involvement of charities was excluded in later iterations of the NPD model. In addition, in the NPD model, the SPV has a public interest director with voting rights and, in early NPD projects, effective veto on some actions of the company.[36]

3.4.3 The structure of a typical NPD project is like that used in other PPP projects, with the public sector authority entering into a contract with the SPV/Project Company. The Project Company secures loans from investors and lenders and enters into contracts with the building contractor and service provider. The basic structure can be illustrated as follows:



Source: Scottish Futures Trust, "NPD Model Explanatory Note" 2015

[35] Argyll and Bute Council, "Submission" - Finance Committee Inquiry into methods of funding capital investment projects.

[36] The veto rights were removed as a result of changes to the rules under which public – private partnership projects had to be accounted for, referred to at paragraph 3.7.1 below. The public interest director in the RHCYP/ DCN project did not have veto rights on the actions of IHSL.

3.5 The Project Company and public sector representation

3.5.1 According to the SFT's explanatory note on NPD: "Whilst there has been no specific corporate structure requirement, all NPD projects to date have adopted a structure where the Project Company is a special purpose company limited by (non-dividend bearing) shares. The shares are held by the private sector investors except for one "golden share" held by the Authority, which increases transparency and accountability and underpins the NPD principle of enhanced stakeholder involvement."[37]

3.5.2 The note goes on to explain that the Project Company should always be managed by the parties whose lending is at risk. This will be the junior lenders (whose management rights are subject to senior lenders step-in rights). The relationship between a senior lender and a junior lender is that senior lenders will generally have one or more forms of security over the project and/ or the Project Company and its assets and be paid back first, before any other creditors are paid. Thus, they take on less risk with their investment than a junior lender does.

3.5.3 However, as noted above one of the characteristics of an NPD Project is greater involvement of the public sector, through holding a 'golden share' and through representation on the Board by a Public Interest Director who is in practice nominated by the SFT.[38] The principal roles of the Public Interest Director are:

a. Monitoring the Project Company's compliance with the core NPD principles and good governance practices

b. Bringing an independent and broad view to the Project Company's board

[37] Scottish Futures Trust, NPD Model Explanatory Note, paragraph 2.2 (p.6)

[38] They were also in practice an SFT staff member: see section 2 of the SFT Board Minutes for March 2013. However, SFT now recruits persons specifically to serve as PIDs. The last round of such recruitment in 2021 included the possibility of appointment to the RHCYP/ DCN project company: publicinterestdirectoropportunitiesinscottishinfrastructurecompanies.pdf (scottishfuturestrust.org.uk). The results of that recruitment exercise can be found here.

c. Bringing the Project Company board's attention to opportunities for refinancing

d. Bringing the Project Company board's attention to opportunities for realising cost efficiencies and other improvements in the Project Company's performance.[39]

3.5.4 The public authority that entered into the contract with the Project Company is also entitled to appoint an "Observer" to attend and participate (but not vote) at the Project Company's board meetings. According to the SFT explanatory note, "the Observer role has been a feature of traditional PFI/PPP projects in Scotland to date and has been retained in the NPD model."[40]

3.5.5 The SFT model Articles of Association for a Project Company lay out the rights and responsibilities of shareholders, directors and the observer, how they are appointed and dismissed and remuneration for directors, amongst other things.[41]

3.6 The NPD Contract and documentation

3.6.1 There is only one type of contract for an NPD project, and that is the Standard NPD Model Form, which follows HMT's Standardisation of PFI Contracts Version 4 Guidance[42] and its adaptations.[43] The Standard Form Project Agreement ("SFPA") is mandatory for procuring authorities, and is intended to simplify documents and minimize transaction costs for contractors, investors and funders as well as procuring authorities.[44]

[39] Scottish Futures Trust, NPD Model Explanatory Note, paragraph 3.1 (p.9)

[40] Ibid paragraph 3.1 (p.9).

[41] Scottish Futures Trust, "Mandatory NPD Articles of Association Consolidated ESA10 amendments to standard form NPD articles of association 13 February 2015". The model articles of association were originally published in 2011, and updated in June 2012 prior to the version referred to..

[42] Scottish Futures Trust, NPD Model Explanatory Note paragraph 2.6 (p.7).

[43] Scottish Futures Trust, Standard Project Agreements (hub DBFM & NPD Model) Users Guide (Version 2 – June 2012), p.1

[44] Scottish Futures Trust, Standard Project Agreements (hub DBFM & NPD Model) Users Guide (Version 2 – June 2012), p.2

3.6.2 The SFPA's basic approach is that:

a. The private sector will provide the authority with serviced accommodation.

b. Payment will only commence once the accommodation is complete and ready for use.

c. The Authority will pay for available facilities and deductions will be made from the annual service payment if the facilities are not available or the services are otherwise not provided in accordance with the Authority's requirements.[45]

3.6.3 However, the SFT notes that each Project Agreement needs to be tailored to the specific project by the procuring Authority.[46] The SFPA needs to be carefully assessed and reviewed in the light of any further project and sector specific guidance and advice received. It should also "be used in conjunction with any further guidance issued/adopted by the Scottish Government and/or the SFT from time to time."[47]

3.6.4 Any changes to the SFPA made in the context of a specific project need to be approved by SFT. Changes to the Project Agreement are called derogations and the derogations process is as follows: "An Authority must give SFT one month's notice of when it intends to submit a request for derogations… SFT will endeavour to respond to a request for derogations within 2 weeks. In requesting derogations, the Authority must provide its amended version of the relevant standard Project Agreement (including the Schedule Parts) and provide explanations for the proposed amendments in footnotes within its amended document. SFT will then do a

[45] Ibid, p. 1.

[46] Furthermore, the SFPA was not considered to be entirely appropriate for 'acute healthcare projects' which are required to operate on a 24/7 basis. In these cases, "it may be appropriate to revert to some of the measures in the Scottish Standard Health PPP Contract (in particular the measurement of service performance by sessions rather than days and the commissioning arrangements around handover of the new facilities), and in this regard NHS bodies must liaise, and agree an approach with, SFT." Ibid p.9

[47] Ibid, p.5.

comparison of the document submitted against its master version of the relevant standard Project Agreement."[48]

3.6.5 The standard form NPD Project Agreement (which includes the standard Service Level Specifications, NPD articles of association and the User's Guide) was published in 2011 and amended in 2012, 2014 and 2015. Use of the second (2012) version was mandatory for projects still in the procurement phase before the close of competitive dialogue (and is the relevant version for the RHCYP/ DCN project).[49]

3.7 End of NPD and introduction of the Mutual Investment Model (MIM)

3.7.1 While not relevant to the RHCYP/ DCN project, to complete the general story of the NPD model, it is worth noting that from September 2014 onward, the rules under which public – private partnership projects had to be accounted for changed. This led to reconsideration of the NPD model and its use for public sector infrastructure projects.[50] In short, the changes meant that the full capital costs of the project had to be accounted for in a public authority's capital budget rather than the revenue budget, having a significant impact on the public authority's finances. As a result of this change the Scottish Government stopped using the NPD model, with the final NPD contract signed in 2017.[51]

3.7.2 The Mutual Investment Model (MIM) replaces the NPD model. It is described as "the current model for private finance projects" in Scotland[52] and has been subject to an options appraisal by SFT.[53]

3.7.3 While the NPD model as used in the RHCYP/ DCN project is therefore unlikely to be used in the future, it should be borne in mind that most variations of public-private

[48] Ibid, p.5.

[49] Ibid, p.5

[50] For background, see Audit Scotland, ESA 10: Classification of Privately Funded Capital Projects Briefing Paper

[51] Audit Scotland, Privately Financed Infrastructure Investment, p.8.

[52] Scottish Government, Infrastructure Investment Plan 2021-22 to 2025-26 Progress Report 2022 to 2023.

[53] Scottish Futures Trust, An Options Appraisal To Examine Profit Sharing Finance Schemes…(2019)

partnerships have, as has already been noted, similarities as well as differences. The MIM model was developed by the Welsh Government and introduced in 2017. It is a PPP model that has strong similarities to NPD as is clear from the Users Guide for the standard form project agreement:

> "The key principles embodied in the MIM Standard Form Project Agreements will be familiar to those who operate in the UK 'PPP' market. The MIM Standard Form Project Agreements are based on various UK precedent and standard project agreements, updated in order to accommodate the specific needs of the Welsh Government's infrastructure programme and Welsh Government policy."[54]

The Guide goes on to explain that (unlike NPD) there are no controls or vetoes on the operations of the Project Company on the part of the public authority, nor is there sharing of rewards or profits with the procuring authority. But the underlying contractual and financial structure of the Welsh model remains similar to that which now stretches back to the early days of PFI, and the option favoured by SFT reflects the Welsh model.[55]

[54] Welsh Government's Mutual Investment Model (MIM) Standard Form Project Agreements User Guide p. 2.

[55] Scottish Futures Trust, An Options Appraisal To Examine Profit Sharing Finance Schemes…(2019) p.5

4. The Outline Business Case

4.1 Introduction

4.1.1 The Outline and Full Business Cases relating to the project set out how NHSL intended to implement the NPD model in relation to the RHCYP/ DCN project. For present purposes, there are three key matters dealt with in the business cases that are key components of the NPD model that fall to be summarised:

a. The funding arrangements and allocation of costs relating to the project;

b. The payment mechanism; and

c. The allocation of risk.

4.1.2 The focus is on the matters just referred to, and what follows is not, therefore, a summary of the entire business cases.

4.2 Capital and Revenue Costs For The Project

4.2.1 As noted above,[56] the Outline Business Case (OBC) for the revised project using the NPD route was approved by NHS Lothian Board on 25 January 2012 for submission to the Scottish Government. NHSL received confirmation from the Scottish Government of the approval of the OBC on 18 September 2012. The OBC outlines the proposals for meeting the capital and revenue costs of the project. The new building was to be revenue funded as a result of using the Scottish Government's Non-Profit Distributing (NPD) Model for the project discussed in section 3. Accordingly, no capital funding from NHSL would be required for the actual construction of the building.[57] The capital costs were quantified at £154.9m, to be funded by the NPD partner. The payments by the Board to the NPD partner over the lifetime of the project would be

[56] At paragraph 2.6.

[57] OBC paragraph 1.41.

revenue costs, funded jointly by the Scottish Government, NHS Lothian and other NHS Partner Boards.[58]

4.2.2 In terms of the revenue funding, there would be 100% SGHSCD revenue funding support for the construction, private sector development costs, financing interest and fees and SPV running costs (construction and operational) costs over the life of the facility.[59] It was noted[60] that the SGHSCD funding for construction, development costs, SPV running costs and lifecycle were subject to a capped budget, based on the OBC analysis. If these costs increased over the capped level, those additional costs would fall to be met from NHS Lothian's budget.

4.2.3 Capital funding would be required for some components of the project that fell outwith the NPD model and that would require SGHSCD project specific capital funding.[61] The total capital costs of these components was quantified at £72.1m.[62] This gave a total capital value of the project of £227 million.

4.3 Financial Models

4.3.1 To support the OBC, and its preferred option of locating RHSC, CAMHS and DCN in a single build at Little France, two financial models were developed:

a. A Shadow Bid Model was prepared by Ernst & Young LLP. This model provides an estimate of the likely unitary charge which will be payable to the private sector partner to design, build, finance and maintain the facilities.

b. An Affordability Model was prepared internally, with oversight by Ernst & Young, to forecast the wider financial implications of the project to NHSL and its partners to assess and confirm overall affordability.[63]

[58] OBC paragraph 1.42.

[59] OBC paragraph 2.100 and Figure 11.

[60] OBC paragraphs 1.46 and 2.100. See also paragraph 5.13 and Figure 27, which provides a calculation of the revenue support that could be expected from the Scottish Government.

[61] OBC paragraph 1.43. Fuller descriptions of the various elements can be found at paragraph 5.16.

[62] OBC paragraph 1.44

[63] OBC paragraph 5.2.

4.3.2 These models, together with the assumptions used and the method of calculation, are explained in section 5 of the OBC. The likely annual unitary charge calculated by the Shadow Bid Model has a range of £14.832m in the year ended 31 March 2017, peaking at £26.560m in the year ended 31 March 2041.[64] The amount of SGHSCD revenue support for the unitary charge payments, and the NHSL funded element, is also set out.[65]

4.3.3 In the "Affordability Statement", NHSL confirmed that "the financial consequences will ultimately be managed as part of their financial and capital plan process; with support from the Scottish Government, NHS Boards and charity partners. This will be fully explored as part of the Full Business Case stage."[66]

4.4 Payment Mechanism

4.4.1 The OBC described the charging mechanisms that were proposed to govern the payments made by NHSL to the SPV.

4.4.2 The payment mechanism adopted in the contract is described in detail in section 6 but largely follows what was proposed in the OBC. The OBC proposed a payment mechanism having the following key features:

a. The mechanism calculates the amount per month that will be paid to the operator, based on the annual unitary charge, indexed as agreed in the contract, converted to a monthly sum from which various deductions may be made if applicable.

b. Deductions are made where the operator fails to perform services as specified in the contract documents, these being a fixed amount per failure based on the severity of the failure.

c. Deductions are made where an area of the facility is deemed to be unavailable, or unsuitable for use in terms of, for example, temperature, safety, lighting. The size of the deduction is dependent on the importance

[64] OBC paragraph 5.9 and Figure 26.

[65] OBC paragraph 5.13 and Figure 27.

[66] OBC paragraph 5.63.

placed on the area in question, with the facility being divided up into areas each of which is given its own weighting.

d. The whole facility can be made unavailable if a certain proportion of areas are unavailable. If the NHS continues to use an area that is deemed unavailable, there is a lower level of deduction.

e. The operator is given a period of time to rectify the problem before a deduction is made.

f. Deductions ramp up if there is a repeated occurrence.

g. Insurance premiums, energy, rates and water charges are treated as pass-through costs (i.e. costs that are simply passed on by IHSL to NHSL).[67]

4.4.3 The OBC noted that the NPD mechanism as described in the previous paragraph differed from payment mechanisms in use within the NHS in one key respect. The NPD standard form project agreement assumed that the facilities will not be required to be available 24/7 and operates deductions on the basis of whole days rather than several sessions within a day. This was unlikely to be workable in an operational hospital that is in use constantly and so the NPD standard would need to be revised in this respect.[68]

4.4.4 The OBC also noted that the SFT standard form of NPD contract and the payment mechanism within it are consistent with the project assets being statistically classified as non-government in the National Accounts as defined in the European System of Integrated Economic Accounts (ESA95). This classification was a

[67] This summary is taken from OBC paragraph 4.16.

[68] OBC Paragraph 4.17; see also *Scottish Futures Trust, Standard Project Agreements (hub DBFM & NPD Model User's Guide version 2 June 2012* at p. 9: ", because the Standard Project Agreements have been developed in anticipation of a pipeline of mostly non-acute healthcare projects, modifications have been made to bring the general approach somewhat into line with arrangements previously used for local authority accommodation (particularly schools) projects. Where the facilities deliver acute healthcare and require to operate on a 24/7 basis, it may be appropriate to revert to some of the measures in the Scottish Standard Health PPP Contract (in particular the measurement of service performance by sessions rather than days and the commissioning arrangements around handover of the new facilities), and in this regard NHS bodies must liaise, and agree an approach with, SFT." See paragraph 7.6.5 on sessions in the specific context of the PA in this project.

requirement for revenue support funding from Scottish Government under the NPD programme.[69]

4.5 Risk

4.5.1 The discussion of the financial model contains a number of statements about apportionment of risk that are worth quoting in full:

> "5.53 Based on the proposed NPD contractual arrangements the operator and not NHS Lothian will be exposed to construction risk. Specifically, NHS Lothian will not be obliged to pay for the assets unless they are delivered in working order and in accordance with the agreed specifications. A requirement for the NHS Lothian to pay without taking into account the effective state of the assets that are delivered would be evidence that the NHS bears the majority of the construction risk and is acting as de facto the owner of the assets. This would also be true were NHS Lothian required to make payments to cover additional costs, whatever their justification. In order for NHS Lothian to be regarded as not having the construction risk the important point is that the NHS should not be obliged to pay for any event resulting in a default in the management of the construction phase by the operator, which is case based on the proposed NPD standard contract. On this basis it would appear that the NPD operator and not NHS Lothian would bear the construction risk in respect of the assets built under the project.
>
> *Availability risk*
>
> 5.54 The NHS is assumed not to bear such risk if it is entitled to significantly reduce its periodic payments if certain performance criteria are not met. Under these conditions, the NHS payments must depend upon the effective degree of availability ensured by the operator during any given period. The application of penalties where the operator is defaulting on its service obligations must be

[69] Paragraph 4.18. ESA 95 was superseded by ESA2010 which in turn led to NPD no longer being used as explained in section 3.7 above.

automatic and must also have a significant effect on the operator’s revenue. The proposed payment mechanism arrangements would suggest that this risk rests with the operator.

Demand Risk

5.55 The NHS is assumed to bear this risk where it is obliged to ensure a given level of payment to the operator independently of the effective level of demand. The proposed payment structure suggests that the payments due from the NHS to the operator are, subject to availability of the assets, due regardless of the level of underlying demand for the assets. On this basis demand risk will clearly rest with the NHS.”

5. The Full Business Case

5.1 Introduction

5.1.1 The Full Business Case for the Re-provision of the RHSC and DCN at Little France (FBC)[70] was approved by the Scottish Government on 10 February 2015, and an addendum to it approved on 28 April 2015. The addendum was submitted after financial close on 13th February 2015 and updates the FBC, particularly in relation to the final financing and capital costs.

5.1.2 The FBC re-affirmed the OBC's conclusion that "a non-profit distributing (NPD) project which brought together children's and neurosciences services in one facility was the most economically advantageous outcome."[71]

5.2 Changes In Capital Costs Since OBC

5.2.1 The total projected capital costs at OBC state were assessed at £230 million, with the NPD element assessed at £154.9 million. The final tender by the preferred bidder set the capital cost of the new build works at £146.7 million.[72] The FBC notes that "The reduction in the capital value of the NPD new build works…was achieved through the competitive dialogue and tendering process with three bidders."

5.2.2 The £146.7 million figure was subject to additional costs in relation to design development which, at FBC stage, was ongoing. So, although the final figure could not be quantified, "the project management is minimising any financial impact and there is no expectation that the final position will deviate significantly from the tender price."[73]

[70] The Full Business Case can be found in Bundle 3 – Governance Volume 3 for the Hearing Commencing 9 May 2022 starting at page 729 of that Bundle.

[71] FBC paragraph 1.2.2.

[72] FBC paragraph 3.2

[73] FBC paragraph 5.1.2

5.2.3 But by the time the Addendum to the FBC was submitted, the NPD capital costs had risen to £150.014 million. The Addendum noted that "Design development and inflation are the key drivers of the £3.3 million increase…".[74]

5.2.4 Some of the projected capital costs for non-NPD elements of the project had increased since OBC. The specialist adviser fees (mainly technical, legal and financial to support the NPD contract) were estimated at £4.5 million at OBC stage but had risen to £4.8 million. This "…reflects the complexities of the interface of this project with the existing PFI contract…[but] many of the deliverables produced by the advisory team have been used for the benefit of the wider NPD programme."[75]

5.2.5 In addition, by FBC stage capital costs had been added in relation to offsite flood prevention (£4.298 million) and a petrol station site (£0.55 million).[76] The non-NPD capital costs at FBC stage were assessed at £80.083 million.[77] It was assumed for the purposes of the FBC that all non-NPD capital costs associated with the project would be funded by an SGHSCD project specific funding allocation.[78]

5.2.6 The net result of all of the capital cost variations, NPD and non-NPD, was marginal as regards the overall capital cost of the project: the estimate at OBC stage was £226.971 million; at FBC this became £226.771 million.[79] However, the Addendum notes that this figure increased to £230.097 million, as a direct result of the increases in the NPD capital costs noted at paragraph 5.2.3 above.

5.2.7 The conclusion of the consideration of capital and revenue implications of the project was that NHSL confirmed the affordability of the project in terms identical to

[74] Addendum paragraph 5.1.2. £2.1 million of the increase was attributed to design development, £1.05 million to inflation.

[75] FBC paragraph 3.3

[76] FBC paragraph 5.1.1 and Figure 7 following.

[77] FBC paragraph 5.1.3 and Figure 8 following.

[78] FBC paragraph 5.2.6

[79] FBC paragraph 5.1.1 and Figure 7 following.

those set out in the OBC.[80] The Addendum confirmed that "All costs of the project are still within the affordability limits set out in the FBC."[81]

5.3 Annual Service Payment

5.3.1 The Addendum notes that the projected annual service payment over the 25 year period of the project agreement was estimated at £432 million, a reduction of £75 million compared with the estimate in the FBC.[82] This reduction was mostly accounted for by a reduction in the costs of the repayment of capital and associated financing costs, reflecting the financing rates set by the funders at financial close.

5.3.2 The benefit of this reduction principally accrued to the Scottish Government. The reduction in annual service payment would lead to a reduction in the need for revenue support from SGHSCD.

5.4 Financing of NPD Capital Costs

5.4.1 The Addendum narrates a post-preferred bidder stage funding competition to determine the final funding package for the project that was completed on 13 October 2014. The result of this competition was that M&G were appointed as the preferred funder alongside the European Investment Bank each of whom provided approximately 50% of the senior debt requirement. The senior debt constitutes 92% of the total funding requirement. [83]

5.4.2 The senior debt was sub-divided into two tranches, as required by M&G so that they could draw their debt contribution from different sources within their fund structure. EIB matched this structure. Accordingly, senior debt was sub-divided into senior debt (comprising 80% of the overall funding) and senior subordinated debt (12% of the overall requirement).[84]

[80] Paragraph 2.3.6 above; paragraph 5.7 FBC.

[81] Addendum paragraph 5.5.1

[82] FBC paragraph 5.2.1.

[83] FBC paragraphs 4.2.2 and 4.2.3.

[84] FBC paragraph 4.2.3.

5.4.3 The 8% balance of the funding requirement was risk bearing junior debt provided by Macquarrie, IHS Lothian's sole investor.[85]

5.4.4 Each of the tranches of debt carried differential interest rates, determined at financial close, with the rates payable to M&G being set by reference to Government gilt rates on the day of close and the EIB portion by reference to the prevailing rates in the interest swap market.[86] The rates set "are significantly lower than the assumptions provided at the time of the final tender, since which time the debt market has become considerably more liquid and competitive."[87]

5.5 Risks and Risk Allocation

5.5.1 The FBC sets out in a table[88] the ownership of known key risks of the project, which is reproduced here in full:

	Risk Description	Allocation		
		NHS Lothian	Project Co	Shared
1.	Design risk		√	
2.	Construction and development risk		√	
3.	Transitional and implementation risk		√	
4.	Availability and performance risk		√	
5.	Operating risk			√
6.	Variability of revenue risks		√	
7.	Termination risks			√
8.	Technology and obsolescence risks		√	
9.	Residual value risks		√	
10.	Financing risks		√	
11.	Legislative risks			√
12.	Sustainability risks			√

Figure 4: Allocation of key risks in the NPD contract

5.5.2 The general principle was to ensure that responsibility for risks should rest "with the party best able to manage them", subject to value for money."[89] A brief

[85] FBC paragraph 4.2.3

[86] FBC paragraph 4.2.4.

[87] FBC paragraph 4.2.5

[88] FBC paragraph 4.1.3

[89] FBC paragraph 4.1.3

explanation of each of the risks referred to in the above table is provided. For the present, it will suffice to note that:

a. The construction and development risk "sits with Project Co, subject to the Project Agreement. For example, a small number of delay and compensation events could entitle Project Co to compensation if the risks materialised…";[90]

b. Financing risks "predominantly sit with Project Co subject to the Project Agreement: however relevant changes in law, compensation events that compensate Project Co and changes under the Project Agreement all may give rise to obligation to NHS Lothian to provide additional funding…".[91]

It is perhaps worth noting that the "subject to the Project Agreement" rider attaches to the allocation of seven of the twelve risks specified in the above table.[92]

5.5.3 In addition to the risks in the table above, the FBC noted political and financial risks arising as a result of the fact that the funding competition for the project, and financial close, were programmed either side of the Scottish independence referendum.[93] In particular, a risk was identified that the cost of financing could be higher than anticipated, or contractual protection sought by funders before the outcome of the referendum was known. NHSL, SFT and the preferred bidder had engaged and continued to engage with funders during the funding competition, and it was noted that private financiers had funded several NPD transactions in Scotland in the recent past.

5.6 Payment Mechanism

5.6.1 The FBC notes that annual service payments (the "unitary charge") to Project Co "will only commence when the development is made operational and will be

[90] FBC paragraph 4.1.3 (2)

[91] FBC paragraph 4.1.3 (10)

[92] The Addendum confirmed that there were no changes to the underlying Project Agreement position and risk allocation reported at FBC remained unchanged (Addendum paragraph 4.1.1)

[93] FBC paragraph 2.11.3

managed and regulated by means of the payment mechanism that will protect NHS Lothian (by deductions from payment) if there are failures in availability or performance."[94] The payment mechanism follows "standard form drafting" with deduction from payment for availability and performance failures "such that should the entire facility be unavailable, no payment would be due." However, it was amended to reflect the acute healthcare nature of the accommodation.[95]

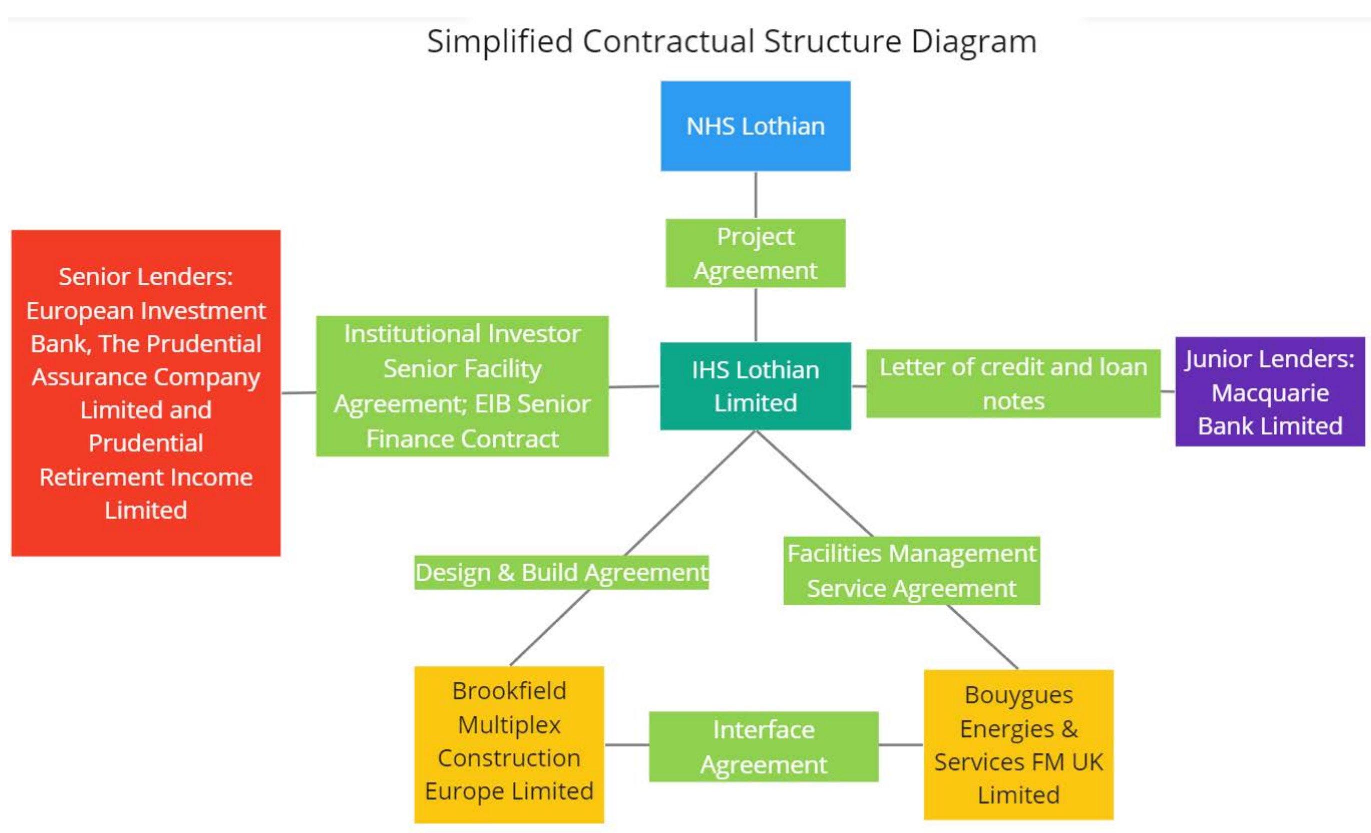
[94] FBC paragraph 4.1.4

[95] See discussion at paragraph 4.4.3.

6. Contractual and Financial Structure

6.1 Introduction

6.1.1 It is possible to adapt and populate the diagram at paragraph 3.4.3 above to illustrate the basic contractual structure adopted in relation to the RHCYP/ DCN project[96] as follows:



[96] This section focuses on the arrangements that were in place at financial close (13 February 2015) or immediately thereafter. While there have been some changes to the companies involved, the structure outlined has remained largely the same.

6.1.2 The names of the actual parties have been used rather than the placeholders in the earlier diagram, and the names of the principal contractual documents governing the relationship between the parties inserted in the green boxes on the linking lines. The basic contractual structure thus reflects the standard NPD approach: Project Company (IHS Lothian Limited) secures loans from investors and lenders (those in the red and purple boxes) and enters contracts with the building contract (Brookfield Multiplex) and service provider (Bouygues).

6.1.3 This is, however, a simplified view of the contract structure. The following section describes the contractual matrix relating to the project in more detail (the contractual matrix relating to the financial structure is dealt with in the section following that). The contractual matrix is complex, and is spread over very many documents, both formal agreements and otherwise. What follows is not an analysis of every one of those documents, but rather an overview to give a flavour of the overall contractual structure. To paraphrase the guidance from the Welsh Government quoted at paragraph 3.7.3, what follows will, for the most part, be familiar to those who operate in the UK 'PPP' market.

6.2 Contractual Structure

6.2.1 The key contractual document from which everything else flows is the Project Agreement (“PA”) between NHSL and IHSL signed on 12 and 13 February 2015 (the latter date being the date of “financial close”) for the design, build, finance and maintenance of the RHCYP/ DCN adjoining the Royal Infirmary, Edinburgh. This agreement is based on the SFPA, the main divergence being in the payment mechanism to reflect the acute healthcare nature of the accommodation.[97] The PA also incorporated drafting to reflect the interface issues between the project and the Royal Infirmary of Edinburgh (“RIE”). This was because the project was constructed on a car park previously part of the RIE, which was a PFI hospital, and was clearly a project-specific divergence from the standard form.The PA is long and detailed – the version held by the Inquiry runs to 748 pages, excluding various provisions including,

[97] As noted above at paragraph 5.6.1. The payment mechanism is discussed further in section 7

for example, the details of the specification for the construction and the financial model (the latter coming to 351 pages).

6.2.2 As is clear from the diagram above, under the PA lie the design and build contract and the facilities management service agreement. In short, the design and build contract passes on all the obligations under the PA to design and build the new facility from IHSL to the construction contractor, Brookfield Multiplex Construction Europe Limited ("Multiplex") and the facilities management service agreement all the obligations to maintain and operate the new facility after construction from IHSL to Bouygues Energies & Services FM UK Limited (Bouygues). These contracts too are long and detailed – the former is 532 pages long, the latter 520.

6.2.3 In terms of the contractual matrix, it is worth noting that each of these agreements is supported by other documents. Principal among these are the following:

- The parent companies of both Multiplex and Bouygues granted parent company guarantees of the obligations of their respective subsidiary companies.
- Both Multiplex and Bouygues granted collateral warranties in favour of NHSL, allowing NHSL to enforce obligations or claim directly against them in respect of a failure to comply with their respective contracts with IHSL subject to certain conditions, particularly the right of the funders to step in and perform the obligations of IHSL under the PA.
- The construction contract was supported by an on-demand performance bond providing for payment in the event of default by Multiplex, and an adjudication bond, providing for payment if Multiplex failed to comply with any award by an adjudicator under the construction contract. Both had Euler Hermes SA (NV) as guarantor, and both were in favour of IHSL and its assignees.
- Bouygues, IHSL and Multiplex entered into an interface agreement (noted in the diagram above) to detail arrangements between them and to regulate the recovery of any costs, losses or expenses caused to or incurred or injury suffered by Bouygues or Multiplex by reason of any breach of their obligations by the other. It also set out other matters which are ancillary and incidental to

the performance by them of their respective obligations under their respective agreements.

6.2.4 While Bouygues and Multiplex are the principal contractors to IHSL, they engaged several subcontractors, consultants and suppliers. For present purposes it is sufficient to focus on those engaged by Multiplex given the focus of the Inquiry's investigations. The following is a list of the key subcontractors and consultants engaged by Multiplex:

- TUV SUD Limited (trading as Wallace Whittle) – building services engineer;
- HLMAD Limited – lead designer, architect, landscape architect and project BIM manager.
- Robert Bird & Partners Limited – structural engineer
- Acoustic Logic Consultancy (UK) Limited – acoustic consultant.
- Ove Arup & Partners Limited – traffic consultant.
- WSP UK Limited – fire engineer.
- Ironside Farrar Limited – planning consultant.
- Brookfield Multiplex CDM Services Europe Limited – CDM co-ordinator
- Balfour Beatty Ground Engineering Limited – sub-contractor for reinforced concrete piling and contiguous walls
- Schindler Limited – supply and install of passenger and FM lifts.
- Mercury Engineering – mechanical, electrical and public health services.

6.2.5 Each of these were engaged under a separate agreement between them and Multiplex. However, in addition, each granted a separate collateral warranty in favour of IHSL, NHSL and the Security Trustee as representing the senior lenders, essentially undertaking to each of them the obligations undertaken by the company concerned in their contract with Multiplex and so permitting each of IHSL, NHSL and the Security Trustee to take independent action to enforce those obligations in certain circumstances and subject to certain restrictions.

6.3 Financial Structure

6.3.1 The high-level structure of the financing arrangements for the project have already been touched on above.[98] The financing arrangements were consistent with the NPD model in providing for exclusively private capital funding, with no public sector contribution other than in relation to ancillary matters falling outwith the scope of the NPD project.[99] This section briefly outlines the underlying structure of those arrangements.

Senior Debt

6.3.2 Senior debt is generally a loan provided by a financial institution to a project. This debt enjoys priority for repayment and will have first call on a project's cash flows and security arrangements. Senior debt for this project amounted to 79.7% of the total funding.

6.3.3 Senior debt for the project was supplied by (i) European Investment Bank (EIB) (49.6%) and (ii) The Prudential Assurance Company Limited and Prudential Retirement Income Limited (50.4%). This funding was injected directly at the level of Project Company (IHSL). There were a number of key agreements underpinning the arrangements for senior debt including:

- Common Terms Agreement: the agreement that sets out the terms that are common to all levels of debt in a project. In addition to the lenders providing the senior debt, the lenders providing the senior subordinated debt were parties to this agreement (and the next named) as were, two other companies in the IHSL structure (see further below) and other parties involved in the financing arrangements.
- Intercreditor Agreement: the agreement that principally regulates the relationships between the various creditors (i.e., the lenders) in relation to the sums loaned by each.

[98] At section 5.4

[99] These matters are listed in Figure 8 following paragraph 5.1.3 of the FBC.

- Institutional Investor Senior Facility Agreement: the loan agreement between IHSL and the lenders named at (ii) above.
- EIB Senior Finance Contract: the loan agreement between IHSL and the EIB.

Senior Subordinated Debt

6.3.4 Senior subordinated debt sits between senior debt and junior debt. Generally, it is debt that is repaid after the senior debt has been repaid in full, and in many cases will be unsecured. Senior subordinated debt amounted to 11.6% of the total funding for this project.

6.3.5 In this project, the senior subordinated debt was injected at the level of IHS Lothian Investments Limited (see further section 6.4 below). The lenders for this debt were the same as for the senior debt, with EIB providing 49.1% of the senior subordinated debt and the others providing the rest. The key documents in relation to this level of debt as those set out in relation to the senior debt.

Junior Debt

6.3.6 Junior debt is the lowest ranking debt, with the lowest priority for repayment and is unsecured. It is therefore the riskiest form of lending. Junior debt contributed 8% of the total funding for this project.

6.3.7 Under the original terms of the Shareholder Support Agreement,[100] a junior debt loan was to be injected at the planned end of construction (July 2017) by IHS Lothian Corporate Limited (see section 6.4 below). This obligation was supported by a letter of credit provided by Macquarie Bank Limited. The beneficiary of the letter of credit is IHS Lothian Corporate Limited, but by virtue of various loan arrangements in the IHSL corporate structure, the project company is the ultimate beneficiary of this funding. This element of the funding package is contractually and structurally

[100] Essentially an agreement between the sponsors or shareholders, the project company and the lenders likely to contain a number of commitments that the lenders require of the sponsors/shareholders with respect to the project and the project company including a requirement to provide funding to the project company.

subordinated to the Senior Subordinated Debt and the Senior Debt (and hence described as “junior debt”). The junior debt amounted to approximately 8% of the funding for the project. Key documents that detail the terms of this arrangement include:

- Letter of Credit issued by Macquarie Bank Limited
- Loan Notes issued by companies within the IHSL corporate structure (see section 6.4 below)
- Shareholder Support Agreement

6.3.8 In accordance with the NPD requirements, each of the Senior Debt, the Senior Subordinated Debt and the Junior Debt had fixed interest rates for the lifetime of the repayment period. Those interest rates varied between the various tiers of debt and between different lenders, but by way of illustration ranged from 2.881% at the Senior Debt level to 9.47% at the Junior Debt level.

6.3.9 It can be seen from the above that the financing structure for the project was complex, and this was reflected in the number of lengthy and detailed agreements between those involved (those specifically referred to above do not constitute a definitive list of all the agreements in place for this project[101]). This is not unique to the RHCYP/DCN project however – all project finance invariably involved a complex set of contractual relationships. The arrangements in place in this case are like those used in many PPP projects in the United Kingdom. However, the Inquiry has not discovered anything apparent in these agreements and the financial arrangements that they establish that in and of themselves would have given rise to the issues that are the subject of the Inquiry’s investigations, directly contributed to them.

6.4 IHSL Corporate Structure

6.4.1 It will be apparent from the explanation above that not all the funding was paid direct to IHSL as the project company but was rather paid to various other companies within the corporate structure of IHSL subject to various agreements between the

[101] The Inquiry holds at least 22 documents relating to finance arrangements (excluding security documentation), totalling 779 pages.

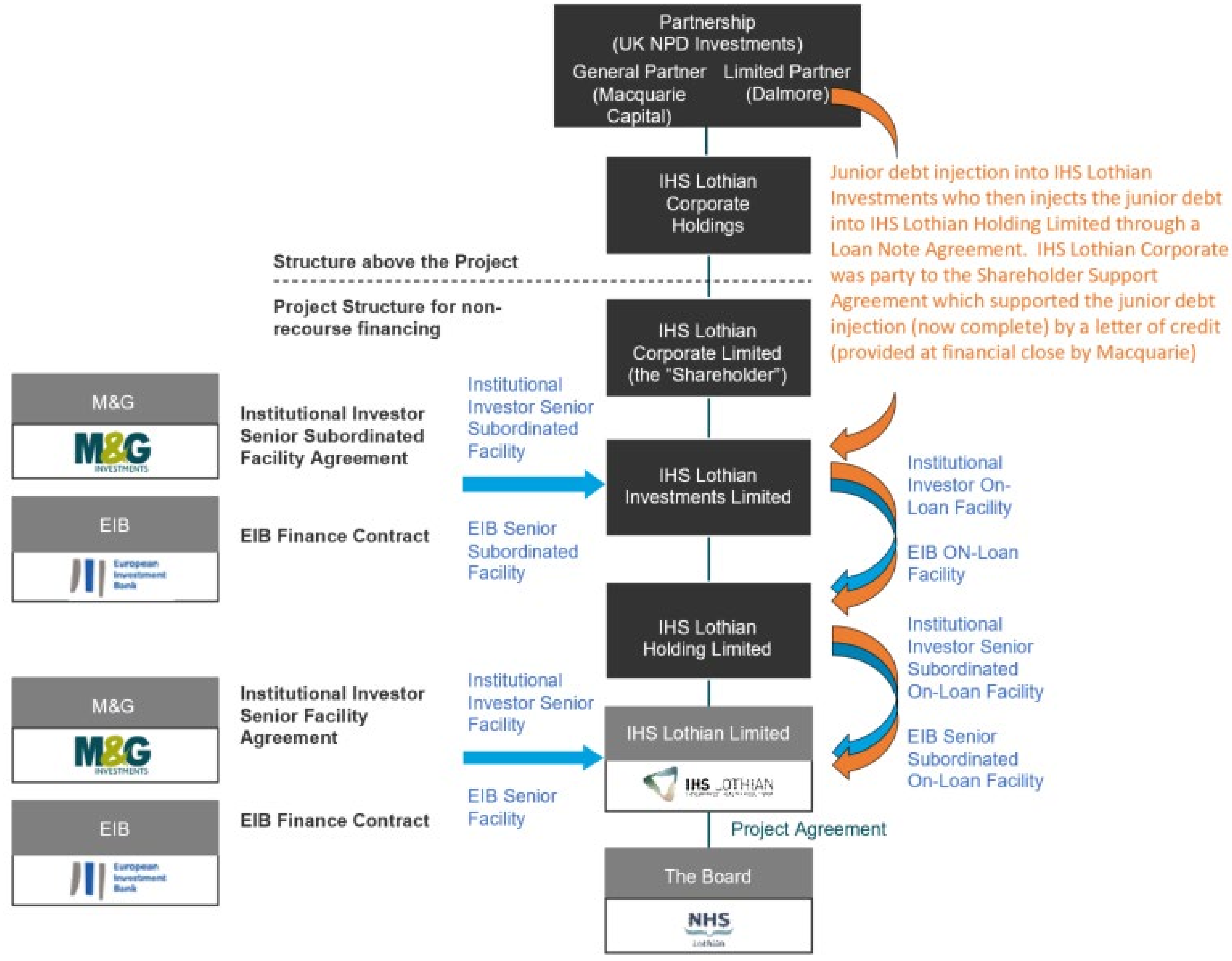
lenders and the companies within that corporate structure requiring payment onwards ultimately to the project company to enable it to meet the payments required for the project.

6.4.2 The relationship between the various companies in the corporate structure and how they interact with the various financing arrangements can be illustrated in the graphic following on the next page. It should be noted that each company in the corporate structure from IHS Lothian Limited upwards is wholly owned by the company directly above it – so IHS Lothian Limited is wholly owned by IHS Lothian Holdings Limited;[102] IHS Lothian Holdings Limited is wholly owned by IHS Lothian Investments Limited;[103] and so on.

6.4.3 It is not part of the Inquiry's remit to comment on the corporate structure of the IHSL companies in so far as not impacting on the issues that arose at RHCYP/ DCN, and accordingly this material is provided for information only to assist in the understanding of the financial arrangements adopted in relation to the construction of the hospital.

[102] Incorporation documents of IHSL.

[103] Incorporation documents of IHS Lothian Investments Limited.


Partnership
(UK NPD Investments)
General Partner
(Macquarie
Capital)
Limited Partner
(Dalmore)
IHS Lothian
Corporate
Holdings
Junior debt injection into IHS Lothian Investments who then injects the junior debt into IHS Lothian Holding Limited through a Loan Note Agreement. IHS Lothian Corporate was party to the Shareholder Support Agreement which supported the junior debt injection (now complete) by a letter of credit (provided at financial close by Macquarie)
Structure above the Project
Project Structure for non-recourse financing
IHS Lothian
Corporate Limited
(the "Shareholder")
M&G
Institutional Investor
Senior Subordinated
Facility Agreement
Institutional
Investor Senior
Subordinated
Facility
IHS Lothian
Investments Limited
Institutional
Investor On-
Loan Facility
EIB
EIB Finance Contract
EIB Senior
Subordinated
Facility
EIB ON-Loan
Facility
IHS Lothian
Holding Limited
Institutional
Investor Senior
Subordinated
On-Loan Facility
M&G
Institutional Investor
Senior Facility
Agreement
Institutional
Investor Senior
Facility
IHS Lothian Limited
EIB Senior
Subordinated
On-Loan Facility
EIB
EIB Finance Contract
EIB Senior
Facility
Project Agreement
The Board
NHS

7. The Project Agreement

7.1 Introduction

7.1.1 One of the key characteristics of NPD contracts is the transfer of appropriate risk to the private sector.[104] The approach that NHSL proposed to take was set out in the OBC[105] and the FBC.[106] For the purposes of this paper, it is not necessary to review all the project agreement provisions relating to the allocation of risks as between the parties. However, in terms of understanding the contractual and financial structure of the project it is necessary to review the provisions relating to construction and design risk and availability risk, which in turn requires an understanding of the payment provisions set out in the project agreement.

7.1.2 Neither "design and construction risk" or "availability risk" are fully defined in either the OBC or the FBC. For present purposes, without seeking to give a definitive explanation, it can be taken that:

a. "design and construction risk" is the risk that the project be built on time, on budget and in accordance with the applicable contractual specifications and performance criteria. For example, should the project not be completed on time, then any additional costs arising would be borne by the body bearing that risk;[107] and

[104] See diagram in Audit Scotland, Privately Financed Infrastructure Investment reproduced at paragraph 3.4.1 above. Some explanation of some of the aspects of risk transfer is given in Scottish Futures Trust, Standard Project Agreements (hub DBFM & NPD Model) Users Guide (Version 2 – June 2012) pp. 1 – 4.

[105] Section 4.5 above.

[106] Section 5.5 above.

[107] A generalisation, subject to exceptions. As the FBC notes at paragraph 4.1.3 (2), "a small number of delay and compensation events could entitle Project Co to compensation if the events materialised, such as no access to the site and incomplete enabling works which impact upon the site."

b. “availability risk” is the risk that the hospital is not available for use for its designed purpose at any time during the lifetime of the project agreement.

7.1.3 The intention was that both risks sat with IHSL. The Inquiry’s provisional view is that the provisions of the project agreement achieve this, though that position may be thought to have been varied by agreements entered into after the project agreement was entered into. These agreements are discussed in subsequent chapters.

7.1.4 What follows should not be taken as a complete explanation or summary of the provisions of the PA, but as a summary only of the provisions that are relevant for present purposes. There is not, therefore, detailed analysis of every exception to a general proposition for which reference should be made to the PA itself.[108]

7.2 Design And Construction Risk

7.2.1 The PA provisions relating to design and construction of the hospital were dealt with in some detail in the Inquiry’s Provisional Position Paper 4 – Project Agreement,[109] and therefore this paper does not repeat that analysis.

7.2.2 It is sufficient for present purposes to note that clause 12.1 of the PA requires IHSL to carry out the Works to procure satisfaction of the Board’s Construction Requirements, in accordance with Project Co’s Proposals and in accordance with the other terms of the PA.

7.2.3 In the terminology adopted at paragraph 7.1.2a. above, the Board’s Construction Requirements and Project Co’s Proposals were effectively the “the applicable contractual specifications and performance criteria”. The Works were defined in the contract as “the design…, construction, testing, commissioning and completion of the [hospital]…in accordance with this Agreement”.[110] While responsibility for delivery of the Works lay with IHSL, at the risk of stating the obvious,

[108] A copy of the PA can be found in Bundle 5 issued by the Inquiry for the Hearing commencing on 25 April 2023.

[109] Available in Bundle 11 – Provisional Position Papers at page 317 of that Bundle.

[110] PA Schedule Part 1, p.181

responsibility for the Board's Construction Requirements lay with NHSL, and the risk of errors, omissions or inaccuracies in those remained with NHSL notwithstanding what follows.

7.2.4 The PA goes to deal with other aspects of design and construction. In terms of clause 14.1, for example, IHSL are obliged to complete the Works by 3 July 2017 (as that date may be varied in accordance with the provisions of the PA). Failure to achieve actual completion within 18 months of that date was an event of default in terms of clause 40.1.2.

7.2.5 In addition, as will become clear from the explanation of the payment mechanism below, IHSL would not receive any payment under the project agreement until the date on which the Certificate of Practical Completion was issued. That Certificate would only be issued when the Independent Tester was satisfied that the works were complete in accordance with the criteria set out in the PA.[111] Accordingly, if the completion of the Works was delayed, IHSL bore the risk that they would not be paid until a later than anticipated date, which may have had implications for them under the financing agreements.

7.2.6 These provisions have the effect set out in the OBC and FBC i.e., that design and construction risk was effectively transferred to IHSL. The relevant contractual provisions are also in line with the SFT model agreement.[112]

7.3 Availability Risk

7.3.1 The rest of this section deals with the question of availability risk. In terms of the PA, availability risk is dealt with primarily through the payment mechanism, more specifically deductions from the monthly service payments made to IHSL due to lack of availability or performance failures. It is therefore necessary to start by looking at the payment mechanism before dealing with the question of deductions from monthly payments. It is necessary to enter two cautions before doing so however. First, to

[111] PA clause 34.1 and 17.12 read with appropriate definitions. See paragraph 7.5.2 below.

[112] Scottish Futures Trust, Standard Project Agreements (hub DBFM & NPD Model) Users Guide (Version 2 – June 2012). See for example clauses 12 and 40 of that standard form.

repeat what has been said already, what follows is not a complete guide to the payment mechanism set out in the contract. It is only an overview and omits some provisions that do not impact significantly on the question of calculation of monthly payments and availability risk, but which nonetheless may be important in other respects.

7.3.2 Second, this paper does not deal with any payments due, or related to, the expiry or termination of the PA (including variations of the Monthly Service Payment because of either event) or any other payments that may become due under the PA from one party to another. It deals solely with the Annual/ Monthly Service Payments.

7.4 Principal Payment Provisions

7.4.1 The principal provisions in the PA relating to monthly payment are found in clauses 34 – 38 and Part 14 of the Schedule.

7.4.2 The essential payment model is a monthly payment (the "Monthly Service Payment"[113]) calculated and paid in accordance with the provisions of the PA. IHSL is only entitled to payment after the Payment Commencement Date.[114] "The Payment Commencement Date" is defined as "the Actual Completion Date", which is in turn defined as the later of the date stated in the Certificate of Practical Completion issued by the Independent Tester or the Completion Date.[115] The Certificate of Practical Completion was issued by the Independent Tester on 22 February 2019.

7.4.3 The starting point for calculating the monthly payment is an Annual Service Payment, which is discussed in section 7.5. From this, a Monthly Service Payment is calculated (essentially by dividing the Annual Service Payment amount by 12, and thereafter assessing whether any deductions fall to be made). This is discussed in

[113] Defined in PA Schedule Part 14 p. 349

[114] PA Clause 34.1 p. 70

[115] The Completion Date as stipulated in the PA was 3 July 2017. However, as a result of the occurrence of Delay Events during construction which entitled IHSL to an extension, this became 9 July 2017.

section 7.6. The mechanism for triggering payment of the amount due is discussed in section 7.7.

7.5 Calculation of Annual Service Payments (PA Schedule Part 14)

7.5.1 The Annual Service Payment for any Contract Year[116] is calculated according to a formula specified in the PA.[117] The formula provides for part of the Annual Service payment to be adjusted according to movements in the Retail Prices Index. Indexation is applied to part only of the Annual Service Payment as it is intended to cover only that proportion of the contractor's underlying costs that are not fixed.[118] The formula, and a simplified example of how it works, is given at Appendix 1. The formula adopted in the PA is that recommended in the SFT's model contract.[119]

7.5.2 Note that while actual payment of the Monthly Service Charge does not start until after the Payment Commencement Date as explained at paragraph 7.4.2, indexation of the Annual Service Payment effectively commences from February 2015 (in the words of the PA, the "Base Date"). Put another way, after the Payment Commencement Date, the Annual Service Payment to be paid by NHSL was not the Annual Service Payment calculated as at the date on which the PA was signed. Rather,

[116] "Contract Year", as defined in the PA, means "(a) for the first Contract Year, the period from the date of this Agreement [13 February 2015] to the subsequent 31 March; and (b) for all subsequent Contract Years, the period of twelve (12) calendar months commencing on each anniversary of 1 April…" - Schedule Part 1 p. 143

[117] PA Schedule Part 14 Section 2 paragraph 2, page 352.

[118] See explanation in *Standardisation of PFI Contracts Version 4*, March 2007, section 15.2 (https://webarchive.nationalarchives.gov.uk/20130123191515/http://www.hm-treasury.gov.uk/d/pfi_sopc4pu101_210307.pdf); *Standardisation of PF2 Contracts*, December 2012 section 19.11 (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/207383/infrastructure_standardisation_of_contracts_051212.PDF); and Scottish Futures Trust, *Standard Project Agreements (hub DBFM & NPD Model) User's Guide,* Version 2: June 2012 p.42 (https://www.scottishfuturestrust.org.uk/storage/uploads/Standard_Project_Agreements_Users_Guide_(Version_2_-_June_2012).doc)

[119] See SFT, *Standard Form Project Agreement (NPD Model)* Version 2: June 2012 at p.287 (https://www.scottishfuturestrust.org.uk/storage/uploads/Standard_Form_Project_Agreement_(NPD_Model)_(Version_2_-_June_2012).doc)

it was the Annual Service Payment as at that to which indexation had been applied in accordance with the formula set out in Appendix 1.

7.6 Monthly Service Payments (Schedule Part 14)

Monthly Service Payments

7.6.1 The monthly payment (the "Monthly Service Payment") is calculated in accordance with the formula specified in Part 1 of Section 2 of Part 14 of the Schedule to the PA.[120] Put simply, the formula provides that the Monthly Service Payment is 1/12 of the Annual Service Payment, less the sum of Deductions in respect of the performance of the Services during the month falling two months previous,[121] then adding any Pass Through Costs due for which supporting uncontested invoices are available.

7.6.2 "Deductions" are discussed in more detail in the following paragraphs. "Pass Through Costs" are costs payable to IHSL specified in Section 6 of Schedule Part 14 to the PA.[122] They fall into three main categories:

a. Utility Charges – charges for electricity, gas, water, sewerage, waste disposal, telephony and similar charges;[123]

[120] PA page 352.

[121] The reason for Deductions being made two months after the event is explained in *Scottish Futures Trust, Standard Project Agreements (hub DBFM & NPD Model User's Guide version 2 June 2012* at p. 23, commentary on clause 34.2: "The drafting here and in Section 2 of Schedule Part 14 (*Payment Mechanism*) assumes that the Authority will pay for services delivered in the current Contract Month at the end of the current Contract Month. In order to allow sufficient time for reporting and agreeing performance and any resulting Deductions, monitoring and reporting will work two months behind. Thus, payment for month 3 will be invoiced near the beginning of month 3 and paid before the last working day of month 3 and will be based on service performance in month 1. Month 2 will be spent reporting and agreeing that performance. This is considered to be the optimum timing for value for money consistent with the principle that payment should not be made before services have been delivered. An Authority proposing any alternative payment cycle will have to demonstrate to SFT the value for money benefit."

[122] PA Schedule Part 14 Section 1 p.349.

[123] The full list is set out in the definition of "Utility" at PA Schedule Part 12 Section 1, p.4.

b. Rates – local authority rates; and

c. Operational Insurance Premiums: premiums for the insurances that IHSL are obliged to maintain under the PA including property damage insurance, business interruption insurance, and third-party public and products liability insurance.

7.6.3 These Pass Through Costs must be paid to IHSL in full each month, irrespective of the total amount of Deductions that NHSL are entitled to make.[124]

Deductions From Monthly Service Payments – General

7.6.4 In the preceding paragraphs "Deductions" are deductions "to be made in calculating a Monthly Service Payment, calculated in accordance with Section 3 (Deductions from Monthly Service Payments) of Schedule Part 14 (Payment Mechanism)".[125]

7.6.5 There is a cap on the amount of Deductions that the Board may make, the Gross Month Availability Deduction. According to SFT guidance, "The monthly cap on Deductions operates to ensure that, over the course of a year, the total Deductions will be capped at an amount equal to the Annual Service Payment. In any Contract Month[126] that the monthly cap exceeds the Monthly Service Payment, the drafting provides for the excess to be carried forward and set-off against future Monthly Service Payments (rather than being an amount payable by the SPV to the Authority)."[127] The drafting of the PA follows the drafting of the SFT standard contract with the exception that it provides for Deductions in relation to Sessions in the relevant Contract Month,[128]

[124] PA Schedule Part 14 Section 3 paragraph 1.3.

[125] PA Schedule Part 1 p. 145

[126] A "Contract Month" is a calendar month with specific provision being made for the first and last such months: PA Schedule Part 1 p. 143

[127] Scottish Futures Trust, *Standard Project Agreements (hub DBFM & NPD Model) User's Guide,* Version 2: June 2012 p. 41 – explanation of definition of "Gross Monthly Availability Deduction".

[128] Rather than "Days" in the SFPA

a Session being "a period of 8 hours, beginning at 6 a.m., 2 p.m. and 10 p.m. in each 24 hour period".[129]

Deductions From Monthly Service Payments – Availability and Performance Failures

7.6.6 Section 3 of Schedule Part 14 entitles the Board to make deductions from the Monthly Service Payment in respect of:

a. Availability Failures: that is an incident or state of affairs with reference to a Functional Area[130] that does not comply with the Availability Standards specified in the Service Level Specification[131] which has not been rectified within the permitted time; and

b. Performance Failures: that is an incident or state of affairs that does not comply with the Performance Standards specified in the Service Level Specification that has not been rectified within the permitted time.[132]

7.6.7 Availability Standards cover accessibility, operational function condition, use condition and safety condition. The definition of those standards is for the most part technical. An example of an availability standard is as follows:

> "The relevant Functional Area is maintained such that the range of functional requirements for the proper use and enjoyment of a Functional Area for its particular purpose relating to air-flow are the same as specified on the Room Data Sheets for the relevant Functional Area."

[129] PA Schedule 14 Part 1 p.350; cf. Scottish Futures Trust, *Standard Form Project Agreement (NPD Model)* Version 2: June 2012, definition of Gross Month Availability Deduction at p.282 and Day at p.281. But see footnote 68 above (page 9).

[130] Listed in PA Schedule Part 14 Appendix 2.

[131] The Service Level Specification is "the requirements of the Board set out in Section 1…of Schedule Part 12…as amended from time to time…": Schedule Part 1 p. 175

[132] Reference should be made to the full definitions of Availability Failure and Performance Failure contained in Schedule Part 14 Section 1, which will require regard also to be had to Schedule Part 1, particularly for the definition of "Functional Area" and "Service Level Specification".

7.6.8 The Response Period for a failure to meet that standard is 15 minutes during operational hours (6 a.m.–10 p.m.), 1 hour outwith. The applicable Rectification Period is 1 hour within operational hours and 2 hours outwith.[133] The list of Functional Areas to which the Availability Standards relate is lengthy[134] but covers areas such as medical gas cylinder stores, wheelchair parking bays, ward management offices, ward kitchens, treatment rooms and bedrooms. Each Functional Area is assigned a GSU, or Gross Service Unit.[135] These vary widely, from 0 for several corridors (and others) to 200 for a General X-Ray room (and others). The aggregate of the GSUs for areas affected by Availability Failures per Deduction Period is taken into account in calculating the deduction.[136]

7.6.9 Response Periods and Rectification Periods run concurrently. The Response Period is the period within which IHSL must respond to the event in question and if relevant remove any immediate risk of injury or incident that might impinge on the heath and safety of users of the hospital either temporarily or permanently.[137] The Rectification Period is the period allowed for the Rectification of the relevant event.[138] Rectification is also a defined term and means making good the incident or state of affairs, restoring all functional capability and compliances with the Availability Standards and the Performance Standards.[139]

7.6.10 Performance Standards cover a wide range of IHSL's activities, including management and strategy, integration with board policies and operation, quality, environment, health and safety, access and works management, recruitment, supply chain management, helpdesk, efficient operation, monitoring and records,

[133] PA Schedule Part 12 Section 1 Chapter 6 AS Ref A06.

[134] Schedule Part 14 Appendix 2 runs to 43 pages.

[135] Schedule Part 14 Appendix 2, table column 7.

[136] A Deduction Period is essentially the number of Sessions from (and including) the Session in which the Performance Failure occurs until the Logged Rectification Time, unless there is no Rectification Period for a Performance Failure, in which case the Deduction Period is 1: Schedule Part 14 Section 1 p.347

[137] PA Schedule Part 12 Section 1 Chapter 1, p.3

[138] The details for computation of the period are set out in the definition of "Rectification Period", Schedule Part 14 Section 1 p.349.

[139] PA Schedule Part 14 Section 1 p.349.

programmed maintenance and so on.[140] Generally, Performance Standards have a specified “Remedy” and a “Remedial Period” within which the Remedy must be implemented. For example, Performance Standard FM64 provides:

> “Project Co shall clean all internal and external panes of glazed areas of the building envelope on a quarterly basis, dates to be agreed with the Board”.

The Remedy for failure to comply is to complete the outstanding Programmed Maintenance for the relevant month, and the Remedial Period is 3 business days.

7.6.11 Performance Standards are assigned a Performance Category of “Minor”, “Medium” or “Major”.[141] This is of relevance to the calculation of deduction for a failure to meet a performance standard - £30 per Deduction Period for failure to meet a standard the Performance Category of which is Minor, £75 per Deduction Period for Performance Category of Medium and £200 for a Performance Category of Major.[142]

Calculation of Deductions

7.6.12 The method by which the precise amount of deductions that may be made in respect of Availability and Performance Failures is set out in detail in Section 3 of Part 14 of the Schedule to the PA. There is a different formula for Performance Failures[143] and Availability Failures,[144] although the basic approach is the same to both: the amount calculated in accordance with the provisions of Schedule Part 14 (and other relevant provisions) that is relevant to the failure is multiplied by the number of Deduction Periods for which the failure lasted. In the case of Availability Failures only, the amount that falls to be deducted is the higher of the amount calculated according

[140] The full list is in PA Schedule Part 12 Section 1 paragraph 5.

[141] PA Schedule Part 12 Section 1 paragraph 5, second column of table.

[142] PA Schedule Part 14 Section 3 paragraph 2.1. All figures are index-linked and so adjusted in accordance with RPI.

[143] See Schedule Part 14 Section 3 paragraph 2

[144] See Schedule Part 14 Section 3 paragraph 4

to the formula the effect of which has just been explained or the Minimum Availability Deduction multiplied by the number of Deduction Periods.[145]

7.6.13 No deduction may be made for a Contract Month for any failure to meet Performance Standards designated as “Minor” in the PA if there are less than five such failures in that month. Where two or more Performance Failures occur in a Functional Area in a single Session, only the Performance Failure that results in the highest deduction applies.[146] There can be a deemed Performance Failure in certain circumstances where IHSL fail to monitor or accurately report an incident or state of affairs that does not comply with the Performance or Availability Standards.[147]

7.6.14 The PA contains provisions relating to an increase or decrease in the amount of Deductions in certain circumstances. For example, where the relevant Functional Area that is subject to an Availability Failure is actually used notwithstanding the Availability Failure, the deduction for that failure is reduced by 50%.[148] There are increases in the GSU’s applicable to an Availabilty Failure affecting a patient bed lift if more than one patient bed lift is affected during the same Session.[149] There are also provisions for repeated Availability and Performance Failures over a rolling period of 3 Contract Months that increase the applicable deduction by a factor of 1.5. These provisions apply in the case three or more Performance or Availability Failures in respect of the same Performance/ Availability Standard and some upper limits on particular kinds of failures.[150]

7.6.15 Similarly, the PA contains provisions dealing with circumstances where a Performance Failure and an Availability Failure overlap. Where the circumstances of a Performance Failure affecting a particular Functional Area also give rise to an

[145] Minimum Availability Deduction is defined (by a formula) at Schedule Part 14 Section 1 p. 348

[146] Schedule Part 14 Section 3 paragraph 2, paragraph 2.3

[147] Schedule Part 14 Section 3 Chapter 3. See also Chapter 6 which creates another deemed Performance Failure.

[148] Schedule Part 14 Section 3 Chapter 4 paragraph 4.2

[149] Schedule Part 14 Section 3 Chapter 4 paragraphs 4.3 and 4.4

[150] Schedule Part 14 Section 3 Chapter 5

Availability Failure in that Functional Area, in general only the deduction for an Availability Failure applies.

7.7 Monthly Payment Mechanism (Clause 34)

7.7.1 The payment mechanism is triggered by the submission of an invoice by IHSL to the Board on or before the first day of each Contract Month (a “Monthly Invoice”) aggregating the following sums:

a. the Monthly Service Payment for that Contract Month, calculated in accordance with Section 2 (*Calculation of Service Payments*) of Schedule Part 14 (*Payment Mechanism*) (discussed at section 7.6 below);

b. adjustments to reflect previous over-payments and/or under-payments;

c. any other amounts due by one party to the other (and where owed by Project Co applied as a negative figure); and

d. any VAT payable in respect of the above amounts.

7.7.2 The invoice is to be accompanied by supporting information that clearly sets out the derivation and calculation of the amounts specified in the monthly invoice.[151] In addition, no later than the tenth day of each Contract Month, IHSL must give to the Board a Monthly Service Report[152] in respect of the preceding Contract Month which sets out:

a. details of each and the aggregate amount of all Deductions[153] incurred in relation to Performance Failures;

[151] *Ibid*.

[152] Defined PA Schedule 1 Part 1 p. 159 as “a monthly report to be prepared by Project Co and provided to the Board in accordance with the relevant provisions in Section 1 (Service Level Specification) of Schedule Part 12 (Service Requirements);

[153] Defined PA Schedule 1 Part 1 p. 145 as “a deduction to be made in calculating a Monthly Service Payment, calculated in accordance with Section 3 (Deductions from Monthly Service Payments) of Schedule Part 14.(Payment Mechanism);

b. details of each and the aggregate amount of all Deductions incurred in relation to Availability Failures;

c. other information detailed in Schedule Part 12 (Service Requirements).

7.7.3 The parties are to endeavour to agree the contents of a Monthly Service Report within ten Business Days[154] of its submission, failing which either party may refer the matter to the Dispute Resolution Procedure. The PA contains provisions relating to disputed amounts and interest on late payments.[155]

7.8 Payment of Surpluses and Compliance with NPD Requirements (PA Clause 36)

7.8.1 Subject to anything in its Articles of Association, IHSL must pay the Surplus available on the date falling five business days after 31 March and 30 September in each year following the Commencement Date[156] to the Board, or to such other party as the Board may direct, (as a rebate of the Monthly Service Payments for the Contract Year most recently ended prior to the relevant Surplus Date) within 30 days of the date in question.[157]

7.8.2 The "Surplus" is defined in the PA as the amount (if any) standing to the credit of the Surplus Account. The "Surplus Account" has the meaning given in the Common Terms Agreement (effectively a nominated bank account held at Sumitomo Mitsui Banking Corporation Europe Limited, the bank that held all the project accounts as at financial close). In practical terms, the "Surplus" is the amount left after payment of the following (in the order in which payment should be made):

a. Any sums due and payable in relation to Project Expenditure;[158]

[154] Defined PA Schedule Part 1 p. 140 as being any day other than Saturday, Sunday or a bank holiday in Edinburgh.

[155] PA Clause 34.2 – 34.5

[156] Each of these being a "Surplus Payment Date" – see definition of that term at p. 178 PA

[157] PA Clause 36.1. Note that the Commencement Date here is the Commencement Date of the PA i.e., "the last day of execution of [the PA]" or 13 February 2015.

[158] Defined in Clause 1 of the Intercreditor Agreement.

b. Any sums required to be transferred in accordance with, or due to be paid under, any of the financing agreements; and

c. Any amounts required to maintain a cash buffer of £100,000 (Index linked.[159]

At the risk of oversimplification, the Surplus is therefore the amount left over from the payments received by IHSL after its operating costs and financing costs have been met.

7.8.3 IHSL are also obliged to comply with the NPD Requirements at all times throughout the Project Term.[160] For this purpose, the NPD Requirements are:

a. not to make a distribution of profit or surplus, or any transfer of assets to one or more shareholders whether by means of any payment or transfer of assets, directly or indirectly, in cash or in any kind, whether by way of dividend, bonus or release of obligation or in any other way otherwise than in certain specified circumstances; and

b. to comply with Clause 4.4 of the PA (Changes to Funding Agreements and Refinancing), which sets out that IHSL could not (without the prior consent of NHSL make changes to the conditions pertaining to the Surplus Account or Surplus Payments.

7.8.4 Specific provision is made in relation to breach of the obligations relating to payment of surpluses and compliance with NPD requirements. If IHSL breach these obligations, then NHSL may terminate the PA at any time within 18 months of becoming aware of any such breach. NHSL is required to inform IHSL of any such breach as soon as reasonably practical after becoming aware of it.[161] Termination is effected by the giving of notice of termination by NHSL to IHSL, and the PA terminates 30 business days after receipt of the notice unless IHSL demonstrates to the satisfaction of NHSL that the breach was caused by an administrative error and it is

[159] For the complete list, see Articles of Association of IHS Lothian Limited, article 3.1.

[160] PA Clause 36.2.

[161] PA Clause 45.1.

rectified within 10 business days of receipt of the notice (in which case the notice is deemed not to have been served).[162] On termination, NHSL becomes obliged to pay compensation to IHSL calculated in accordance with the PA.[163]

7.9 Records and Open Book Accounting (Clause 38)

7.9.1 This clause provides that the provisions of Schedule Part 19 of the PA apply to the keeping of records and the making of reports. That Part requires IHSL to retain and maintain records falling into 24 categories in chronological order and in a form that is capable of audit.[164] IHSL are required to make the records available to NHSL on reasonable notice where NHSL has reasonable cause for requiring such records.

7.9.2 Where practical, original records are to be maintained in hard copy form. Financial and other records[165] are to be retained for a period of at least six years in sufficient detail and in a form that enables IHSL to comply with its obligations relating to information and audit access.[166]

7.9.3 IHSL are also required to provide to NHSL:

a. a copy of its unaudited interim accounts at the end of, and for each six month period of, each financial year of IHSL;

b. a copy of Project Co's audited accounts, prepared in accordance with the Companies Act 1985 and generally accepted accounting principles and bases in Scotland;[167]

[162] PA Clause 45.2

[163] PA Clause 46.5. The bulk of any such compensation payment would find its way to the lenders by virtue of the various agreements relating to the financing of the project.

[164] PA Schedule Part 19 Section 1 paragraph 1. The categories of records are listed in Section 2 of that Part.

[165] Except for records relating to Project Operations, including the design, construction, development, enhancement and maintenance of the facilities), which are to be retained for the duration of the PA: PA Schedule Part 19 Section 1 paragraph 3.

[166] PA Schedule Part 19 Section 1 paragraph 4.

[167] PA Schedule Part 19 Section 1 paragraph 7.

c. on 31 March, 30 June, 30 September and 31 December each year a document listing all information provided by it to the Senior Funders during the preceding three month period and, at the request of the NHSL, any information provided by it to the Senior Funders and any other information relating to the Project that NHSL may reasonably require.[168]

7.9.4 These provisions should be read along with Clause 63 PA (Information and Audit Access). Amongst other things, this clause provides that for the purpose of:

a. the examination and certification of NHSL'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 NHSL 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 IHSL (and IHSL must procure that any person acting on its behalf who has such documents and/or other information shall also provide access). The Auditor General for Scotland may further require IHSL to produce such oral or written explanations as he considers necessary.[169]

[168] PA Schedule 19 Part 1 Paragraph 8

[169] PA Clause 63.2

8. First Supplemental Agreement

8.1 Introduction and Background

8.1.1 NHSL and IHSL entered into a settlement agreement and supplemental agreement relating to the Project on 22 February 2019 (SA1).

8.1.2 Recital B of the Agreement narrates that "The Board and Project Co entered into settlement discussions regarding various matters relating to the Project and the terms of this SA 1 reflect the outcome of those settlement discussions." The original Completion Date specified in PA was 3 July 2017.[170] This date was not achieved, and a subsequently agreed "handover date" of 12 October 2017 was also not achieved. NHSL Board discussed a number of significant issues – high voltage, ventilation and MRI accommodation – at their meeting on 4 October 2017. The Board accepted a recommendation that these issues proceed to dispute resolution process.[171]

8.1.3 At the NHSL Programme Board meeting on 6 November 2017, it was noted that "Construction completion, including all remedial works, is entirely possible by July 2018. Addition of planned 14 week commissioning period would indicate migration dates in October/ November 2018".[172] However, this was an NHSL estimate (based on technical advice), and it was observed that the further the construction progresses, the more complex the remedial works would become. The Programme Board were also informed that there was a "significant amount of paperwork" relating to changes to the Board's Construction Requirements proposed by IHSL still to be progressed. The Board approved progression to dispute resolution process.

8.1.4 Discussions concerning the areas of dispute was ongoing. At the Programme Board's meeting on 27 November 2017, it was noted that IHSL had offered a revised programme with a completion date of 22 May 2018. This was conditional on a number of things, including a payment by NHSL of £6.8 million. That payment was

[170] PA Schedule Part 1, p. 142 definition of "Completion Date"

[171] See summary in Programme Board Papers 6/11/17

[172] Programme Board Meeting Note 6 November 2017 p.3

"unacceptable" to NHSL, and there was "no confidence" in the proposed programme.[173] At its meeting on 19 December 2017, the Programme Board was provided with "a summary of between 50 and 60 areas of potential non-compliance which the Board are awaiting remedies by IHSL. Should these items not be remedied to a satisfactory position they may also require escalation to D[ispute]R[esolution]P[rocess]."[174] NHSL discussed matters with IHSL's lenders on 2 February 2018, stressing that NHSL "has yet to have a facility that is compliant or a credible programme to completion…The Board are yet to recognise any reliability of delivery."[175] It was also noted that the [NHSL] Project team still estimated "July 2018 completion exc remedial work to 4 Bed Room Ventilation and subject to other current potentially significant non compliances not escalating."[176]

8.1.5 On 21 March 2018, NHSL wrote to IHSL regarding the ventilation issue. The letter noted "as has been made clear to you repeatedly the ventilation to multi bed rooms is of critical clinical importance to us. No acceptable solution has been forthcoming from you to date in connection with this issue…. We cannot allow this issue to remain unresolved. The hospital is already over 8 months late. A further delay pending the outcome of the dispute pursuant to the dispute resolution procedures in schedule part 20 of the Project Agreement is unacceptable." The letter enclosed a draft summons that NHSL proposed to lodge in the Court of Session.

8.1.6 Court proceedings were not proceeded with following submission of a commercial proposal by IHSL. A completion date of 31 October 2018 was given, which appeared a "credible programme". The Scottish Government agreed to finance the commercial proposal so that it would not impact directly on NHSL funding. This did not, however, cover the costs of double running (i.e. continuing to run the old hospital while the new one was completed), though as no sums were being paid to IHSL, there

[173] Programme Board Meeting Note 27/11/17 p.2

[174] Programme Board Meeting Note 19/12/17 p.3

[175] Programme Board 19 March 2018 Update p.3

[176] Programme Board 19 March 2018 Update p.8

was a surplus in the budget that would offset those costs.[177] The Scottish Government funding was to be in the form of a capital injection rather than a loan.[178]

8.1.7 Negotiations continued – it was a “fluid situation, with daily conferences and very complex negotiations.” It was noted that “IHSL desperately need this to service debts to Funders. 81 technical items. have been reduced to <70, with cable calculations and works outside the boundary having been taken into another process. Drainage and Automatic Fire Detection (Voids) are now the most pressing technical matters. The proposal includes milestone payments to incentivise delivery – NHSL wish to introduce performance/ delivery standards to payments.”[179]

8.1.8 The update to the Programme Board for its meeting on 6 February 2019 notes that the settlement agreement was approved by the Finance & Resources Committee on 23 January 2019 and was going to the full NHSL Board on 6 February 2019.[180] It was noted that although the documentation was very advanced, there were some technical and commercial issues remaining and the funder approval process was not completed. The settlement agreement was signed on 22 February 2019.

8.2 SA1 – Summary

8.2.1 The key provisions of SA1 may be summarised as follows:

a. IHSL was obliged to design, construct, test, commission and complete the Works (other than the Post Completion Works[181] and Outstanding Works[182]) and Facilities in accordance with the Project Agreement as amended by the

[177] Programme Board Meeting Note 21/5/18 p.2. The funding position is also set out in the Programme Board 21 May 2018 Update at p. 4. Note that in the Update, funding details with Scottish Government identified as a risk, as was the consent of senior funders (p.6)
[178] Programme Board Notes 16 July 2018 p. 2
[179] Programme Board Notes 24 September 2018 p. 1
[180] Programme Board 06 February 2019 Update p. 3
[181] Various drainage works, void detection works and heater battery works all as described in Parts A and B of Part 5 of the Schedule to SA1
[182] Works set out in Part 6 of the Schedule to SA1 that the parties agreed were to be completed after the Actual Completion Date.

Agreed Resolution[183] so as to satisfy the Completion Criteria as amended by the Agreed Resolution; the Agreed Resolution was to be used by the Independent Tester for the purposes of interpreting the relevant aspects of the Completion Criteria as amended by the Agreed Resolution for those parts of the Works (other than the Outstanding Works and Post Completion Works) detailed in Part 1 of the Schedule to SA1;

b. IHSL was obliged to procure the design, build, test and commissioning of the Post Completion Works including detailed technical specifications and operational procedures by agreed programme dates (and failure to complete them by 26 July 2019 would have given rise to an event of default under the PA);

c. Solutions to other disputed technical issues accepted by NHSL (those referred to at paragraph 8.1.8 above) form part of a schedule to the Settlement Agreement which IHSL were obliged to implement;

d. NHSL required to pay to IHSL £6 million (plus VAT) on signature of SA1 to be used towards IHSL's obligations to the funders;

e. NHSL was to pay a further £5.6 million (plus VAT) to IHSL as follows:

- Certification by the Independent Tester in relation to completion of the post-completion drainage works – £2 Million;
- Certification by the Independent Tester in relation to completion of the post-completion void Detection – £2 Million;
- Certification by Independent Tester in relation to completion of the post-completion heater batteries works – £1.6 Million.

f. NHSL would commence payment of the full Annual Service Payment on the Actual Completion Date (that is the date of actual completion of all works to

[183] The "Agreed Resolution" is "the technical solution required to resolve the disputes between IHSL and NHSL (other than the Post Completion Disputed Works) and the obligations on each party to meet (or procure the meeting of) that agreed technical solution all as detailed in Part 1 of the Schedule to SA1" – SA1 Clause 1.3. The Post Completion Disputed Works were set out in of Part 5. to the Schedule to SA1

be carried out under the PA in relation to the construction of the hospital less the Post Completion Works and Outstanding Works[184]); and

g. IHSL and NHSL both released each other from claims in respect of the original disputes relating to the technical issues (referred to at paragraph c above), the Post-Completion Works and any events known by the parties as at the date of SA1 that would otherwise have qualified for relief under the PA.

8.2.2 What follows is not a full analysis of SA1, but rather focuses on those parts of SA1 that impact upon the payments to be made in respect of the project as previously described.

8.2.3 It should be noted that to finance its obligations under SA1 the ultimate shareholders in IHSL were to invest an additional £5.4 million by way of subordinated debt under the terms of an amended and restated shareholder support agreement between IHSL, IHS Lothian Holdings Limited, IHS Lothian Investments Limited, IHS Lothian Corporate Limited and Prudential Trustee Company Limited.

8.3 Payment of the Settlement Sum (Clause 4)

8.3.1 SA1 makes provision for payment of £11.6 million plus VAT by way of a "Settlement Sum" by NHSL to IHSL in instalments.[185] These payments would be made (with the exception of that at Milestone 4 below) prior to the conclusion of the construction phase and therefore before the services relating to the operation and maintenance of the new hospital had begun.

8.3.2 The amount was payable in instalments as set out in the following table:[186]

[184] Works listed in Part 6 of the Schedule to SA1.

[185] SA1 clause 4.1

[186] Derived from Part 7 of the Schedule to SA1

Event	Element of Settlement Sum (£)	Invoicing Arrangements	Payment Date
Milestone 1 Signature of SA1	£6m (Plus VAT)	IHSL to submit invoice to NHSL on the date of final signature of SA1	NHSL to pay invoice within 5 business days of receipt of a valid VAT invoice
Milestone 2 Completion of the Drainage Works in accordance with the Drainage Completion Criteria (target completion date 24 May 2019)	£2m (Plus VAT)	IHSL to submit an invoice to NHSL when the Independent Tester has certified that Milestone 2 has been achieved	NHSL to pay invoice within 5 business days of receipt of a valid VAT invoice (which valid invoice can only be issued once the Independent Tester has certified that Milestone 2 has been achieved
Milestone 3 Completion of the Void Detection Works in accordance with the Void Detection Completion Criteria (target completion date 13 June 2019)	£2m (Plus VAT)	IHSL to submit an invoice to NHSL when the Independent Tester has certified that Milestone 3 has been achieved	NHSL to pay invoice within 5 business days of receipt of a valid VAT invoice (which valid invoice can only be issued once the Independent Tester has certified that

			Milestone 3 has been achieved
Milestone 4 Completion of the Heater Battery Works in accordance with the Heater Battery Completion Criteria target completion date 27 May 2019)	£1.6m (Plus VAT)	IHSL to submit an invoice to NHSL when the Independent Tester has certified that Milestone 4 has been achieved	NHSL to pay invoice within 5 business days of receipt of a valid VAT invoice (which valid invoice can only be issued once the Independent Tester has certified that Milestone 4 has been achieved

8.3.3 These payments were declared to be in consideration of:

a. IHSL carrying out its obligations under clause 3.1.1 (to design, construct, test, commission and complete the works relating to the construction of the hospital (other than the Post Completion Works and Outstanding Works) in accordance with PA as amended by the Agreed Resolution and the other provisions of SA1);

b. The costs of the Agreed Resolution;

c. Associated on-site costs; and

d. Senior debt funding payable by IHSL from the period from 20 April 2018 to 31 October 2018.[187]

[187] See Grant Thornton, *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*, at paragraph 270: “At this stage, it is understood [IHSL] were experiencing cash flow difficulties. A risk

8.3.4 Provision is made for payment of interest and other remedies should NHSL fail to pay an instalment of the Settlement Sum by the date shown in the table above (SA1 clauses 4.2 and 4.3). Provision was also made for each party to bear its own costs in relation to the disputed matters that were effectively resolved by SA1 and the negotiation, execution and implementation of SA1 and in relation to various other matters (clauses 4.4 and 4.5).

8.4 Payment of Service Charge Ahead of Completion of Works (Clause 6.12.1)

8.4.1 Clause 6.12.1 provides that "completion of the Post Completion Works and the Outstanding Works shall not be a requirement for the issue of a Certificate of Practical Completion by the Independent Tester pursuant to Clause 17.12 (Completion Certificate) of the Project Agreement or the occurrence of the Actual Completion Date, and the Certificate of Practical Completion shall be issued the dispute between the Parties regarding the Concrete Specification, De-Watering, Geotechnical Reports, Submains Schedule and the Energy Centre Lighting Calcs". (All of the disputes referred to being defined in SA1 – the details are not relevant for present purposes, it being sufficient to note that there were several ongoing disputed matters relating to construction.)

8.4.2 As explained in paragraph 7.4.2 above, the Actual Completion Date is also the Payment Commencement Date, which is the trigger for payment of the Monthly Service Charge to IHSL (and the trigger for IHSL to start providing services under the PA). Accordingly, clause 6.12.1 makes explicit that notwithstanding that the Post Completion Works and the Outstanding Works are not complete, the Certificate of Practical Completion may be issued and payment of the Monthly Service Charge begin. SA1 made no changes to the definition of "Actual Completion Date" and as noted at paragraph 7.4.2. the Certificate was issued on 22 February 2019 – the same date as the date of signature of SA1. Accordingly, liability for the Monthly Service

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." A copy of this report can be found in Bundle 3 for the Hearing of the Inquiry commencing 9 May 2022 (Volume 1) starting at page 30 of that Bundle.

Charge, amounting to £1.35 million per month, started on the date on which SA1 was signed.[188]

8.4.3 As explained at paragraph 7.6.6 and following, the PA makes provision for deductions from the Monthly Service Charge in relation to performance and availability failures. Clause 6.16 goes on to provide that "No Deduction shall apply…where such Deduction…arises solely as a result of the carrying out of the relevant Post Completion Works or Outstanding Works providing that such relief shall only apply from the Actual Completion Date until the Milestone 2 Target Completion Date[189] (in respect of the Drainage Works) and/ or Milestone 3 Target Completion Date[190] (in respect of the Void Detection Works) and/ or Milestone 4 Target Completion Date[191] (in respect of the Heater Battery Works) and/ or the Outstanding Works Target Completion Date (in respect of the Outstanding Works)". Apart from these limited grounds of relief (that applied for a limited period), the deductions regime discussed above was applicable from the Actual Completion Date.

8.4.4 A number of amendments consequential on SA1 are made to Schedule Part 14 to PA (Payment Mechanism) relating to a number of Service Events.[192]

[188] Audit Scotland, *The 2018/19 Audit of NHS Lothian – Delay To The Opening of the Royal Hospital for Children and Young People*, p. 12.

[189] 24 May 2019

[190] 13 June 2019

[191] 27 May 2019

[192] A "Service Event" is an incident which means that Performance Standards and/ or Availability Standards are not met.

9. Second Supplemental Agreement

9.1 Introduction and Background

9.1.1 NHSL and IHSL entered into a second supplemental agreement relating to the Project on 5 August 2020 (SA2). This agreement came about because of ongoing issues in relation to the ventilation system at the new hospital. Problems with the system had been identified in a series of reports in June and July 2019 from the Institute of Occupational Medicine (IOM) that were commissioned by NHSL. On 1 July 2019, IOM reported that the ventilation system could not deliver 10 air changes per hour in critical care areas. The Cabinet Secretary for Health and Sport made the decision to halt the move to the new site on 4 July 2019.[193]

9.1.2 On 5 December 2019, NHSL issued High Value Change Notice No. 107 "Paediatric Critical Care and Haematology/ Oncology Ventilation" (HCV 107).[194] This notice required IHSL to design, manufacture, supply, construct, test, commission and complete, and thereafter maintain, repair, renew and replace:

a. a ventilation system or systems which will deliver 10 air changes/hour at +10pa as per SHTM 03-01 to listed single bedrooms and multi-bedrooms in Paediatric Critical Care;

b. 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 five listed isolation rooms in Paediatric Critical Care;

[193] See summary in Audit Scotland, *The 2018/19 Audit of NHS Lothian – Delay To The Opening of the Royal Hospital for Children and Young People*, pp. 12 - 13

[194] A High Value Change is a change to the contract specification requested by the Board that is likely to cost more than £500,000 or to require an adjustment to the Annual Service Payment of more than 2%. See definition in PA Schedule Part 16 Section 1 Definitions at p.387. The procedure relating to High Value Changes proposed by the Board is set out in Section 4 of that Part of the Schedule (at p. 404)

c. 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 fourteen single and multi- bedrooms in haematology and oncology; and

d. 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 five isolation rooms in haematology and oncology.

9.1.3 The proposed change had a target capital cost of £4.6m.

9.1.4 SA2 was primarily directed at an agreed solution to the issues with the ventilation system. Recital B to SA2 provides that "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…". Consequential changes were made to the financial relations between the parties applicable under PA, and these matters are discussed below. What follows is not a full analysis of SA2, but rather focuses on those parts of SA2 that impact (or potentially impact) upon the financial relationships between the parties. They are taken in the order in which they appear in SA2.

9.2 Key Definitions

9.2.1 As indicated above, SA2's principal purpose is to make provisions for the Ventilation Works to be carried out under the Ventilation Works Contract by the Ventilation Works Contractor starting on the Ventilation Works Commencement Date and to be completed by the Ventilation Works Target Completion Date. Each of these capitalised terms is defined in the contract as follows:

> "Ventilation Works" means the ventilation works described in and as instructed under HCV 107 more fully described in the Ventilation Works Contract.
>
> "Ventilation Works Commencement Date" means 22 June 2020.

"Ventilation Works Contract" means the contract between IHSL and Imtech Engineering Services Central Limited in the form set out in SA2.

"Ventilation Works Contractor" means Imtech Engineering Services Central Limited (hereinafter "Imtech"); and

"Ventilation Works Target Completion Date" means 25 January 2021.

9.3 Compensation Events (Clause 6.5.2)

9.3.1 If Imtech is entitled to a claim for a compensation event[195], IHSL are entitled to equivalent relief and compensation under SA2. Following notification by the project manager of any change to the prices, completion dates and/ or key dates to NHSL, NHSL shall reimburse IHSL for any costs claimed by the Ventilation Works Contractor and/or grant to IHSL an equivalent extension of time. IHSL are not, however, entitled to reimbursement of any costs where its negligence, error or default gave rise to the compensation event in question.

9.4 Delay Damages (Clause 6.5.5)

9.4.1 Where Imtech is liable to pay delay damages[196] to IHSL under the Ventilation Works Contract, IHSL is required to use reasonable endeavours to enforce its rights and to pay to NHSL the amount of delay damages which IHSL deducts from, recovers or is paid by Imtech within 14 days of deduction, recovery or receipt.

[195] Compensation Events are, broadly speaking, events occurring during the execution of the works that are not the fault of the contractor and change the cost of the work, or the time needed to complete it. As a result, the prices, key dates or the completion date may be reassessed, and the contractor may be entitled to more time or money

[196] Delay damages are payable under NEC Engineering and Construction Contract (part of the contractual arrangements under which Imtech were appointed) as an option (X7) which means that if the contractor (Imtech) does not achieve the completion date then delay damages are payable to the client (IHSL). The option was selected in this case, and the amount of delay damages was set at £5000 per week, or pro rata for any part of a week.

9.5 Limits On IHSL's Liability in Respect of the Ventilation Works (Clause 6.8)

9.5.1 Clause 6.8.1 of SA2 limits IHSL's aggregate liability to NHSL in respect of the Ventilation Works, until the date occurring 12 years after the Ventilation Works Completion Date, to the amounts which can be recovered by IHSL from Imtech, the project manager of the Ventilation Works Contract, the supervisor of the Ventilation Works Contract and any other consultants or sub-contractors appointed in relation to the carrying out of the Ventilation Works, together with any amount recovered by IHSL under the insurances to be maintained in accordance with SA2.[197]

9.5.2 Further, clause 6.8.2 provides "For the avoidance of doubt" that IHSL shall be under no greater liability, until the date occurring after the expiry of 12 years after the Ventilation Works Completion Date, than Imtech owes to IHSL under the Ventilation Works Contract, and the project manager and supervisor owe to IHSL under their respective appointments. Any equivalent rights of defence, exclusions or limitations on the liability of Imtech, the project manager and supervisor contained in the Ventilation Works Contract or their respective appointments apply to SA2.

9.5.3 It should be noted that Imtech, the project manager and the supervisor were all to grant collateral warranties in favour of NHSL in the form specified in Part 5 of the Schedule to SA2 in terms of which all gave undertakings in respect of the work that they would be carrying out directly in favour of (and therefore enforceable by) NHSL.

9.6 Waiver Letter (Clause 6.12.4)

9.6.1 NHSL had sent a letter to IHSL on 12 December 2019 the terms of which were confirmed under SA2, which confirmed that in terms of that letter, NHSL:

a. Waived £280,000 (exclusive of VAT) of Deductions[198] that were accrued in accordance with PA up to and including 30 September 2019. The parties agreed that there will be no further adjustments in calculating the Deductions for the period up to and including 30 September 2019;

[197] See in particular SA2 clause 6.9

[198] On Deductions, see paragraph 7.6.6 above

b. Required to pay IHSL the sum of £120,000 (exclusive of VAT) within 10 business days of the date of execution of SA2. No explanation is given in SA2 as to what this payment is for; and

c. Waived all accrued rights under various parts of clause 40 PA (events of default that may ultimately lead to termination of PA), although this was without prejudice to any future rights available to NHSL under clause 40.

9.7 Revised Annual Payment (Clause 6.12.5)

9.7.1 Clause 6.12.5 provides that the parties “acknowledge and agree” that a revised Annual Service Payment will not be calculated until the date on which the Financial Model[199] is next re-run at a time to be agreed between the parties. When re-run, the Financial Model would be re-run based on an increase to the Annual Service Payment (at then - current 2020 prices) of £84,789.75 (exclusive of VAT) (the “Price Adjustment”). This was to cover the additional maintenance costs and providing the additional services associated with the works undertaken under SA2.

9.7.2 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.[200]

[199] The Financial Model is defined in the PA as “the computer spreadsheet model for the Project incorporating statements of [IHSL]’s cashflows including all expenditure, revenues, financing and taxation of the Project Operations together with the profit and loss accounts and balance sheets for [IHSL] throughout the Project Term accompanied by details of all assumptions, calculations and methodology used in their compilation and any other documentation necessary or desirable to operate the model, as amended from time to time in accordance with the terms of Clause 37 (Financial Model), a copy of which is attached to this Agreement on disk as Attachment 1;” – PA Schedule Part 1 p.150

[200] General provisions as to changes to the Financial Model are set out in Section 6 of Part 16 of the Schedule to PA. These provisions apply in the case of a “Relevant Event”. A High Value Change such as that set out in HVC 107 would have been a relevant event triggering these provisions, leading to a change in the Annual Service Payment (Paragraph 13 of Section 4 of Part 16 of the Schedule to PA).

9.8 Payment for the Ventilation Works (Clause 7 and Schedule Part 8)

9.8.1 Clause 7 provides that "In consideration of [IHSL] procuring the design, construction, testing, commissioning, maintenance, repair, renewal and replacement of the Ventilation Works", NHSL shall pay IHSL in accordance with Schedule Part 8. It is expressly provided that Clause 34 of and Schedule Part 14 to the PA[201] do not apply in respect of the Ventilation Works. This mirrored what occurred under the PA during the construction phase when no deductions were levied against IHSL as no payment were being made by NHSL to IHSL during that phase. The obligation to pay under clause 7 includes any other entitlement of IHSL to payment under SA2, including any compensation payments.[202]

9.8.2 Schedule Part 8 essentially provides for a "pass through" model of payment. In short, Imtech, the project manager and the supervisor submit applications for payment to IHSL. IHSL in turn pass the applications and supporting documentation to NHSL. NHSL are then obliged to pay to IHSL "the amounts which [IHSL] is obliged to pay as properly assessed…in terms of the Ventilation Works Contract, the Project Manager Appointment and the Supervisor's Appointment respectively". The pass-through nature of the payment mechanism is made clear in paragraph 9 which provides: "Subject to receiving payments from [NHSL] in accordance with the process described in the Schedule Part 8, [IHSL] shall comply with its obligations to pay [Imtech]…the Project Manager and the Supervisor".

9.8.3 Provision is made for further information regarding the payment requests to be obtained, NHSL to make comments or representations in relation to the information received, deadlines for payment and other steps in the process, payment of interest in relation to late payments and for repayment to NHSL by IHSL where amounts assessed under the Ventilation Works Contract, or the appointments of the project manager or supervisor are later assessed downwards.

[201] See section 7.6 above

[202] Paragraph 9.3.1 above

9.8.4 Payment of the costs of the Ventilation Works by NHSL does not reflect a radical departure from the principles of the PA. As explained at paragraph 9.1.2, the Ventilation Works had initially been instructed by NHSL by virtue of a change notice under the PA pursuant to Part 16 of the Schedule to the PA. The PA provided for payments being made by NHSL for changes to the contractual specification required by NHSL pursuant to this Part of the Schedule. This is in line with both the SFT Standard Form Project Agreement and general practice in PFI/PPP projects that the procuring authority pays capital sums for changes which it instructs to the original scope of works. So the agreement to pay the costs of the Ventilation Works is not necessarily a departure from the approach that one would expect under the NPD model.

9.9 Indemnity (Clause 7A and Schedule Part 3)

9.9.1 Clause 7A provides for an indemnity by the Board in favour of IHSL in accordance with Schedule Part 3.

9.9.2 Schedule Part 3 provides for a comprehensive indemnity by NHSL in favour of IHSL against all Direct Losses[203] sustained by IHSL as a result of, or in relation to:

a. any unplanned interruption to the utilities infrastructure and/or the carrying out of the other works by IHSL or the requirement for unplanned installation of any apparatus to provide connectivity to any utilities supply networks, as a result of the Ventilations Works or a Ventilation Works Defect.[204]

[203] "Direct Losses" are, subject to certain exclusions, "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 whether arising under statute, contract or at common law" but excluding indirect losses – PA Schedule Part 1 at p. 146. "Indirect Losses" are defined in clause 54.1 PA

[204] A Ventilation Works Defect is "any Defect as defined in clause 11.2(6) of the Ventilation Works Contract".

b. any claim in respect of or arising out of or in connection with the Ventilation Works which is not a Ventilation Works Contractor Excluded Liability[205] and which is not otherwise recoverable;

c. a Ventilation Works Contractor Excluded Liability

d. the occurrence of certain insolvency events in relation to the Ventilation Works Contractor;[206] and

e. a Ventilation Works Interface Claim –a claim by IHSL against Multiplex, Bouyges or Imtech arising out of the situation where the works or services to be provided under PA has been altered or impacted by the Ventilation Works.[207]

9.9.3 The indemnity is for the period from the Ventilation Works Commencement Date until the Ventilation Works Indemnity Expiry Date (five years after the Ventilation Works Completion Date).[208]

9.9.4 There are a number of limitations and conditions put on the indemnity. The following are particularly relevant in the present context:

a. The indemnity shall put IHSL is no better and no worse position than it would have been had the circumstances giving rise to the claim under the indemnity not occurred.[209]

b. IHSL are under a general duty to pursue contractual and insurance claims that may reduce any amounts to be paid under the indemnity promptly.[210]

c. Where IHSL subsequently recovers an amount from the Ventilation Works Contractor, Bouyges or insurances an amount that is directly referable to a

[205] Defined as "any entitlement that [IHSL] 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"

[206] See definition of Ventilation Works Contractor Insolvency, clause 1.2 SA2

[207] Full definition of Ventilation Works Interface Claim at Section A SA2 Schedule Part 3

[208] SA2 Schedule Part 3 Part A paragraph 1.

[209] SA2 Schedule Part 3 Part A paragraph 1.2.2

[210] SA2 Schedule Part 3 Part A paragraphs 1.2.3 and 1.2.4

claim under the indemnity, IHSL are obliged to repay to the Board the lesser of (i) the sum recovered (less the reasonable costs of recovery) or (ii) the amount paid under the indemnity.[211]

9.9.5 The indemnity provisions also provide that with effect from the Ventilation Works Commencement Date, NHSL shall not make any Deduction, or serve a notice in respect of a Service Event,[212] as a result of and to the extent caused by or materially contributed to by various matters related to the Ventilation Works. The restriction on making Deductions is limited to events occurring prior to the date falling five years after the Ventilation Works Completion Date.[213]

[211] SA2 Schedule Part 3 Part A paragraph 4

[212] On Deductions and Service Events generally, see paragraph 7.6.6 and following above.

[213] All the above in SA2 Part 3 Part A paragraph 5.

Appendix 1 – Example of Indexation of Annual Service Payment

1. The formula for indexation of the Annual Service Payment referred to at paragraph 7.6.1 above is:

$$ASP_n = ASP_o \times (1 - IF) + [(ASP_o \ \times IF)x[1 + \frac{(RPI_n - RPI_o)}{RPI_o}]$$

Where

ASP_n is the Annual Service Payment for the relevant Contract Year;[214]

ASP_o is the Annual Service Payment at the Base Date – for the purposes of this simplified example assumed to be £100;

IF (or Indexation Factor) is 26%;

RPI_n is the value of the Retail Prices Index published or determined with respect to the month of February which most recently precedes the relevant Contract Year; and

RPI_o is the value of the Retail Prices Index published or determined with respect to the Base Date (i.e., for February 2015 – 256.7)

2. For the purposes of RPI_n, the relevant RPI figures in each February are:

[214] "Contract Year", as defined in the PA, means "(a) for the first Contract Year, the period from the date of this Agreement [13 February 2015] to the subsequent 31 March; and (b) for all subsequent Contract Years, the period of twelve (12) calendar months commencing on each anniversary of 1 April, provided that the final Contract Year shall be such period as commences on 1 April and ends on and includes the date of expiry or earlier termination of this Agreement (as the case may be)" - Schedule Part 1 p. 143

February 2015 - 256.7

February 2016 - 260

February 2017 - 268.4

February 2018 - 281.5

3. Inserting these figures into the formula, one gets the following results for Contract Years 2 (2015 – 2016) to 5 (2018 – 19):

$ASP_2 = 100 \times (1 - 0.26) + [(100\, x\, 26\%)$ x $[1 + \frac{(256.7-256.7)}{256.7}]$ = 74 + [26 x [1+0]] = £100.

$ASP_3 = 100 \times (1 - 0.26) + [(100\, x\, 26\%)$ x $[1 + \frac{(260-256.7)}{256.7}]$ = 74 + [26 x [1+0.0128]] = £100.33.

$ASP_4 = 100 \times (1 - 0.26) + [(100\, x\, 26\%)$ x $[1 + \frac{(268.4-256.7)}{256.7}]$ = 74 + [26 x [1+0.0456]] = £101.18.

$ASP_5 = 100 \times (1 - 0.26) + [(100\, x\, 26\%)$ x $[1 + \frac{(281.5-256.7)}{256.7}]$ = 74 + [26 x [1+0.0966]] = £102.51.

SCOTTISH HOSPITALS INQUIRY

Hearing Commencing

26 February 2024

Bundle 11 – Provisional Position Papers