

Scottish Hospitals Inquiry
Witness Statement of Richard Cantlay
In response to Rule 21 Request dated 8 December 2022 (re-issued 13
December 2022)

I am unable to answer some of the questions raised in the section 21 notice because I was not involved in those matters. Those questions have therefore been omitted from this statement.

Role on the Royal Hospital for Children and Young People/Department of Clinical Neuroscience Project (“RHCYP/DCN project”); including particular area of expertise and the period engaged on the project

1. My name is Richard Cantlay. I graduated from Aberdeen University in 1996 with BEng degree in Civil Engineering and upon leaving university began employment with a Civil Engineering contractor in Glasgow, Mowlem plc. In 1998 I left that company and took up employment at Mott MacDonald Ltd, where I have remained ever since. I have been a chartered civil engineer since 2001.
2. On commencing employment at Mott MacDonald, I spent three years working in engineering design and other areas of engineering work. I worked on a whole range of engineering projects such as power stations in Dubai and road surveys in Argyll and Bute.
3. In 2001, I became involved in Public-Private Partnership (“PPP”) projects, working in an advisory capacity. I worked on a whole range of projects as a technical advisor for procuring bodies. The main focus of my work ultimately became healthcare PPP projects. I carried out work in England and also on the Forth Valley Royal Hospital, which opened in 2010 under the Private Finance Initiative (“PFI”). When I started working as Lead NPD Procurement Adviser on the RHCYP/DCN project in 2011, I already had 10 years of experience working on PPP projects as a technical advisor behind me.

Procurement Process – The ITPD

The assessment criteria were based on a mix of price and quality with a 60/40 split in terms of price/ quality. Did you or anyone else from Mott MacDonald express any concern as to the split with a focus on price?

4. The process for deciding the quality evaluation criteria weighting for the ITPD involved a series of discussions and workshops with NHS Lothian (“NHSL”), their advisers, and Scottish Futures Trust (“SFT”). SFT proposed a 60% price and 40% quality weighting split. NHSL challenged whether 40% was enough for quality since this resulted in price having more emphasis than quality. The discussions centred around NHSL suggesting a change to have a 40% price and 60% quality split. There were rounds of conversations that ultimately ended up with NHSL having to accept the 60% price and 40% quality split. We supported NHSL’s suggestion of putting more emphasis, and therefore evaluation weighting, on quality.
5. On other projects, commercial and legal components were included within the quality weighting. This therefore reduced the amount of weighting available within the overall quality allocation for the technical components. Following the decision to adopt the 60% price / 40% quality mechanism, Ernst & Young worked with NHSL to develop and agree an approach whereby these components were dealt with outside the 40% quality weighting so that the full 40% for quality could be focussed on the technical proposals. Once this was agreed, Mott MacDonald’s focus was on supporting NHSL on how to use the 40% allocated for quality to best effect.
6. Mott MacDonald were involved in working with NHSL to firstly agree the subdivision of the 40% quality weighting across the technical components of the project – this was ultimately agreed with NHSL as 5% for Strategic and Management Approach, 23% for Approach to Design and Construction and 12% for the Approach to Facilities Management. This reflected the complexity

of the project and the anticipated duration of the NPD contract. Following the agreement of the overall weighting, we were then involved in working with NHSL to agree the subdivision of the 5%, 23% and 12% weighting across the sub-evaluation criteria sitting under Strategic and Management Approach, Approach to Design and Construction and Approach to Facilities Management. The approach to weighting was discussed at numerous workshops with NHSL. There was obviously a limited amount of weighting available which had to be divided between various competing components in a complex project. As further detailed at paragraph 21 below, mechanical & electrical engineering was not scored as a standalone item and its weighting was split across various criteria.

The assessment criteria were based on a mix of price and quality with a 60/40 split in terms of price/ quality. In your experience was this usual?

7. There have been a whole range of splits between price and quality used in procurement over the years, with various evaluation mechanisms then sitting behind these approaches. I can't recall the precise weighting split on projects procured prior to this project but I would expect that such an approach had been used before, and therefore this approach would represent one of the options used within a range of possible options.

With reference to bundle items 1 (A34225364- Invitation to Participate in Dialogue Vol 3 - August 2013)¹ & 3 (A34697102- Invitation to Participate in Dialogue Vol 1, Revision B)² do you believe that the information provided to prospective tenderers in the ITPD was sufficiently clear in relation to the purpose of the Environmental Matrix and whether bidders needed to formulate their tender to comply with the requirements set out in the Environmental Matrix?

¹ Bundle 2 – Reference Design and Invitation to Participate in Dialogue (ITPD) Documents, Item 22, p773

² Bundle 2 – Reference Design and Invitation to Participate in Dialogue (ITPD) Documents, Item 23, p942

8. I believe it was clear in terms of the mandatory elements of the reference design. Before setting out why I believe it was clear, it is worth highlighting two fundamental principles. The first key principle is understanding the status of both Volume 1 (**A34697102- Invitation to Participate in Dialogue Vol 1, Revision B**)³ and Volume 3 of the ITPD (**A34225364- Invitation to Participate in Dialogue Vol 3 - August 2013**)⁴. Volume 1 of the ITPD is a procurement document which explains the procurement process (e.g. what bidders are required to do in terms of submitting a bid, arrangements during the bid period, how bids will be evaluated etc) and it becomes redundant at Financial Close. Volume 3 is the Board's Construction Requirements (the output specification for the design and build of the project) and will form part of the Project Agreement at Financial Close. Therefore, at the start of the procurement process, Volume 3 (A34225364- Invitation to Participate in Dialogue Vol 3 - August 2013)⁵ is drafted (as much as it can be at that stage) in the form it is intended to be when included in the Project Agreement at Financial Close, with the appreciation that it will have clauses amended and sections added to it (e.g. the final agreed environmental matrix) as developed and agreed through the procurement process to reflect the agreement reached between NHSL and the preferred bidder. The second key principle is that the design risk on a PPP contract sits with the private sector (with the exception of Operational Functionality). My first witness statement set out the definition of Operational Functionality at paragraph 46. This relates primarily to the spatial design (e.g. adjacencies of departments, adjacencies of rooms, room layouts etc).
9. Clause 2.5 of Volume 1 of the ITPD (A34697102- Invitation to Participate in Dialogue Vol 1, Revision B)⁶ clearly sets out the Mandatory Reference Design Requirements and states they are "those elements of the Reference Design relating to Operational Functionality". Clause 2.5 also refers to these mandatory requirements being set out in the 1:500 departmental adjacency layouts; 1:200

³ Bundle 2 - Reference Design and Invitation to Participate in Dialogue (ITPD) Documents, Item 23, p942

⁴ Bundle 2 - Reference Design and Invitation to Participate in Dialogue (ITPD) Documents, Item 22, p773

⁵ *Ibid*

⁶ *Ibid*

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departmental layouts; and 1:50 Generic and Key Room Layouts. Clause 2.5 then refers to Appendix E for more specific details of the mandatory requirements. Specifically, clause 2.5 of ITPD Volume 1 (A34697102- Invitation to Participate in Dialogue Vol 1, Revision B)⁷ states that “full details of the mandatory reference design requirements are set out in Appendix E (reference design elements). The environmental matrix is not included as a mandatory requirement in either section 2.5, or in Appendix E, meaning that it was not mandatory, and was instead for bidders to develop themselves. This was entirely intentional, and reflected the fact that with the exception of matters relative to Operational Functionality, the design risk was to sit with Project Co. This is how NPD projects are structured, with design risk sitting with the private sector.

10. Furthermore, clause 2.5 of Volume 1 of the ITPD (A34697102- Invitation to Participate in Dialogue Vol 1, Revision B)⁸ also states “Bidders will be fully responsible for all elements of the design and construction of the facilities including being responsible for verifying and satisfying themselves that the Mandatory Reference Design Requirements can be designed, built and operated to meet the Board’s Construction Requirements”. This meant that even in respect of the mandatory elements of the reference design, the bidders would ultimately be required to verify that their design complied with the Board’s Construction Requirements (BCRs), which also required compliance with all of the relevant guidance. Paragraph 2.3 of the BCRs (A34225364- Invitation to Participate in Dialogue Vol 3 - August 2013)⁹ states for example that “Project Co shall, in relation to all SHTM [Scottish Health Technical Memoranda] and all HTM [HealthTechnical Memoranda] (except HTM where an SHTM exists with the same number and covering the same subject matter) take fully into account the guidance and advice included within such SHTM and HTM; ensure that the Facilities comply with the requirements of such SHTM and HTM; and adopt as mandatory all recommendations and preferred solutions contained in such SHTM and HTM”. Similar provisions exist in

⁷ *Ibid*

⁸ *Ibid*

⁹ *Ibid*

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paragraphs 2.3 and 2.4 of the BCRs (A34225364- Invitation to Participate in Dialogue Vol 3 - August 2013)¹⁰ in relation to other relevant guidance and standards, as well as applicable legislation. Where there was any conflict between the applicable standards and guidance, paragraph 2.5 makes it clear that the most onerous, and most up to date, standard must be followed.

11. In relation to the indicative elements of the reference design, clause 2.6 of ITPD Volume 1 (A34697102- Invitation to Participate in Dialogue Vol 1, Revision B)¹¹ stipulated that “bidders are advised that the Board’s Construction Requirements will always take precedence over the Reference Design for matters which do not define Operational Functionality.” In respect of those indicative elements, which as I say included the environmental matrix, clause 2.6 required bidders to “refer to the Board’s Construction Requirements for the detailed requirements for all such Indicative Elements of the Reference Design for which they [the bidders or more accurately the successful bidder] will ultimately carry the risk”.

12. Clause 2.5.3 of Volume 1 of the ITPD (A34697102- Invitation to Participate in Dialogue Vol 1, Revision B)¹² explains that Room Data Sheets (RDS) were not prepared by NHSL, and the need for Bidders to develop them through the dialogue process. It also states that anticipated room requirements are set out in a series of documents, one of which is the environmental matrix. ITPD Volume 1(A34697102- Invitation to Participate in Dialogue Vol 1, Revision B)¹³ contains definitions at clause 1.3.2. This defines the ‘environmental matrix’ as: “the matrix contained in ITPD Volume 3, Schedule Part 6, Section 3, Appendix C.” Appendix A (ii) then sets out the submission requirements, and in C8.3 makes it clear that the environmental matrix provided as part of the overall ITPD documentation (i.e. that included at that point of time in Volume 3 of the ITPD) was a draft, and that the Bidders must highlight proposed changes (for ease of evaluation for the evaluation team). Therefore, I consider it to be clear

¹⁰ *Ibid*

¹¹ *Ibid*

¹² *Ibid*

¹³ *Ibid*

that the environmental matrix included in the ITPD was a draft, and would ultimately be replaced by an environmental matrix reflecting the preferred bidder's own design.

13. ITPD Volume 3 (A34225364- Invitation to Participate in Dialogue Vol 3 - August 2013)¹⁴ sets out definitions at Section 3 of The Board's Construction Requirements. At sub-section B, the 'Environmental Matrix' is defined as "the Environmental Matrix, which details the room environmental condition requirements of the Board required within each department / unit / space / area. The title is Reference Design Envisaged Solution – RHSC / DCN Environmental Matrix version third issue as set out in Appendix C of this Section 3 (Board's Construction Requirements) of Schedule Part 6 (Construction Matters) (as varied, amended or supplemented from time to time in accordance with the Project Agreement)". Therefore, given that in Volume 1 of the ITPD (A34697102- Invitation to Participate in Dialogue Vol 1, Revision B)¹⁵ this environmental matrix is expressed as being a draft, it was anticipated that the final version of the BCRs for inclusion in the Project Agreement at Financial Close would have the environmental matrix reflecting the preferred bidder's design included in it and this definition would be amended accordingly (a drafting change as explained above). It was anticipated that the environmental matrix would be developed by the preferred bidder prior to financial close, and it is this developed version, designed by the preferred bidder, that would be included in the Project Agreement at financial close. There was no intention that the draft environmental matrix which had been provided to bidders with the ITPD would be included in the Project Agreement; the version of the environmental matrix to be included in the Project Agreement was a different document, being the environmental matrix developed by Project Co.
14. Section 8 of the Board's Construction Requirements refers to the 'Mechanical & Electrical Engineering Requirements'. This states "Project Co shall provide the Works to comply with the Environmental Matrix. For the avoidance of doubt the

¹⁴ *Ibid*

¹⁵ *Ibid*

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hierarchy of standards and advice detailed in paragraph 2.5 shall apply to this paragraph 8.” As I say, the reference to the environmental matrix would be to the preferred bidder’s developed environmental matrix. The Inquiry have asked me to comment on the fact that Bidder C marked up the environmental matrix and whether this presented an ambiguity which ought to have led to one bid being rejected. I cannot comment on the content of the environmental matrix as I am not a mechanical or electrical engineer. Bidders were however required to confirm that their proposals complied with the BCRs (as set out in C21 in the Bid Submission Requirements). There might well have been more than one way of demonstrating compliance with the BCRs. If there were three bidders, you would not expect to receive three identical proposals.

15. I believe it was clearly understood amongst bidders and the ultimate Project Co that the environmental matrix was to be developed by them. Indeed, I now understand that Bidder C made changes to the environmental matrix in their final tender submission. Had bidders been instructed that no changes could be made, or had they somehow understood from the ITPD that this was the position, then this would not have been the case. Ultimately, Project Co (IHSL) adopted and amended the environmental matrix after they were appointed as Preferred Bidder. It follows from this that IHSL must have understood that they were required to develop their own environmental matrix, and in fact did so. I do not recall any statements from the Board or any of their advisors to the effect that bidders were not to innovate in developing the environmental matrix. Certainly, I am not aware of any such instructions being issued by Mott MacDonald Limited. I did not participate in all the competitive dialogue meetings, as I say at paragraph 57 below. I would however consider such a statement to be unlikely, given that in Volume 1 of the ITPD the environmental matrix was expressly stated to be a draft and delivering innovation was specified there as one of the most important scoring criteria for bids.

ITPD Volume 2 was the draft contract. The Environmental Matrix is not mentioned in volume 2. Was the intention that the Environmental Matrix would be redundant by this stage?

16. ITPD Volume 3 (A34225364- Invitation to Participate in Dialogue Vol 3 - August 2013)¹⁶ (where the Environmental Matrix is referred to as described above) also forms part of the draft contract. This was clear from its title which was “SCHEDULE TO THE PROJECT AGREEMENT PART 6 Section 3: The Board’s Construction Requirements.” Effectively, Volume 3 of the ITPD gets slotted into the relevant part of the Schedule to the draft contract at Financial Close. At this point, as described above, the draft environmental matrix would have been replaced with the environmental matrix which by then would have been developed by the preferred bidder to reflect their own design. That is because, as is usual in PPP projects, all design risk was to rest with the private-sector contractor. The inclusion of an environmental matrix in the contract alongside individual Room Data Sheets was considered sensible given the existence of an environmental matrix throughout procurement (which as discussed elsewhere was considered to be a more user- friendly way of presenting the environmental information). It would be IHSL’s responsibility to make sure environmental information in the environmental matrix and the Room Data Sheets were ultimately the same.

When and why was the Environmental Matrix added into the contract as reviewable design data?

17. The decision to add the environmental matrix to the contract as reviewable design data is something which would have happened just before financial close, towards the end of the preferred bidder stage. I was not involved in the project at this stage. However, I presume this decision required to be taken because Project Co’s design proposals were not fully capable of being accepted by NHSL by Financial Close. By this I mean that Project Co’s design (part of which was the environmental matrix) must have required further development and therefore would be subject to the reviewable design data procedure post-financial close. I believe that Graeme Greer at Mott MacDonald was involved in advising NHSL on this point.

¹⁶ *Ibid*
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The Inquiry understands that it was for NHSL to determine the elements that would make up the overall Quality score during tender evaluation, as well as the weightings given to the scored elements within the Quality score.

Workshops were held involving the broader management team within NHSL, and the Project Team including NHSL's advisors. Were you or anyone else from Mott MacDonald involved in these workshops? If so, (a) can you describe what happened during these workshops? (b) Can you describe why M&E engineering was given a lower weighting than other elements.

18. Mott MacDonald employees were involved in the workshops. These workshops typically debated the balance of weightings between criteria with a focus on maximising the use of the 40% (quality) available. As set out in paragraph 6 above, Mott MacDonald were involved in working with NHSL to firstly agree the subdivision of the 40% quality weighting across the technical components of the project (agreed with NHSL as 5% for Strategic and Management Approach, 23% for Approach to Design and Construction and 12% for the Approach to Facilities Management). Following this, we then were involved in working with NHSL to agree the subdivision of the 5%, 23% and 12% weighting across the sub-evaluation criteria sitting under Strategic and Management Approach, Approach to Design and Construction and Approach to Facilities Management.

19. While I was not involved in all of these workshops, the documents listed below relate to the workshops during March and April 2012 and provide insight into the discussions regarding quality scoring:
 - (i) Internal Technical Advisor Meeting on 28 March 2012 (A42058792- RC Enclosure 1- Internal Technical Advisor Meeting on 28 March 2012)¹⁷;
 - (ii) Internal Technical Advisor Meeting on 10 April 2012 (A42058793- RC Enclosure 2 - Internal Technical Advisor Meeting on 10 April 2012)¹⁸;

¹⁷ Bundle 10 Miscellaneous Volume 2 (of 2) Item 22, p.818

¹⁸ Bundle 10 Miscellaneous Volume 2 (of 2) Item 23, p.822
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- (iii) ITPD Evaluation D&C workshop on 10 April 2012 (A42058794- RC Enclosure 3 - ITPD Evaluation D&C workshop on 10 April 2012)¹⁹;
- (iv) Project Management Executive Meeting on 12 April 2012 (A42058791- RC Enclosure 4 - Project Management Executive Meeting on 12 April 2012)²⁰; and
- (v) Email exchange between Andrew Scott at Mott MacDonald and Denise Kelly at Davis Langdon, from 16 – 20 April 2012 (A42058795- RC Enclosure 5 - Email exchange between Andrew Scott at Mott MacDonald and Denise Kelly at Davis Langdon, from 16 - 20 April 2012)²¹.

20. There was a range of evaluation sub-criteria which needed to be taken into account from a technical perspective, and therefore the 40% allocation needed to be split appropriately across them. M&E engineering was not a standalone item and it crossed into other areas. For instance, although M&E had a specific section (C8), M&E was also taken into account in other criteria such as C4 innovation, C5 flexibility, C9 lighting, C10 energy, C15 ICT, C18 utilities and C19 BREEAM. I have been asked to comment specifically on why M&E scored 1.06 while Interior Design scored 2.64. Interior Design was one of several items of particularly high importance to the client as the hospital would clearly be used by both staff and patients confronting often distressing health issues in that environment.

'Technical Risks for Financial Close' dated 25 August 2014 (A36308781- Technical Risks for Financial Close - 25 August 2014)²² . We have been advised by other witnesses this appears to be a Mott MacDonald generated risk register. Is that correct? Do you recognise this as a Mott MacDonald risk register?

21. I was not involved in this part of the project. I would however expect Mott MacDonald to have generated this risk register on behalf of NHSL, or inputted to it, given it is identifying risks associated with the technical components of

¹⁹ Bundle 10 Miscellaneous Volume 2 (of 2) Item 24, p.825

²⁰ Bundle 10 Miscellaneous Volume 2 (of 2) Item 25, p. 829

²¹ Bundle 10 Miscellaneous Volume 2 (of 2) Item 26, p.832

²² Bundle 10 – Miscellaneous Volume 1 (of 2), Item 10, p75

the project. However, due to not being involved in its development, I am not able to comment more accurately on this point.

‘Technical Risks for Financial Close’ dated 25 August 2014 (A36308781- Technical Risks for Financial Close - 25 August 2014)²³ . We have been advised by other witnesses this appears to be a Mott MacDonald generated risk register. In relation to the items flagged as high risk how significant did you believe these risks to be? In particular do you have a view on how and where these risks should have been escalated? Do you know how these risks were escalated and resolved?

22. I was not involved in this part of the project. I presume it was produced to help the NHSL Project Team escalate risks through their governance procedures. I am not able to comment on how these risks were escalated and resolved, having not been involved.

‘Risk Register’ dated 18 November 2014 (A33337268- NHSL RHSC and DCN Risk Register 18 November 2014) ²⁴, records row 8 with a risk status of “red” . What were the problems at this point and the actions put in place to address these issues?

23. I was not involved in this part of the project and so am unable to comment accurately on this point.

There seemed to be real tensions between NHSL and IHSL in the last quarter of 2014 with the project not progressing smoothly or as quickly as anticipated. What is your understanding of the root cause of these tensions and when did you become aware of the situation?

24. I was not involved in the project at this stage so do not have a first-hand understanding of the root cause of any tensions. However, I would have

²³ *Ibid*

²⁴ Bundle 8 - Scoring & Correspondence Regarding Issues, Item 10, p42
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conversations with Graeme Greer at Mott MacDonald if he was looking for advice. From these conversations, I understand that the tensions were primarily due to the delay in signing the project agreement because the preferred bidder had not developed the required information for the contract to be signed.

Many issues appeared to remain unresolved into early 2015. However, NHSL proceeded to sign a contract. Can you offer any insight as to why NHSL were comfortable with doing so given the significance of the project and the sums of money that were being committed? Were Mott MacDonald asked to provide input or advice in the period up to financial close in relation to issues with the preferred bidder, for example in relation to the failure to produce 100% of room data sheets by financial close?

25. Given the nature of my involvement at this stage, as described in the preceding paragraph, I cannot offer any accurate insight into why NHSL felt comfortable signing the contract. A request for their reasoning is better directed towards NHSL. I would however anticipate that NHSL looked at the risks at that stage and considered them to be manageable by way of mitigation through inclusion of a process in the contract for outstanding matters to be resolved post financial close. For design components this is the reviewable design data process.
26. At that point in time, Mott MacDonald were working with NHSL in the role of Technical Advisor and members of the Mott MacDonald team were providing input. This would have included support to NHSL on issues such as how to manage any problems arising from matters such as the under-development of the Room Data Sheets by Project Co.

Risk Registers

27. I am unable to comment on many of the questions raised under this heading. I have provided answers to those questions on which I feel able to comment.

What was your role in respect of the AEDET and HAI-Scribe reviews? Whose responsibility was it to arrange the reviews?

28. I was not involved in any AEDET or HAI-Scribe reviews. I understand the Project Director on a project is responsible for making sure these reviews happen, but I envisage this was delegated to others in the team to organise. I was not involved in AEDET or HAI-Scribe reviews however others from Mott MacDonald may have been and may be able to answer this question.

Did the AEDET assessments that took place before financial close include an assessment of engineering aspects? Was RIBA stage E reached before financial close? At what stage of a project would you expect RIBA stage E to be reached?

29. I do not know if RIBA stage E was reached in its entirety before financial close. I do not think it was reached but I was not directly involved.

30. With a Reference Design, RIBA Stages B to C are carried out in advance of procurement. The remainder of the RIBA Stages are completed by Bidders (through the bid process) and then the preferred bidder up to and beyond financial close. In terms of when RIBA stage E would be reached, I would expect a target of around the point of financial close but often projects would deal with any outstanding issues post-financial close during the reviewable design data process.

Can you explain the role of HAI-Scribe in the procurement phase of a project? Is it mandatory before project approval?

31. It is an infection control review that needs to happen. I understand completion of this is required under Implementation Strategy Scottish Health Facilities Note (SHFN) 30: Part B. I am unable to provide any further detail on the HAI-Scribe process as I was not involved in these reviews.

Is AEDET or HAI-Scribe required as part of the business case process? How do they fit into the overall assurance process? Do the results get reported up, or are they simply for design teams to get feedback and make improvements where required?

32. In relation to this question on AEDET, I would refer to my oral evidence to the Inquiry on 20 May 2022 at pages 95 and 96 (Transcript- Richard Cantlay- 20 May 2022).

We note that an NDAP was not required for the project due to transitional arrangements in place. Can you confirm whether equivalent or alternative design assessment took place?

33. I would refer to paragraphs 57, 59 and 61 of my first statement along with pages 89 to 91 of my transcript of evidence provided to the Inquiry on 20 May 2022 (Transcript- Richard Cantlay- 20 May 2022).

34. I am not in a position to provide an opinion on whether an equivalent or alternative design assessment was carried out.

Amongst the requirements for NDAP is “Evidence that Activity Data Base (ADB) is being fully utilised during the preparation of the brief and throughout the design and commissioning process.” Was an equivalent design assessment implemented to ensure compliance?

35. I am not aware whether an equivalent design assessment was carried out or indeed whether it is possible to conclude that the designers did not use ADB for this project. The designers of this project might have used ADB. The existence of the environmental matrix for example is not inconsistent with ADB having been used as a briefing/ design tool. Mott MacDonald were not designers, and obviously did not prepare the reference design. ADB may have been used by Hulley & Kirkwood in their preparation of the environmental matrix but this is a question which would have to be put to them. Equally, it would be reasonable to

expect that IHSL made use of ADB when preparing their Room Data Sheets but once again this would be a matter for them as designer.

Was any design assessment done in advance of the Full Business Case? If so, can you explain the format this took?

36. Atkins undertook a design assessment. A copy of their report was contained in appendix 3 of the Outline Business Case. Both Architecture & Design Scotland and Health Facilities Scotland were to review the Atkins report.

One of the points made was that IHSL had a different interpretation of SHTM 03-01. Is this usual for healthcare projects?

37. It is not unusual for there to be different interpretations of guidance in a healthcare project. I recently spoke with a contractor who has spent a year in discussions with an NHS Trust in England regarding different interpretations of standards. The resolution is often to use a derogations schedule to close off any issues arising from differences in interpretation. There are a number of different sources of guidance applicable to NHS capital projects, which means that it is not uncommon for two different sources of guidance to conflict with one another. For this reason, it is now common in any PPP/ NPD project to see a provision inserted into the Project Agreement to the effect that where there are two different competing standards, the most onerous standard will apply. This is exactly what happened here. Paragraph 2.5 of the Board's Construction Requirements (A34225364- Invitation to Participate in Dialogue Vol 3 - August 2013)²⁵ states that "where contradictory standards / advice are apparent... then (1) the most onerous standard / advice shall take precedence". Where there were two competing standards, Project Co always had to meet the most onerous requirements. There was an over-arching requirement to comply with the SHTMs.

The Environmental Matrix

²⁵ *Ibid*
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The Environmental Matrix was to be used instead of room data sheets at the early stages of the project. See Paragraph 2.5.3 of Volume 1 of the ITPD volume 1 (A34697102- Invitation to Participate in Dialogue Vol 1, Revision B)²⁶ which states that standard form room data sheets had not been prepared at that early stage. Guidance Note 1 to the Environmental Matrix issued with the ITPD describes the document/ spreadsheet as an “easier reference tool to replace ADB RDS M&E Sheets”. During the competitive dialogue phase, room data sheets were to be prepared by bidders for certain rooms. However, “all remaining rooms” required to have room data sheets completed before financial close. At what point was it expected that the environmental matrix would be superseded/ become obsolete?

38. As stated above, the intention was that the draft environmental matrix provided in the ITPD would be superseded by the environmental matrix developed by the preferred bidder reflecting their design. So, the draft environmental matrix developed as part of the reference design would become superseded at the point the preferred bidder’s environmental matrix was fully developed. ITPD Volume 1 (A34697102- Invitation to Participate in Dialogue Vol 1, Revision B)²⁷ anticipated Room Data Sheets for the rooms for which 1:50s had been prepared to be developed during the bid period – with the remainder post-preferred bidder appointment. Therefore, the envisaged position at financial close was for there to be included in the contract both (i) the preferred bidder’s environmental matrix; and (ii) the Room Data Sheets (and in the event that all Room Data Sheets hadn’t been developed and agreed for financial close, then the environmental matrix would provide the baseline for any development post financial close in relation to room environmental requirements). The draft environmental matrix included in the ITPD – i.e., the document prepared by Hulley & Kirkwood – would not be included in the project agreement at financial close, because it had been superseded by Project Co’s own design.

²⁶ *Ibid*

²⁷ *Ibid*

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In abandoning the use of RDS and adopting the Matrix, did Hulley & Kirkwood seek clearance from Mott MacDonald or NHSL?

39. The decision to use an environmental matrix was made before the decision to use the NPD model; i.e. under the BAM contract which was to be capital funded. As such, Mott MacDonald wouldn't have needed to be consulted given our role at that stage. Having not been involved in the project prior to it becoming a NDP project, I am unable to confirm whether NHSL were consulted. A decision might be taken to proceed with an environmental matrix because this is seen as being an easier and more user-friendly format to develop and review environmental data. As stated elsewhere, this is not incompatible with the use of Room Data Sheets and indeed I understand that both an environmental matrix and Room Data Sheets were used on this project. An environmental matrix may be produced using ADB.

Who authorised the use of the environmental matrix?

40. As stated above, its use was agreed prior to the decision to deliver the project using the NPD model and before my involvement.

Was it the intention that the Reference Design – and the environmental matrix in particular – would have fulfilled its purpose by financial close? Was the intention that it would be replaced with the preferred bidder's design solution and a full set of room data sheets? How was this intention (i.e. that the environmental matrix would be redundant at financial close) communicated to prospective tenderers?

41. Yes, the reference design is a starting point for the bidders' designs and ultimately falls away once replaced with the preferred bidder's design. The technical requirements for the design and construction are as set out in the BCRs. This intention is clear in the NPD contract form whereby the technical requirements are set out in an output specification by the procuring authority (the BCRs) and the design is developed by the bidders, further developed by

the preferred bidder in the run up to financial close and ultimately included in the project agreement in a section called “Project Co’s Proposals”. There is no place in the standard form contract for a reference design as it is simply a procurement tool to avoid bidders requiring to start the design from scratch. This responsibility for the design is clearly set out in the NPD project agreement.

42. ITPD Volume 3 (A34225364- Invitation to Participate in Dialogue Vol 3 - August 2013)²⁸ was accordingly drafted in such a way as to allow the preferred bidder’s environmental matrix to be inserted into the contract at Financial Close. Given its continued operation after procurement, the drafting of ITPD Volume 3 (A34225364- Invitation to Participate in Dialogue Vol 3 - August 2013)²⁹ required to be future facing from the outset. Therefore, although Volume 3 (A34225364- Invitation to Participate in Dialogue Vol 3 - August 2013)³⁰ may have been presented to bidders during Competitive Dialogue, its terms were intended to govern the project once the contract was entered into. The practical implication of ITPD Volume 3 (A34225364- Invitation to Participate in Dialogue Vol 3 - August 2013)³¹ being future facing is that any reference to a document refers exclusively to the final version which had been developed by the preferred bidder at Financial Close, as opposed to the version made available to bidders as part of the ITPD in draft format. In the context of the environmental matrix, this means ITPD Volume 3 (A34225364- Invitation to Participate in Dialogue Vol 3 - August 2013)³² does not refer to the draft version supplied to bidders by NHSL during Competitive Dialogue. ITPD Volume 3 (A34225364- Invitation to Participate in Dialogue Vol 3 - August 2013)³³ solely refers to the final environmental matrix to be developed in the future by the preferred bidder to reflect their design. The draft nature of the environmental matrix referred to in ITPD Volume 3 (A34225364- Invitation to

²⁸ *Ibid*

²⁹ *Ibid*

³⁰ *Ibid*

³¹ *Ibid*

³² *Ibid*

³³ *Ibid*

Participate in Dialogue Vol 3 - August 2013)³⁴ was made clear to bidders in ITPD Volume 1, Appendix A(ii) – Submission Requirements C8.3, (A34697102- Invitation to Participate in Dialogue Vol 1, Revision B)³⁵ where bidders were instructed to highlight their proposed changes to the environmental matrix supplied with the ITPD. The purpose of having bidders highlight their changes to a pre-supplied document was to allow the Board to conduct a high-level review of the document rather than a line-by-line analysis of the bidder's developed environmental matrix. The draft environmental matrix supplied in ITPD Volume 1 (A34697102- Invitation to Participate in Dialogue Vol 1, Revision B)³⁶ was never assumed or portrayed to be definitive by the Board. It was always clearly understood that it would be for the bidders to update and verify the data within it. This is indeed what happened.

43. It should also be noted that bidders' teams are typically led by project finance/PPP experts (not construction professionals) who understand the procurement process and contractual structure and should direct and manage the construction team in the context of the PPP environment within which the project is being delivered.

Was a decision taken to deviate from what was stated in the ITPD and ISFT in order to allow the preferred bidder to refrain from producing a full set of room data sheets? If so, who took this decision? When was the decision taken? Why was the decision taken? Did this prolong the use of the environmental matrix concept? What role/ purpose did the environmental matrix have at financial close?

44. I was not involved at this stage and therefore cannot comment accurately on this point. However, it would seem that due to the preferred bidder not producing a full set of room data sheets for financial close, a decision was made to allow them to be finalised after financial close. This would not necessarily be irregular or cause an issue for the project. The submission of

³⁴ *Ibid*

³⁵ *Ibid*

³⁶ *Ibid*

room data sheets after financial close can be done successfully as long as the contract includes a methodology and baseline for the finalisation of the room data sheets (e.g. the reviewable design data process). A full set of Room Data Sheets was still required prior to construction.

The environmental matrix was included in the final contract as reviewable design data. It is not mentioned in the draft contract in volume 2 of the ITPD as reviewable design data. When was a decision taken to include the environmental matrix as reviewable design data?

45. I was not involved in this stage so cannot confirm when this decision was taken other than an anticipation that this took place in the run up to financial close.

What practical implications did this have for the project and the design process in particular?

46. Again, I was not involved at this stage, however, based on my experience, this would mean Project Co are required to finalise their design data as reviewable design data for approval after financial close as opposed to pre-financial close.

Why did prospective tenderers need M&E engineering information if it was up to tenderers (and ultimately the preferred bidder) to develop the design of M&E building services?

47. They didn't necessarily need it. It had been produced as part of the reference design when the project was still to be capitally funded so this information was shared as indicative information to bidders. It is up to bidders to decide whether this indicative information shared is helpful or not.

Given that the environmental matrix became "reviewable design data", was there an agreed technical specification for the ventilation system (ie air changes per hour, pressure regimes, etc) as at Financial Close?

48. I was not involved in the project at that stage, but NHSL would always have had the NHS design guidance as specified in the Board's Construction Requirements to rely on. That is the output specification which sets out the technical requirements of NHSL. By its very nature and the risk allocation in a PPP project (where design risk sits with the private sector), it is an output specification. Bidders are to develop their own specific design proposals to meet the output specification.

A decision was taken by NHSL to use an Environmental Matrix instead of Room Data Sheets produced using ADB as a briefing tool for prospective tenderers. It is not clear who took this decision, when the decision was taken or why the decision was taken. To your knowledge was this addressed at any meetings either of the project team, the Project Board or the Board of NHSL?

49. The initial decision to produce an environmental matrix was made at the stage when the project was to be capially funded and therefore precedes my involvement. There was at one stage a plan to provide Room Data Sheets as well as the environmental matrix along with the ITPD. There was however a change of plan and a decision made not to produce the Room Data Sheets and instead the room data would be presented to Bidders using different documents (including the clinical output specifications, the schedule of accommodation, the adjacency matrix, the environmental matrix, the equipment list, the schedule of operational/design notes and the operational functionality elements of the reference design). I would not have been involved in the decision not to produce room data sheets as this fell within the remit of the reference design team and I was not party to discussions of the reference design team because there was an ethical barrier in place due to the possibility that members of the reference design team could eventually join bidding consortia. The record of this decision was set out in an email from David Stillie to NHSL dated 15/8/2012. I would however have been involved in reflecting this decision in the procurement documents, specifically paragraph 2.5.3 of the ITPD.

Why was the Environmental Matrix deemed to be of equal quality to room data sheets produced using the ADB system?

50. While I was not involved in the capital funded BAM project or in the NPD reference design team and therefore was not party to the discussions about the use of an environmental matrix, I would be of the view that presenting the environmental data in an environmental matrix rather than within a set of Room Data Sheets would be of an equivalent standard given it is just two different formats of presenting the same information. The format in which the design data is chosen to be presented shouldn't change the design data in itself. My understanding is that ADB could be used to generate design data in either format.

Did Mott MacDonald advise NHSL how to demonstrate this?

51. I was not involved in the capital funded BAM project or in the NPD reference design team and therefore was not party to the discussions about the use of an environmental matrix. I am not aware of Mott MacDonald advising NHSL how to demonstrate that the environmental matrix was of equal quality to ADB.

Would you consider that the decision to use the concept of an environmental matrix was the cause – or part of the cause - of the errors with the ventilation system for the new hospital (in critical care rooms)?

52. No. An environmental matrix is just one way of presenting the room environmental criteria – whether that is done in Room Data Sheets, an environmental matrix or any other format, it should not change the technical specification – it is just a different way of presenting the same information. The design (including the environmental matrix / environmental parameters) was to be developed by the preferred bidder / Project Co in a way that ensured compliance with the output specification (including SHTMs and other design guidance).

What are your thoughts on EM replacing room data sheets?

53. From my experience, the environmental matrix is a commonly used tool. It is viewed as a user-friendly way of presenting the data. The purpose of the environmental matrix was not to replace or supplant room data sheets. It was always anticipated that room data sheets would be developed by the preferred bidder as set out in Volume 1 of the ITPD.

Do you accept that there was an ambiguity in the environmental matrix itself?

54. I am unable to form a view from my own knowledge and experience on whether there was an ambiguity in the environmental matrix. I am not a mechanical or electrical engineer. I would therefore always defer to colleagues qualified in that area on the interpretation of an environmental matrix. Mott MacDonald asked Hulley & Kirkwood for confirmation that the Reference Design was compliant with published guidance and they provided that assurance. Mott MacDonald accordingly proceeded on the basis that the environmental matrix issued to bidders complied with published guidance. That said, design risk would ultimately rest with the preferred bidder / Project Co given that they were required to develop their own environmental matrix, which complied with the relevant guidance, which as far as ventilation was concerned would be SHTM 03-01.

Did any of the bidders raise this ambiguity during competitive dialogue?

55. I did not participate in all of the competitive dialogue meetings. I was involved in dialogue meetings 1 and 2 before Graeme Greer became involved on behalf of Mott MacDonald. I do not recall bidders raising any ambiguity with the environmental matrix during the competitive dialogue meetings I attended.

In both the ITPD and the ISFT there was a requirement to comply with CEL 19 (2010) (A37215536- CEL 2010 - Letter to Chief Executives, 'A Policy on Design

Assurance for NHSScotland 2010 Revision' (2) dated 2 June 2010)³⁷. It is not clear how a bidder could do so without utilising room data sheets for the design and planning of their solution for the ventilation system for the new hospital (ie as part of the tender bid). All that bidders were required to produce at the tender stage was selected room data sheets for key rooms and generic rooms. How did the successful tenderer demonstrate that CEL 19 would be complied with when the briefing tool used (both by NHSL at the ITPD and ISFT stage and by IHSL at financial close) was an “environmental matrix” with only a selection of room data sheets being produced?

56. **CEL 19 (A37215536- CEL 2010 - Letter to Chief Executives, 'A Policy on Design Assurance for NHSScotland 2010 Revision' (2) dated 2 June 2010)** ³⁸required the use of ADB. My understanding is that Room Data Sheets can be generated from ADB. However, my understanding is that ADB can also be used in the process of developing an environmental matrix. In any event there was a contractual obligation for Project Co to develop Room Data Sheets as part of the design process and before constructing the hospital. Therefore the intention was always for Room Data Sheets to be developed whether that be through the bid period, the period from appointment up to financial close, or after financial close. Use of an environmental matrix would not necessarily be incompatible with CEL 19 (A37215536- CEL 2010 - Letter to Chief Executives, 'A Policy on Design Assurance for NHSScotland 2010 Revision' (2) dated 2 June 2010)³⁹ because ADB could also be used in preparing the matrix. While I don't know whether Hulley & Kirkwood used the ADB in drafting their environmental matrix, it would seem to be a sensible place to start. There is a requirement in the BCRs (A34225364- Invitation to Participate in Dialogue Vol 3 - August 2013)⁴⁰ at paragraphs 2.2 and 2.4 to comply with CEL19 (A37215536- CEL 2010 - Letter to Chief Executives, 'A Policy on Design Assurance for NHSScotland 2010 Revision' (2) dated 2 June 2010)⁴¹. The successful bidder therefore had an obligation to ensure they complied with it.

³⁷ Bundle 1 – Published Guidance – Item 6, p.553

³⁸ Bundle 1 Published Guidance, Item 6, p553

³⁹ *Ibid*

⁴⁰ *Ibid*

⁴¹ *Ibid*

57. One further point to clarify is that, by final tender stage, the bidders were not expected to have produced a fully worked up design for the hospital. They are bidding to be appointed to prepare the design, carry out the construction and then deliver facilities management services throughout the project term. What we would be looking for at final tender stage is an indication of whether the bidders were agreeing to produce a design which ultimately, when finalised, would comply with the requirements of the BCRs (A34225364- Invitation to Participate in Dialogue Vol 3 - August 2013)⁴².

Reference Design

To your knowledge, who within NHSL determined how much detail would be included within the reference design?

58. The project was changed from a capially funded project to an NPD project after a design had been developed for the capially funded delivery model. Therefore, it wasn't a case of deciding to what level of detail to develop a reference design, but rather deciding how the already developed design under the BAM contract could be used as a reference design under a NPD procurement process (recognising that the design risk on a NPD project sits with the private sector bidders) and therefore which components of the reference design could be mandated and which components were provided for information only. This was set out in my first witness statement (Witness Statement Richard Cantlay) in paragraphs 17, 20, 25, 30, 36, 41, 43 and 45.

Was that decision taken by the Project Director, Project Board or Board of NHSL decision?

59. As set out in the paragraph above, the design which was used as a reference design was the design developed under the BAM contract. It wasn't developed at the outset to be used as a reference design. Therefore, the decision was

⁴² *Ibid*
A42760176

how to use the already developed design as a reference design in the NPD procurement process. Our reference design advisory papers referred to in my first witness statement were used to help NHSL make this decision, and were discussed and debated with SFT.

Where is this recorded?

60. Please refer to my two previous paragraphs.

Were NHSL and Mott MacDonald briefed on the Reference design prior to the departure of Reference Design Team?

61. My recollection was that there was a briefing and handover process which amongst other things required the reference design team to confirm compliance with the NHS guidance and key legislation. I previously addressed this at paragraphs 53 to 56 of my first statement (Witness Statement Richard Cantlay) in relation to the requirement of the reference design team to confirm compliance during March 2012.

**“Include the requirements contained in the Clinical Output Specification ...”
What is meant by “the Clinical Output Specification”? Is it a reference to the Clinical Output Based Specifications contained in Sub-Section D (Specific Clinical Requirements) of Section 3 (Board’s Construction Requirements) of Schedule Part 6 (Construction Matters) (A41179262- Schedule Part 6 Construction Matters, Section 3 (Board’s construction requirements)⁴³?**

62. Yes. These are the clinical requirements setting out how a space will be used to deliver services so that an engineer or architect can design that space accordingly.

⁴³ Bundle 5 – Contract – Part 4, p.341
A42760176

If so, are any of the contents of these specifications pertinent to the ventilation issues which later arose?

63. The Clinical Output Based Specifications inform a designer how departments and rooms will be used. Therefore designers will look at clinical output specification and the design guidance (e.g. SHTMs) to develop their design proposals.

Section 7 of Schedule Part 6 of the Project Agreement (A41179262 - Appendix P, Thermal and Energy Model Parameters Excerpt pages 353 to 537) ⁴⁴concerns Thermal and Energy Efficiency Testing Procedure. Do you consider this to bear upon in the Inquiry's Terms of Reference? If so, please briefly explain why.

64. My understanding is that the testing procedure involves a process where you demonstrate that the facility you have built is energy efficient and complies with guidance. I do not think it is related or pertinent to the Inquiry's terms of reference but I will defer to M&E engineers to comment further.

65. In answer to the Inquiry's supplementary questions on Mott Macdonald's role in the technical evaluation of tenders, it was not our role to check the design on a line-by-line basis. Our role was to review the bids in accordance with an agreed evaluation methodology, which was contained in documents such as the Final Tender Evaluation Manual and Supplementary Guide to Final Tender Evaluation. We also attended workshops with the client team in order to agree scoring of bids.

66. Bids would be reviewed on an individual basis against the scoring criteria and not compared to each other, in accordance with usual procurement practice as well as the Public Contracts (Scotland) Regulations 2012 and underlying European Directives. I have been asked to explain why both IHSL and Bidder C

⁴⁴ Bundle 5 – Contract Documents, item 5, p.762

were assessed as a “PASS” despite offering different technical solutions. There was nothing to prevent bidders from preparing different solutions, so long as each bidder confirmed at final tender stage that their bid, when developed, would be compliant with the Board’s Construction Requirements. Quality evaluation criterion C21 explicitly stated that “Bidders must confirm their compliance with the Board’s Construction Requirements”. Given the relatively high-level role I had in the project at that point, I was not aware of the detail of how Bidder B and Bidder C had taken differing approaches to the environmental data at the time the bids were being evaluated. My focus would have been on whether the evaluation methodology agreed with NHSL was followed. This methodology was set out in the Evaluation Manual. I am unable to confirm the extent to which the Room Data Sheets produced by IHSL were reviewed at this stage and Graeme Greer might be better placed to comment on this point. Before I issued the letter to the effect that there had been a robust technical assessment of the tenders, I would have consulted with colleagues such as Graeme Greer and others involved in the evaluation of the bids to check that they were content that the process had been followed correctly.

I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Signed:  _____

Date: 22 February 2023

