

# SCOTTISH HOSPITALS INQUIRY

**Hearing Commencing  
26 February 2024**

**Bundle 12 – Substantive Core Participant  
responses to Provisional Position Papers  
– Volume 2 (of 3)**

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**AND**

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**RESPONSE ON BEHALF OF NHS Lothian****TO THE PROVISIONAL POSITIONING 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 (“PPP7 – NON VENTILATION ISSUES AND REMEDIAL WORKS”)****(Submitted on 8 September 2023)****1. Introduction**

- 1.1 NHS Lothian (NHSL) agrees with the content of the PPP7 non ventilation issues and remedial works subject to the table of comments and clarifications in the table at Appendix 1. NHSL has set out its response to question 8 below. To provide relevant context to the answers, NHSL has set out an additional two points below.
- 1.2 Firstly, under the NPD Project Agreement, the RHCYP and DCN is subject to an external facilities management contract as between IHSL and Bouygues. The ongoing operation of the NPD is managed by IHSL and its supply chain. NHSL has a contract management team in place, who are well sighted on key issues, but ultimately any issues with the building and its facilities in terms of maintenance, repair, replacement and cleaning are the responsibility of IHSL and their facilities management contractor, Bouygues.
- 1.3 Secondly, NHSL seeks to clarify any misunderstanding that there is an infection control aspect to all elements of construction and maintenance, particularly in relation to electrical installations where there is no direct risk of transmission of infection. Clinical risks and non-clinical risks should not be conflated or misunderstood. The risk of a hospital acquired infection (HAI) is a clinical risk but electrical failure is a resilience risk to uninterrupted service delivery. The majority (if not all) critical equipment will have battery backup. The consequence of the electrical failure may create an environment where some infections may transmit more readily (if all mechanical ventilation failed for instance) but that would be very bespoke to the particular setting and HAI risk wouldn't necessarily be the most significant consequence.

## **2. Unresolved Issues**

- 2.1 As noted at paragraph 1.2, the facilities are managed by IHSL and their supply chain and, accordingly, some of the questions are best directed to IHSL. However, NHSL has a contract management team in place and has answered the questions to the best of its knowledge.
- 2.2 NHSL is aware that IHSL and Multiplex have applied for a building warrant to allow them to undertake upgrade works to increase the frequency of cavity barriers in the external walls. Otherwise, NHSL is not aware of any unresolved issues or further defects with building systems that could have an adverse impact on patient safety.
- 2.3 In relation to whether there is still a 'single point of failure' with regard to the electrical supply to Medical IT systems, it would require a sequence of catastrophic events to create the failure required to lose a very large plant room containing 3 separate UPS systems (giving resilience). Such an event would have wider implications than electrical resilience. As noted in paragraph 1.3 above, electrical failure is a resilience risk to uninterrupted service delivery rather than a direct clinical or HAI risk. There are no other issues of concern in relation to HV/LV resilience that NHSL is aware of.
- 2.4 There is no requirement for third party validation of electrical systems. Some systems are 'validated' as complete systems during commissioning but not by a third party.
- 2.5 There is and was no infection control risk in relation to the installation of Earth Bonding Bars. The risk that had been associated with Earth Bonding Bars related to an unsealed Perspex cover, which has now been sealed.
- 2.6 The issue with window restrictors has been resolved. They were all replaced.
- 2.7 NHSL is not aware of any further issues with drainage.

## **3. HAI Scribe Stage 4**

- 3.1 NHSL has provided a copy of the HAI Scribe stage 4 IPCT sign off for the following areas: Borthwick, ED, Critical Care and Lochranza of the RHCYP and DCN which took place prior to the hospital opening in 2021. These are the areas where there was outstanding ventilation and non-ventilation work to be completed prior to the hospital opening.

#### 4. Provisional Findings

4.1 NHSL is encouraged to see positive commentary in the Provisional Findings and elsewhere in relation to:

- The collaborative focus on putting in place 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 (para 8.1.1);
- The volume of documents shared by NHSL with the Inquiry, including a significant amount of correspondence, which saw the challenged and significant amount of work involved in resolving complex issues (para 8.1.4);
- NHSL provided the Inquiry with a clear 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 (para 2.1.6); and
- The views expressed by the Senior Programme Director at the penultimate oversight Board Meeting on 25 February 2021 that: “The new Hospital was now one of the safest and best building in the whole of Scotland” (para 8.1.6).

4.2 The NHSL Project Team dealing with the remedial works, both ventilation and non-ventilation issues, was largely the same as the Project Team during the design and construction of the Project. NHSL considers one of the key differences in terms of the scope for collaborative working is that (i) the managed services firm for IHSL changed from HCP to George Street Asset Management and; (ii) the contractor was changed from Multiplex to IMTECH under IHSL's new managed services firm. The result was that IHSL were being pro-actively managed and were working with a fully engaged contractor (IMTECH), enabling significant progress to be made over a short period of time. This was markedly different and a welcome improvement to the approach of the IHSL's team during construction.

## Appendix 1

Table of Comments and Clarifications on PPP 7 Non Ventilation Issues and Remedial Works

General comment		The Inquiry may find it helpful to know that there is an international naming convention for bacteria names that they may wish to comply with. The genus name starts upper case i.e. <i>Legionella</i> and the species name is lower case i.e. <i>Pseudomonas aeruginosa</i> and both should be italicized. The first time the genus name is used the whole word is written and in subsequent occasions it is truncated to just the initial letter e.g. <i>P aeruginosa</i> .
Glossary	SHPN – Scottish Health Protection Network	Suggest this should be “Scottish Health Planning Note”
	“IT” – see Medical IT	It may be worth clarifying that “IT” can also mean “Independent Tester” given cross-over to PPP7.
	HEPA filter	Defined as “High-efficiency particulate absorbing filter.” However, a HEPA filter is usually considered to mean: “High Efficiency Particulate Air filter”.
1.2.3	Second bullet point: “Non-compliant water hose lengths and concerns about water management, including water temperature control, which increased the risk of contamination of the system and HAI.”	Suggest clarify as follows: “non-compliant <u>shower</u> hose lengths <u>and use of retaining rings</u> and concerns about water management, including water temperature control, which increased the risk of contamination of the system and HAI”
1.2.3	Sixth bullet point: “Electrical installation that increased risk of contamination and thus HAI.”	Electrical installation does not increase the risk of contamination and thus HAI (see paragraph 1.3 above). Suggest deletion of bullet point.

3.1.2	NHSL later commissioned Westfield Caledonian to conduct tests to “quantify the risk of infection from <i>Pseudomonas aeruginosa</i> in augmented care areas and to assess the bacteriological load within the domestic systems generally”.	Westfield Caledonian were not just commissioned to assess water from the perspective of <i>P aeruginosa</i> . They also did Legionella testing and TVC testing.
3.1.5	Water Solutions Group (WSG), which had experience at Queen Elizabeth University Hospital, Glasgow, 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	It is of note that: (i) the widening of scope of testing that WSG initiated was only being performed at RHCYP and DCN; and (ii) the significance of WSG findings was over-interpreted such that it conveyed a greater microbiological hazard than actually was present.
3.1.7	Amongst the areas requiring work, the NHS NSS report noted that shower hose lengths were non-compliant with SHTM 04-01.	The issue of shower hose length non-compliance comes from Scottish Water Byelaws and not SHTM 04-01. The only mention of shower hoses in SHTM 04-01 is in Part G and it does not relate to the issue of length or risk of contamination by touching the floor or other sanitary ware.
3.1.9	In November 2019 an RHCYP and DCN water safety group was set up, chaired by Dorothy Hanley, Commissioning Manager, NHSL. The group reported to the NHSL	This is incorrect. When the water safety group was set up it was chaired by Tracey Gillies ( <u>not</u> Dorothy Hanley) and continued to be for many months. It reported primarily to the Executive

	Water Safety Group and RHSC Site Infection Control Committee, from which the reporting chain ultimately reached the Board Chief Executive.	Steering Group (ESG) ( <u>not</u> the NHSL Water Safety Group or RHSC infection control committee) until the actions in the action log were addressed.
3.4.2	To become compliant with SW Bylaws, welded, disposable shower heads with a shorter hose length were installed, and a programme of regular water sampling to test for contamination was put in place, eventually returning to six 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.”	Disposable shower heads are not required by Scottish Bylaws. Quarterly shower hose and shower head maintenance/decontamination required. Point of use (disposable) shower heads can be used if there is a water quality issue in the short term.
Page 18	Second blue box on diagram	The second blue box on the diagram states that local water safety groups report to the Health and Safety Executive. This is incorrect. Either the HSE and the NHS Lothian Health and Safety Executive Lead (Tracey Gillies) are being confused or it’s supposed to read Health and Safety Committee and not HSE.
3.3.9		Duplication of “this” in last bullet point
3.4.1	The risk was that removable shower heads with long hoses could come into contact with contaminants, thereby becoming a vector for spreading infection.	The issue with shower heads becoming contaminated is not so much that the shower head is the vector, it’s the poorer water quality coming from the shower



		head that generates the risk of infection and not the shower head itself.
4.1.6	Earth Bonding Bars	The incorrect installation of earth bonding bars is not a potential infection control risk. See paragraph 1.3 above.
5.1.2	McRoberts LLP provided a proposal for Fire Safety Enhancement Works which was reviewed by Richard Walker of 3-FE Fire Engineering Consultancy.	That is incorrect. NHSL provided this proposal, not MacRoberts LLP.
7.1.2	It is not clear whether the window restrictors were replaced.	All window restrictors were replaced.
7.2.1	On 31 December 2020 an issue was reported regarding significant longstanding damp identified in two dental surgery rooms, with black mould found to a height of 5 feet.	The evidence of 'longstanding damp' only became apparent on invasive survey (when wall removed). As written this implies this was a visible/known longstanding issue which is not correct.
7.2.6	The impact on patients was that six children had to be rebooked and there were no cancellations. The children were regarded as low risk. A communication was prepared for parents to provide information regarding the incident, and a Q&A. According to NSS a review of patients who have received treatment since October 2020 is in progress and no clinical concerns have been identified to date.	<p>There appears to be some conflation or confusion in this paragraph.</p> <p>“The impact on patients was that six children had to be rebooked and there were no cancellations.” – that is correct.</p> <p>“The children were regarded as low risk.” This relates to the children who had received treatment between October – December 2020.</p> <p>“A communication was prepared for parents to provide information regarding the incident, and a Q&amp;A.” NHSL issued a communication about re-booking the six children.</p>

		<p>“According to NSS a review of patients who have received treatment since October 2020 is in progress and no clinical concerns have been identified to date.”</p> <p>NHSL is unsure what NSS review is referred to here. There is general surveillance for fungal and mould organisms in the population and <b>if</b> any of the individuals who had received treatment <b>had</b> presented with such an organism, an epidemiological link to the dental treatment would have been considered (<b>they did not</b>). 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.</p>
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**RESPONSE ON BEHALF OF NHS Lothian**  
**TO THE PROVISIONAL POSITIONING PAPER 7**  
**SUPPLEMENTARY NOTE (“PPP7 SUPPLEMENTARY 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 THE REMEDIAL WORKS UNDERTAKEN**  
**(Submitted on 8 September 2023)**

## **1. Introduction**

- 1.1 NHS Lothian (NHSL) has set out its response to question 8.1.1 – 8.1.6 of PPP 7 Supplementary Note below. NHSL agrees with the content of the PPP7 supplementary note subject to the table of comments and clarifications in the table at appendix 1 below.
- 1.2 To provide relevant context to the answers, NHSL wishes to emphasise that, under the NPD Project Agreement, the RHCYP and DCN is subject to an external facilities management contract as between IHSL and Bouygues. The ongoing operation of the NPD is managed by IHSL and its supply chain. NHSL has a contract management team in place, who are well sighted on key issues, but ultimately any issues with the building and its facilities in terms of maintenance, repair, replacement and cleaning are the responsibility of IHSL and their facilities management contractor, Bouygues.

## **2. No Unresolved Issues**

- 2.1. NHSL is not aware of any further unresolved issues or defects with the ventilation system not discussed in the PPP 7 supplementary note. However, as the facilities are operational and are managed by IHSL and its supply chain, these questions are best directed to IHSL.

## **3. Interpretation of Guidance**

- 3.1. Health Boards, and in particular NHSL, are assisted with the interpretation of guidance by:

- 3.1.1. Appointing experienced healthcare designers, i.e. architects and engineers, as external advisors, either in a Technical Advisory or a Shadow Design Team role. This can be via the national Frameworks or direct procurement;
  - 3.1.2. Appointing a contractor experienced in healthcare, such as with the appointment of Framework Scotland Capital Design and Build Contractors;
  - 3.1.3. The Board's Project Team obtaining internal advice and expertise from (i) the Infection Prevention Control Team and (ii) estates and facilities personnel as required. However, those experts are heavily committed in other operational fields and resource is very limited;
  - 3.1.4. The Project Team obtaining advice from their Authorising Engineer and / or NHS Scotland Assure (previously HFS and HPS) where interpretation differs among parties. This process is now formalised as a clarification or derogation request;
  - 3.1.5. The establishment of safety groups for each of the infrastructure systems: for example Water, Ventilation, Medical Gases and Electrical, who have to report to the Board; and
  - 3.1.6. Lessons learned from other sites and projects: ongoing information sharing within the capital projects team and estates and facilities.
- 3.2. The contracts in use for major healthcare projects now tend to be more collaborative in origin than that of the RHCYP and DCN NPD style contract. Accordingly, there is more engagement with designers and contractors in the development phase of the projects. However, the same commercial pressures exist which drive opportunities to exploit potential interpretations of guidance to reduce the costs to build.

#### **4. Clarification of Guidance**

- 4.1. NHS Scotland Assure is best placed to advise what steps are being taken to clarify the guidance. As above, NHSL obtains advice from NHS Scotland Assure where interpretation differs among parties.

4.2. NHSL's current projects undertake an enhanced and formalised approach to NHS Scotland Assure on the many clarifications and derogations that are required to address vagueness, conflicts between different guidance and standards, and emerging innovations in engineering, architecture, construction and clinical practices. However, NHSL has, over the course of the last couple of years developed its own 'Assurance Framework' to support project developments and internal assurance needs. This includes referencing more decision points to NHSL's safety groups for decisions. Such processes are also required to assist NHS Scotland Assure reach a conclusion on whether a derogation from one of the elements of the guidance is appropriate.

4.3. Although the Key Stage Assurance Reviews instigated by NHS Scotland Assure prioritise use of Environmental Matrix, NHSL on current significant capital projects is solely relying on Room Data Sheets at the commencement of the briefing process.

4.4. As "owners" of the NHS Scotland healthcare guidance, NHS Scotland Assure is best placed to answer how the guidance itself is being updated and clarified generally and how they approach and disseminate information on specific clarifications to all project developers across NHS Scotland.

## **5. Excessive flexible ductwork**

5.1. This is best answered by IHSL and Multiplex. The issue in relation to flexible ductwork was primarily about functionality and performance, rather than any IPC risk with the potential to adversely impact on patient safety and care.

## **6. HAI Scribe Stage 4**

6.1. NHSL has provided a copy of the HAI Scribe stage 4 IPCT sign off for the following areas: Borthwick, ED, Critical Care and Lochranza of the RHCYP and DCN which took place prior to the hospital opening in 2021. These are the areas where there was outstanding ventilation and non-ventilation work to be completed prior to the hospital opening.

### Appendix 1

#### Table of Comments and Clarifications on PPP 7 - Supplementary Note

1.1	NHSL commissioned the Institute of Occupational Medicine (IOM) to validate the ventilation system following concerns about the commissioning process raised by the Infection Prevention and Control Team.	While there was ongoing dialogue with NHSL's Infection Prevention Control Team (IPCT) in relation to validation and the way IPCT wished the information to be presented to them, it should not be surmised that validation would not have occurred had there not been any input from NHSL's IPCT. It was a collaborative process.
1.2	NHS NSS commissioned Malcolm Thomas, a consulting engineer, and John Rayner (TurnerPes), NHSL's authorising engineer for ventilation.	For the avoidance of doubt, John Raynor of TurnerPes happened to be NHSL's AE for ventilation, but he was appointed directly by HFS. TurnerPes were appointed as AE to several Health Boards through the HFS framework.
1.3	On 7 August 2019 Q-Nis, the AHU manufacturer, visited the site to verify compliance with SHTM 03-01, during which further issues with air handling units were discovered.	Manufacturer of AHU was Sandometal. AHU issues were discovered prior to Q-Nis/Sandometal involvement. Q-Nis/Sandometal attended an all-party walkround to discuss the issues and agree a plan to resolve them. This resulted in the 23 item checklist referenced at paragraph 2.3 of the PPP 7 supplementary note.
Page 6	Table of Resolution of Ventilation Issues	<p>If the size of the boxes are intended to proportionately represent the significance of each issue, then this table is not an accurate depiction of that. Most noticeably, HV 107 re HDU air change is the smallest box but was the biggest issue.</p> <p>In addition, suggest the text in the grey snagging box should read: "various issues</p>

		signed off—closed out by Ronnie Henderson <u>in conjunction with HFS</u> ".
2.1	Air handling units (AHUs) and ductwork contained deviations from SHTM 03-01, including "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."	Suggest including underlined text: "Air handling units (AHUs) and ductwork contained deviations from SHTM 03-01, including "loose internal cabling in the airflow, cable routes <u>and poorly fitted filters</u> allowing air to bypass filters, air leakage at penetrations and possible fan replacement difficulties which need to be corrected."
2.2 & 2.3	"Following an IPCT assessment 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	Suggest this should read: "Following an <del>IPCT assessment</del> <u>a multidisciplinary assessment by relevant stakeholders....</u> "  Although IPCT were present during the reviews of the "bespoke metalwork casing" these were highly technical discussions between several AEs for ventilation, IHSL, Director of Facilities, Project Team and Motts. IPCT were simply highlighting that the inside of AHUs were not clean and there was filter bypass. Accordingly, this would be more accurately phrased as "multidisciplinary assessment" rather than an "IPCT assessment". This is in keeping with para 2.3 where it notes a multidisciplinary group of signatories assessed compliance and not just IPCT.
4	Maintenance Bypass	For the avoidance of doubt, this is no longer an issue in critical care or haematology / oncology.
6.1	"meter"	<u>"metre"</u>
	However, NHSL were not satisfied with the overall response from IHSL, who would not inspect the hospital for	The issue was not so much whether Mercury or IHSL would undertake another inspection, but rather the lack of visibility

	<p>further instances of non compliant use of flexible ductwork because, according to Mercury (a sub contractor of Multiplex, responsible for commissioning the ventilation system), this had been done before.</p>	<p>of any data or evidence being offered to back up the survey that had done and their expectation that NHSL should take on trust that it was done.</p>
6.3	<p>It is not clear to the Inquiry whether this issue was adequately resolved and would invite further explanation.</p>	<p>As far as NHSL are aware, no further inspection took place. However, NHSL note that this issue was primarily about functionality and performance, rather than any IPC risk with the potential to adversely impact on patient safety and care.</p> <p>Under the performance terms of the Project Agreement, IHSL, with Bouygues, have a responsibility to clean the ventilation grilles and flexible ductwork.</p>



## **Scottish Hospitals Inquiry**

### **Response by National Services Scotland to Provisional Position Paper 7**

1. In this Response, National Services Scotland (“NSS”) provides comments on:
  - a. Provisional Position Paper 7 (‘Non-ventilation issues with the potential to adversely impact on patient safety and care at the Royal Hospital for Children and Young People and the Department for Clinical Neurosciences; and remedial works to resolve them’); and
  - b. Position Paper 7 Supplementary (‘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 Royal Hospital for Children and Young People and the Department for Clinical Neurosciences; and remedial works undertaken’).

#### **Provisional Position Paper 7**

2. Para. 3.1.6 states that some of the water testing carried out “was not detailed in current guidance and the review was influenced by ‘lessons learned’ from recent projects.” For context, the lessons learned were derived from a live incident and therefore were not appropriate for inclusion within guidance at that stage. HPS/ARHAI Scotland, as a national body, 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. The evidence to support guidance is reviewed every 3 years, and also when any key literature is published and identified via ARHAI Scotland’s quarterly scientific evidence screening. The guidance is then updated, where appropriate, using a robust methodology that includes a stakeholder consultation process. Expert opinion collated via this consultation process, and lessons learned, may be included in guidance where evidence in the literature is lacking. Outside this process, National Clinical Leads share lessons learned from other Boards. The development of guidance and the incorporation of recommendations were paused due to NSS’s involvement in respect of COVID-19, various Public Inquires, and Police Scotland operations. The infection prevention and control aspects of the healthcare water system literature review that commenced in May

2019, were paused. The literature review has now restarted and is at the stage of external consultation. Evidence from this literature review is expected to address gaps in the current guidance.

3. Para. 3.3.4 refers to recommendations that were not in current guidance. Reference is made to NSS's response to para. 3.1.6 above.
4. Para. 5.1.1 discusses an NSS report on fire safety. To clarify, HFS determined that fire and smoke dampers would be a means of achieving the intent of para. 2.9 of Schedule 5 of the Building (Scotland) Regulations 2004, which provides that "Every building must be designed and constructed in such a way that in the event of an outbreak of fire within the building, the occupants, once alerted to the outbreak of the fire, are provided with the opportunity to escape from the building, before being affected by fire or smoke." This HFS determination was based on the following guidance documents: BS 9999, BS 5588, Building standards technical handbook 2017 : non domestic buildings and Scottish Health Technical Memorandum 81. However, the guidance documents did not expressly state that fire and smoke dampers should be installed to protect escape route corridors in hospitals. Accordingly, HFS recommended that the existing fire dampers should be replaced by fire and smoke dampers as an enhancement measure. Scottish Health Technical Memorandum 81 has subsequently been revised to clarify that fire and smoke dampers are required between bedrooms and escape route corridors.
5. With regard to the question at para. 8.2.1, subject to the responses above and noting that NSS had no involvement in many of the matters covered, to the best of NSS's knowledge the findings are correct.
6. With regard to the question at para. 8.2.2, for completeness ARHAI notes two further incidents that were submitted using the Healthcare Infection, Incident and Outbreak Reporting Template. 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. With regard to the question at 8.2.7, to date no incidents regarding drainage have been submitted using the Healthcare Infection, Incident and Outbreak Reporting Template.

### **Provisional Position Paper 7 Supplementary**

8. Para. 1.5 contains a diagram, but NSS is not clear what it shows. For example, it is not clear what the different sizes and shapes of the segments represent.
9. With regard to the questions at 8.1.1 and 8.1.2, again noting that NSS had no involvement in many of the matters covered, to the best of NSS’s knowledge (i) the findings are correct, and (ii) there are no further unresolved issues or defects with the ventilation system that could have an adverse impact on patient safety.
10. With regard to the question at 8.1.3, NHS Scotland Assure has an enquiries service for Boards to ask questions and seek clarification in relation to guidance (or about matters not contained in the guidance). This is in addition to regular contact with stakeholders in the course of NSS providing services and its involvement in groups/networks, which provide further opportunities for giving assistance.
11. With regard to the question at 8.1.4, guidance is developed in collaboration with Board stakeholders. This provides an opportunity for Boards to contribute to the content of guidance, and seeks to make guidance as clear as possible. There is also collaboration with other devolved nations and their stakeholder networks and, where appropriate, with industry stakeholders. Regarding ventilation specifically, in February 2022 NHS Scotland Assure published updated interim versions of Scottish Health Technical Memorandum 03-01 (‘Specialised ventilation for healthcare premises’) Part A (‘The concept, design, specification, installation and acceptance testing of healthcare ventilation systems’) and Part B (‘The management, operation, maintenance and routine testing of existing healthcare ventilation systems’). Further updates are currently in discussion.
12. NSS will be happy to provide further input and clarification as required.

National Services Scotland

8 September 2023

## 1 Introduction

- 1.1 The following is a response by Multiplex Construction Europe Limited ("**Multiplex**") to:
- 1.1.1 Provisional Position Paper 7 titled: *"Non-ventilation issues with the potential to adversely impact on patient safety and care at the Royal Hospital for Children and Young People and the Department for Clinical Neurosciences; and remedial works to resolve them"* ("PP7"); and
- 1.1.2 The supplementary PP7 Note: *"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 Royal Hospital for Children and Young People and the Department for Clinical Neurosciences; and remedial works undertaken"* ("PP7 Note").
- both of which were issued by the Inquiry by e-mail dated 09 August 2023 (timed at 15.20).
- 1.2 Multiplex notes the terms of PP7 and the PP7 Note, together with terms of the Inquiry's e-mail issuing them and the Inquiry's email of 27 July 2023 at 08.42, where the Inquiry highlights the importance of Core Participants understanding the factual basis on which the Inquiry is proceeding and having the opportunity to correct any misunderstandings or misapprehensions. Multiplex is grateful for this opportunity to assist the Inquiry.
- 1.3 Having regard to Section 2(1) of the Inquiries Act 2005, Multiplex's position set out in this response is provided solely to assist the Inquiry's understanding and is without prejudice to and under reservation of any further submissions Multiplex may make or evidence it may lead in any forum.
- 1.4 Part 1 of this Response considers PP7 and Part 2 considers the PP7 Note.

### PART 1 – PP7

- 1.5 The Inquiry poses a number of questions at paragraph 8.2 of PP7. Question 1 at para 8.2.1 asks: *"Do Core Participants agree with the above findings?"*
- 1.6 PP7 refers to "issues" which the Inquiry suggests were identified following the decision to delay the opening of the hospital.
- 1.7 Multiplex does not agree with the characterisation in the provisional conclusions that the "issues" were "defects" or "non-compliances".
- 1.8 As the Inquiry will understand, in so far as the Project Agreement is concerned, "Defect" is a defined term. Schedule Part 1 Section 1 of the Project Agreement defines a Defect as:

*"any defect or fault in the Works and/or the Facilities and/or the Retained Estate Handback Infrastructure (not being a Snagging Matter) which occurs due to a failure by Project Co to meet the Board's Construction Requirements and/or Project Co's Proposals or otherwise to comply with its obligations under this Agreement".*

- 1.9 The matters discussed in PP7 are matters identified as part of various reviews carried out after Practical Completion of the Works had been certified under the Project Agreement. Multiplex does not understand that those reviews were directed towards compliance (or otherwise) with the requirements of the Project Agreement. These reviews were also carried out after the parties had spent considerable time negotiating and entering into a settlement agreement which resolved any differences between them in relation to whether or not the technical requirements under the Project Agreement had been met and completion had been certified.
- 1.10 Given the foregoing and to avoid the potential for confusion and the risk of the Inquiry straying into questions of contractual liability Multiplex would respectfully request that the Inquiry confirm at the outset of PP7 that references to "defects" and "non-compliances" are not intended to be references to whether or not the contractual requirements under Project Agreement were met.
- 1.11 In relation to question 8.2.2, the assessment of patient safety is a matter principally for NHSL; Multiplex, as the design and build contractor, is not best placed to assist the Inquiry concerning matters of patient safety. Multiplex would direct the Inquiry to (i) the settlement agreement which resolved all issues as at completion; and (ii) the Helpdesk where Service Events arising post-completion are notified.
- 1.12 In relation to question 8.2.3, 8.2.4 and 8.2.8 these are directed towards NHSL and accordingly Multiplex make no comment.
- 1.13 In relation to questions 8.2.5, 8.2.6 and 8.2.7, these are not matters on which Multiplex consider it is able to assist the Inquiry as they relate to the operation of the hospital after completion. Multiplex would suggest these are better answered by NHSL and the Service Provider.

## **PART 2 – PP7 Note**

- 1.14 The Inquiry poses questions at paragraph 8 of the PP7 Note, the first of which at paragraph 8.1.1 asks whether or not Core Participants agree with the content of the note.
- 1.15 For the reasons outlined in paragraphs 1.7 – 1.10 above, Multiplex does not agree with the characterisation of matters as "defects" or "non-compliances".
- 1.16 To assist the Inquiry Multiplex would also make the following comments in relation to the factual accuracy of some specific matters raised in the Note:

### Single and Multi-bed Ventilation

- 1.17 Paragraph 3.1 of the PP7 Note states that:

*"Single and multi-bed ventilation had been designed with four air changes per hour mechanical ventilation, and a natural ventilation component (involving openable windows). There were two issues with this design. Firstly, while in most cases the provision of 4 ac/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".*

1.18 Multiplex would refer the Inquiry to its November 2021 Submission in response to item 2.11 on the Inquiry's Ventilation Spreadsheet, a copy of which is produced again as Appendix 1 to this Response for ease. As is explained there was no requirement to provide 2AC/hr of natural ventilation.

1.19 The design required 4 mechanical air changes, and this was provided, demonstrated and approved. NHSL expressly confirmed this in the settlement agreement, which recorded their design requirement to:

*"Decrease the mechanical air change ventilation rate within single bedrooms from 6 air changes per hour (6 ac/hr) to 4 air changes per hour (4 ac/hr)"*

Extract grille location in Theatre Scrub Areas

1.20 The following is stated at paragraph 5.1 of the PP7 Note:

*"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, 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."*

1.21 Multiplex would refer the Inquiry to its November 2021 Submission in response to item 4.1 on the Inquiry's Ventilation Spreadsheet:

1.21.1 The theatre scrub room design was given status A by NHSL on 04 October 2016 (see Document 4.1.1 provided by Multiplex as part of their November 2021 Submission<sup>1</sup>).

1.21.2 As part of this design review RDD comments were recorded confirming the scrub room grille position at high level (see Document 4.1.1 and Document 4.1.2<sup>2</sup> provided by Multiplex as part of its November 2021 Submission).

1.21.3 The extract grilles had accordingly been installed as per NHSL's requirements.

1.21.4 Multiplex, however, agreed to relocate the grilles in order to address NHSL/IOM's changed requirements.

Flexible ductwork

1.22 Paragraph 6 of the PP7 Note relates to Excessive Flexible Ductwork and at paragraph 8.1.5 the Inquiry asks about the current situation in relation to flexible ductwork at the hospital.

1.23 Multiplex would refer the Inquiry to its November 2021 Submission in response to item 15.1 on the Inquiry's Ventilation Spreadsheet. The works carried out to Theatre 35 required work to alter the flexible duct work in one single bend.

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<sup>1</sup> Produced again as Appendix 2

<sup>2</sup> Produced again as Appendix 3

- 1.24 NHSL did not identify any other locations where flexible ductwork had been used and the item was noted as closed in the Ventilation Action Log of 11 October 2019 (see Document 15.1.7<sup>3</sup> – V26, provided by Multiplex as part of their November 2021 Submission). This matter has not been raised again with Multiplex.
- 1.25 In relation to the remainder of the questions raised in the PP7 Note, again Multiplex does not consider that it is best placed to assist they Inquiry with these questions as they appear to be questions either directed at NHSL specifically or relating to the current operation of the hospital.
- 1.26 Multiplex is happy to discuss this response with the Inquiry team if it would be of assistance.

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<sup>3</sup> Produced again as Appendix 4



8 September 2023

By e-mail only – [REDACTED]

For the attention of Inquiry Team  
Scottish Hospitals Inquiry

Our Ref: TUVS/2/3

Your Ref: TBC

Direct e-mail: [REDACTED]

Dear Sir or Madam

**TUV SUD Limited/Wallace Whittle Limited (TSWW)  
RHCYP/DCN Edinburgh  
Response to Provisional Position Paper 7 – Non Ventilation Issues**

TSWW welcomes the opportunity to comment on Provisional Position Paper 7, first circulated among Core Participants on 9 August and officially published on 16 August.

We note that Core Participants are directed to confine their comments to only those matters requiring material clarification or correction, particularly in relation to matters of fact.

With that direction in mind, please find below our response, on behalf of TSWW, following the order and paragraph numbering of the working paper.

**Identification of Issues**

1.2 The working paper makes reference to various reports, commissioned by NHSL, the Scottish Government and NHS NSS, in order to assess the safety of building systems and whether they were fit for purpose. These reports (“the Reports”) apparently identified a number of issues, some with the potential to impact on patient safety and care.

TSWW would wish to make clear, for the avoidance of doubt, that it was not invited to provide direct input into any of the Reports at the time of their being commissioned, nor was it provided with copies of the Reports (either draft or finalised versions) and asked to provide comments on the conclusions reached, either at the time of their first being issued or at any stage thereafter (although it has now requested sight of the Reports in light of the working paper identifying their existence). Accordingly TSWW was not made aware of defects, concerns or issues specifically highlighted in the Reports.

Likewise, TSWW was not directly or knowingly involved in any actions taken to remedy any such defects, concerns or issues (although it is not inconceivable that some of these issues may have been raised with TSWW (via IHSL and, in turn, Multiplex) and addressed informally through that process).

The fact that the input or engagement of TSWW has not hitherto been sought leads it to the conclusion that the defects, concerns or issues identified in the Reports (as listed at paragraphs 1.2.3 and 1.2.6 of the working paper) were not considered at the time to be design related (or perhaps in some cases, not building services related): otherwise it would seem surprising that TSWW was not one of the third parties from whom input was sought, given its role as the original designer of the building services.

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## **Governance, Management and Assurance**

- 2.1.5 On a similar note, TSWW was neither part of, nor had any direct interaction with the IMT/ESG and was not a party to meetings of the IMT/ESG, in terms of either direct participation in any of those meetings or being provided with copies of minutes. TSWW cannot, however, rule out that some matters arising from those meetings may have been fed back to it indirectly and informally via IHSL and Multiplex.

Given the foregoing, TSWW is not a position to confirm or dispute whether the working paper provides a full and accurate narrative of the chronology of events, the issues arising and the steps taken to remedy them.

## **Drainage**

- 3.5.2 For clarification, the design of the basement sump (pumped drainage solution) was not undertaken by TSWW.

## **Electrical**

- 4.1.2 With regard to the inability to isolate the power to the CAMHS unit rooms from outwith those rooms, TSWW's recollection is that, on checking the installation against HBN 03-01, it was agreed at the time that because HBN 03-01 is specifically noted as being for acute services and because the CAMHS unit is not an acute mental health unit, compliance with HBN 03-01 was not strictly necessary and therefore neither a change to the installation nor a formal derogation was required.

TSWW recalls raising the issue of isolation of services by hospital staff very early on in the project but being told that the "patient group wasn't at the level that would require this". TSWW confirmed this on Aconex (BMCE-RTRFI-000858).

NHSL later claimed no recollection of these discussions, whereupon TSWW specifically sought clarification as to where NHSL required local isolation to be provided. NHSL responded to the effect that the Intensive Nursing Suite within the CAMHS Inpatient Unit (comprising Rooms G-F1- 087, 088, 092 & 101) would require local isolation as detailed in SHPN 35 Part 1 paragraph 6.76 and that this could be located within the associated service duct. (See Aconex MM-GC-001845).

Acting on this instruction, local isolation was provided, in agreement with Multiplex, to the rooms for which it was specifically requested by NHSL.

- 4.1.3 TSWW's recollection is that the electrical cabling used for medical IT systems was ultimately demonstrated as being compliant and that the issue was accordingly closed out without the need for any changes to be made but please see below under "Resilience".

Similarly, as far as TSWW are aware, the issue regarding the Uninterruptable Power Supplies being located in the same room was one which was investigated, reviewed but ultimately closed out without the need for any changes to be made.

- 4.1.4 For clarification, it was established that the interruptible power supply to medical IT systems was fire rated in around 50% of the locations in which fire rating was expected.

## **CAMHS**

- 4.2.1 Given that TSWW's recollection in relation to local isolation (as set out above under 4.1.2) might appear to be at odds with what is stated at 4.2.1 of the working paper, TSWW has requested and will need sight of the paper to the ESG dated 27 January 2020 in order to be able to consider this issue further.

## Resilience

4.3.3 Because TSWW was not directly involved in the process of addressing defects, concerns or issues highlighted in the Reports, it was not in point of fact aware:

- (a) that HFS were satisfied as to compliance with SHPN 00-07 and SHTM 06-01, as regards the length of cabling used for medical IT systems but
- (b) that, or indeed *why*, HFS remained unconvinced that IHSL had agreed mitigation strategies in place to avoid failure of the single electrical supply to the critical electrical services such as life support systems.

Again, this can perhaps be attributed to TSWW not being asked for its direct input at the time.

## Provisional Conclusion and Key Findings

Consistent with our comments above in relation to paragraph 1.2, based on what it is able to glean from the working paper, and:

- Notwithstanding any items specifically commented upon above, and
- Subject to seeing and examining the detail of the Reports,

TSWW is of the view that the other defects, concerns or issues to which the working paper refers were either not design related (but rather issues stemming from the installation, commissioning and/or management, operation and maintenance of the water, drainage, electrical or other systems or items in question) or, where design related, relate to systems or items designed by parties other than TSWW.

Looking at matters from a broader perspective, however, TSWW would agree that, by virtue of what appears to have been an effective and collaborative process and a significant amount of work on the part of those involved in that process, the issues raised in the Reports seem to have been satisfactorily resolved either through remedial work being undertaken, or alternatively, where works were deemed too costly or high risk, through mitigations and control measures being put in place following appropriate risk assessments.

While TSWW would acknowledge that it is fortunate that because the opening of the hospital was delayed, there was an opportunity to remedy any potential 'defects' in building systems before they could have an adverse impact on patient safety and care, TSWW is not in a position to assess whether or to what extent the defects, concerns or issues highlighted in the Reports and discussed in Provisional Position Paper 7 may themselves have caused or contributed to that delay.

## Outstanding Questions

- 8.2.1 As set out more fully in the immediately preceding section of this response, TSWW would broadly agree with the Inquiry's findings.
- 8.2.2 TSWW is not aware of any further unresolved issues or defects with buildings systems not discussed in the working paper that could have an adverse impact on patient safety. Subject to 8.2.3, 8.2.5 and 8.2.7 below, TSWW is not aware of any unresolved issues or defects in relation to buildings services systems that could have an adverse impact on patient safety.
- 8.2.3 TSWW requires NHSL to confirm whether there is still a 'single point of failure' with regard to the electrical supply to Medical IT systems, or any other issues of concern in respect of HV/LV resilience.
- 8.2.5 TSWW requires NHSL to confirm whether there is any remaining infection control risk in relation to the installation of Earth Bonding Bars and, if so, what mitigations are in place.

8.2.7 TSWW requires NHSL to confirm whether any further issues with drainage have emerged and, if so, whether these present a risk to patient safety and what is being done to manage this risk.

We trust that the foregoing is of assistance but should the Inquiry have any queries, or require any further information or clarification, then we/TSWW would of course be willing to provide it.

Yours faithfully



Alan Eadie  
Partner  
For and on behalf of BTO Solicitors LLP

8 September 2023

By e-mail only – [REDACTED]

For the attention of Inquiry Team  
Scottish Hospitals Inquiry

Our Ref: TUVS/2/3

Your Ref: TBC

Direct e-mail: [REDACTED]

Dear Sir or Madam

**TUV SUD Limited/Wallace Whittle Limited (TSWW)**

**RHCYP/DCN Edinburgh**

**Response to Provisional Position Paper 7 – Supplementary Note on issues regarding the ventilation system outside of Critical Care areas**

TSWW welcomes the opportunity to comment on the Supplementary Note to Provisional Position Paper 7, first circulated among Core Participants on 9 August and officially published on 16 August.

We note that Core Participants are directed to confine their comments to only those matters requiring material clarification or correction, particularly in relation to matters of fact.

With that direction in mind, please find below our response, on behalf of TSWW, following the order and paragraph numbering of the working paper.

**Overview**

- 1.1 Simply for the record, TSWW would wish it noted that it does not accept that the air change rates in Clinical Care areas were inadequate, although it does acknowledge the fact that IOM identified a potential issue in that regard.

**AHUs and Ductwork**

- 2.1 The problems identified would appear to be manufacturing, rather than design, issues.

**Single and multi-bed ventilation and the Environmental Matrix**

- 3.1-4 TSWW would highlight the distinction to be drawn between, on the one hand, achieving compliance with ventilation requirements (in terms of the original design being in accordance with the relevant guidance) and, on the other, achieving what was ultimately the Board's preferred solution for mitigating any perceived risks of transmission of infection or of acquisition of healthcare associated infection, particularly for certain types of patients who might be considered especially vulnerable.
- 3.6 TSWW would endorse the view that there was a lack of clarity regarding interpretation of the relevant guidance which therefore afforded a degree of discretion as to how compliance might be achieved.

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- 3.7 Having not been a party to, or having had sight of, Settlement Agreements 1 or 2, TSWW is not in a position to comment on whether, or by what means, any concerns regarding the provision of appropriate ventilation for neutropenic patient areas have been resolved.
- 3.8 Similarly TSWW has no visibility on what solution was implemented to meet the new requirements for isolation of high consequence infectious diseases in light of the Covid 19 Outbreak. It is not therefore in a position to comment on this.
- 3.9 TSWW would warn that the suggestion that the Daikin Air Handling Units were superior to the original Sandometal units appears to be a subjective and unsubstantiated one and, as such, should be treated with a degree of caution.

Having no knowledge of the Hoare Lea design data referred to, TSWW is not in a position to comment on the perceived need and/or technical justification for any changes made.

### **Excessive Flexible Ductwork**

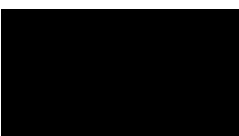
- 6.3 This concerns an installation issue, in relation to which TSWW is not in a position to assist the Inquiry.

### **Questions**

- 8.1.1 Subject to the express qualifications and explanations set out above and to the various caveats regarding reports which were not shared with TSWW and discussions, decisions and Settlement Agreements to which TSWW was not party and which it is not therefore in a position to comment upon, TSWW would otherwise agree with the content of the Supplementary Note.
- 8.1.2 TSWW is not aware of any further unresolved issues or defects with the ventilation system not discussed above that could have an adverse impact on patient safety.
- 8.1.3 TSWW's understanding is that health boards are or ought to be assisted in the interpretation of guidance by their appointed Technical Advisory Team.
- 8.1.4 TSWW is unable to comment on this.
- 8.1.5 Whilst emphasising that the presence of excessive flexible ductwork is an installation issue, TSWW would wish it noted that they share the concerns which have been identified and the need for any other potential instances to be investigated and rectified as soon as possible. TSWW has no information on what, if any, mitigation measures are in place, in the meantime, to mitigate any risks of contamination and spread of infection due to flexible ductwork.

We trust that the foregoing is of assistance but should the Inquiry have any queries, or require any further information or clarification, then we/TSWW would of course be willing to provide it.

Yours faithfully



Alan Eadie  
Partner  
For and on behalf of BTO Solicitors LLP

**Public Inquiry: Queen Elizabeth University Hospital, Glasgow and the Royal Hospital For Children and Young People and Department of Clinical Neurosciences, Edinburgh (“The Inquiry” Or “SHI”)**

**Response on behalf of IHS Lothian Limited to the Inquiry’s Provisional Position Paper 7 and Supplementary Paper relating to the Royal Hospital for Children and Young People and Department of Clinical Neurosciences (“RHCYP/DCN” or “Project”)**

**1. INTRODUCTION**

- 1.1 This document forms the response (“**Response**”) on behalf of IHS Lothian Limited (“**IHSL**”) to the Inquiry’s documents entitled: (i) ‘*Provisional Position Paper 7: Non-ventilation issues with potential to adversely impact on patient safety and care at the Royal Hospital for Children and Young People and Department for Clinical Neuroscience; and remedial works to resolve them*’ (“**PPP7**”); and (ii) ‘*Provisional Position Paper 7 Supplementary: Note on issues with the ventilation system outside Critical Care areas with the potential to adversely impact on patient safety and care at the Royal Hospital for Children and Young People and the Department for Clinical Neurosciences; and remedial works undertaken*’ (“**PPP7-Supplementary**”).
- 1.2 The Inquiry Team has advised Core Participants (“**CPs**”) that PPP7 outlines the Inquiry Team’s current understanding of issues with key building systems (aside from ventilation) that could have the potential to adversely impact on patient safety and care and which arose in the construction of the RHCYP/DCN. Similarly, the Inquiry Team has advised CPs that PPP7-Supplementary outlines the Inquiry Team’s initial understanding of issues with the ventilation system outside 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 RHCYP/DCN.
- 1.3 IHSL notes the Inquiry Team’s comment that the Chair is likely to be invited by the Inquiry Team to make findings in fact based upon PPP7 and PPP7-Supplementary and that CPs may seek to “*correct and/or contradict it by way of response*” to these papers. Accordingly, IHSL notes that the Inquiry’s understanding of matters set out in PPP7 and PPP7-Supplementary may change and so the position set out in these papers remains provisional.
- 1.4 IHSL has set out its comments in response to PPP7 in Section 2 below and in response to PPP7-Supplementary in Section 3 below. IHSL’s comments in this short Response are intended to assist the Inquiry Team in its understanding of the relevant facts and are limited to those facts within IHSL’s own knowledge. PPP7 and PPP7-Supplementary clearly relies upon material provided by NHS to the Inquiry which IHSL has not seen and refers to various reports commissioned by NHS, Scottish Government or NHS NSS which IHSL was not party (or privy) to. IHSL’s scope for commenting upon PPP7 and PPP7-Supporting is, therefore, limited.

- 1.5 Subject to the points made in this Response and in so far as the contents are within IHSL's (albeit limited) knowledge, IHSL broadly agrees with the contents of PPP7 and PPP7-Supplementary.
- 1.6 PPP7 and PPP7-Supplementary identifies certain issues that were identified by third parties in the lead up to the date originally fixed for the opening of the RHCYP/DCN or in the months following the Scottish Government's decision to delay opening. Those issues were satisfactorily addressed during the period from the Scottish Government's decision to delay opening in July 2019 through to March 2021. PPP7 and PPP7-Supplementary also acknowledge the collaborative approach adopted by the parties on the Project to address those issues and to undertake enhancement or varied works instructed by NHSL. As PPP7 and PPP7-Supplementary recognise, the issues referred to in those papers were addressed before they could have had any adverse impact on patient and safety and care. Consequently, IHSL agrees with the Inquiry Team's provisional conclusion that these issues should need no further consideration by the Inquiry.

## 2. **RESPONSE TO PPP7**

- 2.1 IHSL has adopted the headings used by the Inquiry Team in PPP7.

### **Identification of Issues**

- 2.2 The Inquiry Team refers to various reports commissioned by NHSL, the Scottish Government and NHS NSS. IHSL was not party to those reports and cannot comment upon them. Similarly, IHSL is unable to comment on the minutes and papers of NHSL's Incident Management Team (subsequently the Executive Steering Group) or the "body of evidence" which NHSL has supplied and referred to by PPP7 in connection with NHSL's decision making (IHSL has not yet seen these reports or this evidence).

### **Governance, management and assurance from July 2019 to April 2021**

- 2.3 Paragraph 2.1.3 of PPP7 states that membership of the Oversight Board ("**OB**") included representatives from Scottish Government, NHSL, Scottish Futures Trust and NHS NSS/HFS "*with IHSL in attendance "on an 'as required' basis"*". IHSL wish to clarify to the Inquiry: IHSL did not attend meetings of the OB. As far as IHSL is aware it was never invited to attend meetings or requested to provide reports or submissions to the OB. There was a management and communication structure in place for IHSL to report to NHSL in the following periods.

- 2.3.1 Completion of Settlement and Supplementary Agreement No.1 ("**SA1**") to August 2019. SA1 required the establishment of a Joint Steering Group. This was principally 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. The Joint Steering Group operated from February 2019 through to June 2019 (when the



Post Completion Works were completed) and beyond: the last Joint Steering Group meeting took place in August 2019.

2.3.2 Late 2019 to full opening in March 2021. From late 2019, the Joint Steering Group continued as the Liaison Group (which appears to be same group described as the “Strategic Liaison Group” in the diagram at page 10 of PPP7).

2.4 The Inquiry Team is referred to IHSL’s previous submission dated 22 July 2021 (a copy of which is appended to this Response) for further detail of the meeting groups and communication/reporting structure in place during the relevant time periods.

#### **Water**

2.5 IHSL agrees with the Inquiry Team that the water issues and the shower hose lengths referred to in PPP7 were addressed prior to opening of the RHCYP/DCN.

#### **Electrical**

2.6 IHSL agrees with the Inquiry Team that the electrical issues identified in PPP7 were addressed prior to opening of the RHCYP/DCN.

2.7 The Inquiry Team comments in PPP7 (at paragraph 4.1.2) that one of the “major issues” with the electrical systems was with the electrical installation in the CAMHS unit. As the Inquiry Team note at paragraph 4.2.1, the works to address this issue were instructed by NHSL pursuant to a Medium Value Change (i.e. the works were an instructed change to IHSL’s original scope of works).

2.8 This is one example where the references to ‘defects’ throughout PPP7 may lead to some possible misunderstanding. The issues identified by the various reports commissioned by NHSL and others did not necessarily identify non-compliances or failures to comply with the Project Agreement. Furthermore, the works procured by IHSL following the Scottish Government’s decision to delay opening were not necessarily works to address non-compliances with the Project Agreement but included enhancements and changes to the original scope of works. The ventilation works in Critical Care and latterly in the Haematology unit are significant examples. The electrical works in the CAMHS unit is another example of works undertaken as a result of a Change instructed by NHSL.

#### **Fire Safety**

2.9 As indicated in section 5 of PPP7, the fire safety works undertaken were enhancement works undertaken pursuant to Medium Value Changes instructed by NHSL and reflected in Supplemental Agreement 4.

### Window restrictors

- 2.10 The Inquiry Team refers (at paragraph 7.1 of PPP7) to an issue with window restrictors which was identified in August 2020.
- 2.11 IHSL understands that there were two restrictors which were found to have been damaged. Those two were immediately replaced. Thereafter, the Services Contractor, Bouygues E&S FM UK Limited (“**BYES**”), surveyed all of the window restrictors and found that some others showed signs of damage (it looked to BYES as though operatives had not used the appropriate tools when fitting the restrictors). BYES installed replacements to those damaged restrictors. There are no open issues with regards to window restrictors as far as IHSL is aware.

### Dental rooms

- 2.12 Section 7.2 of PPP7 refers to water damage found in two dental rooms. This damage was found to be due to a water leak occurring in NHSL’s equipment (specifically, in a specialist valve under the dentist’s chair). IHSL notes that this issue was described by NHSL (in the ESG minutes referred to in PPP7 paragraph 7.2.1) as a normal and routine occurrence in an operational hospital.

### Outstanding Questions

- 2.13 The Inquiry Team has set out certain questions at section 8.2 of PPP7. IHSL briefly comments as follows.
- 2.13.1 **Do CPs agree with the above findings?**
- A. See IHSL’s comments in Section 1 above.
- 2.13.2 **Are CPs aware of any further unresolved issues or defects with building systems not discussed above that could have an adverse impact on patient safety?**
- A. The only other issue with building systems which IHSL is aware of relates to the issue of fire cavity barriers in the external walls. A Kingspan insulating material was used in the external walls. The classification of the product at the time of construction meant that fire cavity barriers at 20m intervals would have been sufficient to comply with the relevant building regulations. Following construction, the Kingspan product was found to have been erroneously classified by the manufacturers and classifying body. Upon re-classification of the product the relevant building regulations required fire cavity barriers at 10m intervals. NHSL, IHSL and MPX have been in discussions to address this issue. A building warrant application has been made to City of Edinburgh Council seeking building control approval for proposed works to install further cavity barriers. The issue has been discussed with the relevant duty holders under the fire safety legislation and has

been accounted for in updated fire risk assessments. The issue is not necessarily one that could have an adverse impact on patient safety but IHSL raise it in response to the Inquiry's question for completeness.

**2.13.3 Could NHSL provide an update on whether there is still a 'single point of failure' with regard to the electrical supply to Medical IT systems, or any other issues of concern in respect of HV/LV resilience?**

A. This question is addressed to NHSL. Nevertheless, IHSL understands that this question relates to the "minor" issue referred to in paragraph 4.1.3 of PPP7 relating to Uninterruptible Power Supplies ("UPS") which were all located in the same room, creating a single point of failure. IHSL is advised that the UPS systems on site remain in a single location (except those localised systems for specialist equipment). They are, however, contained in three separate banks of 200 batteries each. Each bank works independently and can be isolated independently to allow for planned preventative maintenance or lifecycle maintenance without impacting the safety of the critical systems supplied by the UPS.

**2.13.4 Could NHSL provide a copy of the third-party ventilation of the electrical installation by the authorising engineer?**

A. NHSL to provide.

**2.13.5 Is there any remaining infection control risk in relation to the installation of Earth Bonding Bars? If so, what mitigations are in place?**

A. This question appears to be addressed to NHSL.

**2.13.6 Has the issue with the window restrictors been resolved?**

A. Yes. See paragraphs 2.10 and 2.11 above.

**2.13.7 Have any further issues with drainage emerged?**

A. No.

**2.13.8 Could NHSL provide a copy of the HAI Scribe 4 IPCT sign off of the RCHYP/DCN that took place prior to the hospital opening in 2021?**

A. NHSL to provide.

**3. RESPONSE TO PPP7-SUPPLEMENTARY**

3.1 IHSL has adopted the headings used by the Inquiry Team in PPP7-Supplementary.

## Overview

- 3.2 Paragraph 1.7 of PPP7-Supplementary notes and IHSL agrees that most ventilation issues were closed out by 1 May 2020 with the exception of an issue with the theatre corridor ventilation which was not fully resolved (but that issue did not impact upon patient safety).

## Single and multi-bed ventilation and the Environmental Matrix

- 3.3 This section of PPP7-Supplementary highlights further enhancement works instructed by NHSL and undertaken by NHSL. For example:
- 3.3.1 Enhancement works to the neutropenic patient areas instructed pursuant to High Value Change 107 which was the subject of Supplemental Agreement 2; and
  - 3.3.2 Enhancement works following the issue of guidance relating to Infection Prevention advice for acute care settings following the Covid-19 outbreak. Those works were carried out pursuant to Medium Value Change 157.

## Questions

The Inquiry Team has set out certain questions at section 8 of PPP7-Supplementary. IHSL briefly comments as follows.

- 3.3.3 **Do CPs agree with the above content of the note.**
  - A. See Section 1 of this Response above.
- 3.3.4 **Are CPs aware of any further unresolved issues or defects with the ventilation system not discussed above that could have an adverse impact upon patient safety?**
  - A. No.
- 3.3.5 **How are health boards assisted in the interpretation of guidance?**
  - A. This question appears to IHSL to be a reference to the dialogue referred to at paragraph 3.6 of PPP7-Supplementary, in particular the technical workshop involving HFS and NHSL's Ian Graham (Director of Capital Planning and Projects). PPP7-Supplementary states that the issue of air change rates and provision of natural ventilation and 4 ac/hr v 6 ac/hr mechanical ventilation was discussed at that workshop. IHSL has not seen the documents, minutes, correspondence, notes etc. relevant to that workshop (or the broader dialogue which NHSL was having with HFS in 2019) but IHSL observes the Inquiry Team's comment that: "*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 guidance to be updated.'*”

That NHSL and HFS considered there was a lack of clarity regarding the interpretation of guidance is perhaps unsurprising, given the evidence that the Inquiry has heard from witnesses at the earlier hearings which took place in 2022 and 2023 (e.g. that the guidance is not fully comprehensive and open to interpretation). IHSL is not aware of the context of Mr Graham's feedback to colleagues that “*much discussion was had about the failure of Boards to be clear regarding ventilation requirements*”.

The Inquiry Team will recall from the evidence heard at the April/May 2023 hearing that the policy of the Scottish Government from 2006 was that the NHS in Scotland, when procuring new healthcare facilities, was to use the English Department of Health's Activity Database (“**ADB**”) as an appropriate tool for briefing, design and commissioning. This was, and still is, a mandatory requirement. However, alternatives may be used if the ADB is deemed inappropriate for a particular project. The relevant NHS body is responsible for demonstrating that the alternative is of equal quality and value to the ADB.

Whilst some witnesses gave evidence that an environmental matrix may be an appropriate alternative to the use of ADB, NHSL informed the Inquiry in its closing submissions following the April/May 2023 hearing that it considered that its briefing tool for conveying its requirements for the ventilation system for the RHCYP/DCN to IHSL was in fact the requirement in the Board's Construction Requirements (“**BCRs**”) for IHSL to comply with the relevant guidance. NHSL stated that the requirement in the BCRs to comply with guidance was the alternative to the ADB which NHSL adopted for briefing, design and commissioning the Project. NHSL considered that the requirement in the BCRs to comply with guidance was of equal quality and value to the ADB. The deficiency in adopting such an approach is evident not only in light of the witness evidence which addressed the nature of the relevant guidance but it also demonstrated by the discussion between NHSL and HFS in 2019 referred to in paragraph 3.6 of PPP7. Given NHSL and HFS concluded there was a lack of clarity around the interpretation of the relevant guidance and there was a need for it to be updated, it is not clear to IHSL why NHSL would consider that a (qualified) requirement in the BCRs to comply with that guidance might constitute a sufficient briefing tool which was of equal quality and value to the ADB.

**3.3.6 What steps are being taken to clarify guidance?**

A. NHSL and/or HFS to comment.

**3.3.7 What is the current situation regarding excessive flexible ductwork?**

A. IHSL is advised that all areas and locations of excessive flexible ductwork identified by NHSL/IHSL/MPX were rectified to reduce excessive lengths to 1m or less. There are still areas of “excessive flexible ductwork” in the ventilation system; it is not reasonably practicable to measure every flexible duct throughout the entire facility.

Recent planned preventative maintenance was undertaken by BYES which involved all ductwork systems being extensively cleaned in line with the guidance in paragraphs 5.21 and 5.22 of SHTM 03-01 Part B (which recommends cleaning at a frequency typically in excess of every 10 years). This cleaning work re-baselined the ductwork cleanliness as part of a 10-yearly cycle and included areas which were considered as being ‘critical ventilation’. Those areas are subject to annual verifications. Any future discrepancies regarding length of flexible ductwork identified by BYES would be notified by BYES to MPX and/or IHSL.

**3.3.8 Could NHSL provide a copy of the HAI Scribe 4 IPCT sign off for the RHCYP/DCN that took place prior to the hospital opening in 2021.**

A. NHSL to provide.

**8 September 2023**

**IHS LOTHIAN LIMITED ("IHSL")**

**PUBLIC INQUIRY: QEUH, GLASGOW AND THE ROYAL HOSPITAL FOR CHILDREN AND YOUNG PEOPLE AND DEPARTMENT OF CLINICAL NEUROSCIENCES (RHCYP/DCN), EDINBURGH ('THE SCOTTISH HOSPITALS INQUIRY OR 'SHI')**

**RESPONSE TO ITEM 6 TO ANNEX 1 TO REQUEST FOR INFORMATION ISSUED BY LORD BRODIE  
ON 1 February 2021**

**1. INTRODUCTION**

- 1.1 IHSL understands the request from the Scottish Hospitals Inquiry ("**SHI**") issued on 1 February 2021 ("**SHI Request**") to be seeking to better understand the communication, engagement, relationships, obligations and other interactions between NHS Lothian and IHSL, and IHSL and its subcontractors through the stages of the project up to present day. This considers a period from 2013 through to 2021.
- 1.2 IHSL has structured this response to item 6 to Annex 1 to the SHI Request as a combined response to the following requests:-
- Further to the organograms already supplied, organograms showing:-
    - the hierarchical structure and relationship between project subcommittees of NHSL and IHSL (6.1.1); and
    - the hierarchical structure and relationship between IHSL and its sub-contractors (6.1.2),

as they evolved during the lifecycle of the project. Such organograms should reference detailed descriptions of each contractor and sub committees' remits, functions, membership/staffing, leadership, reporting relationship/obligations, escalation routes, and relationships with each other.
  - A detailed description of the channels for reporting progress to NHSL and frequency and nature of communication between IHSL and NHSL (6.5).
  - A detailed description of project management and operational decision-making authority within IHSL, including reference to named individuals with the authority to make decisions (6.3).
  - A detailed description of the channels available to IHSL for obtaining technical advice or appointing sub-contractors (6.7).
  - Further to the organograms already supplied, a detailed description of IHSL's financial structure, including details of junior debt providers, financial advisers, senior debt holders, and junior debt equity interests (6.4).
- 1.3 IHSL has not currently responded to the request for information at item 6.2 of Annex 1 (contractual programmes) or 6.6 (all formal and informal communication (whether scheduled meetings or otherwise) between IHSL and NHSL). In relation to the former, IHSL is not in possession of all programmes and suggests that this information will be better obtained from MPX (defined below). In relation to item 6.6, IHSL has discussed the wide-ranging nature of this request with the Inquiry and agreed in the first instance to focus on more specific requests for information.
- 1.4 As the information request calls for the consideration during the lifecycle of the project, IHSL has divided the project lifecycle into the following stages for the purposes of responding to this request:-

Stage	Description	Start Date	End Date
Stage 1	Procurement Phase including Preferred Bidder through to Financial Close	Mar 2013	Feb 2015
Stage 2	Construction Phase up to issue of certificate of Practical Completion	Feb 2015	Feb 2019
Stage 3a	Commencement of Operational Phase. Hospital handed over to and accepted by NHSL. Includes design and delivery of enhanced ventilation works to Critical Care and Haematology. Partial occupation of hospital with NHSL clinical services from May 2020.	Feb 2019	March 2021
Stage 3b	Operational Phase, post completion of enhanced ventilation works, and hospital fully occupied with NHSL clinical services	March 2021	Present Day

## 2. KEY PARTIES

2.1 When referring to organisations in this response IHSL is doing so in accordance with the hierarchy and relationships as detailed in Figure 1 and Figure 2 of its response to the SHI dated 30 October 2020. For ease of reference:-

- NHS Lothian ("**NHSL**") is the client to IHSL as set out in the Project Agreement.
- When IHSL refers to engagement or meetings with NHSL or NHSL Project Team, IHSL includes within this term NHSL's internal team and external advisors (e.g. Mott MacDonald, MacRoberts).
- Where IHSL refers to IHSL, that includes the SPV Manager, who under the Management Services Agreement acts on behalf of IHSL. HCP Management Services ("**HCP**") conducted this role, later replaced by George Street Asset Management on 1 December 2019.

2.2 As detailed in the organograms provided to the SHI, IHSL has two Sub-Contractors:-

- Brookfield Multiplex Construction Europe Limited ("**MPX**") – Design and build contractor; and
- Bouygues E&S FM UK Limited ("**BYES**") – Services/ Facilities Management contractor.

2.3 When IHSL refers to engagement with IHSL's Sub-Contractors, IHSL will mean MPX or BYES or both (where appropriate).

2.4 In addition to NHSL and IHSL's Sub-Contractors, IHSL has a relationship and regularly engages with a number of additional parties (referred to collectively as "Other Parties") as follows:-

- **Senior debt Funders** – M&G and European Investment Bank ("**EIB**").
- **Intercreditor Agent** – M&G Investment Management.
- **Lender's Technical Advisor** ("**LTA**") – Sweet Group, who later became part of Currie & Brown.
- **Independent Tester** ("**IT**") – EC Harris, who later became part of Arcadis.

## 3. RESPONSE STRUCTURE

3.1 In responding to item 6 to Annex 1 to the SHI Request, for all stages of the project, IHSL will outline the project management structure and responsibilities within IHSL in Section 4 of this response. IHSL



will address the relationship between NHSL and IHSL in Section 5 and in Section 6 IHSL address the relationship between IHSL and its Sub-Contractors and Other Parties.

- 3.2 ISHL would like to note that it has drafted this response on the communications and meeting structure agreed or established at the commencement of each stage, based on normal operating conditions i.e. Business as Usual. ISHL acknowledges there have been exceptional events on the project where additional more frequent and often *ad hoc* communications/meetings have taken place which were less structured as a response to a particular set of circumstances, and IHSL has tried to provide an indication of arrangements during these times within Section 5.
- 3.3 ISHL has set out the channels available for IHSL to obtain technical advice or to appoint subcontractors in Section 6 and the detailed description of IHSL's finance structure in Section 7.
- 3.4 Where IHSL refers to reports or meetings between the various parties, IHSL include, where available, sample reports, agendas and Minutes/Action Notes in the Appendices to this response. Should the SHI find these samples of assistance, IHSL can provide any specific report or Meeting Minute or all copies IHSL has available to it; although IHSL appreciates these will be significant in number and the SHI may have already received copies from other participants.
- 3.5 IHSL hopes that SHI appreciates and recognises the inherent difficulty in providing a record of all communications, engagements and relationships with multiple stakeholders across an 8-year period on a project that has faced some considerable challenges. IHSL has, however, sought to provide as much clarity as is practicable that best addresses the questions which SHI has raised. IHSL will be happy to clarify any aspects or provide further detail as requested.

#### 4. **PROJECT MANAGEMENT AND DECISION-MAKING RESPONSIBILITY WITHIN IHSL THROUGHOUT THE PROJECT LIFECYCLE**

##### **Stage 1 – Tender Period up to Financial Close in February 2015**

- 4.1 During Stage 1, a tender consortium acted together under a preliminary consortium agreement that regulated the roles to be undertaken by the principal consortium members who were: Macquarie Capital Group Limited (UK Branch) ("**Macquarie**"); MPX; and BYES, whom together formed the "**Tender Consortium**". Note that each of these company names changed over time (as noted elsewhere), although the underlying entity did not, so IHSL has used the same abbreviations as elsewhere. IHSL as a Special Purpose Vehicle entity was only formed at Financial Close.

The agreed roles between the Tender Consortium during Stage 1 were as follows:-

- MPX as the design and build contractor was responsible under the preliminary consortium agreement for performance and management of all design and build aspects of the tender, including *inter alia*: (i) scoping and analysing the Tender Consortium's design and build obligations; (ii) developing a competitive design and build solution; (iii) management of all design and build sub-contractors and advisors; and (iv) investigation and development of alternative design options identified and agreed by the Tender Consortium.
- BYES as the facilities manager was responsible under the preliminary consortium agreement for the performance and management of all hard FM aspects of the tender including *inter alia*: (i) scoping and analysing the Tender Consortium's hard FM obligations; (ii) developing a competitive hard FM solution; (iii) management of all hard FM sub-contractors and advisors; and (iv) investigation and development of alternative design options identified and agreed by the Tender Consortium.
- Macquarie as the sponsor was responsible for providing a project director for the Tender Consortium in Stage 1 to: (i) maintain a working relationship with the client; (ii) manage the overall co-ordination of activities required for the preparation and negotiation of the tender up to financial close; (iii) co-ordinate the assembly of the tender. Furthermore Macquarie was responsible for: (i) the engagement of Macquarie Capital Europe Limited as the financial advisor to arrange third party senior debt financing for the Project; and (ii) arranging the provision and incorporation of a project special purpose vehicle (to become IHSL).

**Stage 2, 3a and 3b (Feb 2015 to Present Day)**

- 4.2 At Financial Close, the IHSL Project Company was incorporated in accordance with the hierarchy, relationships and other agreements as detailed in Figure 1 and Figure 2 of IHSL's response to the SHI dated 30 October 2020.
- 4.3 IHSL is the Project Company under both the Project Agreement with NHSL and the Construction Contract with MPX in relation to the design and construction of the Royal Hospital for Children and Young People in Edinburgh.
- 4.4 As the Project Company, IHSL is responsible for delivering the services outlined in the project agreement: to design, build, finance and maintain the hospital through entering into a construction sub-contract and a facilities management ("**FM**") sub-contract.
- 4.5 The Project Company is also responsible for financing the project (see Section 6 for the commercial structure of IHSL and key parties).
- 4.6 This project was procured under the NPD model. The NPD model follows the broad principles of PPP projects which have been delivered across the acute health sector within the UK with similar commercial principles and service specifications.
- 4.7 The Project Company has Directors who have a fiduciary responsibility for the undertakings of IHSL in relation to the Agreements noted above. The Directors of IHSL and the duration of their appointment are as follows:-

<b>Director</b>	<b>Appointment Tenure</b>
Jonathan Dooley	December 2014 to July 2015
Mark Bradshaw	December 2014 to September 2019
Olivia Shepherd	December 2014 to August 2015
Helen Everitt	December 2014 to August 2015
Brian Saunders	December 2014 to August 2016
Anthony Rose <sup>1</sup>	February 2015 to July 2019
John McDonagh	July 2015 to January 2019
Andy Clapp	August 2016 to July 2018
Richard Osborne	May 2018 to present
Stephen Gordon	July 2018 to present
Matthew Templeton	January 2019 to present
Vivienne Cockburn <sup>1</sup>	July 2019 to 30 June 2021

- 4.8 An SPV Manager acts on behalf of IHSL under the terms of a Management Services Agreement ("**MSA**") in undertaking the following responsibilities:-
- Operational Services
  - Company Secretary Services
  - Financial Management Services
  - Insurance Management Services

<sup>1</sup> Denotes B Director of IHSL Limited, also known as the Public Interest Director. All Board meetings require at least 1 A Director and the B Director to be present to be Quorate.

- Construction Liaison Services

- 4.9 The detailed responsibilities of the SPV Manager are contained in Appendix 1.
- 4.10 HCP were the appointed SPV Manager from Financial Close until 1 December 2019 when they were replaced by George Street Asset Management.
- 4.11 IHSL Board meetings are conducted 4 times a year from 2015. These Board meetings are organised by the SPV Manager (including establishing the Agenda and Board Paper preparation) on behalf of the IHSL Directors. The meetings are attended by the Directors of IHSL, one of whom acts as Chair, and the SPV Manager. An Observer from NHSL is also invited to attend the Board meetings.
- 4.12 In addition to these formal Board meetings, additional *ad hoc* and periodic meetings were held usually on a monthly basis during the Construction period and continue during the Operational period as well. These were organised in the periods between the Board meetings to enable the SPV Manager to update on project progress or to address specific issues that arise with the IHSL Directors.

## 5. RELATIONSHIP, ENGAGEMENT AND COMMUNICATION BETWEEN IHSL AND NHSL THROUGH PROJECT LIFECYCLE

### Stage 1 – Tender Period up to Financial Close in February 2015

- 5.1 During the tender period within Stage 1, the Tender Consortium engaged with NHSL according to the roles described in Section 2 in prescriptive dialogue sessions set up in accordance with the Invitation to Participate in Dialogue as issued and updated from time to time by the Lothian Health Board (the "ITPD") as part of Contract Notice Ref: 386758-2012 (2012/S 235-386758). An extract of the proposed timeline of dialogue meetings is set out in Figure 1 below (from Volume 1, Revision A of the ITPD). The ITPD set out that the dialogue meetings would break into the legal / technical and financial aspects of the Tender Consortium's proposals. It is IHSL's understanding that the Tender Consortium undertook the engagement with NHSL in this manner, with MPX and BYES leading the respective technical dialogue engagement, Macquarie leading the financial dialogue and the legal dialogue being shared between the Tender Consortium.

**Figure 1**

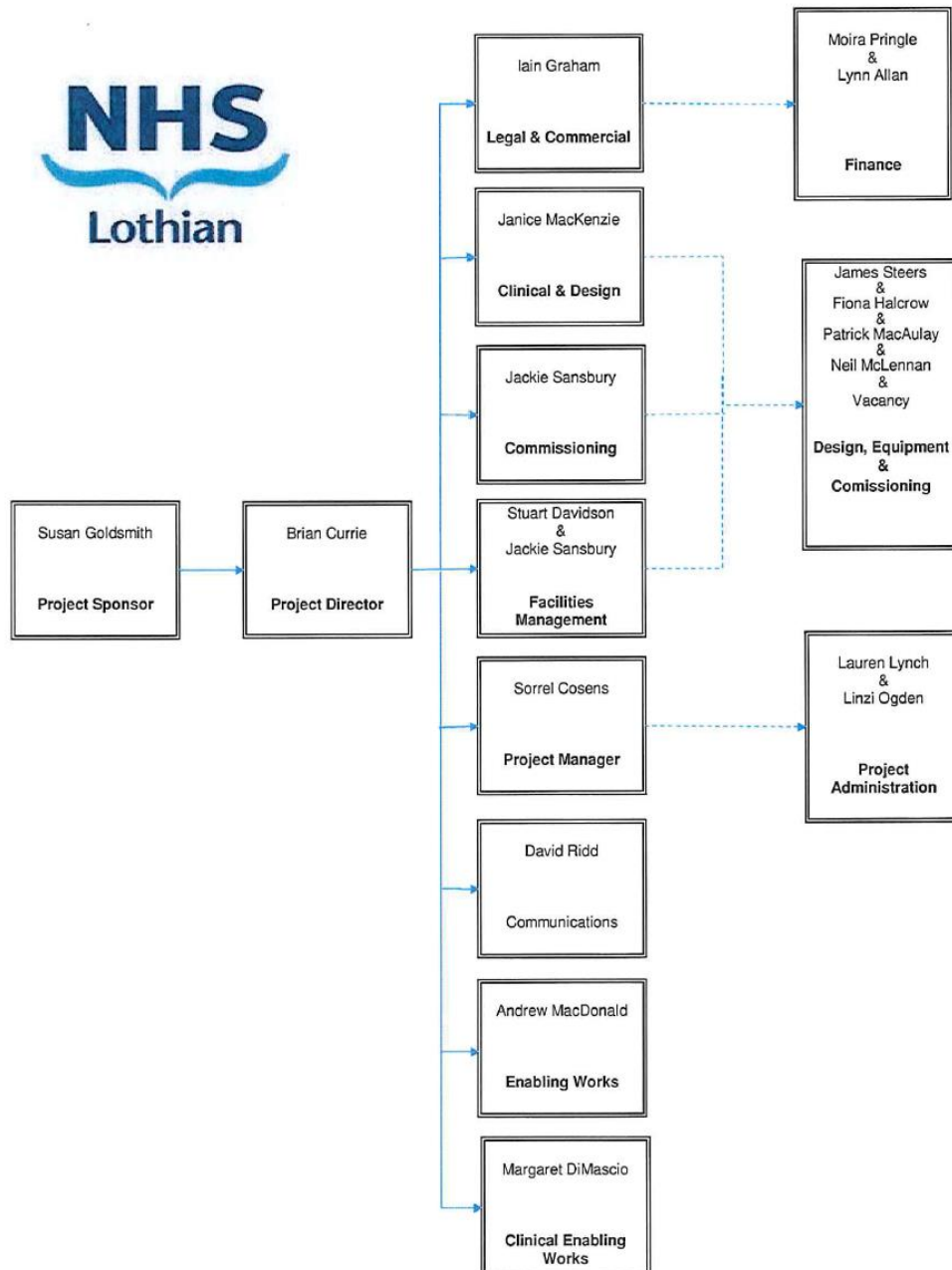
Task	Date
Issue Invitation To Participate In Dialogue	12/03/13
Briefing Meetings	w/c 18/03/13
Board to propose draft Site Survey	22/03/13
Bidders to provide comments in relation to draft Site Survey	05/04/13
Dialogue Meeting 1	w/c 01/04/13
Dialogue Meeting 2	w/c 29/04/13
Dialogue Meeting 3	w/c 27/05/13
Dialogue Meeting 4	w/c 24/06/13
Dialogue Meeting 5	w/c 22/07/13
Draft Final Tender submission	26/08/13
Dialogue Meeting 6	w/c 23/09/13
Close dialogue	30/09/13
Invitation to Submit Final Tenders	11/10/13
Final Tender submission	11/11/13

- 5.2 During the tender period, all communication with NHSL was controlled in accordance with the ITPD where "*all information and communication flows between the Board and Bidders out with Dialogue Meetings will be via Conject.*" As the majority of information to be communicated was technical in nature, MPX controlled all information flow during the tender to and from Conject including the upload

of all the dialogue submission, draft final tender and the final tender. Where relevant, MPX would then share information with the wider Tender Consortium.

5.3 At the receipt of the preferred bidder status (5th March 2014), the Tender Consortium was to continue in its roles in engaging with NHSL. NHSL issued a structure chart as follows:-

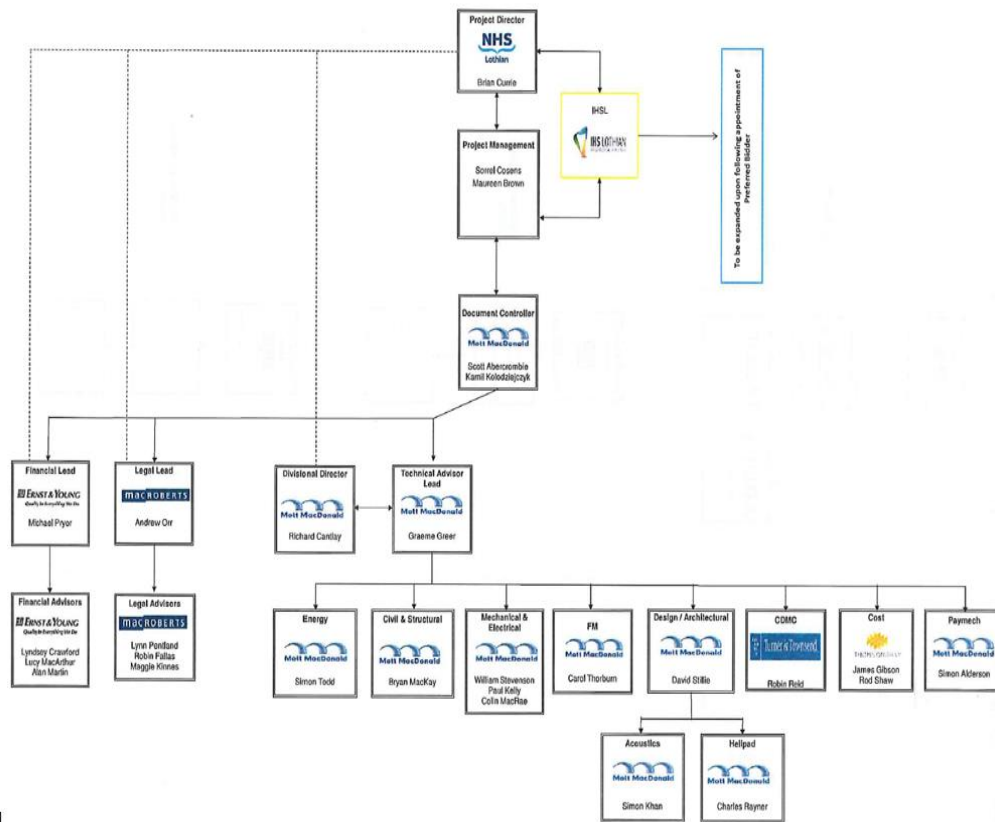
**Figure 2**



together with a structure chart showing the advisors:-

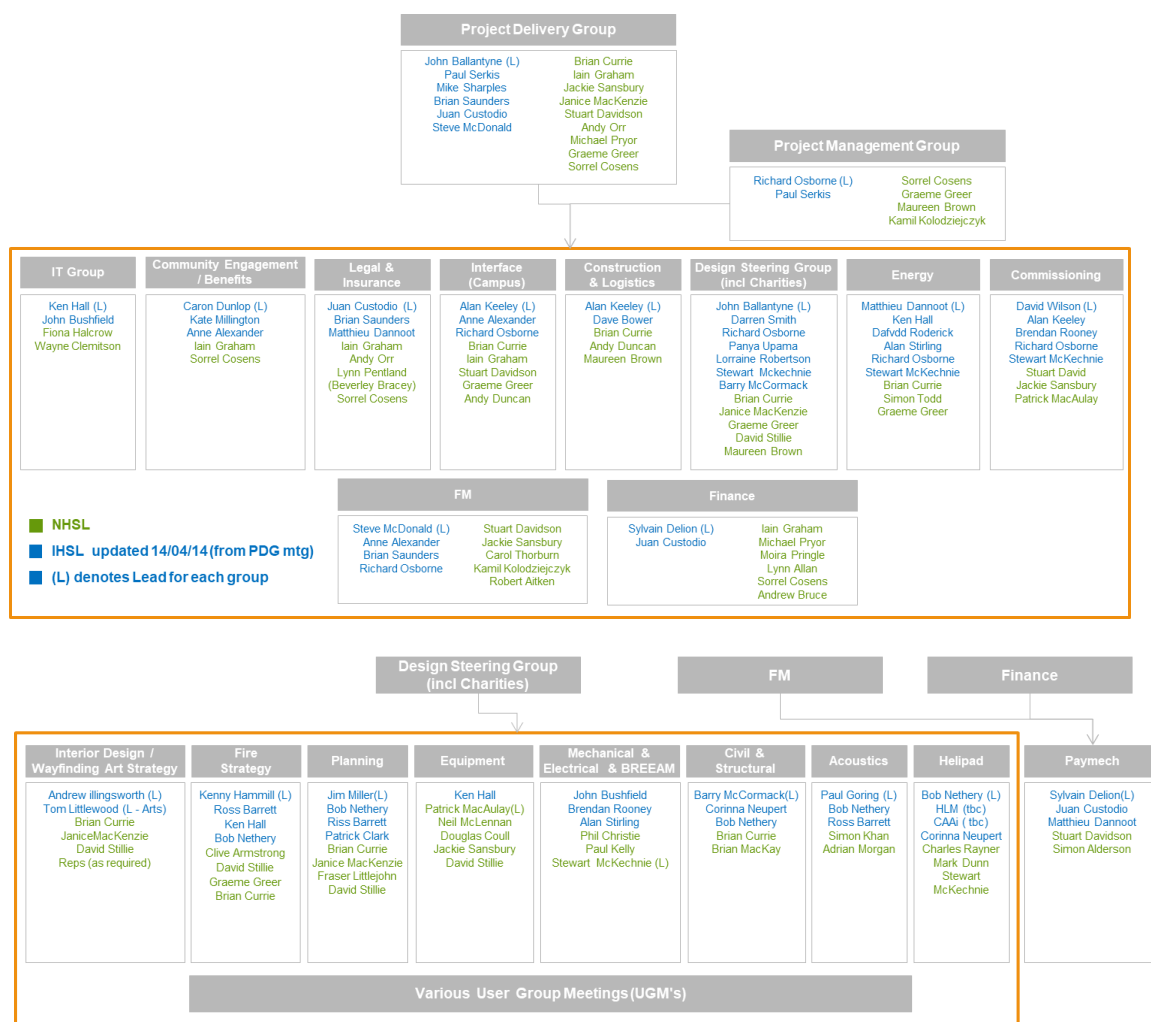
Figure 3

RHSC + DCN - Little France  
NPD Project Partners Project Delivery Structure



5.4 During the preferred bidder period (starting 5th March 2014 with notification by letter from NHSL to the Tender Consortium that the Tender Consortium was invited to progress the project to financial close), the Tender Consortium and NHSL engaged through a number of "sub-group" meetings on a regular basis up to financial close. This included regular meetings with end users and clinical groups (within the structure in Figure 4 below). The intention of the meetings and dialogue was to progress the Tender Consortium's tender across all the technical, legal, financing and commercial workstreams sufficient to be able to achieve financial close (being the moment the contractual documents between all the parties, including Other Parties and NHSL are executed and senior debt financing is raised to fund the commencement of the project). The majority of the sub-groups that were an interface between NHSL and the Tender Consortium were technical in nature and sub-group attendees, leads and timings altered over the period of 5th March 2014 to February 2015. However, the initial structure is shown below:-

Figure 4



5.5 Many of the sub-group meetings were minuted. Principally the user group meetings were led by the architects (HLM) of MPX. However, a number of meetings were chaired and led by NHSL (as shown in Figure 4 above). The "Project Delivery Group" meeting was the key senior liaison group between the Tender Consortium and NHSL that was rolled over post Financial Close (see below Stage 2).

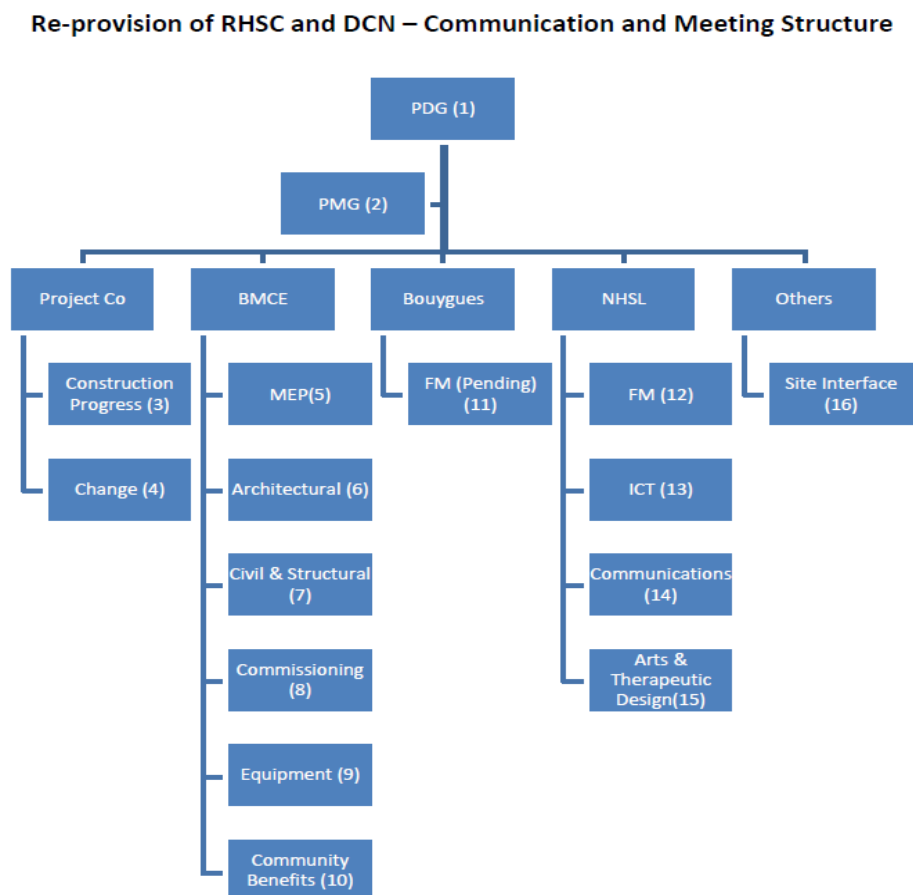
5.6 Following Financial Close all arrangements and agreements between the Tender Consortium were replaced by the project documents that were executed at Financial Close, 13th February 2015 (and any amendments thereafter) and IHSL was incorporated as an SPV.

**Stage 2 – Construction Period (Feb 2015 to Feb 2019)**

5.7 IHSL includes within Appendix 2 the 'Re-Provision of RHSC and DCN – Communications and Meeting Structure' for the construction period of the new Royal Hospital for Sick Children & DCN (extract of structure included in Figure 5 below). This communications and meeting structure was established within the first 6 months of the construction period and agreed between NHSL, IHSL, MPX and BYES. This meeting structure, whilst flexed on occasion, was generally maintained for the duration of the construction stage. The full Communications and Meeting Structure document included within Appendix 2 provides details including, attendees, frequency, and meeting chair.

**Figure 5:** Construction Stage Communication and Meeting Structure

Note: Project Co = IHSL and BMCE= MPX.



## Explanatory Notes on the Communications and Meeting Structure:-

- (a) The PDG is the Project Delivery Group and the PMG is the Project Management Group. The PDG morphed by agreement to a quarterly Liaison from 25<sup>th</sup> November 2015 with any outstanding actions and agenda items transferred to the PMG from 21<sup>st</sup> October 2015.
- (b) NHSL's design approval of the Reviewable Design Data ("**RDD**") in accordance with Schedule Part 8 (Review Procedure) of the Project Agreement, including Clause 12.6 of the Project Agreement, occurred over the online document management system Aconex (Oracle) and in the above listed meetings. Aconex creates a common data environment which assists in coordination, sharing and recording of information during the design and construction phase. NHSL, HCP (on behalf of IHSL), MPX, BYES and Mott MacDonald all had access to Aconex.

For example, RDD approval of finishes to the external envelope would have occurred in meeting 6- Architecture.

- (c) In addition to the above formal meetings there would have been numerous *ad hoc* meetings on specific design or specification matters between NHSL and their technical advisors. These occurred on a daily basis.
- (d) Whilst NHSL clinical representatives attended a number of the listed meetings, IHSL understood that the NHSL Project Team were engaging separately with NHSL sub-committees e.g. Control of Infection, clinical leads, Soft FM & Estates on the design approval process and collating comments, observations, suggested amendments and feeding these back into the above technical meetings.

- (e) The flow of information which was often the subject matter of agenda items within these structured meetings was generally distributed through Aconex.

- 5.8 As stated in paragraph 3.4 of Section 3, IHSL has included sample agendas and meeting Minutes/Actions Notes for each of the above meetings in Appendix 3. Further editions can be provided upon request.
- 5.9 There were two regular meetings which are not detailed within the above structure which IHSL considers are worth referencing (sample agendas and meeting notes also included in Appendix 3):-
- **Liaison Committee:** The Liaison Committee was operational from November 2015 and was established "*to provide strategic direction and leadership to ensure a true partnership and collaborative approach*". IHSL encloses within Appendix 4 the draft Terms of reference discussed between NHSL and IHSL. The Liaison Committee was attended by the project teams and senior management/directors of NHSL, IHSL, MPX and BYES. From IHSL's records, the Liaison Committee ceased to continue at a point in 2018. Please note the Liaison Committee was in effect replaced with the Joint Steering Group from February 2019.
  - **Weekly Reviews/Catch-up Meetings:** In addition to the various workstream meetings as set out in the organogram in Figure 4, the project leads from NHSL, IHSL and MPX met on a weekly basis for a 'Catch-up/Review Meeting'. These meetings were operational between 20<sup>th</sup> April 2015 to early 2019.
- 5.10 In addition to the structured meetings, because NHSL, IHSL, MPX and BYES shared an office complex for the majority of the construction period, there were daily interactions between the parties. The shared office presented the opportunity for collaboration and direct informal communications and interactions individually between the various parties. For example, NHSL (including technical advisors) and MPX would regularly engage directly and this direct communication channel was absolutely necessary to ensure design development progressed at the pace required to meet the construction programme. Due to IHSL's role within the project structure, IHSL were not, and were never intended to be, involved in every design, technical and operational meeting which was required to deliver the project. The direct communication and interactions between NHSL and MPX and BYES were standard industry practice to create partnership and successful outcomes for the project.

### Stage 3a – Operational Hospital & Ventilation Works

#### Background/Context

- 5.11 On the 22 February 2019, NHSL and IHSL entered into a Settlement Agreement (referred to as "SA1") which, amongst other things, settled a number of technical disputes and enabled the Independent Tester ("IT") to issue the certificate of Practical Completion. The issue of the certificate of Practical Completion is significant as, first, it confirms that construction is sufficiently complete to allow NHSL to occupy the new hospital and, second, it is the trigger to commence the Annual Service Payment (the fee paid by NHSL to IHSL). Essentially the issue of the Certificate of Practical Completion is the notification by an independent third party that the project can move from the construction phase to the operational phase. The new building also obtained sign-off from Edinburgh City Council Building Control department.
- 5.12 A condition of the SA1 was that IHSL/MPX would complete Post Completion Works (a defined term within SA1), after 22<sup>nd</sup> February 2019 but importantly prior to NHSL's intended 'go-live' date for the new hospital on 5 July 2019 (i.e. patients transfer to new hospital and the commencement of clinical services). In the period between February and July 2019, MPX were completing the agreed Post Completion Works and NHSL were undertaking their own commissioning, equipment installation, mobilisation, staff familiarisation, etc. in advance of hospital going live. It is worth noting that even in advance of SA1, there was intended to be a period of post completion activity to be undertaken by IHSL and NHSL prior to the original "go-live" date.
- 5.13 As is well documented now, in June 2019 NHSL's ventilation validation engineers, the Institute of Occupational Medicine ("IOM"), advised that elements of the ventilation in Critical Care, whilst compliant with contractual standards agreed between NHSL and IHSL in the Project Agreement and SA1, did not meet national guidelines. Initially NHSL, MPX and IHSL developed options to



immediately enhance the air flow rates in Critical Care above those required in the Contract, whilst a programme of work could be delivered to meet the desired requirements whilst the new hospital was fully operational (from July 2019). However, shortly after those options were developed, a decision between NHSL and Scottish Government postponed the opening of the new hospital indefinitely, to deliver the identified works to the discrete areas of the hospital; IHSL were not engaged with nor consulted on in relation to that postponement decision. From around this time, a Scottish Government representative, Mary Morgan, became directly involved in the management of the project.

- 5.14 IHSL provides this as background to explain a revised approach to meeting and communication reporting and structure that was established post-June 2019. Paragraphs 5.17 to 5.22 of this Section 5 focus on the technical meetings to deliver the enhancements to the ventilation works in critical care (and latterly Haematology), whilst paragraph 5.23 addresses the Operational Meetings between NHSL, IHSL and BYES as Services Provider.
- 5.15 It is also worth noting that IHSL appointed a third Sub-Contractor, Imtech Engineering Services Central Limited ("**Imtech**"), a specialist mechanical and electrical main works contractor, to deliver the enhanced ventilation works to meet NHSL's revised requirements in Critical Care and Haematology in late 2019. These works are captured in the following agreements:-
- **Settlement Agreement 2 ("SA2")** – An agreement between NHSL and IHSL to deliver the ventilation works (as defined), dated 5 August 2020.
  - **Ventilation Works Contract** based on NEC4 ECC Option E between IHSL and Imtech dated 5 August 2020.
- 5.16 It should be noted that whilst Imtech were on-site delivering the above works, they also delivered other additional works requested by NHSL in Child and Adolescent Mental Health Unit and Emergency Dept. These variations were additions or amendments to the original design brief/specification.

#### **Communications and Meetings during early operations and delivery of ventilation works**

##### **Completion of SA1 Post Completion Works to June 2019.**

- 5.17 A requirement within SA1 was that a Joint Steering Group be established, principally to provide a mechanism at Senior level (IHSL Director, MPX Director and NHSL Director) to monitor the progress of the Post Completion Works, to escalate any operational issues that required to be addressed in relation to those works and then latterly to escalate any other issues for commissioning of the Facilities until completion of the Post Completion Works. Full details of the Joint Steering Group are provided in paragraph 8 of SA1. The Joint Steering Group was effective from February 2019 through to June 2019 when the Post Completion Works were completed, in advance of notification of the ventilation issues identified by NHSL's ventilation validation engineers, IOM. Attendees at these meetings to June 2019 were from the following designates from each organisation:-
- **NHSL:** Susan Goldsmith, Jim Crombie, Iain Graham, Brian Currie.
  - **IHSL:** Matt Templeton, Tony Rose and Wallace Weir.
  - **MPX:** Callum Tucket and Ben Keenan.
  - The meeting was chaired by Roger Thompson of IHSL.

##### **June 2019 to present:-**

- 5.18 Upon discovery of the ventilation not meeting national guidelines in June 2019, the Joint Steering Group continued as the executive management group and escalation point with senior representatives from NHSL, IHSL, BYES and Scottish Government (Mary Morgan). MPX did not attend the Joint Steering Group meetings from approximately June 2019, due to the completion of the Post Completion Works and the focus on the ventilation works.
- 5.19 From Summer 2019 through to March 2021, the Joint Steering Group was active and met on a frequent basis which varied between weekly, fortnightly or monthly depending on the issues being

managed. The agenda for the Joint Steering Group considered matters such as development and delivery of the enhanced ventilation works, completion of building Snagging, Operational FM and preparing the hospital for progressive occupation from May 2020 through to full occupation in March 2021. Representation at the Joint Steering Group during the period from Summer 2019 through to March 2021 included *inter alia* as follows :-

- Scottish Government: Mary Morgan.
- NHSL: Susan Goldsmith, Iain Graham, Brian Currie and Michael Pryor (latter replaced by Martin Gallagher).
- IHSL: Matt Templeton, Richard Osborne, Viv Cockburn, Gordon Morrison, and Stephen Kelly.
- Bouygues: Lee Beard and Nicola Searle
- The meeting was chaired by Roger Thompson of IHSL.

5.20 Sample agendas and meeting minutes of these meetings are provided in Appendix 5.

5.21 At a project level during the same period the following design/technical and progress meetings took place.

**Table 1: Ventilation Works (SA2) & Hospital Readiness Meetings**

Meeting	Purpose	Frequency	Representations
<b>Project Delivery Group</b>	Required actions to open new hospital, including closing out HFS/NSS Audit Reports	Monthly	<b>Chair: Mary Morgan</b> IHSL/NHSL/ BYES/ Mott MacDonald
<b>SA2 / Ventilation Project Meeting</b>	To progress the scope, design, construction and commissioning of the ventilation works.	Fortnightly	Chair: Faithful & Gould IHSL/NHSL/Imtech/ Watermans/ Hoare Lee/ Mott MacDonald/ Bouygues
<b>Ventilation Works Progress Report</b>	Update all parties on progress of design, construction and commissioning of SA2 ventilation works	Monthly	Chair: Imtech (same parties as above)
<b>Ventilation Works Cost Reviews</b>	Monthly cost forecast as required under NEC4 Contract	Monthly	Chair: Faithful & Gould IHSL/NHSL/Thompson Gray/Imtech

5.22 It is worth noting that, in addition to the above, there were also related and similar meetings with respect to Settlement Agreement 4, NHSL Board Change Variation Works, which were taking place over a similar period. Also, there were several *ad hoc* meetings between NHSL, IHSL, Imtech and MPX to facilitate the delivery of the works required to open the new hospital.

### **Stage 3b – Operations post full transfer of full clinical services**

5.23 NHSL accepted occupation of the new hospital on 23 February 2019. NHSL staff started occupying the building thereafter although it was not until the transfer of DCN clinical services in May 2020 that this became a material number. Upon completion of the SA2 ventilation works, full patient services transferred into the new hospital in March 2021.

Within this section IHSL details the communications and engagements between NHSL and IHSL to manage operational services. The key meetings are listed below; however IHSL includes within Appendix 6 sample agendas/meeting notes of the Service Review Meeting, Change Order Meeting and Risk Review Meeting.

Table 2: Operational Services Meetings

Meeting	Frequency	Representations
<b>Liaison Meeting</b> (formerly Joint Steering Group)	Monthly	NHSL, IHSL (chair) and Bouygues
<b>Service Review Meeting</b>	Monthly	NHSL, IHSL and Bouygues
<b>Change Order Meeting</b>	Monthly	NHSL, IHSL and Bouygues
<b>Risk Review Meeting</b>	Quarterly	NHSL, IHSL and Bouygues
<b>Principals Update Meeting</b>	Weekly	NHSL: Martin Gallagher IHSL: Gordon Morrison Bouygues: David Gordon {this meeting is not minuted}
<b>Operations 'touch-base' Meeting</b>	3 x per week	Representatives from NHSL's Hard & Soft FM Teams. Supervisors. Bouygues

In addition to the above, NHSL (as building user/occupier) is also required to establish the following safety committees which IHSL and BYES are then invited to attend:-

- (a) Health & Safety
- (b) Fire Safety
- (c) Medical Gases
- (d) Electrical
- (e) Ventilation
- (f) Environmental.

## 6. **ENGAGEMENT AND RELATIONSHIP WITH SUB-CONTRACTORS AND OTHER PARTIES THROUGH THE PROJECT LIFECYCLE (EXCLUDING TECHNICAL INPUT)**

### **Stage 1 – Tender Period up to Financial Close in February 2015**

- 6.1 In the tender period, the Tender Consortium's primary roles were as set out in the preliminary consortium agreement described in paragraph 4.1 above. The engagement within the Tender Consortium prior to the preferred bidder period was on an on-going and regular (minimum weekly) basis to coordinate a tender and negotiate the commercial proposition between the parties (to submit a fixed price tender as required under the ITPD). However, each Tender Consortium member had distinctive and discrete roles (as set out above) and the engagement between the parties comprising the Tender Consortium focused on: (a) tender management, programming and submission; and (b) management of the interfaces including: (i) lifecycle programming and design; (ii) facilities management engagement in the design; (iii) negotiation of the D&B heads of terms, FM heads of terms and interface agreement; (iv) legal dialogue planning and negotiation to feed in to the project agreement; (v) pricing and programme proposals. The Tender Consortium's respective sub-consultants, sub-contractors etc. were managed by the relevant Tender Consortium member in accordance with the preliminary consortium agreement (e.g. HLM architects were managed by MPX).
- 6.2 During the financial close / preferred bidder period of Stage 1, the Tender Consortium engaged with each other as part of the meetings set out in Figure 4 (above) when dealing in particular with technical

matters. In relation to the technical aspects of facilities management or the design and build of the project, the Tender Consortium met as a group, rarely outside of the shared forums with NHSL (though each respective Tender Consortium member may have had several meetings with their respective sub-consultants without the other Tender Consortium members, e.g. MPX with HLM Architects). In addition to the shared engagement with NHSL as part of the Sub-contractors technical solution, the Tender Consortium also continued regular commercial and legal meetings to draft, comment and negotiate the full form D&B sub-contract and FM sub-contract that IHSL (as a newly incorporated SPV) would enter in to at Financial Close. In relation to key "other parties" that were engaged, Macquarie undertook all negotiations and discussions with senior lenders and their advisors (including *inter alia* the lenders technical advisor, the lender's legal advisor, the T&A advisor and the model auditor) with the aim of incorporating IHSL and executing all the required finance documents between IHSL and the senior lenders. These other parties comprising the funders are described elsewhere in IHSL's answers.

### Stage 2 – Construction Period (Feb 2015 to Feb 2019)

- 6.3 During the construction period and under the terms of the MSA, the SPV Manager was required to monitor subcontractor work and liaise with them on progress against the requirements of the Project Agreement. Progress Reports and monitoring of the construction works was also reported to the IHSL Board on a regular basis. This was undertaken within the joint NHSL/IHSL and MPX meeting schedule, reporting and communication approach as outlined in Section 5 that involved multi-party meetings with all interested parties and covering all the relevant subjects.
- 6.4 As stated previously, as IHSL and its Sub-Contractors shared offices during the construction period, the interactions were daily with numerous informal meetings and interactions to discuss key matters and issues.
- 6.5 During the construction period IHSL Sub-Contractors and Other Parties prepared multiple reports documenting progress, quality and compliance, whilst noting any material issues affecting any one of those categories. These are noted below:-

**Table 3: IHSL Construction Period Reporting**

Report	Distribution	Author	Frequency
Multiplex Construction Liaison	IHSL/ NHSL/ Bouygues Senior Debt Funders	Multiplex	Monthly
Funders Construction Report	Senior Debt Funders	HCP (on behalf of IHSL)	Monthly
Lenders Technical Advisor Construction Report	Senior Debt Funders/ IHSL	Currie & Brown	Monthly
Independent Tester Construction Report	IHSL/ NHSL/ Bouygues /Multiplex/ Senior Debt Funders/	Arcadis	Monthly
BYES FM Services Report*	IHSL/ NHSL/ Multiplex	Bouygues	Monthly
IHSL Board Report	IHSL Board/ NHSL Board Representative	HCP	Quarterly

*\*BYES FM Services Report would have commenced when the project was nearing construction completion as report focussed on mobilisation of FM activities ready for operational service commencement.*

- 6.6 Site visits, inspections of works, telephone conversations, and informal meetings would take place between the various parties to assist in the drafting of these reports. A sample copy of each report is provided in Appendix 7, where all editions can be provided upon request.

6.7 From early 2017 when the Planned Completion Date was at risk and an increasing number of technical disputes were arising between NHSL and MPX, communications increased between IHSL board directors and the Managing Director of MPX.

6.8 IHSL and the Senior debt funders (M&G and EIB) had regular update meetings throughout the construction period. However, the frequency of those meetings, whilst never fixed, did increase when the Planned Completion Date for the Works was not going to be achieved.

### **Stage 3a – Operational Hospital & Ventilation Works**

6.9 As referred to above, there were no additional formal bilateral meetings between IHSL and MPX during the delivery of the SA1 Post Completion Works between March 2019 and June 2019. Multi-party design, technical and progress meetings described above involving NHSL, the Independent Tester and BYES did continue.

Following the issue of NHSL Board Change (HVC107 – SA2) requesting IHSL design and install new ventilation infrastructure to meet revised ventilation requirements, IHSL engaged with a third Sub-Contractor (Imtech) around November 2019 to deliver these works. As during the main construction works all design, technical and progress meetings were held involving multiple parties, including NHSL. IHSL did not hold specific meetings with Imtech and their design team - these were held with NHSL as set out in Table 1 in Section 5.

### **Stage 3b – Operations post full transfer of full clinical services**

6.10 As per previous Stages, during the operations period there was no equivalent formal meeting structure solely between IHSL and BYES as there is with NHSL. IHSL's participation in formal meetings with BYES is generally as detailed within Table 2 in Section 5. However, there has been frequent dialogue between IHSL's General Manager and team and BYES' Manager/Team regarding performance improvements and performance monitoring/reporting.

## **7. ENGAGEMENT DURING EXCEPTIONAL EVENTS AND SETTLEMENT NEGOTIATIONS**

7.1 The development and delivery of the Royal Hospital for Sick Children and DCN has encountered numerous challenges, some of which are now subject to this Inquiry. As these challenges unfolded, broadly from late Summer of 2017 through to the signing of SA1 in February 2019 the response required a more bespoke series of interaction between the parties and in particular the senior leadership from the various organisations. These interactions were issue-driven and hence reactionary on a need basis. There was, therefore, no detailed or agreed engagement structure during the period outlined. It is difficult, therefore, to set-out the exact arrangements in which these meetings and interactions occurred.

7.2 In general, once matters were escalated above the Project Management Group (PMG) and Liaison Group, they were elevated to 'Board to Board' meetings, involving NHSL, IHSL, MPX and on a few occasions BYES.

7.3 Representation at these meetings varied, however typically involved the following attendees:

**Table 3: Senior Representatives from Key Parties**

<b>NHSL</b>	Susan Goldsmith (Finance Director) Jim Crombie (Acting/Deputy Chief Executive) Iain Graham (Director of Capital Projects) Brian Currie (Project Director) Michael Pryor (Consultant) Mary Morgan (Scottish Government) – meetings post July 2019
<b>IHSL</b>	Andy Clapp, later replaced by Stephen Gordon (both IHSL Directors) Tony Rose, later replaced by Viv Cockburn (both IHSL Directors) Richard Osborne (IHSL Director) Matt Templeton (IHSL Director)
<b>Multiplex</b>	Calum Tuckett (Managing Director)



	Ben Keenan (General Counsel)
<b>BYES</b>	Fabienne Viala (Chair of Bouygues Construction UK) David Carr (Managing Director) Mark Griffiths (Consultant)

- 7.4 On several occasions NHSL would request their legal advisor attend too which they did. Where appropriate, IHSL's legal advisor would also attend although not as frequently.
- 7.5 Furthermore on a few occasions, Peter Reekie of Scottish Futures Trust would participate in meetings to facilitate constructive dialogue.
- 7.6 There were also on occasion tripartite meetings involving NHSL, IHSL and representatives from the senior debt funders.
- 7.7 The negotiation and drafting of Settlement Agreements 1, 2 and 4 all involved detailed protracted legal discussions with the senior representatives detailed in Table 3 above and respective legal advisors. On occasion, the Chief Executive from Scottish Futures Trust facilitated discussions in the interests of finding common ground/a solution.
- 7.8 A broad chronology of events that necessitated more concentrated senior level interaction through to SA1 is summarised below:

When	Issues	Parties
Late Summer 2017	Escalation of issues regarding ventilation design, most specifically whether the pressure regime in bedrooms should be positive or negatively balanced to the corridor (+ve/-ve).	IHSL/MPX/NHSL
Winter 2017	Series of engagements regarding resolution of ventilation and a range of additional identified design issues. This culminated in NHSL issuing an initial notice to enact Court proceedings against IHSL in March 2018.	IHSL/MPX/NHSL
Early 2018	A series of engagements to seek to resolve the Court Order proceedings, that culminated in a removal of the Court Order and initiation of facilitated discussion.	IHSL/MPX/NHSL
Spring-Autumn 2018	Engagement to take forward the outcome of the mediation process. As further issues arose, escalation of discussion that also, in part, involved other parties.	IHSL/MPX/NHSL/ Funders/SFT
Winter 2018- February 2019	Engagement to reach resolution and agreement in relation to the design and commercial issues contained in SA1.	IHSL/MPX/NHSL/ Funders/SFT

## 8. CHANNELS AVAILABLE TO IHSL FOR APPOINTMENT OF ADVISERS AND ADDITIONAL SUBCONTRACTORS

### Technical Advice

- 8.1 IHSL was established as a Special Purpose Vehicle (SPV) to finance, design, build and operate the new Royal Hospital for Sick Children & DCN (RHSC/DCN). In accepting the obligations passed to IHSL via the Project Agreement with NHSL, IHSL further passed down the design and build obligations to MPX and the FM and Lifecycle Services obligations to BYES. IHSL appointed HCP, an experienced asset manager within healthcare PPP/NPD, to provide day to day operations, oversight, governance and financial management on behalf of IHSL. These reflect industry standard arrangements for PPP/NPD projects.

- 8.2 The channels available to IHSL for obtaining technical advice primarily reside in these three appointments. For design, compliance, or construction technical advice, IHSL's first point of contact would be to consult with MPX (and their wider design team and supply-chain expertise) and request their opinion as specialist healthcare infrastructure developers. For FM Maintenance and lifecycle matters, IHSL would consult with BYES. IHSL also sought advice from HCP recognising their 20 years of experience in developing and managing acute healthcare facilities. IHSL is not precluded from seeking alternative third-party technical advice and indeed on occasion has done so. In addition to the above, there were also occasions where the Independent Tester or Lender's Technical Advisor would offer an opinion that IHSL would consider in respect of any assessment.

### **Appointing Sub-Contractors**

- 8.3 As more fully described in Section 4, Macquarie (IHSL founding shareholder), MPX and BYES formed a consortium in 2013 to bid for the RHSC/DCN, where if successful, they would fulfil the roles set out in the organograms previously provided. Once the SPV (also referred to as "Project Company", "ProjectCo" or "PCo") was established at Financial Close it was not anticipated that any further Sub-Contractors would be appointed directly by the SPV/ProjectCo as IHSL had entered into contracts with MPX, BYES and HCP to fulfil the obligations under the Project Agreement. This is the industry standard approach.
- 8.4 Through the term of the contract, NHSL are permitted to request changes to the physical works or services for an agreed increase or decrease to the Annual Service Fee. These are referred to as Board Changes and the process is governed by the terms of the Project Agreement. During the construction period all Board Changes would be delivered by MPX as controller of the construction site. During the operational period, there is greater flexibility and with the agreement of NHSL and BYES, IHSL can appoint a third-party Sub-Contractor to deliver Board Changes. Following construction completion and early into the operational period of the contract, IHSL appointed a third Sub-Contractor, Imtech, to deliver the SA2 Ventilation Works and the SA4 (Fire Works and alternations to the Child and Adolescent Mental Health department). It should be highlighted that the normal operating assumption is that BYES would deliver the majority of Board Changes during the operational period, however the option is there for IHSL to appoint other sub-contractors if agreement between all parties, including Senior debt funders, is agreed (subject to legal advice).

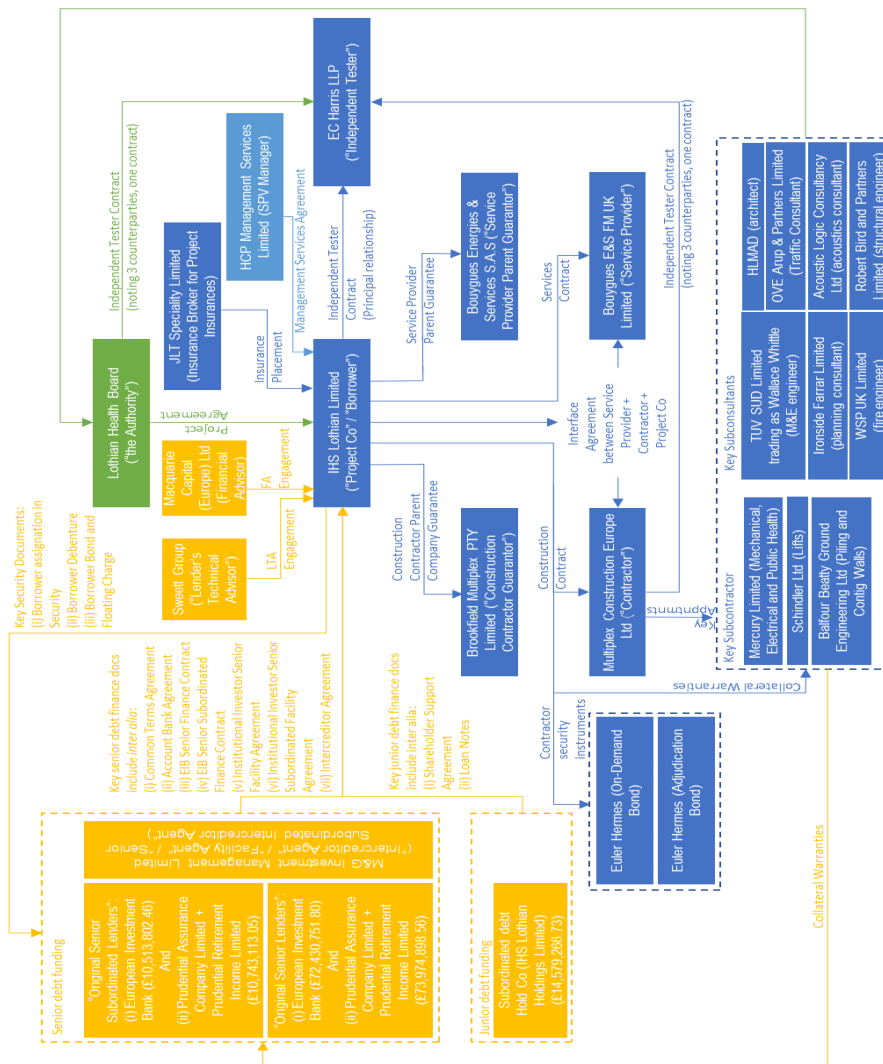
## **9. UPDATED DETAIL OF IHSL'S FINANCIAL STRUCTURES**

**This section provides a response to item 6.4 of Annex1 to the SHI Request:** *"Further to the organograms already supplied, a detailed description of IHSL's financial structure, including details of junior debt providers, financial advisers, senior debt holders, and junior debt equity interests."*

### **Updated Structure Chart**

- 9.1 The below structure chart, Figure 6, has been updated to include the financial advisor to IHSL at Financial Close as requested. This mandate was between IHSL and Macquarie Capital (Europe) Limited and covers financial advice and structuring up to and including Financial Close. HCP (later replaced with George Street Asset Management Ltd) provided on going accounting support post Financial Close.

Figure 6



9.2 For completeness, further advisors involved prior to Financial Close (but not shown in the above structure chart) that were engaged by the sponsor at tender prior to IHSL becoming incorporated were as follows:

Company	Role
A&O	Sponsor's legal counsel
Burness Paul LLP	Sponsor's Scottish legal counsel
Mazars	Model auditor
PwC	Tax and accounting advisor
Hogan Lovells	Lenders' legal counsel
Clifford Chance	EIB Legal Counsel
Brodies LLP	Lenders' Scottish legal counsel
J.C. Rathbone Associates Ltd	Base rate checker



### Sources and use of funding

9.3 During construction, the project costs (excluding any variations or agreements between the parties to amend) were funded through a combination of pinpoint equity, junior debt and senior debt and senior subordinated debt funding. The planned structure at Financial Close was as follows:

- Pinpoint equity amount of £101
- Junior debt amount of c. £14,579k<sup>2</sup>
- M&G and EIB provide the senior debt amount on a c.50/50 basis (c. £146,404k of total senior debt)
- M&G and EIB provide the senior subordinated amount on a c.50/50 basis (c. £22,256k of total senior subordinated debt)

9.4 The debt service reserve account amount was to be funded at the end of the construction period out of the total sources of funds above. A table of sources of funds during construction as per the results of the financial model base case at Financial Close is presented below:

Sources of funds at Financial Close (13th February 2015)	£'000	Approx. %
Total Shareholder funding	14,579 <sup>2</sup>	8.0%
M&G senior debt, split as follows	<u>73,974</u>	40.2%
The Prudential Assurance Company Limited	31,000	
Prudential Retirement Company Limited	42,974	
EIB senior debt	72,430	39.5%
M&G senior subordinated debt, split as follows	<u>10,743</u>	5.9%
The Prudential Assurance Company Limited	3,000	
Prudential Retirement Company Limited	7,743	
EIB senior subordinated debt	10,513	5.7%
Unitary Payment (in construction / drawdown period)	1,304	0.7%
<b>Total approx. sources of funds</b>	<b>183,543<sup>2</sup></b>	<b>100%</b>

9.5 The small difference between the M&G and EIB funding (as a sum of their respective facilities) is driven by EIB condition of not exceeding 50% of the project's senior debt requirement (comprised of both senior and senior subordinated facilities). EIB's facility size was fixed the day before Financial Close and special consideration was therefore given to the sizing of EIB debt to maintain a buffer in the case of a reduction in fixed rates on the day of Financial Close. As a result of EIB fixing its disbursement profile prior to Financial Close, a strictly pro-rata drawdown between M&G and EIB was not possible. Therefore, the drawdown profile of M&G varied slightly against a pro-rata position and the sizes of the combined facilities from the two senior debt providers are slightly different (with EIB being slightly smaller, thus fulfilling their mandate requirement of <50%).

### Financing structure

9.6 One of the features of the M&G financing structure is that it includes a tranche of senior debt and a tranche of senior subordinated debt (with the senior subordinated debt contractually and structurally subordinated to the senior debt). This drives the financing structure of the project (where the required structural subordination permits the Project Company's immediate creditors as the senior debt to be made whole first prior to the senior subordinated debt in the event of winding up, with any remaining

<sup>2</sup> The shareholder support agreement (dated 13th February 2015) was amended on 22nd February 2019 as part of the settlement agreement also dated 22nd February 2019 between the Lothian Health Board and IHS Lothian Limited (the "Settlement Agreement"), to increase the amount of shareholder commitment by £5,400,000 by means of additional junior debt. The additional shareholder commitment, combined with the sums payable by the Lothian Health Board under the Settlement Agreement increased the total source of funds by £17 million to c.£200,543k (the additional source of funds was utilised as construction costs, payable to the Contractor and Senior Debt repayments).

equity distributed to the holding companies and their creditors as shown below). The structure was driven exclusively by M&G since it facilitated M&G obtaining an enhanced internal credit rating and therefore providing more competitive pricing. Key highlights include:

- Senior debt is injected at Project Company (IHSL) level, key documents that detail the terms of this arrangement (which are part of the suite of project and finance documents created at Financial Close and dated 13th February 2015) include:
  - Common Terms Agreement<sup>3</sup>
  - Intercreditor Agreement<sup>4</sup>
  - Institutional Investor Senior Facility Agreement<sup>5</sup>
  - EIB Senior Finance Contract<sup>5</sup>
- Senior subordinated debt is injected at IHS Lothian Investments Limited level, key documents that detail the terms of this arrangement (which are part of the suite of project and finance documents created at Financial Close and dated 13th February 2015) include:
  - Common terms Agreement
  - Intercreditor Agreement
  - Institutional Investor Senior Subordinated Facility Agreement (and on loan agreement)<sup>5</sup>
  - EIB Senior Subordinated Finance Contract (and on loan agreement)<sup>5</sup>
- M&G and EIB participated in these two facilities on a c.50/50 basis (note it is not exactly 50/50 owing to the EIB mandate described above).
- Under the original terms of the Shareholder Support Agreement, a junior debt loan is injected at the planned end of construction (July 2017) by IHS Lothian Corporate Limited, the obligation to inject was backed off at Financial Close by the letter of credit provided in favour of the Security Trustee (Prudential trustee Company Limited) by Macquarie. The beneficiary as the registered holder of the £14,579,266.73 nominal of the TopCo Loan Notes (being the loan instrument recording the terms and conditions of the junior debt) is IHS Lothian Corporate Limited. The TopCo Loan Notes are mirrored in the corporate structure below between the 100% owned subsidiaries, until the Project Company participates in the Borrower Loan Note). The TopCo Loan Notes are contractually and structurally subordinated to the Senior Subordinated Debt and the Senior Debt (and hence described as “junior debt”). Key documents that detail the terms of this arrangement (which are part of the suite of project and finance documents created at Financial Close and dated 13th February 2015) include:
  - TopCo Loan Note
  - HoldCo Loan Note

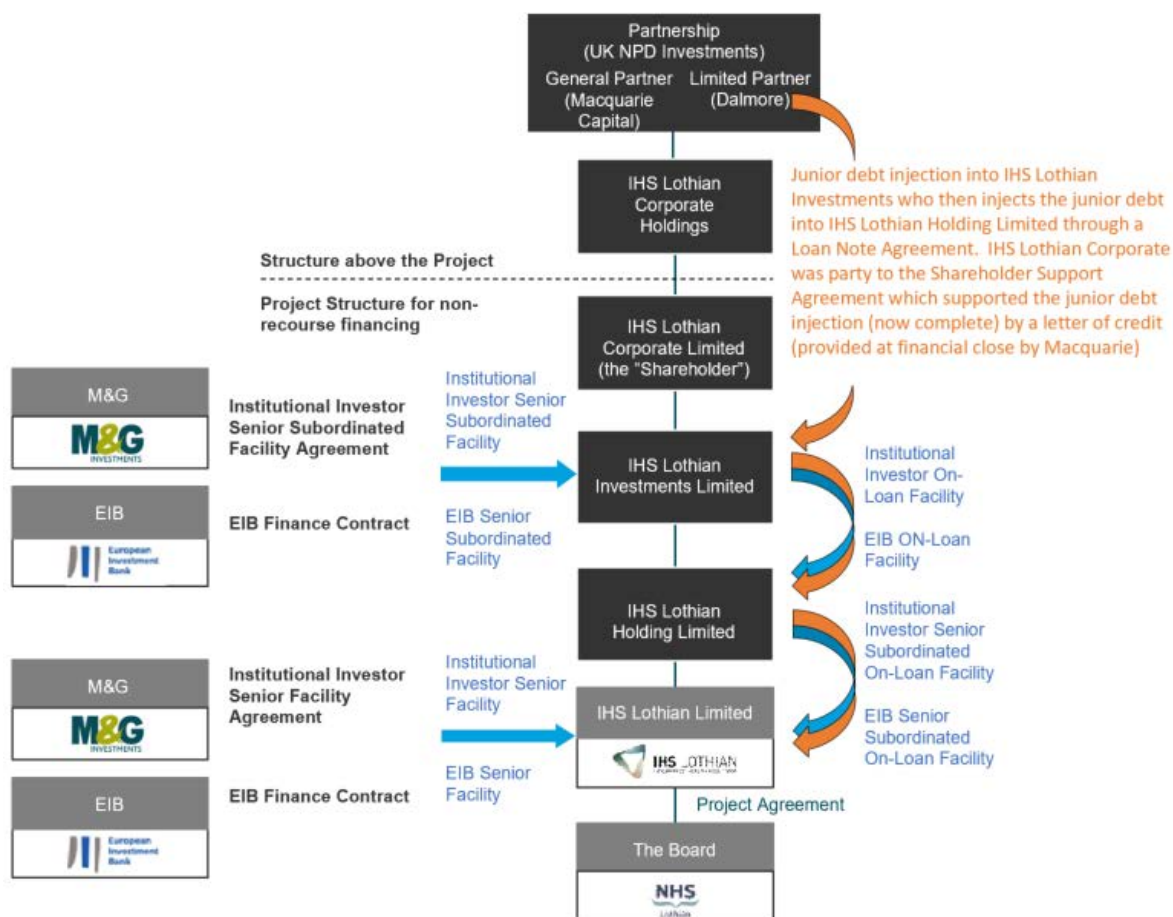
<sup>3</sup> Being the agreement executed at Financial Close between the “borrower” (as IHS Lothian Limited which is also the Project Company), the security trustee, the intercreditor agent and the senior lenders (M&G and EIB) that *inter alia* sets out the common terms shared by and agreed between the debt facilities for the Project Company to adhere to (e.g. common terms of default, agreed cashflow waterfalls between the project costs, creditors and junior creditors to be implemented by the Project Company and the methods of control that senior lenders exert over the performance and activities of the Project Company).

<sup>4</sup> Being the agreement executed at Financial Close between the “borrower” (as IHS Lothian Limited which is also the Project Company), the security trustee, the intercreditor agent and the senior lenders (M&G and EIB) that *inter alia* sets out the agreed terms by which the lenders will act during the project including their respective rights under contractual subordination, actions required to maintain the credit structure and actions in event of winding up or enforcement of security. The agreement also sets out the required activities of the intercreditor agent and security trustee (and how they may act on behalf of senior lenders).

<sup>5</sup> A facility agreement between a borrower and a debt provider containing *inter alia* terms that are not common to all the lenders (and therefore not included in the common terms agreement).

- Borrower Loan Note
- Shareholder Support Agreement<sup>6</sup>
- Equity LC

9.7 The chart below, Figure 7, shows the overall financing structure that was implemented at Financial Close showing all the provision of funds required to finance the project:



**Figure 7**

9.8 As shown in the chart, the senior subordinated debt is contributed into Project Company through on loan agreements with separate agreements for M&G and EIB at all levels. An Intercreditor Agreement was executed between the senior debt holders. The junior debt injection timing is required and as governed under the Shareholder Support Agreement (the obligation being backed off by a letter of credit to the value of the junior debt). The junior debt monies were injected by a Dalmore managed fund as the limited partner (UK NPD Investments LP) of the partnership with Macquarie (UK NPD investments GP Limited).

### Financing terms


9.9 The table below shows a summary of the key terms of the financing structure at Financial Close (which are further detailed in the documents listed above).

<sup>6</sup> Being the agreement executed at Financial Close between IHS Lothian Limited, its relevant holding companies and the security trustee to *inter alia* regulate the required timing, quantum of junior debt and rights to subscribe to junior debt funding in the project, together with the required credit support to back off these requirements and rights until the required junior debt funding date. This agreement was amended on 22nd February 2019 and as further described above.

<b>Term</b>	<b>Senior debt</b>	<b>Senior Subordinated debt</b>	<b>Junior Debt</b>
Amount	£146,404k	£21,256k	£14,579k <sup>2</sup>
Gearing	80.3%	11.7%	8%
Maturity	23 years	23 years	25 years
Fixed All In Rate	3.288% (M&G) 2.881% (EIB)	4.538% (M&G) 4.560% (EIB)	9.47% (borrower loan note)
Commitment Fee	0.50%	0.45%	N/A
Sizing DSCR	1.40x	1.20x (combined)	N/A
Sizing LLCR	1.25x	1.25x	N/A
Lockup DSCR	1.10x	1.10x	N/A
Default DSCR	1.05x	1.05x	N/A

22 July 2021

## APPENDICES

#	Appendix	Contents
1	Schedule 1 to the Management Services Agreement	The detailed responsibilities of the SPV Manager.
2	<i>Re-Provision of RHSC and DCN – Communications and Meeting Structure</i>	 150812 Meeting Structure - Final.1.0.
3	Sample Agendas and Action/Minutes from meetings within the ' <i>Re-Provision of RHSC and DCN – Communications and Meeting Structure</i> '	Sample Agenda and Action Notes from the following Meetings:- (a) <b>Pdg</b> (b) <b>Pmg</b> (c) Construction Progress (d) Change (e) <b>Mep</b> (f) Architectural (g) Civil & Structural (h) Commissioning (i) Equipment (j) Community Benefits (k) FM (Bouygues) (l) <b>Fm (Nhs)</b> (m) <b>Ict</b> (n) Communications (o) Arts & Therapeutic Design (p) Site Interface (q) Liaison (r) Weekly Catch-ups
4	Draft Terms of Reference for Liaison Committee	Draft Terms of Reference discussed between NHS and IHS for the Liaison Committee
5	Sample Agendas for Joint Steering Group	Sample Agendas from the Joint Steering Group meetings
6	Sample Agendas and Meeting Notes of meetings referred to in Table 2	Sample Agendas and Reports from the following meetings: (a) Service Review Meeting (b) Change Order Meeting

		(c) Risk Review Meeting
7	Sample Reports and Agendas of meetings referred to in Table 3	<p>Sample Agendas and Reports from the following meetings:</p> <ul style="list-style-type: none"> <li>(a) Multiplex Construction Liaison</li> <li>(b) Funders' Construction Report</li> <li>(c) Lenders' Technical Advisor's Construction Report</li> <li>(d) Independent Tester Construction Report</li> <li>(e) BYES FM Services Report</li> <li>(f) IHSL Board Report</li> </ul>



SCOTTISH HOSPITALS INQUIRY  
Hearing Commencing 26 February 2024  
Bundle 12 – Substantive Core Participant responses  
to Provisional Position Papers – Volume 2 (of 3)