RESPONSE BY MOTT MACDONALD LIMITED

in relation to

Note of request by the Chair of the Scottish Hospitals Inquiry

in respect of hearing of submissions on 17 June 2024

1. In this document, Mott MacDonald Limited ("MML") seeks to respond, so far as it is able, to the Note of request by the Chair of the Scottish Hospitals Inquiry in respect of the hearing of submissions on 17 June 2024.

Question 1: *At CTI para 14 it is suggested that the chair should consider whether independent advice should have been sought on the technical resolutions in SA1 in relation to ventilation design (a technical audit) or whether to have done so would have been unnecessary and/or disproportionate (see also CTI paras 58, 155 and 182). The parties who might have instructed a technical audit are NHS Lothian (NHSL) and/or Scottish Government (SG). In their closing statement, the parents and representatives of children are critical of NHSL and SG in not instructing a technical audit or something like it. It is understood that NHSL confirmed to Project Co that it wanted 14 multi-beds at 4ach and bal/neg pressure in March 2018, and that by October 2018 Multiplex (MPX) had completed the agreed ventilation works to the multi-bed rooms and other disputed issues addressed by SA1. The NHSL Finance & Resources Committee gave its support to the proposed agreement to resolve disputed issues at its meeting on 23 May 2018 and it approved a Business Case (BC) for SA1 on 25 July 2018, SG approved NHSL's BC on 8 August 2018. By letter of 25 January 2019 Paul Gray, the Chief Executive of NHS Scotland asked for confirmation that all critical ventilation systems were "inspected and maintained in line with [SHTM 03-01]". By letter of 31 January 2019 Project Co advised NHSL that "all ventilation systems have been designed, installed and commissioned in line with SHTM 03-01 as required". The Board of NHSL approved the terms of SA1 on 6 February 2019. SA1 was signed on 22 February 2019. CPs are invited to indicate their positions on necessity, proportionality, appropriate nature and timing (having regard to the above summary of relevant dates) of a technical audit (if such audit is considered to have been appropriate), and likely outcome if an audit had been carried out.*

1.1 In June 2018, in light of concerns about risk allocation in SA1, MML did offer NHSL an enhanced level of checking. Option one was for MML to carry on as before; option two was for MML's scope to increase to give additional assurance; and option three was for MML to do the design itself. NHSL chose option one. This matter is discussed more fully at paragraph 224 of MML's closing statement.

1.2 With the benefit of hindsight, a technical audit may seem to be an attractive option as it may have brought the issue to light at an earlier stage. However, at the relevant time, NHSL's decision to choose option one was a reasonable choice. A technical audit, or any enhanced level of checking, would have had significant implications in terms of cost and timing. It ought not to have been a necessary step: the design was supposed to comply with SHTM 03-01. But for Mr McKechnie's anomalous interpretation of SHTM 03-01, the design would have complied with SHTM 03-01 and the issue would not have arisen. In these circumstances, MML considers that a technical audit would have been unnecessary and disproportionate.

Question 2: The HAI SCRIBE process set out in SHFN 30 Part B in its October 2014 version has been mandatory since 14 July 2015 in terms of DL (2015) 19. Stage 2 (planning and design stage of the development), as mandated by the previous 2007 version of SHFN 30, was completed in respect of the project on 19 November 2014. However, the agreement formalised as SA1 effected in relation to items 4, 7 and 13 of the Technical Schedule what it is understood NHSL considered to be changes in the design of the ventilation system. CTI para 152 raises the question as to whether that triggered an obligation to complete a stage 2 question set anew. CPs are invited to comment on this question and, more generally, as to whether during the course of a healthcare construction project stage 2 of the HAI SCRIBE process is mandated to scrutinise all (or, alternatively, all material) design changes with the potential to impact on infection control risks with a view to minimising hazards and managing these risks.

2. MML does not consider itself to be best placed to comment on this issue. MML was not involved in the HAI SCRIBE process.

Question 3: *At CTI para 303 Counsel draws attention to the email from Dr Inverarity dated 4 January 2019. That email refers to provisions in chapter 8 of SHTM 03-01 which makes recommendations as to the validation of specialised ventilation systems. At the beginning of chapter 8 there is a Note which includes: "It is unlikely that 'in house staff' will possess the knowledge or equipment necessary to validate critical ventilation systems …Validation of these systems should therefore be carried out by a suitably qualified independent Authorised Person appointed by the NHS Board". That is what appears to have been done by NHSL when it instructed IOM. However, CPs are requested to comment on the proposition that, in a situation where testing and commissioning has been carried out on behalf of Project Co by its contractor, albeit to the satisfaction of an Independent Tester appointed pursuant to clause 15.1 of the Project Agreement, in order to comply with the recommendations in SHTM 03-01, it was incumbent on NHSL to instruct an independent validation of the specialised ventilation systems.*

3. MML does not consider itself to be best placed to comment on this issue.

Question 4: *CTI para 179 notes the resolution of item 4 in the Technical Schedule as an agreed derogation from guidance. Looking to NHSL's response to PPP8 it would appear that MPX had designed and constructed the ventilation system of department C1.4 (Lochranza ward) to the specification in the Reference Design EM of 31 October 2014. CPs are invited to comment on that understanding and, further, as to whether, on a proper construction of the guidance, they accept that specification in Table A1 of SHTM 03-01 in relation to "neutropenic patient ward" applied to the whole of department C1.4 and that therefore in this respect what appeared in the EM of 31 October 2014 represented a departure from guidance.*

4.1 So far as MML is aware, the ventilation system of department C1.4 (Lochranza ward) was designed and constructed to the specification in the Reference Design EM dated 31 October 2014.

4.2 MML considers that the provisions in Table A1 of SHTM 03-01 in relation to "neutropenic patient ward" did not apply to the whole of department C1.4. It applied only to those rooms within the department that could properly be called neutropenic patient wards - those areas that housed neutropenic patients.

4.3 Whether the provisions in the EM dated 31 October 2014 represented a departure from guidance depends entirely on the use to which the rooms in department C1.4 were to be put. If neutropenic patients were to be housed only in isolation rooms, then the EM was not a departure from guidance (see paragraph 9.6.35 of PPP8). However, if neutropenic patients were to be housed in single and multi-bed rooms as well (as had been NHSL's original intention) then the EM was a departure from guidance (see paragraph 9.6.29 of PPP8). Ultimately a pragmatic solution was reached whereby NHSL would manage patients so that neutropenic patients were to be housed only in isolation rooms in department C1.4 (see paragraphs 9.7.31 and 9.10.42 of PPP8). NHSL changed its intended use of the rooms within department C1.4 rather than requiring IHSL to change the design in order to ensure compliance. By managing patients in this manner, the EM essentially became compliant with SHTM 03-01.

Question 5: Mr McKechnie was the team leader of the M&E engineers sub-contracted to MPX with responsibility for ventilation systems. Mr McKechnie's interpretation of Table A1 of SHTM 03-01 was not shared by any other witness. However, Mr McKechnie's interpretation is understood to be supported by Wallace Whittle/ TUV SUD (WW), his employer (WW paras 10 and 11). It is not repudiated by MPX which at para 2.3 state that the relevant guidance is open to different interpretations. IHSL at para 2.18 describe the EM as in error but that WW did not recognise this as it was not inconsistent its interpretation of Table A1. CPs are invited to comment on the contention of NHSL at paras 24 and 79 that had it not been for Mr McKechnie's interpretation of the relevant guidance what, on a proper construction, was an inconsistency between the specification for Critical Care contained in the EM and the terms of SHTM 03-01, would have been identified earlier. Similarly, CPs are invited to comment on the contentions of MML to similar effect at paras 2.1 and 2.2, as developed at paras 101 and 261, in support of the proposition that any lack of a finalised document clearly setting out the technical requirements for ventilation at Financial Close, rather

than being the root of the problems, had no causal connection to the delay in the opening of the hospital.

5. MML agrees with the contentions at paragraphs 24 and 79 of NHSL's closing statement, which are consistent with the position it takes.

Question 6: IHSL, MPX and WW are invited to comment on the contentions developed by NHSL in sections 4 and 5 of its closing statement (paras 20 to 29), and in particular at paras 20.2, 20.3, 20.4, 23, 24, 25 and 28, to the effect that: any ambiguities in the Board's Construction Requirements or derogations from guidance should have been brought to NHSL's attention regardless of what was perceived to be the client's brief; flagging non-compliance was a contractual obligation on IHSL under the Project Agreement (albeit I recognise that it is not for the Inquiry to determine the correct interpretation of the contractual provisions); and IHSL, MPX and WW should have had in place their own processes for design review and audit, whereas Mr McKechnie's outlier views on the interpretation of SHTM 03-01 were not apparently reviewed internally or otherwise challenged throughout the entire duration of the Project, thus allowing Mr McKechnie to become a single point of failure.

6. MML agrees with the relevant contentions in NHSL's closing statement.

Question 7: Following the points made at CTI paras 44 to 50, Counsel suggest at CTI para 51 that there was a lack of clarity in the role of MML as technical adviser. That is not accepted by NHSL: its position is that the role was comprehensively set out in the Contract Control Order of 26 February 2015 and understood by NHSL (NHSL para 44). MML is invited to comment on what is set our in NHSL para 47 to the effect that it was involved in advising NHSL on compliance with guidance and that is accordingly implicated in the ventilation errors that formed part of the technical schedule to SA1. MML is further invited to comment on the proposition advanced by MPX (at MPX para 4.5.15, set out in more detail in paras 4.5.10 to 4.5.15) that in the RDD process NHSL/MML were in fact undertaking "a very detailed scrutiny of the EM…including down to the level of individual air change rates in certain Critical Care rooms."

7.1 MML has been asked to comment on a submission made at paragraph 47 of NHSL's closing statement. Paragraph 47 starts by stating that MML was "deeply involved" in drafting and negotiating the technical elements of what came to be included in the technical schedule to SA1. MML does not accept this characterisation of its role. MML's position regarding its role in the preparation of the technical schedule to SA1 is summarised at paragraph 221 of MML's closing statement. Its particular role in relation to the four bed rooms is set out in detail starting at paragraph 178 of MML's closing statement.

7.2 So far as the salient passage of paragraph 47 of NHSL's closing statement is concerned, it is not entirely clear what NHSL means when it describes MML as being "implicated" in the ventilation errors. If it is being suggested that MML was one of the parties which was involved on occasions when the errors could have been spotted, then MML agrees with that proposition. However, if it is being suggested that MML ought to have identified the errors and that it acted unreasonably and/or in breach of its contract with NHSL in not spotting the errors, MML does not accept that proposition. The reasonableness of MML spotting the errors is addressed at length in MML's closing statement, starting at paragraph 107 (MML's Role in Reviewing the Design).

7.3 Turning to the proposition advanced by MPX at paragraph 4.5.15 of its closing statement, MML does not accept the suggestion that it undertook "very detailed scrutiny" of the EM. There is no doubt that MML did review the design submissions made by IHSL and did pick up on matters that went beyond operational functionality. This is addressed at paragraph 147 of MML's closing statement. However, any such reviews were conducted for the purposes of the RDD process: that was the limit of MML's contractual responsibility in conducting these reviews. These reviews were not conducted for the purpose of checking that all parameters in the design complied with the applicable guidance (albeit any obvious issues would be flagged up if they were spotted). Contractual responsibility for ensuring that the design complied with the applicable guidance remained with IHSL and its sub-contractors throughout. Even if MPX formed the view that MML was scrutinising the design, that did not absolve it of its own responsibilities regarding the design.

Question 8: *CPs are invited to comment on the points put forward for consideration at CTI paras 329 and 330 in relation to the 2022 interim revision of SHTM 03-01. Additionally, CPs are invited to identify whether they consider, in relation to the matters canvassed in evidence, there to be any weaknesses or drafting deficiencies in the interim 2022 version which would merit further revision.*

8.1 Paragraph 329 of CTI's closing statement invites consideration of whether the ventilation issues would have arisen had the updated version of SHTM 03-01 been in place. MML considers that it is unlikely that the ventilation issues would have arisen if the updated version of SHTM 03-01 had been in place. Had the updated version been in place, Mr McKechnie would presumably no longer have considered that the requirement for enhanced ventilation applied only in relation to isolation rooms in the Critical Care department. He would presumably have ensured that the EM reflected the updated guidance, which would have involved consideration of the levels of care being provided in the relevant rooms. On the assumption that the levels of care being provided in the relevant rooms were levels 2 or 3, he would presumably have ensured that there were 10 air changes in accordance with the updated guidance.

8.2 Paragraph 330 of CTI's closing statement invites consideration of whether the changes to SHTM 03-01 would be sufficient and proportionate to address the ventilation issues without the need for Assure's KSAR process. MML does not have enough experience of Assure's process to be able to provide an answer to this.

8.3 MML has not conducted a full review of the updated guidance for the purpose of identifying any weaknesses or drafting deficiencies. As matters presently stand MML is not aware of any weaknesses or drafting deficiencies.

Question 9: *At CTI para 425 onward, counsel sets out a series of potential recommendations that they consider that the Chair could make in an interim report. The CPs which have made express comment on the potential recommendations are understood to agree with all of them, subject to the qualifications noted by NHSL in Appendix D to its closing statement and Mott MacDonald Ltd (MML) at paras 271 and 276. CPs are invited to confirm that understanding. MML is invited to expand on its explanation at para 271.*

9. MML's response at paragraph 271 of its closing statement arose out of an uncertainty about what is meant by the phrase "output parameters" used at paragraph 428 of CTI's closing statement. In particular, it is unclear to MML whether the phrase "output parameters" is to be understood as including the ventilation rates for individual rooms. MML notes that NHSL appear to have understood "output parameters" as not including such ventilation rates. At Appendix D of its closing statement, NHSL refers to "output parameters by way of the Clinical Output Specifications, departmental adjacencies, room adjacencies and rooms layouts". If that is what is meant by "output parameters", MML agrees that the health board is best placed to identify them, and therefore agrees with paragraph 428 of CTI's closing statement. However, if "output parameters" goes beyond this and includes such things as the actual number of air changes required in any space, it is questionable whether the health board is the party best placed to stipulate those. However, NHSL is best placed to comment on this issue, and MML would defer to its views.

Question 10: CPs are invited to confirm whether or not they take issue with Counsel's assessment at CTI paras 322, read with what is set out in CTI paras 323 to 326, that the arrangements put in place by NHSS Assure represent a robust challenge to help improve boards' governance and compliance with guidance.

10. MML has limited experience of dealing with Assure. It does not feel able to comment on this.

Question 11: As a point of detail, NHSL is requested to respond to MML's suggestion at para 111.5 that NHSL instructed an Authorising Engineer in respect of the project (prior to the instruction of IOM). MML reference Dr Inverarity's evidence but that seems to phrased in terms of what, in general terms, he would expect rather than a reference to a specific instruction.

11. MML has no further comment on this issue.

Question 12: Separately from the above matters, NSS is invited to provide a brief written report, by 28 June 2024, on the progress of the work referred to by Ms Grant at

paragraphs 34 to 38 of her statement for the hearing in 2023 and noted by Counsel in his first Closing Submission at para 70.

12. MML has no comment on this issue.