Scottish Hospitals Inquiry

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

Submission on behalf of Wallace Whittle/TÜV SÜD Limited

in respect of the Hearings covering the period
from the Commencement of the Project to Financial Close

INTRODUCTION

1) These submissions are made on behalf of Core Participant, Wallace Whittle/TÜV SÜD Limited (WWTS) as represented Garry Borland KC, Alan Eadie and Stuart Craig, Solicitors, of BTO Solicitors LLP.

2) Over the course of two hearing sessions and across four Provisional Position Papers (PPPs) together with the responses to those PPPs from various Core Participants (CPs), the Inquiry has so far examined in detail two particular topics in relation to the Royal Hospital for Children and Young People / Department of Clinical Neurosciences ("RHCYP/DCN"): (i) the theory and practice of ventilation in hospitals; and (ii) the background and chronology of events in relation to the project for the procurement and construction of the RHCYP/DCN, covering the period from the start of the procurement exercise to Financial Close.

3) These submissions do not seek to review and comment on all of the aforementioned evidence but to focus on the key issues which are considered potentially relevant to the Terms of Reference (TOR). Nor do they seek to repeat what has been covered in the Closing Submission by Deputy Counsel to the Inquiry (the SHICS), insofar as what is stated in that submission is considered by WWTS to satisfactorily cover the relevant ground, is considered to be accurate and is therefore adopted on behalf of WWTS. Rather this submission seeks to highlight for the Inquiry only those areas where WWTS would:

   a) wish to place particular emphasis;
   b) seek to draw a different conclusion from the SHICS in relation to the aforementioned evidence;
   c) wish to supplement what has been covered in the SHICS; or
   d) wish to identify areas where valuable lessons might be learned for the future and suggest further potential recommendations.

4) Accordingly, for ease of reference, these submissions follow the same chapter headings and sequence as the SHICS, namely:

1. ***The task of the Chair and the approach to the evidence***
2. ***Ventilation requirements in hospitals***
3. ***The Activity Database System, Room Data Sheets and Environmental Matrices***
4. ***The background to the RHCYP/DCN and the need for a new hospital***
5. ***Initial Planning and Preparation***
6. ***The Reference Design***
7. ***Errors in the Environmental Matrix***
8. ***The Procurement Exercise***
9. ***The Contract***
10. ***Governance***
11. ***Findings and Potential Recommendations***

5) WWTS has also reviewed, taken into account and adopted to the extent considered appropriate, the draft submissions of the other CPs. For the avoidance of doubt, where this submission makes no specific comment on the submissions of other CPs, no inference should be drawn that that WWTS either agrees or disagrees with those submissions.

6) The Inquiry has not yet exhausted its Remit and Terms of Reference insofar as they relate to the RHCYP/DCN. It would be premature for any firm conclusions to be drawn, certainly in relation to certain matters, on the basis of the evidence heard by the Inquiry thus far. That is because the Inquiry has not heard evidence regarding the period following financial close which may cast new light upon, and therefore have a significant bearing on, the matters addressed at the two hearing sessions, particularly in relation to how parties ultimately resolved any disputed issues and ambiguities regarding certain matters relating to ventilation. For that reason, WWTS reserves the right to revisit these submissions in future.

EXECUTIVE SUMMARY

a) WWTS would agree with the SHICS that one of the central issues in the Inquiry is the clarity of the procurement documents and the contract. On that note, and perhaps as an illustration of the lack of such clarity, it is acknowledged that there is a dispute among the CPs as to whether the specification for the ventilation system for the RHCYP/DCN, as at financial close, fully complied with the best practice guidance set out in the relevant technical memorandum: SHTM03-01.

b) A key component of that dispute is the controversy surrounding the status of the Environmental Matrix (EM); whether it could and should have been relied upon as a fixed brief for the design of the ventilation system; and whether it contained what ought to have been identified as an error.

c) The EM contained appropriate environmental parameters, including air pressure values (whether positive or negative and in some cases the magnitude) and air change rates, for various areas of the hospital, including critical care areas. For certain areas within the critical care unit, air pressure and air change rates for a standard ward were inserted. WWTS interpreted this to mean that those particular areas within the critical care unit were to have applied to them the air pressures and air change rates for a standard ward, notwithstanding their location within the critical care unit. WWTS were able to reconcile that requirement with the guidance set out in SHTM03-01 and did not therefore identify the inclusion of theses standard rates as an error at the time, although it since seems to have been accepted as such by those responsible for compiling the original EM, namely Hulley & Kirkwood (H&K).

d) WWTS were reinforced in their view because this apparent error was not detected by NHSL or its original technical advisors, H&K, whom WWTS understood had been required to confirm, and had in fact confirmed, that the reference design (of which the EM formed part) complied with the published guidance (including SHTM03-01).

e) The EM was issued with the invitation to participate in dialogue (ITPD) and the invitation to submit final tenders (ISFT) and appeared to form part of the Board's Construction Requirements (BCRs). In the absence of any indication to the contrary, WWTS, and Multiplex by whom they were engaged as part of the IHSL bid team, took that to mean that the EM was intended to form part of NHSL's fixed brief as to what it wanted the ventilation system to achieve; and that it could therefore be relied upon, without having to be revisited or checked, insofar as it specified appropriate environmental parameters, including air pressure values and air change rates for various areas of the hospital. If that was *not* NHSL's intention, it is submitted that the decision to include the EM within the procurement documents (even if borne out of an understandable desire to ensure that prior work undertaken on the project was not wasted) was likely to, and did, give rise to confusion on the part of tenderers, including IHSL. And if the intention was that the time and money already invested in the Reference Design should not go to waste, how would that be achieved if the Reference Design was not, at bid stage, to be relied on by bidders and could instead be ignored by them, with impunity?.

f) This, coupled with ambiguous statements elsewhere in the ITPD and ISFT as to the status of the EM, left it unclear whether it was a document that tenderers required to comply with. Indeed, if it was NHSL's intention that the design risk associated with the selection of parameters in the EM should sit solely with the successful tenderer, it is submitted that the very inclusion of the EM in the ITPD, and ISFT, and furthermore the instruction that tenderers were required to "comply with the Environmental Matrix", sat at odds with that intention.

g) Rightly or wrongly, different tenderers adopted differing views as to the status and requirements of the EM and of the extent to which (if at all) the values that it specified could be changed. The fact that they did so, and were allowed to do so without any of them having their tenders rejected

as being non-compliant, serves to reinforce the lack of clarity surrounding the status of the procurement documentation, including the EM.

h) In the absence of clear communication, it was not apparent to tenderers how rigorous, or otherwise, the review of the tenders had been. The successful tenderer could have been forgiven for assuming that its bid had been assessed as being fully compliant with the BCRs. In fact, what was undertaken was only a low intensity review which offered no such reassurance. Greater transparency around the review process may have avoided any such misapprehension.

i) Prior to financial close, engineers acting for NHSL did identify certain respects in which, in their view, the EM did not comply with SHTM 03-01. It is submitted that tenderers could thereby have been led to believe, albeit mistakenly, that a more intensive and comprehensive review had been undertaken than was actually the case:

j) As it was, in the interests of achieving financial close, entries in the EM, including any perceived non-compliances, were classified in the project agreement as “reviewable design data” to be resolved only after the agreement was signed. They were thus left unresolved, and at risk of later being lost sight of, by the time of financial close.

k) As a result the foregoing and by treating the EM in part as if it were one of NHSL’s requirements, and in part as if it were one of the contractor’s proposals, the Project Agreement reflected the by then unresolved status of the EM.

l) To add to any confusion, the Project Agreement included room data sheets for certain key and generic rooms; required IHSL to comply with them; but also classified the room data sheets as reviewable design data. The room data sheets covered certain patient areas in the critical care department setting a pressure parameter which conflicted with that in the EM.

m) The lack of clarity and consistency left scope for argument and confusion over where contractual responsibility ultimately lay for the ventilation parameters in the EM and the room data sheets.

n) It seems to have been acknowledged by H&K that any issue regarding the air change rates for certain critical care rooms in the EM arose through human error on their part. That that “error” went undetected seems to have been due to (1) opportunities being missed to detect it prior to financial close and/or (2) other parties applying a different interpretation to the EM whereby it was not considered to be an error at all.

1. The task of the Chair and the approach to the evidence

1.1. WWTS offers no comment other than to concur with all that is stated in the SHICS.

2. Ventilation requirements in hospitals

2.1 WWTS would concur with the exposition of the ventilation requirements in hospitals, drawn from the evidence and set out in the SHICS, but would add the following observations:

2.2 Regarding the importance of ventilation in preventing and controlling infection, while WWTS would agree that it is correct to highlight the importance of air changes, it is also important not to lose sight of the importance of air pressure rates in controlling the flow of air between areas; and of these two factors (air changes rates and pressure rates) working in conjunction.

2.3 WWTS would agree that, when not designed, installed or operated correctly, ventilation systems can not only fail to protect people but can increase the risk of infection. It is important to consider, however, whether "design" in this context refers to (i) the mechanical performance of a ventilation system in terms of its ability to achieve a design air-change rate or to maintain a design pressure rate or (ii) the layout of a ventilation system in terms of the extent to which a certain ventilation system, meeting certain performance criteria, is deployed. WWTS would invite the Chair to consider whether the issue affecting the RHCYP/DCN falls into the latter category and, if so, whether that is a "design" issue at all or whether it is more appropriately characterised as an issue concerning the interpretation of the published guidance, including Scottish Health Technical Memorandums (SHTMs), and its application in a particular scenario.

2.4 Just as the regime set out in SHTM 03-01 is a compromise agreed between contributors (including engineers and IPC professionals), so too any deviations from published guidance may be a compromise, driven by the need to balance a number of considerations (e.g. a reduction in the number of air changes per hour to improve energy efficiency). Such deviations may be appropriate where it is considered that they will enable other requirements or objectives to be met (such as temperature control or energy efficiency), without compromising on infection prevention and control.

2.5 Again, it may be important to draw a distinction between a deviation from recommendations and standard guidance whereby a ventilation system fails, on a technical level, to meet certain performance criteria; and a deviation from recommendations and standard guidance, in the sense of an otherwise correctly functioning ventilation system simply not being provided or deployed in certain rooms or areas of the hospital (e.g. because there is debate about what is required.)

2.6 WWTS would submit that this distinction is also relevant to the question of what is meant by "*compliance*" with published guidance and whether it is appropriate to require compliance in any scenario which may involve a degree of subjective interpretation of the relevant technical

guidance and/or which may involve having to make assumptions to determine the parameters to be achieved and in precisely what locations those parameters are to be achieved.

2.7 WWTS would also adopt the view expressed on behalf of IHSL (drawing upon the evidence of Ms Susan Grant and others) that, whilst SHTM 03-01 contains a summary of recommendations in Table A1, it would be an oversimplification – and no guarantee of patient safety - simply to extract, blindly rely upon and apply the figures contained in that table. It would similarly be an oversimplification to suggest that if specific air change or pressure rates are not applied, there will inevitably be a risk to patients. The relevant guidance requires to be considered in the broader context of a clear, quality-controlled and risk assessed briefing process that takes into account the clinical function and use of the relevant hospital areas, as well as other relevant operational considerations and priorities, that involves an informed client and an appropriate level of engagement with clinicians and other stakeholders and that incorporates relevant expert input and engineering judgement.

3. The Activity Database System, Room Data Sheets and Environmental Matrices

3.1 WWTS would concur with and adopt the submission of the SHICS but would raise only the following points:

3.2 The SHICS identifies, as a risk arising from the summary nature of an EM, the fact that parameters will be listed without an accompanying description of the detailed clinical activity which would be apparent from a room data sheet (Greer, 2023 Bundle 13, page 161, paragraph 95). There is therefore the possibility, if using only an EM to develop a set of ventilation parameters, that the clinical significance of a particular space may be misunderstood.

3.3 A question this raises is whether it is in fact helpful to an MEP engineer designing a ventilation system to have an understanding of the clinical significance of a particular space or whether that encourages or at least introduces scope for subjective judgements to be made by those who are not medically trained and may not therefore have (nor profess to have) sufficient knowledge of infection prevention and control to make such judgements. Is it ultimately better, from the point of view of the MEP engineer designing the system, to know only the performance criteria that have to be met?

3.4 WWTS would concur with the view expressed in the SHICS that, in circumstances where the use of EMs is considered a useful tool for facilitating the process of specifying and implementing an appropriate body of environmental parameters, the Inquiry should be slow to discourage their use, particularly when there are significant limitations associated with the most obvious alternative solution (i.e. the creation of room data sheets produced using ADB). Instead, efforts might be

better focused on mitigating any risk of transcription errors during the population of EMs with the relevant information.

3.5 WWTS would also agree that whether or not an EM is to be understood as either (1) a definitive, detailed and finalised brief or (2) an indicative-only "work in progress" is something that ought perhaps to be stated explicitly in the EM itself, for the avoidance of any doubt or misunderstandings. That said, WWTS would take the view that it would serve no value to provide a "work in progress" EM which could not be relied upon, as its content would have to be so heavily caveated as to negate any usefulness. Furthermore, without being able to take the EM as a brief, there would have to have been another means, beyond SHTM 03-01 alone, by which NHSL provided a briefing of its requirements for environmental parameters. In the absence of room data sheets what else were bidders to take as their brief? Against that background, it is difficult to make sense of any suggestion that the EM was intended merely as a "placeholder" pending development by the successful bidder of its own environmental matrix.

4. The background to the RHCYP/DCN and the need for a new hospital

4.1 No comment other than to concur with what is stated in the SHICS.

5. Initial Planning and Preparation

5.1 WWTS would agree with the narration of events and observations set out in the SHICS and have no further comments to add in this regard.

6. The Reference Design

6.1 While WWTS would express no particular view on whether a reference design is, generally speaking, any more suitable than an exemplar design – both have their advantages and disadvantages – it is submitted that a key consideration, when providing a greater level of specificity in relation to fixed requirements (as would be the case with a reference design), is making sure it is clearly conveyed to relevant parties the extent to which that greater level of specificity is intended to be taken as indicative-only, prescriptive, or even mandatory.

6.2 Not only is that relevant to the question of how much discretion bidders have to develop their own designs but it is relevant to how much engagement it can be assumed has already taken place or how much further engagement there still needs to be between clinicians and designers.

7. Errors in the Environmental Matrix

7.1 WWTS would accept that the SHICS provides an accurate narration of events as to how the version of the EM included in the ITPD and ISFT documents issued by NHSL during the

procurement exercise came to contain what its original authors, H&K, considered to be an error (insofar as it specified 4 ac/hr rather than 10 ac/hr for multi bed wards in the critical care area).

7.2 The evidence of Mr McKechnie of WWTS was that in critical care departments, 10 ac/hr and 10Pa of pressure was needed only for isolation rooms; therefore the parameter of 4 ac/hr for critical care areas other than isolation rooms (which would include multi bed wards and standard single bed rooms) was not inconsistent with the guidance note nor with Table A1 in SHTM 03-01 and, as such, did not require a derogation from that guidance.

7.3 Mr McKechnie understood that if there were ambiguities in the EM, or between it and the SHTMs, it was one of WWTS's responsibilities to bring those to the attention of NHSL (Transcript, page 76) but, for the reason explained above, he did not consider there to be any such ambiguity in this respect.

7.4 A question which arises is whether, from the point at which WWTS agreed (albeit with misgivings) to assume ownership of the EM as a WWTS document, the parameter in question (which H&K considered to be an error but which WWTS never regarded as an error) ceased to be either an "error" or an ambiguity. That may depend on whether the issue is considered from a subjective or objective perspective and comes back to the point made earlier (*cf* 2.6) about what is meant by "compliance" with published technical guidance in any scenario which involves a degree of subjective interpretation of that guidance.

7.5 An objective justification for Mr McKechnie's interpretation is that it resolves what would otherwise be an inconsistency or conflict between the EM's requirement of balanced pressure for single rooms in critical care, and the recommendation, in Table A1 of SHTM 03-01, of positive pressurisation for critical care areas.

7.6 Stepping back from the specifics, WWTS would adopt the suggestion that the Inquiry may wish to consider (a) whether, if the guidance is reasonably open to heavily divergent interpretations, reasonably held by experienced professionals, it is sufficiently well expressed to achieve its purpose and (b) whether there should be any recommendations made in relation to the input that clinicians/Infection Prevention and Control personnel should have when room functions are being determined. The Inquiry may also wish to consider what was the rationale for NHSL transferring ownership of the EM in the first place where the EM was intended to form part of the BCRs in the final contract between NHSL and IHSL.

8. The Procurement Exercise

8.1 Having had no direct involvement in the selection and implementation of the procurement procedure, WWTS has no comment to make on this aspect of matters, except as follows under the sub-headings noted:

Re the clarity of the procurement documentation including the mandatory requirements

8.2 As an "end user" of the procurement documentation, WWTS would endorse the invitation to the Chair, in the SHICS, to find that the procurement documentation (namely the ITPD and the ISFT) contained ambiguous and inconsistent provisions in relation to the specification for the ventilation system: in particular, that there was a lack of clarity as to whether the EM (included within the Board's Construction Requirements) was a fixed client brief or a draft document that could not be relied upon.

8.2.1 Regarding the "disconnect" between the Guidance Notes section of the EM (which contained the intended specification for critical care rooms) and the parameters specified in the critical care department sheet - and the suggestion that the hierarchy of standards provision should have dictated that the more onerous standard ought to have been adopted – WWTS would wish to highlight that they were uncomfortable at the time with the text of the Guidance Notes and therefore made revisions to those to bring them into conformity with the department sheet: in particular noting that the reference to 10 ac/hr would apply only to isolation rooms. This revision was made relatively early on, during the reviewable design development phase. It was noted at the time by others (see, for example, the evidence of Mr Greer of MML (Witness Statement, paragraph 83)) yet WWTS we were never asked to remove this revision and therefore assumed it had been accepted.

Re the intensity of review of tenders

8.4 The evidence indicates that only a low intensity review of the tenders was undertaken. This is unlikely to have been apparent to IHSL or other tenderers who may have assumed that a more rigorous assessment had been undertaken.

8.5 Compliance with the BCRs was to be assessed on a pass/fail basis, with a pass being awarded if the bidder's approach demonstrated *"a satisfactory understanding of the Board's requirements; and delivered a satisfactory level of compliance with the Board's requirements."* In relation to various aspects of the BCRs, it is not clear how NHSL (and those involved in assisting NHSL with the assessment of tenders) could have been satisfied that there was a satisfactory understanding of the requirements without a more intense level of review being undertaken.

8.6 The Inquiry may wish to consider whether the fact that IHSL's tender was assessed as a pass, in circumstances where it might reasonably have been assumed that a more rigorous review of the tender had been undertaken, may have left the IHSL bid team with a perhaps misplaced confidence that its tender had been assessed as being fully compliant with the BCRs.

Re the period to Financial Close

8.7 Having not been directly involved in any discussions between NHSL and IHSL during the period from IHSL being appointed as preferred bidder until the contract was signed and financial close was achieved, WWTS has no comment to make on that aspect of matters

8.8 The fact that NHSL's concerns about the EM's perceived non-compliance with SHTM 03 were not resolved before the contract was signed and it was instead included as reviewable design data in the contract - something which Mr McKechnie considered to be strange and surprising at the time (Transcript, page 177) - suggests that an opportunity to have caught any problems which later emerged in relation to the critical care area may have been missed, primarily as a result of the significant time pressure that NHSL was by then under to conclude the contract and progress the project.

9. The Contract

9.1 WWTS has no comment to make other than to endorse the comments in the SHICS about the Project Agreement reflecting uncertainty and ambiguity regarding the status of the EM.

10. Governance

10.1 No comment other than to concur with all that is stated in the SHICS.

11. Findings and Potential Recommendations

11.1 For the reasons already touched upon at paragraph 6 of the INTRODUCTION above, WWTS would submit that since it is possible that further evidence may become available which is relevant to, or may have a bearing on the ultimate significance of, the issues considered during this stage of the Inquiry, it may be appropriate to defer making any formal findings or recommendations until all of the evidence has been considered.

11.2 Subject to those caveats, and the suggestions set out below, WWTS would endorse the SHICS insofar as it sets out, under the respective Terms of Reference, the findings which the Chair is invited to make.

11.3 In relation to TOR 2 and the proposed finding at para 306 of the SHCIS, WWTS would wish to propose that the finding be expressed in the following revised terms (proposed changes highlighted in bold type):

"There was, **as least as far as its original authors, H&K, were concerned,** an error in the Environmental Matrix in relation to the parameters for certain critical care rooms. This was a transcription error that arose from human error. Had this error not been present, **any issues**

regarding the ventilation system would likely have centred around how, in practical terms, the specified parameters could be achieved within the existing (i.e. reference design) configuration of the critical care area."

11.4 Again in relation to TOR 2 but as regards the proposed finding at para 309 of the SHCIS, WWTS would question whether it would be fair to criticise the lack of, and encourage more, direct contact between clinicians and bidders during the procurement exercise. WWTS would question the practicality of all bidders investing (potentially wasted) time, effort and money, each in trying to secure similar levels of engagement and input from a potentially large number of clinicians who understandably have other priorities. An alternative suggestion would be to encourage the early involvement of an infection control specialist to discuss strategies for key areas.

11.5 WWTS would concur with the approach suggested in the SHICS with regard to deferring the making of any recommendations at this stage. WWTS would also endorse the suggestion in the SHICS that at the conclusion of all the evidence the Chair may wish to circulate a paper to interested parties setting out potential options for discussion with stakeholders before any formal recommendations are made.
