Hearing Commencing 26 February 2024

Bundle 13 - Miscellaneous

Volume 14

Table of Contents

NHS Lothian Comments on Issue 8 – SHTM 03-01, Part A, Feb 2022

27 June 2024

Lord Brodie invited core participants to comment on the following issue (issue 8) in oral submissions:

> *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.*

During NHS Lothian's oral submissions to the Inquiry on 17 June 2024, counsel indicated that he had been provided with some detailed comments on issue 8 by Dr Donald Inverarity and the NHSL Capital Projects Team and that these could be provided to the Inquiry if that would be of assistance. Lord Brodie welcomed receipt of the comments, which are set out below.

Dr Inverarity's Comments with additional comment from the Capital Projects Team

The NHS Lothian Capital Projects Team endorse the comments made by Dr Inverarity below and have noted additional comment where appropriate. Attention is specifically drawn to the following documents:

(i) Letter from NHS Lothian to NHS NSS dated 12 October 2022 providing NHS Lothian's Ventilation Safety Group comments on the inconsistencies that should be considered prior to the next update of the document (appendix 1); and

(ii) NHS Lothian's Standard Operating Procedure for Managing of Ventilation Safety in Construction Projects v.1 Feb 2024 (appendix 2).

1. SHTM 03-01 - Appendix 2

Appendix 2 remains a key table for many stake holders but there continue to be issues of ambiguity that could easily be resolved by altering the format or terminology used. For instance, hyphens are used in many cells of the table but in some they seem to indicate "no value given", in some they indicate "negative" and in some they indicate a range between two values. This ambiguity still risks different interpretation being taken of (-) by clinicians and IPCT and designers for a pressure cascade for instance as it is not clear whether (-) indicates "no specific value", "balanced" or "negative" and could be easily avoided by using words and not symbols. There is space in the cells to use clearer terminology using words.

Additionally, it could be made clearer if the comments column provided more detailed rationales from a clinician perspective, IPCT perspective and engineering perspective as to why the parameters are chosen (or evidence behind them) rather than the present content.

- Capital Projects Team comment: Whether the comments columns should provide detailed rationale from clinical perspective or not is subjective and should be applied to specific projects rather than 'as a whole' principle. Taking a General Ward as an example, there are many general wards but the rationale might be different depending on the clinical service being provided. This in turn would inform technical design where, currently, no information is being 'dictated' by the guidance, i.e. pressure regime.

2. Critical Care

Although terminology is clearer around critical care being Level 2 and Level 3 care and a general ward being (level 0 or level 1 care) which is very welcome there are still very nebulous/ambiguous terms being used in the table such as “neutropenic patient ward” and “general treatment room” or “interventional or non interventional imaging room” or “catheterisation room” which can be misinterpreted and result in rooms being over-provided with ventilation at additional installation costs and maintenance costs based on a guidance table that doesn’t align well with the clinical function of the room.

There is a discrepancy between environmental conditions advocated for a paediatric intensive care unit (10 pascals pressure specified) and a neonatal unit (positive pressure but no pressure value explicitly stated) which doesn’t make much sense from a clinical view as children over 28 days old don’t suddenly need an environment of 10 PA positive pressure while children < 28 days old (the definition of neonate) need less positive pressure. Both are considered to be critical care areas. [1]

3. Neutropenic Ward

The term “neutropenic patient ward” is contentious. We have experience of it being used interchangeably by designers to refer to a “cancer ward” or “haematology ward” or “oncology ward” or “haemato-oncology ward” or “bone marrow transplant unit.” The issue is that not all

[1] See a letter to be published in Journal of Hospital Infection: Variation in design of neonatal intensive care units: the need for consensus (Simon Pybus, Teresa Inkster), PII: S0195-6701(24)00179-8, DOI:, https://doi.org/10.1016/j.jhin.2024.05.009, Reference: YJHIN 7242. To appear in: *Journal of Hospital Infection,* Received Date: 17 May 2024, Accepted Date: 19 May 2024 (see Appendix 3)

cancer patients or even all haematology patients require protective isolation for neutropenia as many are not neutropenic and not receiving treatment that would make them neutropenic. Additionally, within the specialty of haematology currently (as opposed to 20-30 years ago when SHTM 2025 and SHTM 03-01 first drafted) many patients with neutropenia are now not considered to require protective isolation and are being manged in community settings and at home and do not require ultraclean air and a positive pressure environment. Insisting on such environmental conditions for any haematology patient or every haematology patient with neutropenia will result in over provision of rooms designed to provide protective isolation with appreciable and arguably unnecessary cost of equipment (e.g. Air handling units), space for ductwork and maintenance.

The intent behind the line “neutropenic patient ward” really aligns most now with the term “bone marrow transplant unit” which is a much more specialist haematology ward with a predictable need for protective isolation rooms and a patient group with prolonged chemotherapy induced neutropenia that need a specialist environment initially. For most general haematology and oncology wards there will not be a need to provide the protective isolation conditions outlined in SHTM 0301 for all bed spaces and it would be more realistic to only provide them for a proportion of bedspaces based on service needs. Also, for cancer patient admission ward areas where the patient will be assessed and only be present for a few hours but not stay overnight the area’s purpose aligns more with a general ward than an inpatient area requiring protective isolation. Without greater clarity there is a risk of over provision of mechanical ventilation to achieve compliance with a document rather than provide what is needed clinically.

- Capital Projects Team comment: The 2022 version of SHTM 03-01 provides further and clearer guidance for neutropenic patients vs 2013 version of SHTM 03-01. There is also a clear distinction between neutropenic and isolation room classification which was not identified in previous revision of the guidance making it more challenging for the design teams. The isolation room classification will require a much higher specification of the infrastructure to maintain specific pressure regime, clean air and so on which inevitably impacts on capital but also revenue cost (more frequent maintenance etc). Appendix 2 should be a starting point for discussion on every project with clinical and IPCT to identify the exact clinical service, future proof and inform the design. It should not be taken as is without developing or scrutinising to identify optimal conditions required for the patients. This is also helpful for design teams otherwise any changes, particularly during the construction stage, usually have significant impact on programme, cost, quality.

4. Infectious Disease Isolation Room

It would be helpful to be much clearer regarding terminology around “infectious disease isolation room” as this is ambiguous. It conveys that the isolation room is in a specialist infectious disease ward but the intent is an isolation room to provide source isolation (containment of something infectious) for which there are two design choices – a PPVL room (which isn’t suitable for all possible scenarios but is the default design in UK) or a negative pressure isolation room (for which there isn’t clear design guidance around dimensions and architecture or clear guidance for which infectious conditions it is the preferred option).

Reference to PPVL isolation rooms needs to be clearer regarding how to make the exhaust air safe if carrying infectious micro-organisms or whether HEPA filtered supply air is required or not depending on the case mix of patient who will be occupying the room e.g. immunosuppressed by also infectious. The interplay between SHTM 03-01 and HBN 0401 Suppl1 needs to be reviewed as they often just refer back to each other without giving a clear answer regarding isolation room design choice or design parameters. SHPN 04 Suppl 1 hasn’t been updated for many, many years but is still referred to in preference to the English version (HBN 0401 Suppl 1) which is clearer, more comprehensive and more recent.

5. Imaging Room

With regards to “imaging room” we have run across ambiguity and uncertainty as to the application of the requirement for mechanical ventilation at 10 air changes per hour and positive pressure. The intent is that this applies to a radiology department or an area where specialist radiology equipment like MRI or CT scanners are located and generating significant heat which require particular ambient temperatures (achieved through high air change rates) to function correctly. Recently in the context of an eye hospital design there had been flagged to Lothian’s IPCT a question from the designer who was uncertain as to whether to apply these criteria for a room where retinal photographs were performed as this is non interventional imaging. But provision of 10 Ach/hr and a positive pressure environment for a room where essentially a photograph was being taken was deemed to be inappropriate and would be over provision of mechanical ventilation with unnecessary installation and maintenance costs that would be driven by a need to comply with the table in guidance rather than appreciating the function and purpose of the room and the nature of the activity being performed in it.

- Capital Projects Team comment: By definition of 2013 SHTM these are 'treatment' rooms and SHTM 2013 required 10ac/h and positive pressure. This has been improved in 2022 revision as the rooms are now 'interventional and non-

interventional imaging room' but there are other things still to consider. Putting the medical equipment environmental requirements aside, whether it is intrusive or non-intrusive, the room conditions now remain the same. The rooms are generally quite big and so the 10ac/h is a lot of air being pumped and extracted which has impact on the duct sizes, routes and ultimately on the AHU. Also, to maintain 10Pascals, the air permeability of the suite might need to be improved to be able to hold the air / pressure, otherwise any leaks in effect will cause the need to pump even more air than required to maintain pressure which then translates to energy costs. Reducing / providing better justification of the radiology / scanning (depending in the criticality of the treatment) to a lower spec of environment requirement will essentially cost less from design, install and operational point of view. The comment in the 'comments column' states 'as specified for the imaging equipment' which could be more or less onerous than predetermined ventilation rates / pressure regime as per subsequent columns in the same table. There is however no confirmation of hierarchy which takes precedence i.e. are the environmental conditions to achieve a safe clinical environment for safe delivery of patient care or a suitable environment to allow imaging equipment to function optimally?

6. Catheterisation Room

Similarly “catheterisation room” is ambiguous and the ambiguity can be removed easily by being more explicit. The conditions in this line of the table align with a “cardiac catheterisation suite” for performance of angiography and angioplasty but would be very excessive for urinary catheterisation for example which is a simple procedure usually performed at the patient’s bedspace in general wards.

7. Waiting Areas

It seems strange only to be explicit about conditions for a waiting area in an emergency department and not other areas of a hospital. Patients or visitors attending waiting areas in outpatient departments and radiology or even canteens are just as likely to have undiagnosed transmissible infections like Covid 19. We have had to ask for clarity regarding ventilation parameters for an eye hospital waiting area so it would make sense to have this line as being applicable for any generic waiting area where the general public will be sitting together rather than being a specific application for emergency departments. It would also be useful to be explicit about the role of Building Standards criteria in determining the specification of the

mechanical supply ventilation for volume of fresh air delivered per person in communal areas like waiting rooms based on anticipated maximum numbers of people who may be in the area.

- Capital Projects Team comment: It is appreciated that there might be patients with different conditions for different departments, but this should be clarified in the Guidance. The Building Standards dictate the air volume based on number of people within a specified area and state that minimum 8 litres of fresh air per person per second should be provided (not including the need to extract heat etc). This is turn could be calculated for ac/h based on room volume and number of people. However, if emergency dept waiting room standard is most onerous then again, we might be over specifying for less critical areas and therefore paying more unnecessarily. Equally, if the emergency dept waiting room standard is the less onerous, we might be under specifying for more critical areas.

8. General Treatment Rooms

The parameters for treatment rooms currently are difficult to apply without knowing what activities will be performed within them. With excessive waiting lists for surgery in the current NHS, there is a move to performing minor surgery in areas other than traditional operating theatres. It has been proposed for over a decade that such areas should have at least 15 air changes per hour with 5 Pa positive pressure differential to corridor for minor surgery procedures. For the list of procedures in Table 1 of Humphreys et al 2012 (see Appendix 4 - Article re Guidelines on the facilities required for minor surgical procedures and minimal access interventions' by Prof H. Humphreys et al, Journal of Hospital Infection dated 25 October 2011), there is greater flexibility for health boards if treatment rooms meet a 15 Ach/r and > 5 Pa positive pressure environment. (not 10 air changes, neutral pressure as per SHTM 0301). This may be over provision though for many procedures so it might be clearer if there were two lines in the SHTM 03-01 table, one for treatment rooms where minor surgical procedures are performed as per Humphreys guidance and one for treatment rooms where minor surgical procedures are not performed. Currently there is a possibility some boards may perform some procedures in environmental conditions that another board would consider inappropriate for the same procedure and national guidance should result in a uniform standardised approach.

9. Ventilation in Older Buildings

One area where the SHTM 03-01 could make a very big beneficial impact (but where it is currently silent) would be to give a steer as to cost effective and safe methods that can be used to augment supply ventilation in older building that are dependent on natural ventilation (but from current guidance would have mechanical supply/extract) and criteria for when they can be considered and when they would be inappropriate. This is particularly an issue for dental services and also very relevant with current pause on capital project funding by Scottish Government and a need to continue to use older buildings for clinical care delivery.

- Capital Projects Team comment: This would be welcome but it would be difficult to incorporate / provide standard Guidance because the current conditions of different estates will be vastly different and would need to be considered on a case by case basis. The cost will fluctuate depending on what / how much other works would need to be included to allow for the installation / modification etc of the ventilation systems in the existing facilities.

10. Increased Role of the Authorising Engineer

The much expanded and very detailed chapters regarding commissioning and validation of ventilation systems and the role of an independent authorising engineer for ventilation in those processes and the new advice regarding the AE who will perform validation also having involvement in overseeing commissioning and having multiple visits to assess compliance while the system is installed rather than at the end when completed is very welcome.

What was a couple of lines in the 2014 SHTM 03-01 have been expanded into two much more explicit chapters (Chpt 11 and 12) about commissioning and validation. The tasks now ascribed to the "independent validator" (who will usually be the board's AE for ventilation) are now much clearer to the extent that they should be involved in choice of items like AHUs, witness and consider their installation at several points and then ultimately perform a final validation and issue a clear report (see sections 12.11-12.16, 12.20, 12.21-12.31 for example). The interim guidance also highlights that validation is not a snagging exercise and that the system should be presented by the contractor as ready for validation.

- Capital Projects Team comment: The SHTM 03-01 Part A 2022 interim version 3.0 section 12.4 page 140. now states: “The validator would be the client’s AE(V) or **someone of similar standing** who is familiar with the ventilation requirements for healthcare facilities” so it does not mandate an AE, though does draw attention to the importance of this role. In addition, it would be helpful to have some specific

guidance on the PFI / PPP / NPD form of contract which is currently not covered by the SHTM.

Appendices

1. Letter from NHS Lothian to NHS NSS providing NHS Lothian's Ventilation Safety Group comments on the inconsistencies that should be considered prior to the next update of the document dated 12 October 2022
2. NHS Lothian's Standard Operating Procedure for Managing of Ventilation Safety in Construction Projects v.1 Feb 2024
3. Letter to Editor, Pybus S, Inkster T, Variation in design of neonatal intensive care units: the need for consensus, Journal of Hospital Infection Received Date: 17 May 2024, Accepted Date: 19 May 2024
4. Article re Guidelines on the facilities required for minor surgical procedures and minimal access interventions' by Prof H. Humphreys et al, Journal of Hospital Infection dated 25 October 2011

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Scottish Health Technical Memorandum 03-01: Specialised ventilation for healthcare premises (2022)

Dear Ian,

NHS Lothian has welcomed the release of the Interim Version of the Scottish Health Technical Memorandum, SHTM 03–01: *Specialised ventilation for healthcare premises* in January 2022. Having reviewed its contents, the Board's Ventilation Safety Group has identified some inconsistencies that we suggest you consider and clarify before the next update of the document is released.

Our comments are as follows:

- The previous version of SHTM 03-01 stipulated a requirement for communal ward toilets to deliver 10 air changes (ach). This requirement has been reduced in the new guidance to 6ach, whilst single room en-suite requirement increased from 3ach to 10ach. Could reasoning be provided to this seemingly inconsistent change, please? The above values were taken from Air Change Rate Table in the Appendices of both documents.
- The above query highlights a further lack of clarity around the definition of a *General ward (level 0 and 1 care)* and a *Ward communal toilet* referred to in the 2022 document Appendix 2 Air change rates table. A clarification is required if these rooms refer to a multi-bedded bay and its ensuite or indeed to an overall ward and any toilet within that ward that is not an ensuite - as the table does not make specific references to multi-bedded rooms.
- In the new document, the Appendix 2 Air change rates table requires for Birthing rooms to provide 10ach, however Table 5 (Section 8) that it refers to calls for 15ach to Birthing rooms.
- The document advises that patient bedrooms are clinical areas ("Patient bedrooms are classed as clinical areas as treatment is often delivered at the bedside rather than in a designated

NHS Lothian

treatment room"). There is also a recognition throughout the document (e.g. point 2.8), that: "Minor procedures may be carried out in a treatment room or at the bedside". Appendix 2 table stipulates 6ach for a single bedroom, however, the invasive procedures require a minimum of 10ach. It is common practice that e.g. blood samples are taken at the bedside in patients' bedrooms – which is an invasive procedure by breaking of the skin. Following the above logic, most bedrooms should be therefore designed with the provision of 10ach, however, the standard bedroom ventilation requirement is 6ach. We consider this ambiguity to potentially become an issue which may result in the overdesign of ventilation provision to all bedrooms at 10ach, and would there welcome a clarification around this point.

- We note the requirement for the provision of sinks within plantrooms "so that glass drainage traps may be cleaned out and staff can wash their hands" (Note under p 9.8). We consider this provision to pose a risk of a dead leg in an instance of sporadic use of the plantroom and a need for additional resource attendance to flush the outlet regularly in accordance with the SHTM 04-01 *Water Safety for healthcare premises*. In addition, Infection Control guidance stipulates that wash hand basins, not sinks should be used for handwashing. This requirement would mean the provision of a sink and WHB in the plantroom should be considered.

NHS Lothian will continue to apply the document to the new capital projects and monitor any practicalities of its application, which may result in further correspondence from us in the future. We hope you will consider our comments helpful and useful in the continuous betterment of the document.

Yours sincerely

[redacted]

Tracey Gillies
Executive Medical Director
NHS Lothian

NHS Lothian

Operational Procedures

For

Management of Ventilation Safety in Construction Projects

Unique ID: NHSL	**Author (s): Hania Klinge**
Category / Level / Type: Procedure	**Version: 1, February 2024**
Status Final:	**Authorised by:**
Date of Authorisation:	**Review Date:**
Date Added to Intranet:	**Comments:**

Contents

1. INTRODUCTION

1.1. Ventilation is used extensively in all types of healthcare premises to provide a safe and comfortable environment for patients and staff, and control odours.

1.2. Healthcare facilities have specialised rooms that require critical ventilation systems. Operating departments, critical care areas, neonatal units, isolation rooms, laboratories, scanning or imaging environments, sterile facilities and any other primary patient treatment areas need specialized ventilation systems to help reduce airborne infection risks.

1.3. Ventilation may also be installed:

- to ensure compliance with highly regulated quality assurance requirements of items processed in pharmacies and central decontamination units
- to protect staff from airborne microorganisms and toxic substances (for example, in laboratories and anaesthetic rooms)
- to contain the spread and clear of smoke as part of the fire strategy.

1.4. Increased health risks to patients and staff will occur if ventilation systems do not achieve and maintain the required standards.

1.5. The main risks of ventilation system-associated infections can be caused by:

- Failure of design, e.g. placement of air intake/exhaust in high risk areas, installation of systems that do not meet the requirements of the facility or patient group, poor access to components that require maintenance, inadequate quality checks during design and commissioning phases.
- Failures during construction stage in relation to poor separation of construction activities and normal hospital operation resulting from lack of adherence to – or absence of – well considered HAI SCRIBE risk assessment tool.
- Noncompliance with optimal operation: any activity that disrupts or obstructs pre-established air flows or pressure differentials; any inappropriate activity that results in non-compliance with optimal operation.
- Inadequate cleaning and/or maintenance: overdue filter replacements, accumulation of debris/dust in grilles/vents, deteriorated insulation material

2. PURPOSE OF THE SOP

2.1. In response to recommendations made in the internal audit report July 2020 – Governance and Internal Controls: Royal Hospital for Children & Young People, and Department of Clinical Neurosciences Edinburgh, a number of procedures were put in place as part of the development of an overall assurance framework. Building upon the framework this procedure has been drafted to provide

assurance pathways in connection with ventilation systems in construction projects.

2.2. The aims of this document are: to provide assurance around governance and pathways, bridge any existing gaps in understanding of guidance, address the NHSScotland Assure recommendations and provide a good practice guide relating to ventilation systems for managers responsible for delivery of new build and refurbishment projects.

2.3. The Health and Safety at Work etc Act 1974 is the core legislation that applies to ventilation installations and these installations are intended to prevent contamination, control closely the environment, dilute contaminants or contain hazards.

2.4. This procedure should be read in conjunction with the NHS Lothian Ventilation Systems Policy and with the Scottish Health Technical Memorandum (SHTM) 03-01, Parts A-B: *Specialised ventilation for healthcare premises*. Project teams also must take cognisance of the NHSScotland Assure Key Stage Assurance Review process and its deliverables in the context of ventilation safety.

2.5. In recognition of key phases in the development of capital projects: briefing and design, construction, commissioning and handover, this document sets out the procedures for design and operation in connection with ventilation management relating to construction projects in NHS Lothian.

2.6. This document is not intended to cover all aspects of ventilation systems design, as these are described in the SHTM 03-01, CIBSE Guides, The Control of Substances Hazardous to Health (COSHH) Regulations 2002 and other documents as referred to in the NHSL Ventilation Systems Policy 2023, but rather provide an assurance pathway and good practice guide in relation to ventilation, to project teams responsible for delivery of construction projects in NHS Lothian.

3. ORGANISATIONAL ARRANGEMENTS

3.1. The management of NHS Lothian's ventilation systems is overseen by the Board Ventilation Safety Group (VSG). The VSG has clearly defined roles and responsibilities as laid out in its Terms of Reference and is part of NHS Lothian governance structure.

3.2. VSG is responsible for assessment of all aspects of ventilation safety and resilience required for the safe development and operation of healthcare premises. It should inform the following:

- the design process for new healthcare premises
- the design process for modifications to existing premises
- the commissioning and validation process
- operational management and maintenance
- annual verification and performance testing

- prioritising the plant replacement programme
- decommissioning and removal of redundant equipment.

3.3. Any decisions affecting the resilience, safety and integrity of the ventilation systems and associated equipment should only be taken with the agreement of the VSG.

3.4. The VSG has a responsibility for ensuring that the design of a healthcare facility is, as a minimum, compliant with current legislation and technical guidance relating to ventilation systems, air quality, and that any risk to patient, staff or visitor safety arising from ventilation systems is minimised during the installation, commissioning, and handover of the facility. In the instances where there are higher levels of risk in specific projects, the risk reduction measures and tasks in excess of the guidance may be required. These should be escalated to the VSG, and advice received from the group must be followed. The project manager must ensure that any derogations relating to ventilation developed during the project's design and construction stages are assessed, recorded and submitted to the VSG for approval.

3.5. The project director and the project team have a delegated responsibility for ensuring that their projects are designed, planned, installed and commissioned in compliance with the most current and stringent guidance available for healthcare premises.

3.6. The Authorising Engineer (AE) for Ventilation provides services to NHS Lothian as specified in the NHSL Ventilation Systems Policy and provides additional services to construction projects on a separate appointment. These duties are described in the points below, but broadly include: provision of independent auditing and advice on ventilation systems, assessment of competency of the project contractors and relevant sub-contractors, provision of training to project teams and contractors, review of project documentation, drawings and specifications, providing ad hoc advice on project-specific ventilation related queries and involvement during the commissioning of the project including review of verification documentation, witnessing as appropriate and provision of independent validation of ventilation systems.

3.7. Estates managers/Authorised Persons (AP) for ventilation as key members of the Board VSG have duties in relation to their responsibilities described in the Ventilation Systems Policy and as the members of the specific project boards. Specifically, on new build/refurbishment projects, their duties will focus around acceptance on behalf of the Estates and Facilities Directorate of technical briefs and specifications and providing advice and assistance on Facilities technical, operational and maintenance-related queries.

3.8. Infection Prevention and Control Team and Consultant Microbiologists provide advice as members of the Board VSG and are engaged early on projects as key members of the project team. In addition to their duties via VSG, they provide advice to capital projects in relation to infection control matters. In particular: as to suitability with regards to whether design or function has a preventable risk of infection, via participation in project briefing and design meetings, ad hoc advice on specific project issues in relation to ventilation, review relevant project

documents and specifications and have responsibilities as stakeholders of the HAI SCRIBE process, including stage 4 approval at project handover. Microbiology can also provide more technical support in the interpretation of specific patient group requitements in relation to ventilation provision.

3.9. Duties in relation to ventilation safety are part of NHS Assure Key Stage Assurance Process requirements, in particular around derogations, variations, independent verification, Access and Maintenance Strategy, appointments of Authorised and Competent Persons and the VSG involvement in the design process around these items.

3.10. Director of Capital Planning and Projects, on behalf of the Chief Executive, will have overall responsibility for the implementation of this procedure and delegate managerial and day-to-day operational responsibility to the project directors and managers for capital projects. Similarly, Director of Estates and Facilities will have the same responsibility for Estates-led capital projects.

4. OPERATIONAL GUIDELINES

4.1. NHS Lothian will take all reasonable steps to provide assurance around appropriate governance arrangements and management processes in relation to ventilation systems design, reviewing, monitoring, commissioning and accepting completion of buildings.

4.2. All capital projects must be designed and delivered in accordance with current statutory and mandatory regulations and guidance. Adherence to SHTM 03-01 parts A and B is essential.

4.3. Aside from Ventilation specific guidance identified in this document, all ventilation systems should conform to the principles set out in the Health and Safety Executive's (HSE) Approved Code of Practice and guidance document HSG274 *Legionnaires' disease: the control of Legionella bacteria in water systems* and Scottish Health Technical Memorandum 04-01 *Safe water in healthcare premises*.

4.4. The ventilation of healthcare facilities consumes a significant portion of their energy load, so wherever possible natural ventilation is the preferred option. Where mechanical ventilation is used, sustainable design concepts allied to good-quality installation and the provision of controls that maintain the desired environment when the facility is in use will result in the minimum energy input for the maximum benefit.

4.5. In order to reduce energy costs and provide a more sustainable healthcare estate and support the declared zero- carbon target, where possible and where user and function requirement allows for it, ventilation selection should be as follows:

- first choice – natural ventilation;
- second choice – mixed mode ventilation;
- final option – mechanical ventilation.

4.6. In order to ensure continuity of service, ventilation systems should be designed and installed so that they can be quickly and easily maintained as far as it is practicable. Resilience of the proposed system in the event of service outage should also be considered.

4.7. All new major projects above £2m are required to use building information modelling (BIM) in order to ensure a coordinated design and provide information for the subsequent operation and possible future development of the facility.

4.8. At any stage of a project, VSG should always be consulted when:

- building work is undertaken outside or inside a building. The VSG should be consulted to determine its effects on the occupants, its effects on the existing ventilation system air intakes, and identify any risks to construction personnel who may be working in the vicinity of existing extract air discharges.
- a change of use of existing facilities is contemplated and the ventilation requirement is revised to suit the new use. All requirements must be agreed with the Ventilation Safety Group.
- any derogations or alternative design strategies differing from SHTM 03-01 and other guidance arise from a project or any works.
- designing ventilation for any particular healthcare application - the VSG should be able to give advice on any specific risks to patients and staff.
- it is proposed to install ventilation units of any type in a ceiling void above a non-clinical area (mounting of these in ceiling voids above clinical areas is never permitted).
- any doubt exists about whether a system falls within the definition of a critical system.

4.9. <u>Briefing and Design Stages</u>

4.9.1. The project director/project manager will ensure that the appropriate stakeholders are included in the project structure in the early stages of the project. In terms of ventilation, the appointments must include local Estates and Facilities managers (including Authorised Persons), Infection Prevention and Control Nurse, Consultant Microbiologist and Authorising Engineer for ventilation.

4.9.2. The above stakeholders, together with other members of the project team will be invited to regular project technical meetings tasked with management and overview of all project decisions and processes in relation to ventilation safety on the project.

4.9.3. The project team will ensure that the Board VSG is informed of the project, its stage and particulars following the approval of Initial Agreement via the relevant VSG representative. If the project location is on any acute site, the project manager should also be invited to the local Critical Systems Group by the

Estates chair, which has oversight of the building services systems and is part of governance structure.

4.9.4. The project director and project team members will engage with the Ventilation Authorising Engineer in the early stages of the design in order to ascertain appropriate levels of oversight and agree specific project involvement. For the briefing and design stage this should at least include:

- participation in relevant project technical meetings, providing ad-hoc advice on any ventilation related queries
- review and input into technical briefs,
- review of design drawings and specifications,
- assessment of the contractor and sub-contractor competencies
- training for contractors and commissioning sub-contractors where relevant
- input and comment on the contractor's draft Commissioning plan.

4.9.5. The project director and/or project managers will update the relevant VSG representative on a regular basis on the progress of the projects and their anticipated commissioning programme and escalate any issues requiring VSG attention or decision via this route.

4.9.6. The project manager ensures that any derogations relating to ventilation safety that are identified during the design stage are assessed by the project team, recorded and submitted for approval to the VSG.

4.9.7. The project manager will liaise with appropriate local Authorised Persons for ventilation in order to collate documentation and existing services information (existing site record drawings, critical ventilation information, validation and inspection records, etc.) and provide them to the contractor and design teams as part of the Pre-Construction Information. This will also provide the opportunity for the Estates Department to influence the design and identify any specific local requirements in relation to ventilation systems.

4.9.8. Patient group, facility function and environmental specific requirements should be understood in the early stages of the briefing process. SHTM 03-01 Part A Appendix 2: *Summary of design conditions* and other user specific tables should be referred to in the first instance and IPCT, Microbiology and Service representatives must be consulted during specification of the environmental parameters of the ventilation (and other building services) systems.

4.9.9. Specific airborne hazards should be captured at source and removed by local exhaust ventilation (LEV) systems provided under the COSHH Regulations.

4.9.10. Design drawings and specifications should be presented to the Authorising Engineer for ventilation and the local Authorised Persons for their comment and acceptance.

4.9.11. HAI SCRIBE Risk Assessment Stages 1 and 2 will be undertaken during early design period to inform the design; Stage 3 in the pre-construction phase and Stage 4 at handover in order to ensure safe delivery of the construction project.

4.9.12. It is essential that clear lines of managerial responsibility are in place for the avoidance of any doubt as to who is responsible for dealing with project design acceptance of the project during the pre-construction stage. This should be developed and agreed as part of the project technical group and VSG consulted in case of ambiguity.

4.10. Construction Stage

4.10.1. The Project Managers will ensure that the key stakeholders identified above are involved in the discussions and decision making relating to Ventilation during all phases of the construction stage.

4.10.2. HAI SCRIBE Stage 3 will be adhered to throughout the construction and commissioning stages.

4.10.3. Any existing services in a refurbishment project require to be protected during construction. Ventilation supply and extract in the working area must be isolated from the live systems.

4.10.4. The Project Managers will ensure that the Contractor's Commissioning Plan is submitted to NHS Lothian with enough time for review in advance of the commissioning stage start. Once the document is received, it should be presented to the AE and APs for discussion and comment in order to ensure the appropriate tests are prescribed and be able to influence the commissioning programme, thus providing additional level of assurance around this process.

4.10.5. The VSG is to be kept informed of the status of the project, including the anticipated commissioning timetable and any issues regarding escalation via the relevant VSG representative.

4.10.6. Any project derogations resulting from material variations to the design identified during the construction stage will be assessed by the project manager, recorded and submitted to the VSG for approval.

4.11. Commissioning and Handover Stage

4.11.1. The design and commissioning procedures should be accepted on behalf of the project manager by the Authorising Engineer.

4.11.2. The designers should prepare a commissioning brief well in advance of this stage for use by the commissioning engineer. This brief should specify fully and clearly the extent of the commissioning and maintenance and the objectives which must be achieved, and should include:

- a "user" brief comprising a description of the installation and its intended mode of operation
- the precise design requirements with regard to the scheme of air movement, room static pressures, supply and extract airflow rates and acceptable tolerances
- full details of the design conditions both inside and out, for winter and summer, together with the control strategy

- equipment manufacturers' type test data, commissioning, operation and maintenance recommendations
- drawings showing the layout of the system, positions of airflow measurement test points, dampers, regulating devices and filters within the duct runs, together with sizes of ducts and terminal fittings.
- wiring diagrams for all electrical equipment associated with the air- handling systems, including motor control circuit details and any interlocking and safety devices.

4.11.3. The designer should prepare for inclusion in the contract documents a list of tests and measurements that are to be taken and recorded by the contractor. These should be witnessed by the Project NEC Supervisor (if appointed) and the Estates Authorised Person on Project Manager's behalf, who, if approved, will circulate the results to IPCT and Microbiology Consultants and advise the VSG of the results via the group representative.

4.11.4. The SHTM 03-01, CIBSE Commissioning Code A – 'Air distribution' or BSRIA BG 49 – 'Commissioning air systems' provide full guidance on the information that will be required by the commissioning team. SHTM 03-01 also advises the order in which the commissioning process should be carried out in as well as a complete list of required test certificates.

4.11.5. Impending NHSScotland Assure Commissioning Checklist should also be consulted during the production of the commissioning brief. The Checklist will be appended to this SOP once officially issued.

4.11.6. The system, on completion, should be operated by the contractor as a whole and subject to performance tests in accordance with the contract requirements. These will include independent validation of the system performance on behalf of the client.

4.11.7. All new and refurbished ventilation systems should be independently validated as a whole from the air intake through to the extract discharge, prior to acceptance by the project manager. To retain independence, the validator should be appointed and paid directly by NHS Lothian. The validator will act as the project manager's representative to inspect the system, check its performance and if satisfactory – recommend acceptance.

4.11.8. Validation should be carried out by a suitably qualified competent engineer appointed by the project manager. The validator could be the client's AE or someone of similar standing who is familiar with the ventilation requirements for healthcare facilities. The extent of AE's involvement around validation should be agreed during the briefing stage of the project and any specific commissioning requirements or checklists should be made available to the project team at that stage.

4.11.9. Once the system is shown to meet the design intent, the handover documentation should be completed. This, inclusive of all the test certification and maintenance information as part of the O&M Manuals will be passed on to the Estates Department on handover of the project.

5. IMPLEMENTATION AND REVIEW

5.1. Director of Capital Planning and Projects, on behalf of the Chief Executive, will have overall responsibility for the implementation of this procedure and delegate managerial and day-to-day operational responsibility to the project directors for construction projects. Director of Estates and Facilities will have the same responsibility for Estates-led capital projects.

5.2. All staff working within project teams must take cognisance of this procedure when they invite contractors on to NHS Lothian premises. The contractor must liaise with the project team before work commences. Advice on procedures can be sought from Capital Planning and Projects Assurance Team.

5.3. All contractors working on NHS Lothian sites will be issued with a copy of the NHS Lothian Health & Safety Control of Contractors Policy and the Ventilation Systems Policy and its associated procedures.

5.4. The Director of Capital Planning and projects will review this procedure annually, or sooner if an audit or review of the procedures recommends otherwise, or in case of updates to guidance and/or legislature.

APPENDICES

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Letter to the Editor

Variation in design of neonatal intensive care units: the need for consensus

Sir,

In the UK, typical ventilation parameters for neonatal units are detailed in Healthcare Technical Memorandum (HTM) 03—01 [1]. Positive pressure +5 Pa to the corridor and 10 air changes per hour is recommended in neonatal intensive care units (NICUs), which are subtly different to critical care areas. There is ambiguity over whether fungal spore protection is required, with the suggestion that positive pressure is for this purpose, but there is no recommendation on high-efficiency particulate air (HEPA) filters. Health Building Note (HBN) 09—03 [2] on neonatal units and HTM 03—01 [1] advocate a draught-free environment, and highlight the importance of temperature control in neonates. However, there is sparse guidance on how to achieve this while mitigating the risks of transmission via the air.

We recently reviewed the proposed ventilation strategy for an NICU where supply grilles were located at the entrance to the cot bay, and extract grilles were located at the foot of the cot bay, moving air from a circulation space over the neonate and out. The infection prevention and control team had concerns about the risk from dirty activities in the circulation space, and neonatologists had concerns about draughts. There was also uncertainty about the requirement for isolation facilities. A survey of the healthcare built environment of existing NICUs was conducted to explore some of the challenges.

Questionnaires were distributed in February and March 2024 to 42 hospitals with NICUs in the UK, and also to members of the European Network to Promote Infection Prevention for Patient Safety (EUNETIPS) to capture NICUs in wider Europe. Thirteen responses were received from the UK (31% response rate) and four from outside the UK, all from France. The oldest NICU opened in 1998, but most opened between 2011 and 2015. The NICUs surveyed had a median of 16 cots designated for intensive care level treatment, and most had additional cots for other levels of neonatal care within the same footprint. French NICUs reported a greater proportion of single/family accommodation compared with the UK (82% vs 32%).

Responses on technical aspects of ventilation are detailed in Table I. Although all NICUs reported annual verification of the ventilation system, variation in specialist ventilation isolation rooms and use of HEPA filtration was found. A US consensus

Table I
Responses to technical aspects of ventilation by each neonatal intensive care unit (NICU)

Question item	Responses (number of NICUs)
Does the NICU ventilation system undergo annual verification?	17/17 (100%) Yes
Is air intake to the NICU HEPA filtered?	7/17 (41%) Yes; 10/17 (59%) No
Does NICU have any natural ventilation?	4/17 (24%) Yes; 13/17 (76%) No
What is the air change rate per hour within patient areas in the NICU?	12/17 (71%) answered Mean: 11.1; Range: 8—12 (air changes/hour)
Is a pressure differential maintained from the NICU (or patient areas within) to the corridor?	12/16 (75%) Yes; 4/16 (25%) No; 1 no answer
If so, please describe the pressure differential, e.g. +10 Pa from NICU to corridor	6/12 (50%) ≥5 Pa from NICU to corridor 2/12 (17%) <5 Pa/variable to corridor 4/12 (33%) no answer/stated not measured
Do you have any single rooms with specialist ventilation in the NICU, e.g. PPVL/positive-pressure/negative pressure isolation rooms?	6/17 (35%) Yes; 11/17 (65%) No
If so, please describe any specialist ventilation rooms in the NICU	Negative pressure: 1/17 (6%) Positive pressure: 1/17 (6%) Positive pressure lobby -type: 4/17 (24%) Switchable ventilation options 2/17 (12%) Other side rooms 8/17 (47%)
Where are the air intake grilles positioned in relation to the cots? i.e. directly over/to side of the cot	Offset: 7/15 (47%) Directly above: 4/15 (27%) Centre of room: 3/15 (20%) Other: 1/15 (7%); no answer 2

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document recommends that a negative pressure isolation room should be available for all NICUs, and suggests that HEPA filtration may improve infection control in immunocompromised neonates [3]. Some respondents commented that specialist isolation rooms were rarely used for their intended purpose. Placement of ventilation grilles also varied and deserves greater consideration, alongside air flow within NICUs.

The ratio of clinical handwash basins to cots varied from 1:1 to 1:6, with a median of 1:2. Four of 17 (24%) NICUs reported having a point-of-use filter fitted on any outlet for over 1 year. Risks of water outlets have been realized in NICUs [4], but up-to-date guidance with specific recommendations are lacking in UK guidance documents. Further problems arise from the requirement for surgical scrub necessitating a trough sink. Splash-reducing sanitaryware and placement of splash guards [3] should be considered, given the splash zone is now appreciated to be $\geq$2 m [5]. Solutions are needed that allow good hand hygiene and prevent transmission events from water outlets.

Eight of 17 (47%) NICUs had a washing machine in the unit or in a nearby clinical area, of which four have annual validation. Three industrial-style washing machines were described. Outbreaks related to laundry have been linked to both specialist laundry facilities [6] and washing machines on an NICU [7]. HBN 09—03 [2] suggests laundry facilities within the NICU which parents may operate, but half of the NICUs surveyed reported no local laundry facilities. Shared learning is crucial to improve risk mitigation for laundry in NICU.

NICUs are unique in their vulnerable patient population and specific operational requirements. This questionnaire study highlights variations in practice, and the need for updated evidence-based guidance specific to the design and maintenance of neonatal settings covering ventilation strategy, water and laundry.

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Conflict of interest statement
None declared.

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Guidelines

Guidelines on the facilities required for minor surgical procedures and minimal access interventions

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SUMMARY

There have been many changes in healthcare provision in recent years, including the delivery of some surgical services in primary care or in day surgery centres, which were previously provided by acute hospitals. Developments in the fields of interventional radiology and cardiology have further expanded the range and complexity of procedures undertaken in these settings. In the face of these changes there is a need to define from an infection prevention and control perspective the basic physical requirements for facilities in which such surgical procedures may be carried out. Under the auspices of the Healthcare Infection Society, we have developed the following recommendations for those designing new facilities or upgrading existing facilities. These draw upon best practice, available evidence, other guidelines where appropriate, and expert consensus to provide sensible and feasible advice. An attempt is also made to define minimal access interventions and minor surgical procedures. For minimal access interventions, including interventional radiology, new facilities should be mechanically ventilated to achieve 15 air changes per hour but natural ventilation is satisfactory for minor procedures. All procedures should involve a checklist and operators should be appropriately trained. There is also a need for prospective surveillance to accurately determine the post-procedure infection rate. Finally, there is a requirement for appropriate applied research to develop the evidence base required to support subsequent iterations of this guidance.

Introduction

There have been many changes in healthcare delivery in recent years, including the delivery of surgical services in primary care or in day centres, previously provided by acute hospitals. Also, some minor surgical procedures continue to be performed outside the conventional operating theatre.

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A recent survey of operating theatre ventilation facilities for minimally invasive surgery in the UK found that most procedures were carried out in areas without specialist ventilation and/or in facilities that are often referred to as 'treatment rooms'.[1] However, there is a paucity of evidence on whether or not procedures carried out under these conditions are associated with increased infection rates, specifically surgical site infection (SSI).

Guidelines to minimize SSI by identifying interventions during the pre-operative, operative and post-operative phases have been published.[2] Although these guidelines apply to all surgical or operative interventions, they do not address the physical conditions under which minor surgical procedures – those carried out under local anaesthesia and that are superficial, and minimal access interventions (MAIs), i.e. therapeutic or diagnostic procedures that are not considered major in terms of the size of the operative site – should take place. Nonetheless, there is confusion among infection prevention and control personnel, operators and others as to what facilities and practices are required when minor surgical procedures and MAI are carried out in the acute hospital sector and elsewhere, such as in primary care.

History of hospital operating theatres

Over the centuries, surgeons have moved from operating under primitive conditions to an environment which is ventilated to specific high standards and considerably advanced from that of their predecessors. The practice of surgery demands the training of surgical trainees in the use of masks, sterile clothing and the need to minimize movement into and within the operating theatre.[3] There is also emphasis on minimizing the duration of each procedure as it is accepted, based on evidence, that prolonged procedures carry increased risk for SSI.[4]

Specialized ventilation systems in operating theatres

Originally, powerful extract ventilation was provided for operating theatres to remove steam from boiling water 'sterilizers', pulling in air from surrounding areas (i.e. the theatre was at negative pressure), but this led to infections caused by airborne bacteria being drawn in from adjacent wards. With the general provision of clean air under positive pressure, clean wound infection rates fell by a factor of 10.[5–7]

The principle of modern conventional theatre ventilation is to remove airborne contamination generated in the theatre and to prevent the ingress of possibly contaminated air from the surrounding areas. This is achieved by actively supplying relatively clean air into the theatre faster than excess air can be passively removed.

The air escapes through pressure release dampers and any gap in the fabric of the theatre (e.g. around doors) and, in flowing outwards, it prevents any air from surrounding areas flowing inwards.

The main source of airborne contamination is the skin of those moving inside the theatre, i.e. the staff.[8] This is diluted by the air supplied to the theatre, with air then flowing out to less sensitive areas such as corridors, carrying the contamination away with it.[8] A classic study of operating theatre ventilation found that counts of airborne microbes increased with the degree of movement and numbers of personnel within the theatre.[9] It was shown later that airborne skin squames carrying micro-organisms in a 'raft-like' fashion are shed from the skin surface; during modest activity, humans can shed microbe-carrying skin scales yielding up to 10,000 colony-forming units (cfu) every minute.[10–12]

The importance of ventilation in controlling airborne contamination was shown in an early study in England where the comparative rates of infection in hospital ranged from 2% to 7% and the cut-off between a low and high rate was an air-count of 5 cfu/ft^3 referred to in the so-called Lidwell Report, the forerunner of Health Technical Memorandum 2025, 'Ventilation in healthcare premises'.[13,14]

In 'clean' surgery, surgical sites can be exposed to airborne bacteria, either directly into the wound or indirectly by microbes settling onto surgical/operative instruments which will then, on use, transfer this contamination to the surgical site. This latter route probably accounts for the majority of airborne bacteria in a surgical site or wound.[15] The smaller the incision, such as during laparoscopy, the greater will be the proportion of bacteria that enter the wound via indirect airborne sources. Thus instrument contamination contributes proportionally more to surgical site contamination in this scenario.

The critical areas within the operating theatre suite are the operating theatre itself and the preparation room, where sterile instrument packs may be opened and exposed to the air before use. The soiled utility room is under negative pressure (i.e. inward airflow) so that it does not contribute to airborne contamination in theatre.

There is a need to define procedures in terms of the susceptibility of the surgical or operative site to contamination and to define the basic physical requirements of facilities in which many minor surgical procedures and MAI may be carried out.

Aetiology of post-operative infections in minor procedures and MAI

In the National Institute for Health and Clinical Excellence (NICE) guidelines on SSI, no distinction is made between minor surgical procedures, MAI and conventional surgical operations.[2] However, it is not always clear what is meant by minor surgical procedures or MAI and the individual perception of this may vary according to background and professional practice. Laparoscopic procedures are associated with lower infection rates than those after open procedures but patients who undergo laparoscopic procedures may be pre-selected and have a lower risk of infection as more complicated cases are carried out as conventional surgical operations.[16,17]

Surveillance data of orthopaedic procedures from the Health Protection Agency revealed that *Staphylococcus aureus* accounted for 39–44% of the bacteria responsible for SSI in these procedures followed by Enterobacteriaceae in 14–19% of cases.[18] The bacteria recovered from specimens taken from infected wounds following laparoscopic abdominal surgery, minor hand surgery or day surgery, largely reflect the endogenous flora of both patients and staff, and appear to be no different from those following conventional surgical operations.[19,21] For example, *S. aureus* was responsible for 44% of infections of the hand and *Pseudomonas aeruginosa* and other Gram-negative bacilli are more likely to be responsible for infections arising from laparoscopic gastrointestinal procedures.[19,20] Therefore

there does not appear to be any difference in the causative microbes of post-operative infection whether carried out as a conventional surgical operation or as an MAI/minor surgical procedure.

Interventional radiology

The major recent developments in radiology/imaging include therapeutic interventions in the vascular and non-vascular arenas. Interventional radiology was originally pioneered by Charles Dotter (1920–1985) who saw the potential for treatment, as well as diagnosis, with the use of catheterization.

Endovascular procedures are now often considered before open surgery and these techniques can be used in the management of a range of cerebrovascular, cardiovascular and oncological conditions. Biocompatible materials, e.g. stents including those covered with graft material used in the modern management of aortic aneurysms, coils, particles and inferior vena cava filters, may be implanted. Some procedures require access to the arterial system by an arteriotomy, but the majority can be performed by a percutaneous approach.

In the non-vascular arena, there are a variety of procedures, such as computed tomography and ultrasound-guided tumour ablation instead of open surgery and osteoplasty which instills cement into weakened bone without the need for an operative approach. A variety of percutaneous catheters and stents are used for drainage of obstructed urinary and hepatobiliary systems.

Interventional radiology is likely to be the initial treatment for many diseases in preference to open surgery in the future.[22] To date, anecdotal reports seem to indicate that infection rarely occurs following these procedures. Every effort is used to maintain sterility, including only opening the intervention kit when it is about to be used, but the ventilation and other facilities in most interventional radiology departments are not as yet equivalent to those of an operating theatre. It is recommended that endovascular aneurysm repair should only be performed in a dedicated endovascular suite of operating theatre standard with appropriate ventilation and support facilities, because of the severe consequences when infection complicates this procedure.[23]

Surgical issues

The operational standards under which minor surgical procedures or MAI are carried out in the outpatients department, in the emergency department or elsewhere outside the theatre have not been defined but should maximize patient safety while being feasible in terms of facilitating access to clinically required procedures. There is increasing emphasis on some surgical procedures being carried out as day procedures; for some, a specialist ventilated theatre is not currently used, e.g. excision of nail bed and vasectomy.[24] A current trial of patients undergoing vasectomy in conventional operating theatres and in procedure rooms with no mechanical ventilation shows no difference to date in post-procedure infection rates but this trial is ongoing (M. Nevill, personal communication). The pressure to carry out more procedures in primary care, where it may be cheaper, and the obvious advantages for some patients in terms of ease of access mean that more procedures may take place outside hospitals and under non-ventilated conditions. For example, it is suggested that a variety of procedures such as carpal tunnel decompression, the removal of a ganglion from the dorsum of the wrist, and haemorrhoid injections may be carried out by general practitioners with enhanced surgical experience in a 'modified treatment room/operating theatre'.[25] Although this guideline is helpful in indicating which procedures can usually be carried out in primary care, the precise definition of this type of facility remains unclear.

In addition, the unexpected may occur, for example the removal of an apparent groin lymph node in a hospital operating theatre may subsequently become a hernia repair which requires the facilities of an operating theatre.

The use of aseptic techniques with the appropriate facilities is especially important in those areas of surgery where the consequences of infection can be devastating, for example orthopaedic surgery resulting in an infected implant, or ophthalmic surgery resulting in endophthalmitis. However, intravitreous injections such as in the treatment of macular degeneration, are carried out in treatment rooms with or without specialist ventilation, and the risk of endophthalmitis, when it occurs occasionally, is related to suboptimal technique.[26,27]

Basis for design specifications for minor surgery and MAI, including interventional radiology

Health Technical Memoranda in the UK seek to define the optimum parameters in which various forms of healthcare delivery should be undertaken. There is a range of ventilation options available, depending on whether a day case theatre, treatment room, endoscopy room, a conventional or an ultra-clean theatre is being considered. In all cases the primary requirement is to protect the patient from preventable infection. There is also a need to control the exposure of staff to waste anaesthetic gases, where present, and to ensure that staff work in comfortable conditions.

Traditionally UK operating theatres have been ventilated at ~20 air changes per hour, an 'air change' occurring when a volume of air equivalent to the volume of a room has been supplied to or extracted from that room, and the operating theatre is maintained at a positive pressure to surrounding areas. This air change rate has been shown to be sufficient to dilute contaminants within the theatre, with the resulting positive pressure ensuring that contaminants from outside do not enter.[13]

Current guidelines recommend a design ventilation rate of 25 air changes per hour for new conventional operating theatres.[28] The supply air should be filtered to at least EN 779 F7 standard (i.e. 80–90% efficiency against a test aerosol with particles of 0.4 μm) and a positive pressure differential of 25 Pa with respect to outside air.[13] The performance of the ventilation system is acknowledged to deteriorate over time, but as long as at least 18 air changes are achieved it will remain acceptable. The ventilation requirements for ultraclean theatres are much greater in terms of a more organized air flow at the operating site with the supply air being high efficiency particulate air (HEPA)-filtered.

Portable HEPA-filtered auxiliary ventilation units are available, and, when incorporated into an instrument trolley, may provide the equivalent of ultraclean air quality in an ultraclean ventilated theatre but over surgical instruments on the trolley (M.J. Thomas and C.A. Mackintosh, personal communication).

Freestanding portable HEPA-filtered directional auxiliary ventilation units have been evaluated.[29] Their effectiveness is likely to be influenced by their position and direction relative to the operating site and discipline of the operating staff.

In rooms where anaesthetic gases may be used, e.g. interventional radiology, a minimum of 15 air changes per hour is required for the removal of airborne chemicals.[28]

In designing surgical and operative facilities, there are many other issues apart from ventilation to be considered. These include sterile pack storage facilities, separating where possible clean and dirty facilities, the type and location of the scrub and the disposal of excised human tissue and surgical waste.

Recommendations

General principles

The primary objective in formulating standards for facilities is to protect patients from surgical site and other infections. The removal of anaesthetic gases and the provision of comfortable facilities for healthcare staff are also important and should be considered.

It is recognized that the risk of infection will vary according to the procedure and the patient. Even where there is a low risk of infection after a specific procedure, in some circumstances the consequences may be disproportionately serious, for example, infection after arthroscopy resulting in septic arthritis. Consequently, such factors should be considered in deciding where a procedure should be carried out and under what conditions, i.e. conventional operating theatre standards or those outlined below. Here we make recommendations on the design of new facilities to be used for the carrying out of MAI, including interventional radiology, and minor surgical procedures to minimize post-procedure infections. We also hope to raise awareness of all healthcare staff and patients of the importance of infection prevention.

We recognize that many minor surgical procedures in particular are currently being undertaken in facilities that do not meet these standards, and usually without reported adverse consequences in terms of increased infections. However, in response to the changing delivery of healthcare, increasingly in the non-acute hospital sector, and in response to requests for guidance, we have produced the following guidelines. These are based on best practice, evidence and current guidelines where available and appropriate, and expert consensus to primarily provide sensible and feasible advice. For existing facilities, consideration should be given to using these recommendations to improve facilities in part or in full over time.

Definitions

- *Minimal access interventions* may be therapeutic or diagnostic and are not considered major procedures in terms of the size of the operating skin site, but may be major in terms of the actual surgery, e.g. laparoscopic colectomy. These are carried out using a non-open approach, e.g. laparoscopic surgery and interventional radiology. These may be performed under local or general anaesthesia, and, although relatively uncommon, consideration needs to be given to the necessity to quickly and safely convert from an MAI intervention to an open surgical procedure due to complications or technical difficulties, e.g. laparoscopic cholecystectomy.
- *Minor surgical procedures* are those that are carried out under local anaesthesia and that are superficial. The operative site is usually limited in size by whether it can be anaesthetized locally. Some podiatric procedures and the debridement of leg ulcers are included in this category. By definition for the purposes outlined below, such procedures are not carried out under spinal or general anaesthesia. Some intraocular ophthalmic procedures are excluded from this category as the consequences of eye infections are significant and difficult to treat, even if the operative site is small or limited, and carried out under local rather than general anaesthesia. A list of some of the procedures that might come under this category is outlined in Table I, which is modified from Reference 25. However, this is not exhaustive and some of the procedures listed might be considered as requiring conventionally ventilated operating theatre facilities, e.g. carpal tunnel decompression.

Facilities specifications

(a) Ceiling

This should preferably be made from non-porous material that can be easily cleaned. Suspended ceilings should not be installed in new facilities.

(b) Walls

These should be made from non-porous/monolithic material that can be easily cleaned and occasionally disinfected.

(c) Windows

These should be non-openable where specialist mechanical ventilation is provided.
Where there is natural ventilation using a window that can be opened, there must be a fly screen to prevent the ingress of insects.
Where windows are present, these must not compromise patient privacy.

(d) Doors

These should be self-closing with a vision panel (with laser protection where appropriate) to facilitate observation of procedures and the movement in and out of the operating room. However, this has to be balanced with the necessity for patient privacy.

(e) Floors

Floors should be easily cleaned and disinfected according to local policies, and be durable and strong enough to support the machinery that will be necessary in some operative facilities.
Coving is desirable to facilitate cleaning, contain spills and to avoid damage.

Table I
Examples of minor procedures[a] under various surgical disciplines that may be performed outside a ventilated operating theatre

Surgical discipline	Procedure
Breast	Percutaneous core biopsy
	Vacuum-assisted excision biopsy
Ear, nose and throat	Cauterization of nasal septum
	Polypectomy of internal nose
	Manipulation of fractured nose
General	Trans-anal excision of lesion of anus
	Haemorrhoid injections and haemorrhoidectomy
	Excision of epidermoid cysts, lipoma (<2 cm), basal cell carcinoma and 'small bumps and lumps'
	Hydrocele aspiration
Gynaecology	Endometrial biopsy
	Colposcopy
	Diathermy or laser treatment of cervical lesions
	Marsupialization of Bartholin's cyst
	Insertion of intrauterine device
	Vacuum aspiration, and dilatation and evacuation termination of pregnancy
Ophthalmology	Excision, biopsy or cauterization of eyelid, e.g. chalazion
	Laser iridotomy
	Intravitreal injections
	Lacrimal sac washouts
	Subconjunctival injections
Orthopaedic	Excision of ingrown toe nail
	Intra-articular injection
	Carpal tunnel surgery
Vascular surgery	Varicose vein injection, sclerotherapy, laser treatment or radiofrequency ablation
Other	Liver, renal and bone marrow biopsy
	Caudal block
	Endoscopy via natural orifices, e.g. cystoscopy and gastroscopy
	Vasectomy
	Pleural drain insertion
	Radiologically guided CT or ultrasound drain insertion and biopsies

CT, computed tomography.
[a] Mainly derived from recommendations/discussions in References 24 and 25.

(f) Instruments and sterile pack storage

Single-use instruments may be preferable and their use is encouraged if it is difficult to comply with the requirements for the appropriate decontamination and storage of reusable instruments. Also, for minor procedures in primary care, single-use items eliminate the increasingly rigorous requirements to decontaminate surgical instruments to a standard that would be difficult to comply with outside specialized sterile supply departments.[30,31]
Dedicated secure facilities should be provided for the storage and collection of re-usable instruments if preferred, including endoscopes and their accessories (which require pre-cleaning in a separate sink), to ensure their safety and to avoid damage to the instruments themselves.
There should be adequate storage space for instruments with due regard to the range of procedures carried out and the throughput of patients.
The design should minimize the deposition of dust, including appropriate racking or shelving.
Unlike for conventional operating theatres, a separate area for the laying up of instruments is not required, but instruments should only be laid up as required and not in advance.

(g) Scrub-up facilities

These may be within the operative facility, but, if within the operating room/theatre, should be located such that instruments do not get splashed and should be separate from basins used for other purposes.
Taps or faucets should be hands-free.
Disposable towels should be used.

(h) Disposal of waste

The facilities and the procedures for the safe disposal of waste should comply with the current guidelines for holding waste prior to collection/disposal.[32]
A separate secure area, inside or outside the operative facility, e.g. a lockable bin, should be provided.

(i) Ventilation
(1) Minimal access interventions

It is recommended that new facilities be designed to achieve 15 air changes per hour, as required for the removal of airborne chemicals/anaesthetic gases and which we believe is microbiologically adequate in this setting.[28] Such a specification is required because of the need to prevent the deposition of airborne contamination on to items that may be introduced into the patient, especially where there is implantation of sterile prosthetic devices such as stents, and a need occasionally to convert to an open procedure.
Where there is a perceived increased risk of infection due to the complexity of the patient or the procedure, a risk assessment should be carried out to determine whether the procedure should be undertaken in a theatre in the operating theatre suite.
Supply air should be filtered by an EN 779 F7 filter (see above and Reference 13) for new facilities.
There should be a pressure differential of $\geq$5 Pa positive pressure between the operating facility and the surrounding area when constructing new facilities.

(2) Minor procedures

Natural ventilation, including the presence of opening windows but with a fly screen, is acceptable.

(j) Room conditions (e.g. temperature)

For mechanically ventilated facilities, these should be within the standard range, i.e. 18–22 °C with a relative humidity of 20–60% unless clinical considerations deem otherwise.

(k) Ventilation status indicator panel

Where the operating facility has specialist mechanical ventilation to the standards above, there should be a clear indication to those carrying out the procedure (i.e. within the room such as part of a surgeon's panel in a conventional theatre) that the ventilation is functioning correctly.

(l) Lighting

This should be adequate for the task to be undertaken in the facility.

(m) Medical gases

Where MAIs with general anaesthesia are undertaken, 15 air changes per hour are required, similar to that specified for anaesthetic rooms in conventionally ventilated theatre suites, to minimize staff exposure to anaesthetic gases.[28]

(n) Imaging/IT

Access to Picture Archive and Communications Systems (PACS) is required to optimize the quality and safety of patient care.

(o) Specimen storage/transport

There should be adequate facilities and space for the collection and storage of specimens, with temperature-controlled conditions, for important or key specimens.

(p) Electrical services

All facilities should have emergency lighting in the case of a loss of power supply and should comply with relevant health and safety recommendations.

Professional practice

If the hands of the operator are not visibly dirty, alcohol hand rubs or equivalent may be used between cases. However, a conventional surgical scrub is indicated at the start of a list, i.e. before the first case or procedure. Sterile gloves and a plastic apron are the minimum personal protective equipment requirement for carrying out minor surgical procedures. However, full precautions, including fresh sterile gowns for each case, are required for MAI, for minor surgical procedures if a sterile device is being implanted and when there is a risk of significant post-procedure infection, or if there are other factors predisposing to infection.

Masks are not usually required except when a sterile device is being implanted, or when there are other issues predisposing to infection. However, face protection (e.g. mask with eye protection) for operators and other staff who may be affected is required, if splashing is likely. Further details on pre-, peri- and post-operative interventions to minimize SSI can be accessed elsewhere.[2]

All surgical procedures should involve a checklist. Those involving general anaesthesia should be modelled on the World Health Organization checklist for safe surgery (http://www.who.int/patientsafety/safesurgery/tools_resources/SSSL_Checklist_finalJun08.pdf) to include aspects of mechanical theatre ventilation, e.g. checking that the ventilation is working, in facilities for MAI. Modifications to these may be made for MAI and minor surgical procedures as appropriate.

Training and education

Facilities need to meet the educational needs of students, doctors in training and other healthcare workers, such as those related to understanding infection and sepsis. All staff involved in MAI and minor surgical procedures must be able to provide evidence of competency in aseptic technique and in their knowledge and understanding of the facilities that are provided, e.g. ventilation, safe disposal of waste, etc. Although outside the scope of this document, practitioners carrying out MAI and minor surgical procedures should be competent to do so with appropriate mandatory training and ongoing continuous professional development.

Research and audit

As there is an absence of good data on the risk of infection after MAI and after most minor surgical procedures, prospective surveillance of post-procedure infections is required. Audit is necessary, and should include, as minimum, re-admission rates for healthcare-associated infection. There should be access to the results of research and audit, and research in primary care is essential to underpin improvements in patient care. Appropriate support and funding to develop the evidence base is required to support subsequent iterations of this guidance.

Acknowledgements

We wish to acknowledge the support and help of S. Hollinshead at the Healthcare Infection Society throughout the development of these guidelines. We are also grateful to the following individuals who contributed to the initial meeting: J. Hood, M. Kelsey, M. Kiernan, D. Tucker and H. Osborne. We also wish to thank those individuals and organizations that provided helpful and valuable feedback on earlier drafts.

Conflict of interest statement
H.H. has recently been in receipt of research funding from Steris Corporation, 3M, Inov8 Science, Pfizer, Wyeth & Cepheid. He has also received lecture or consulting fees from 3M, Novartis & Astellas. The following have no conflicts of interest: J.E.C., A.S., M.T., A.M.B., P.H., P.J., C.M.

Funding sources
The Healthcare Infection Society.

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NSS response to request from Scottish Hospitals Inquiry

28 June 2024

Progress of work referred to in Ms Grant's statement at paragraphs 34 to 38; and in paragraph 70 of Counsel to the Inquiry's first Closing Submission

Request from Scottish Hospitals Inquiry

“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 paragraph 70.”

1. NSS Response

NHSS status of ADB & Repeatable Rooms

1.1. The work noted in para 38 of Ms Grant's statement on NHS Activity Database (ADB) and Repeatable Rooms developments is ongoing. In 2017, the direct link between NHS Guidance and the ADB automatic updates was discontinued by NHS England. This had medium to long-term implications for NHSScotland (NHSS) policy, guidance, and practice.

1.2. In 2018, a Short Life Working Group (SLWG) was established under the Scottish Property Advisory Group (SPAG) to address the future role and development of ADB for NHS Scotland. Given its complementary relationship, this SLWG also encompassed the future role and development of recent NHS England 'Repeatable Rooms' and 'Standard Components' programme. Membership included representation from NHSS Boards, Health Facilities Scotland (now NHSS Assure), and subject matter experts. External consultants funded by NHSS Assure created key design outputs compatible with ADB and NHSS digital estate strategy. SPAG governance ensured input and review from all Boards before publication.

1.3. In 2018, SPAG accepted initial SLWG recommendations that, in line with policy, all Boards should continue to support / utilise ADB and going forward, wherever appropriate, also utilise the NHS England 'Repeatable Rooms'. SPAG also agreed the SLWG recommendation to develop NHSS specific ADB and Repeatable Rooms, where they had identified a clear gap in NHS England's list.

1.4. The SLWG, formed in February 2019, reconvened in 2022 following a pause due to COVID. NSS published outputs in 2020 (archived), 2023, and in 2024 providing up to 13 NHSS specific 'Repeatable Rooms.' This augments the now up to 24 NHS England room types.

NHSS development of ADB & Repeatable Rooms

1.5. In 2018 the SLWG recognised ADB as a sole source of over 5,000 combined NHS room and equipping data for NHSS briefing. It therefore endorsed to SPAG, both continued ADB use, plus that NHSS start using the then 15 types of 'Repeatable Rooms' and 22 'Standard Components', produced by NHS England. The SLWG stated aim was to maintain a starting point in NHSS briefing, providing quality, consistency, and continuity of standards across policy, guidance, and governance. ADB data templates (RLS and RDS) also align with NHSS's digital estate strategy. Their next aim was prioritising development of 'Repeatable Rooms', where required to improve NHSS quality, value and sustainability.

1.6. The SLWG's 2019 focus was to address key gaps, including safety, in NHS England Repeatable Room provision due to key Scottish Government specific policies, such as joint acute, primary and mental health care, plus 100% single bedrooms. They targeted three of NHSS's most common room types: consulting exam rooms, single bedrooms, and ensuite toilets with showers. The SLWG initial outputs were published in December 2020. Digital RLS

and RDS are available to all Boards via NSS. NSS also recommend / review use of ADB and Repeatable Rooms via our NHSS Design Assessment Process (NDAP) role.

1.7. In 2022 -23, the NHSS Assure research team, supported by the SLWG, conducted a post-occupancy user review of the three NHSS specific Repeatable Room types. This national feedback loop informed SLWG next room development, prioritisation, and publications. This feedback is published in an NSS August 2023 Repeatable Rooms supplement.

1.8. The SLWG reconvened in 2022 to build on their initial NHSS specific three room types, plus further NHS England updates. It recommended to SPAG a prioritisation list for the next suite of Repeatable Room types, which reflected NHSS needs, including guidance and likely facility investment priorities, including primary and not just acute care settings. The opportunity was also taken to incorporate feedback and update the initial 2020 three room types. In April 2024, NSS published an expanded 13 NHSS-specific Repeatable Rooms, including 10 additional room types such as treatment rooms, enhanced treatment rooms, specialist dental treatment rooms and key support rooms. As previously, digital RLS and RDS are available to all Boards via NSS (or NHS England), and their use is supported in Board projects going through NDAP review, from briefing to construction stages.

1.9. In Spring 2024, the SLWG recommended the next priority two NHSS specific Repeatable Room types, as a cleaners' rooms (for primary care, and if universal, acute general hospitals) and an interview / counselling / consulting room (for primary care). It is anticipated this further development will commence in Autumn 2024.

NHSS external collaboration on ADB & Repeatable Rooms

1.10. The SLWG and NHSSA aim is to make the recent NHSS repeatable rooms, the original NHS England Repeatable Rooms, and Guidance updates all available within the ADB library software. This would create a "single source of truth" with easy NHS briefing and supply chain access. All 13 NHSS Repeatable Rooms are developed to be compatible with ADB software. SLWG and NHSSA have engaged with Talon Solutions Ltd (ADB's owners) since 2018, to agree our common goals, key roles, and to manage ADB technical, plus commercial/ licencing, challenges. The first ADB upload for NHSS 13 Repeatable Rooms, including RLS / RDS with reference to NHSS guidance, is anticipated during 2024, following NSS publication. The digital compatibility checks are already underway between the NHSS Repeatable Rooms external consultant architects and Talon Solutions, but due to technical issues a specific completion date is not currently available.

1.11. NHSSA collaborates closely with all of our NHS UK devolved nation partners on shared priorities, including NHS Guidance and Repeatable Rooms. NHS England updated their suite to 24 NHS Repeatable Rooms for acute general and mental health hospital care settings. These are available on NHS England hub 'member' websites for use throughout the UK NHS and its supply chain. Similarly, NHSS specific Repeatable Rooms are also available for NHS UK wide use. An 'open licence' and common feedback loop are a key part of NHS Repeatable Rooms initial and ongoing development, including the 2018 SPAG endorsement for use in NHSS projects wherever appropriate. Additionally, in 2024 NHSS Assure is supporting eight

further hospital utility rooms and staff bases as part of the NHS England / NHS UK HBN 00-03 Guidance updates and NHS Repeatable Rooms programme.

NHSS other initiatives related to ADB & Repeatable Rooms

1.12. NHSS Assure is currently collaborating with key stakeholders on several other important improvement initiatives and workstreams, which may impact on the ongoing development and implementation of ADB and Repeatable Rooms. The timescales and outputs of these, given multiple stakeholders, are not within NHSS Assure's direct control. Worth noting is a piece of work being considered around 'Better Briefing', plus the other recent NSS reports, such as "Quality Matters", both via our Building Design and Construction (BDaC) group, a permanent sub-group reporting to SPAG. BDaC is directly responsible for governance of the current ADB and Repeatable Rooms SLWG. Also, with Scottish Government and NHSS Board support, we are currently undertaking a formal review of NDAP to consider any improvements, enhancements or developments. Finally, NHSS Assure have commenced an integration review for the potential streamlining / alignment of some or all of our capital project support processes. These ongoing workstreams may impact on the future NHSS role and support for ADB and Repeatable Rooms development.

References

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   2023: www.nss.nhs.scot/media/5214/nhss-repeatable-rooms-poe-research-report-v1.pdf
   2020: www.nss.nhs.scot/publications/report-on-repeatable-rooms-archived/
2. **NHS England Repeatable Rooms** programme member sites:
   https://procure22.nhs.uk/guidance/download.ashx?f=872_Repeatable-Rooms-Catalogue-1506.pdf
   ProCure23 - FutureNHS Collaboration Platform
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4. **NSS publications**: **NHSScotland: Reports from SPAG / BDaC group**, including:
   2022: Report on Construction Quality Matters

Donald, Laura

From: Lorraine Robertson <lorraine.robertson[redacted]
Sent: 19 March 2018 17:44
To: Liane Edwards; McKechnie, Stewart
Cc: Darren Pike; Colin Grindlay; Nick Beecroft; Glasgow Filing
Subject: (Disarmed) Re: Neutropenic Wards Design - MEDIATION - CONFIDENTIAL

Liane,

Where does the clinical output spec state that the entire ward should cater for neutropenic patients?

Lorraine Robertson

Lorraine Robertson
Director

HLM

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From: Liane Edwards
Sent: Monday, March 19, 2018 17:18
Subject: Re: Neutropenic Wards Design - MEDIATION - CONFIDENTIAL
To: McKechnie, Stewart
Cc: Lorraine Robertson , Darren Pike , Colin Grindlay , Nick Beecroft , Glasgow Filing

Stewart

As you are aware, we are dealing with a number of alledged non-compliances by NHSL.
This one has the potential to become PI notifiable should the Board have any angle so you will appreciate we are trying to cover these off before they are raised.

The question is not regarding the alignment of the design team response but rather the design itself if being challenged.

The clinical output spec does state that the whole ward should cater for neutropenic patients; while MPX agree that neutropenics are catered for as are a number of other patient types the Board do not and so I am trying to understand the genesis of the MEP design in this regard and why 10a/c was not identified as not being required to all rooms in a neutropenic ward.

I have a timeline of drawing reviews and the architectural design process from Lorraine. I have a two lined response to the specifics of the Boards email which you have copy of.
We need to prepare the full story though so that it is robust enough to demonstrate why our design is compliant.

Hopefully this is now clear - we do not want to be unravelling anything more than you do but we have no choice but look deeper into this.

Liane

On 19 Mar 2018, at 16:18, McKechnie, Stewart <Stewart.McKechnie[redacted] wrote:

Liane ,
I am simply stating that our design and HLM's designs are aligned and suggest you confirm that to NHSL
With respect to final filter standard these should align with the Boards Instruction suggest you get Mercury to confirm .
If they don't reasonably straightforward to change and don't see relevance of this to the larger question of accommodation .
Whilst I don't feel its in my responsibility to tell them that the entire ward hasn't been designed to exclusivley treat Neutropenic patients surely if that was the case it should have been briefed accordingly
Whilst I can appreciate the difficulty of dealing with intransigent people nevertheless the facts are the facts and I'd suggest you really have to stand your ground here once you start looking for a workround you run the danger of undoing a strong position
Regards

Stewart McKechnie

Director
IEng ACIBSE MIHEEM

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Stewart.McKechnie[redacted]
[redacted]

Help cut carbon... please don't print this email unless you really need to

From: Liane Edwards [redacted]
Sent: 19 March 2018 14:55
To: McKechnie, Stewart [redacted]; 'Lorraine Robertson' [redacted]
Cc: Darren Pike [redacted] Colin Grindlay [redacted]; Nick Beecroft [redacted]; Lorraine Robertson [redacted] Glasgow Filing [redacted]
Subject: {Disarmed} RE: Neutropenic Wards Design - MEDIATION - CONFIDENTIAL

Stewart
That's great but I cannot write to the Board that WWs response to HLMs response is that it is 'bang on' ...!
Can you comment on the H12/hepa filter aspect at FC and post Board Instruction 056?
Lorraine and Stewart
They clearly anticipate that the whole of the ward should be capable of treating neutropenic patients – which still comes back to why we did not propose isolation lobbies to all rooms (which is ridiculous, I am aware – we are just trying to rebut the Boards counter commentary). Regardless of the reference design, our obligation is to provide a compliant design; why did we not identify back to them that the reference layout did not 'comply' – or can we justify why it did.
Liane

From: McKechnie, Stewart [redacted]
Sent: 19 March 2018 14:40
To: Liane Edwards; 'Lorraine Robertson'
Cc: Darren Pike; Colin Grindlay; Nick Beecroft; Lorraine Robertson [redacted] Glasgow Filing
Subject: RE: Neutropenic Wards Design - MEDIATION - CONFIDENTIAL

Liane
I believe Lorraine's response is bang on .
We have provided appropriate ventilation to match the accommodation being provided.
The only way to my mind to provide ventilation to the levels now being quoted by the Board would have been to provide all bedrooms in this multi use department as Isolation rooms which they clearly weren't nor are
Regards

Stewart McKechnie

Director
IEng ACIBSE MIHEEM

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From: Liane Edwards [redacted]
Sent: 19 March 2018 14:33
To: 'Lorraine Robertson' [redacted]
Cc: McKechnie, Stewart [redacted]; Darren Pike [redacted]; Colin Grindlay [redacted] Nick Beecroft [redacted]
Subject: {Ext} RE: Neutropenic Wards Design - MEDIATION - CONFIDENTIAL

Stewart
Do you have anything to add on this?
We don't seem to have much in the way of robust response regarding the ventilation/air changes which is the Boards main issue.
Liane

From: Lorraine Robertson [redacted]
Sent: 14 March 2018 13:02
To: Liane Edwards
Cc: McKechnie, Stewart; Darren Pike; Colin Grindlay; Nick Beecroft
Subject: RE: Neutropenic Wards Design - MEDIATION - CONFIDENTIAL

Liane,
Please refer to our previous responses, which provide the narrative, and detail, and extracts from the brief for ease of reference.
The ward provides for treatment of a variety of patients (as detailed below).
The facility to treat neutropenic patients within the ward is provided by the isolation rooms listed in the email below, as the ventilation meets the criteria requested of Neutropenic patients in addition to the requirements for isolation of patients for different reasons.
The Environmental matrix – provided specifically for this particular project, did not highlight that all single bedrooms within this department were to have the capability of treating neutropenic patients, as there are a variety of other conditions to be treated within the department – detailed in theC1.4 (Haematology & Oncology Inpatients & Day Care Clinical Output Based Specification) also highlighted below.
The Schedule of Accommodation also did not highlight that all single bedrooms within this department were to have the capability of treating neutropenic patients, and the level of isolation rooms were clearly set out (which is a much higher percentage of the ward than the standard arrangement).
The detail in our previous responses cover the items that have been raised in the correspondence below, in that IHSL have met the brief provided by NHS Lothian - the service provider.
Regards
Lorraine

Lorraine Robertson
Director

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From: Liane Edwards[redacted]
Sent: 14 March 2018 09:35
To: Lorraine Robertson[redacted]; 'Stewart.McKechnie[redacted]
[redacted]
Cc: Darren Pike[redacted] Colin Grindlay[redacted]
Subject: RE: Neutropenic Wards Design - MEDIATION - CONFIDENTIAL

Lorraine
Please can you issue today your co-ordinated response on the matter below.
With reference to your comment yesterday where the Board make reference to correspondence from Colin, this is merely the document which tracks actions from the mediation. The action on this was for NHSL to return comment to IHSL on the basis of their considered non-compliance.
Should you not be in a position to respond to us today I would be obliged if you would please call me.
Many thanks.
Liane
Regards
Liane

Liane Edwards-ScottARB
Project Design Manager RHSC + DCN Edinburgh
Please note I am not available on Fridays
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From: Liane Edwards
Sent: 08 March 2018 15:44
To: Lorraine Robertson[redacted]
Cc: Darren Pike; Colin Grindlay
Subject: Neutropenic Wards Design - MEDIATION - CONFIDENTIAL
Importance: High

Lorraine – as just discussed
Stewart – as message just left on your voicemail
Please see below just in from NHSL regarding their perceived non-compliance on the neutropenic aspect of the heamato-oncology ward design.
Lorraine please lead the co-ordinated response – acknowledge you prepared information for discussion during the mediation; NHSL opted to come back separately on their opinion on this matter so we now need to tailor the response to their commentary below.
Please ensure that it clearly identifies how the layouts design have always been accepted – as far as we are concerned the allegation that this design compromises the service provision is new; we need to ensure this is clear in the response.
Thank you.
Regards
Liane

Liane Edwards-ScottARB

Project Design Manager RHSC + DCN Edinburgh
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[redacted]
W: www.multiplex.global

From: Greer, Graeme [redacted]
Sent: 08 March 2018 15:19
To: Colin Grindlay
Cc: Currie, Brian; Anderson, Douglas H; Henderson, Ronnie [redacted]; Kolodziejczyk, Kamil K; Darren Pike; Graham Coupe; Ken Hall; Liane Edwards
Subject: RE: Polite Reminder - Mediation Actions

WITHOUT PREJUDICE TO LOTHIAN HEALTH BOARD'S WHOLE RIGHTS, REMEDIES AND PLEAS WHICH ARE RESERVED

Colin,

Further to Item 1 (first paragraph) of your email, and further to the Principals Meeting on 20 and 21 February 2018 between the Project Co, MPX and the Board, please note the following relating to neutropenic patients department:

Noting the requirements of 2.1 (Approach to Design) of Sub-Section C (General Requirements) of Section 3 (Board's Construction Requirements) of Schedule Part 6 (Construction Matters), which states that:

Project Co shall take cognisance of all the architectural and building services implications of the requirements described in the Board's Construction Requirements in this Schedule Part 6 Section 3 Sub-Section D (Specific Clinical Requirements) and Sub-Section E (Specific Non-Clinical Requirements).

And Section 8 (Mechanical & Electrical Engineering Requirements) of Sub-Section C (General Requirements) of Section 3 (Board's Construction Requirements) of Schedule Part 6 (Construction Matters), which states:

Project Co shall take cognisance of all the building services implications of the requirements described in Section D (Specific Clinical Requirements) and Sub-Section E (Specific Non-Clinical Requirements) of Sub-section C of the Board's Construction Requirements.

Also the requirements of C1.4 (Haematology & Oncology Inpatients & Day Care Clinical Output Based Specification) of Sub-Section D (Specific Clinical Requirements), which states under 1.1.1 (Scope of the Service):

The paediatric Haematology and Oncology Unit, (Inpatient and Day Care services), is to provide a 24 /7 service for the care of all patients with cancer or blood dyscrasia (a pathologic condition in which any of the constituents of the blood are abnormal in structure, function, or quality, as in leukaemia or haemophilia). Patients and families will attend for assessment, investigations, treatment, ongoing care planning, and palliative and end of life care.

The type of services provided include:

- *Chemotherapy*
- *High dose therapy with autologous bone marrow or peripheral blood stem cell transplant*
- *Psycho-social support and counselling for patients and families.*
- *Management of children with febrile neutropenia*
- *Management of any complications relating to cytotoxic therapy including chemotherapy and radiotherapy*
- *Administration of immunotherapy*
- *Blood transfusion*
- *Immunoglobulin infusion*
- *Management of chicken pox (primary infection and contact)/shingles in haem/onc patients*
- *Management of haemophilia patients*
- *Management of patients with sickle cell disease/crisis.*
- *Palliative care*

And the requirements of SHTM 03-01

Single bed rooms in Haematology and Oncology Department

Noting the SHTM 03-01 requirements for neutropenic patients, as well as requirements of Sub Section D, the following single bed rooms (3-C1.4-059, 057, 055, 046, 032, 018, 016, 013, 010) within the Heamatology and Oncology Department should be designed to +10 Pressure (Pascals). These rooms are currently designed to balanced pressure with 4 ac/hr.
Environmental matrix provided for C1.4 was positive pressure with 4 ac supply.

Isolation rooms in Haematology and Oncology Department

For the isolation rooms noting SHTM 03-01 (which cross refers to SHPN 4 Supplement 1), the following isolation rooms (3-C1.4-072, 052, 049, 043, 040 and 032) within the Haematology and Oncology Department should be designed to balanced pressure. These rooms are currently designed to balanced pressure with 10ac/hr and the isolation bed lobbies designed to positive pressure with 36ac/hr that prevent any air enter or egress the bedroom.
Isolation rooms were Balanced with supply and extract HBN 4 dependant.

Additional of three single bedrooms through a Board Change

The Board issued a Board Change Notice to remove the U1 department and extend the Haematology & Oncology. The effect of this was addition of three single bedrooms (3-C1.4-074, 076 and 078) which should also have been designed to the same standard as other single bedrooms, i.e. +10 pressure (Pascals).
On the basis of the above, we believe a Project Co change is required for the Board to consider a deviation from the BCR's for the Single Bedrooms in the Haematology and Oncology Department.
Kind Regards
Graeme

Please note that this email is issued entirely without prejudice to Lothian Health Board's whole rights, remedies and pleas and may not be referred to or founded upon in any circumstances whatsoever without our express consent."

Graeme Greer
Associate

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Contract Control Order No 290961/117

Title: RHSC DCN Mott MacDonald services for the Construction Phase

Dated: 26 February 2015

Mott MacDonald

Contract	RHSC DCN Contract between Lothian Health Board and Mott MacDonald Limited signed 11 October 2011 - Order Number NM66866 dated 22 March 2011
Project Title	NPD Project for RHSC/DCN at Royal Infirmary Edinburgh for NHS Lothian

Source of Change

NHSL

Description and Reason for Control Order

Further to the original Mott MacDonald appointment (and several agreed CCOs) to provide TA and PM services to NHS Lothian and following the achievement of FC, the project has now entered the Construction Phase.

Initially only a Provisional Sum was agreed for this stage of the commission, and none of this has been yet formalised by any agreed CCOs.

Following extended dialogue between the Board and MM over the last six months, this CCO now represents the agreed position with respect to support during this period. This CCO covers the initial 6 months following Financial Close, and represents a fixed fee for the core team and an estimated fee for the support team, all as per the attached detail. Subsequent CCOs will be required:

1. For support beyond the initial six months costed here (CCO's to be agreed periodically)
2. For other ongoing, parallel activities such as off-site flood support.

Consequential Changes

Cost

Effect on Programme / Schedule

Time and cost

Cost Summary (based on Schedule 2-3 of the Contract – Services and Fee Schedule)

Estimated change in Labour Costs:	£	£285,067.72 (core team fixed) £82,144.11 (support team estimated) **£367,211.83 (total estimated)**
Estimated change in Direct Costs:	-	£1,000 (estimate)
Estimated change in Total Costs:	-	**£368,211.83**

New estimated total project Costs:	Section A
(Currently all as contract.)	Section B
Payment for changed Ordered Services and Variations to be in accordance with Clause 43 of the Contract	Section C Section D

Classification

This Control Order is considered to comprise:

Additional Work	☒	Clarification of present scope of work	☐
A variation to existing work	☐	Release of work previously on hold	☐

This Control Order is issued for your information and record. Please sign and return one copy. Further information and details will be provided in due course. Please provide your comments in writing within 10 days after which we will assume that we have your approval to proceed with the above change.

Signed for Mott MacDonald Limited [redacted] Date: 26/2/15.

Signed for NHS Lothian [redacted] Date: 22/04/15.

Distribution: NHSL (PD,PM); Relevant Sub Consultants; MML (PD,PM,PPW,Relevant Staff, PiMS CC)

NHS Lothian - RHSC + DCN

Post Financial Close Support Services Proposal

We refer to the meetings held on 10 July 2014 and 8 January 2015 regarding the above. The following is Mott MacDonald's formal proposal for the Post Financial Close Support Services which we propose forms the basis of a Contract Control Order to the Technical Advisory and Project Management Appointment.

As confirmed in previous discussions, continuity of service from pre to post FC services is of particular importance to NHSL so that the momentum of the current team is maintained and that the investment main in gaining knowledge is continued and exploited to best effect. This approach will provide value for money to NHSL.

The precise profile of support required for the period between FC and a successfully commissioned and operational facility some three years post FC cannot be accurately defined. This proposal therefore allows flexibility to respond to the circumstances that may potentially arise and change over that period. This proposal is however clear, realistic and targeted at the outset incorporating the ability to be flexible.

This proposal is in two parts:

- Initial six month period post FC (i.e. from Monday16th February 2015) for the Core Team on a fixed price basis, plus the Support Team on a cost reimbursable basis; and
- Indicative input that may be required by the Core Team and the Support Team from FC plus 6 months to the Planned Completion currently (3 July 2017).

Resourcing: Initial six month period post FC

As previously agreed and in order to provide continuity and deliver value for money, we are proposing to deploy during this period, staff that are familiar to NHSL and already form part of the core delivery team. This is summarised in the following table.

Name	Role	Input
G Greer	Lead Technical Adviser	100%
M Brown	Project Manager	100%
K Kolodziejczyk	Technical Adviser and Project Management Support	100%
D Stillie	Technical Adviser Architectural	80%
R Cantlay & R Peace	MM Project Direction, and Overview	20% (combined total)
where 100% means 37.5 hours per week		

The above team would form the continual presence we believe is required to support NHSL, and our fixed price proposal has been developed on that basis. However, as is the case in our current commission, we would be happy to keep this level of resourcing under review. Should both MM and NHSL agree that amendments are needed to better align with evolving workload, we will adjust this and our associated fees, to suit the requirements by mutual agreement.

Note that Director's input has been set at a level we believe to be commensurate with needs in the post FC period, which is typically lower than the need pre FC. Again this can be subject to ongoing review on an as required basis. No allowance is made in the core time for prolonged inputs into direct task delivery, or indeed for substantial NHSL / Project Co interface.

We have estimated likely Support Team inputs for the initial six month period as follows:

Name*	Role	Input
A Thomson	Energy Modeller, Senior	5%
A Wholley	Energy Modeller and Building Services	35%
C Macrae	Building Services	50%
B Mackay	Civil / Structural	25%
S Alderson	FM Support	5%
where 100% means 37.5 hours per week		

*or equivalent

Given the largely indeterminate nature of these inputs, inputs from these staff members are to be reimbursed on the basis of time spent, with the above inputs being targets for fee budget purposes only. Other technical support may also be required (e.g. acoustics, fire engineering, helipad) which is not included in the estimates here, but this can be provided by agreement with the Board on a needs basis.

Resourcing: Beyond the Initial Six Months

Estimated resourcing levels beyond the initial six months has also been included, for budgeting and planning purposes, in the Core Team and Support Team tables in Appendix B. It is proposed that these form a baseline estimate only at this stage in order to establish a potential budget and that actual scope and inputs will be agreed with NHSL on a rolling basis, taking into account a variety of issues including but not limited to:

- The level of NHSL staff deployment and availability;
- Performance of Project Co; and
- Progress of the Works.

This flexible approach gives NHSL the ability to purchase the level of support needed on a rolling basis, which should provide a value for money.

Resourcing: Sub-Contracts

The sub-contract with Thomson Gray will continue to provide NHSL with consistency of resources and continue the knowledge transfer from the procurement phase. A description of the type of works envisaged is included in the Construction Monitoring section of Appendix A. Rates and costs for this work are subject to future agreement and additional to those quoted in Appendix B, however an initial estimate is that Thomson Gray will have approximately 25 days of work – equating to a cost of around £12.5k.

Proposed charge rates for MM staff

The following charge rates are proposed for the works carried out in the post FC period as summarised in the following table.

Grade Descriptor	MM Staff Member	Mott MacDonald Rate per day
Partner or Director	Richard Cantlay Richard Peace	£872.16
Principal Professional 1	David Stillie	£750.00
Principal Professional 2	Kenneth Birrell*	£650.00

	Brian MacKay* Andrew Thomson	
Senior Professional 1	Graeme Greer	£575.00
Senior Professional 2	Maureen Brown Colin McCrae* Simon Alderson*	£480.24
Professional	Andrew Wholley*	£458.16
Senior Technician	TBC if needed	£430.56
Technician	Kamil Kolodziejczyk	£320.16

The following should also be noted in relation to the above:

1. Rates are exclusive of VAT and generally inclusive of all normal office and local travel expenses within the Edinburgh area (staff that are not Edinburgh based, including those marked * thus, that are required to travel to Edinburgh will have travel costs reimbursable);
2. Rates are fixed for 1 year from the date of Financial Close and will be reviewed in line with the original Buying Solutions framework terms (so all prices quoted beyond the initial 1 year period are subject to future uplift);
3. With respect to framework management charges, these are applicable and have been added to the bottom line as indicated in Appendix B.

Draft Fee Proposal: Initial six month period post FC

Taking all of the above into account, our fixed price and estimated fees (ex VAT) for the 6 months following Financial Close are as follows:

Dates	Element	Duration (months)	Proposed Fee
From FC to FC + 6 months	Core team Fixed Fee	6	£279,478

Dates	Element	Duration (months)	Estimated Fee
From FC to FC + 6 months	Support Team Estimated Fee, cost reimbursable	6	£80,533

Note the above numbers do not include framework management charges. These are clarified in Appendix B.

Appendix A – Detailed Scope

Activity
Core Team Activities
The core team will be a substantially co-located team with NHSL consisting of (in the first instance) 3.2 Whole Time Equivalents. They will continue to be part of an integrated delivery team with NHSL and will undertake a wide range of management, advisory and supporting tasks both from a project management and technical advisory perspective. The activities are expected to include, but will not necessarily be limited to:
Continuous delivery of support to Board's Representative / Contracts Manager
Management of Reviewable Design Data (RDD) process on behalf of the Board including progress reporting, attendance at workshops, administration and stakeholder input
Contract management Training for the technical aspects of the project
Ongoing Management of Independent Certifier in conjunction with SPV
Monitor the construction of the works with respect to compliance with the Building Contract and Construction programme
Monitor that Project Co provides CDM Coordinator with necessary record drawings, operating manuals for inclusion in Health & Safety file
Ongoing risk management
Aconex support throughout
Liaising, communicating and co-operation with all other project personnel
Consultation and liaison with other consultants
Maintain ongoing relationship and dialogue with Project Co
Assist in management of the project and facilitate it's delivery in accordance with the Project Programme
Programme review – critical path monitoring/review/reporting/Programme Meetings
Attendance at meetings with the Client, other consultants and contractor for the performance of the services
Attendance at design development and technical meetings as and when required
Attendance and reporting at Project Board meetings as required
Attendance and reporting at Construction Progress Meetings (monthly)
Management and implementation of Handover Strategy
Review and update Project Execution Plan as required
Potential Support Team Activities
Design Reviews
Review of Reviewable Design Data (RDD) items
Technical Reviews
Ad hoc design support
Construction Monitoring
Management and reporting of Change Control process (Capex)
Review of Capex costs related to Change Control
Assistance with assessment and negotiation of any claims from SPV
Coordination and reporting of snagging and defects matters
Construction Monitoring (site visit every two weeks)
Review and comment on the construction programme
FM
FM input regarding operational readiness
Review of FM costs related to Change Control
Review of Lifecycle costs related to Change Control
Desktop review
Meetings with the Board's project team
Meetings with service provider
Liaison with the Board's project team and clinical leads
Review of contractor monitoring system
Development of contract monitoring Board's proposals
Review of Planned Preventive Maintenance Plan and Method Statements and work instructions
Commissioning
Input from M&E specialists during testing and commissioning of key systems.
Liaison with SPV and Independent Certifier as required to achieve Handover
Support to commissioning and mobilisation by NHSL

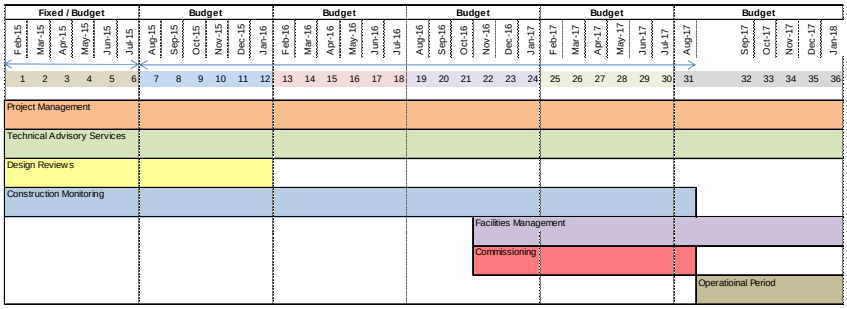
Review mobilisation and actions plans with service provider
Attendance at service provider mobilisation meetings
Post operational start support (soft landings)
Service preparedness testing
Helpdesk / Performance Mechanism Support
Review of helpdesk arrangements
Site visits
Progress reporting
Operational audit of the hospital

Appendix B – Fee Proposal

Proposed Rates

Grade	Rate
Partner or Director	£872.16
Principal Professional 1	£750.00
Principal Professional 2	£650.00
Senior Professional 1	£575.00
Senior Professional 2	£480.24
Professional	£458.16
Senior Technician	£430.56
Technician	£320.16

Programme



Core Team

Name	Grade		16 Feb 15 - 14 Aug 15	17 Aug 15 – 12 Feb 16	15 Feb 16 – 13 Aug 16	15 Aug 16 – 10 Feb 17	13 Feb 17 – 11 Aug 17	14 Aug 17 – 09 Feb 18
G Greer	Senior Professional 1		100%	75%	50%	50%	50%	50%
M Brown	Senior Professional 2		100%	100%	100%	100%	100%	100%
D Stillie	Principal Professional 1		80%	80%	80%	60%	60%	60%
K Kolodziejczyk	Technician		100%	50%	0%	0%	0%	0%
R Cantlay	Partner or Director							
R Peace	Partner or Director	Combined total input	20%	20%	20%	20%	20%	20%
		Rate						
	G Greer	£575.00	£74,750.00	£56,062.50	£37,375.00	£37,375.00	£37,375.00	£37,375.00
	M Brown	£480.24	£62,431.20	£62,431.20	£62,431.20	£62,431.20	£62,431.20	£62,431.20
	D Stillie	£750.00	£78,000.00	£78,000.00	£78,000.00	£58,500.00	£58,500.00	£58,500.00
	K Kolodziejczyk	£320.16	£41,620.80	£20,810.40	£0.00	£0.00	£0.00	£0.00
	R Cantlay							
	R Peace	£872.16	£22,676.16	£22,676.16	£22,676.16	£22,676.16	£22,676.16	£22,676.16
	Fee		**£279,478.16**	**£239,980.26**	**£200,482.36**	**£180,982.36**	**£180,982.36**	**£180,982.36**
	2% Buying Solutions Levy		**£5,589.56**	**£4,799.61**	**£4,009.65**	**£3,619.65**	**£3,619.65**	**£3,619.65**
	Total		**£285,067.72**	**£244,779.87**	**£204,492.01**	**£184,602.01**	**£184,602.01**	**£184,602.01**

Support Team

Name	Grade	Role	16 Feb 15 - 14 Aug 15	17 Aug 15 – 12 Feb 16	15 Feb 16 – 13 Aug 16	15 Aug 16 – 10 Feb 17	13 Feb 17 – 11 Aug 17	14 Aug 17 – 09 Feb 18
A Thomson	Principal Professional 2	Energy Modeller	5%	5%	0%	0%	5%	5%
A Wholley	Professional	Energy Modeller	10%	10%	0%	0%	10%	10%
C Macrae	Senior Professional	Building Services	50%	50%	10%	25%	25%	10%
A Wholley	Professional	Building Services	25%	25%	10%	25%	25%	10%
B Mackay	Principal Professional 2	Civil / Structural	25%	25%	0%	0%	0%	0%
K Birrell	Principal Professional 2	FM / Commissioning	5%	5%	5%	50%	75%	50%
S Alderson	Senior Professional	FM Support	0%	0%	0%	25%	25%	25%
		Rate						
£521.25	A Thomson	£650.00	£4,225.00	£4,225.00	£0.00	£0.00	£4,225.00	£4,225.00
£382.73	A Wholley	£458.16	£5,956.08	£5,956.08	£0.00	£0.00	£5,956.08	£5,956.08
£436.35	C Macrae	£480.24	£31,215.60	£31,215.60	£6,243.12	£15,607.80	£15,607.80	£6,243.12
£382.73	A Wholley	£458.16	£14,890.20	£14,890.20	£5,956.08	£14,890.20	£14,890.20	£5,956.08
£539.63	B Mackay	£650.00	£21,125.00	£21,125.00	£0.00	£0.00	£0.00	£0.00
£408.08	S Alderson	£480.24	£3,121.56	£3,121.56	£3,121.56	£31,215.60	£46,823.40	£31,215.60
£591.30	K Birrell	£650.00	£0.00	£0.00	£0.00	£21,125.00	£21,125.00	£21,125.00
	Fee		**£80,533.44**	**£80,533.44**	**£15,320.76**	**£82,838.60**	**£108,627.48**	**£74,720.88**
	2% Buying Solutions Levy		**£1,610.67**	**£1,610.67**	**£306.42**	**£1,656.77**	**£2,172.55**	**£1,494.42**
	Total		**£82,144.11**	**£82,144.11**	**£15,627.18**	**£84,495.37**	**£110,800.03**	**£76,215.30**

Inc Buying Solns Fee (2%)	**£367,211.83**	**£326,923.97**	**£220,119.18**	**£269,097.38**	**£295,402.04**	**£260,817.30**
July 2014 Proposal	**£339,965.00**	**£305,840.00**	**£234,393.00**	**£306,324.00**	**£337,630.00**	**£298,207.00**
Variance	**£27,246.83**	**£21,083.97**	**-£14,273.82**	**-£37,226.62**	**-£42,227.96**	**-£37,389.70**

Appendix C – Residual values for sub consultants and other ongoing MM inputs outwith this Fee Proposal

The following is an analysis of the residual values for sub contract works. These values will need to be reassessed at the time of letting the Post FC Commission to ensure that the figures are fully aligned with the actuals.

The following are the CCOs that will continue to be carried out post February 2015:

Contract Control Order	Agreed CCO value	Invoiced until (and including) February 2015	Remaining to be invoiced
CCO 74 Thomson Gray Cost Adviser Services for the Clinical Enabling Works	£99,056.72	£82,642.55	£16,414.17*
CCO 97 Off Site Flood Defence - provision of Conject for Enabling Works (Invoiced Separately, £542.77 quarterly)	£7,292.00	£7,072.43	£219.52

*Currently the residual value from February 2015 is circa £16,414.17 (including 7.5 and 2%) excluding the Mott MacDonald fee and Conject. Conject is invoiced separately.

There is an ongoing discussion with respect to the CCO for Arup's Traffic Management inputs not included in the above table – endorsement on CCO by Arup rejected - response awaited. Assuming worst case scenario the fee from February 2015 onwards will be £5,161.

CCO 105 Off-site flood re Mott MacDonald Project Management Services – the drawdown schedule for the provision of Project Management resource has come to end in February 2015 therefore there is currently no further payments by NHSL scheduled. However the Mott MacDonald services associated with Off Site Flood are anticipated to continue beyond February 2015. Furthermore, the Off Site Flood construction phase will be now procured using NEC3 with an associated increased resource cost. This is subject to a separate fee agreement.

CCO 106 Off Site Flood Prevention - Programme Extension Cost Advisor - Thomson Gray have still to submit costs for the extended Off Site Flood programme. Motts are awaiting proposal from Thomson Gray. This is subject to a separate fee agreement.

CCO 104 Off Site Flood Prevention - Programme Extension Arup – it is anticipated that proposal for extended Arup's services will be received in due course. This is subject to a separate fee agreement.

Appendix D - Crown Commercial Services letter

From: Moore Darren [redacted]
Sent: 02 February 2015 11:50
To: Parker, Andrew
Subject: Customer Guidance - RM457

Hi Andrew,

As discussed please see below wording that was shared with a number of customers prior to the expiry of RM457. This is only for guidance and will be down to each customers individual requirements, assessment of their situation and their awareness that any risks will sit with them.

There is a clause written into the framework which states that orders placed up to the day of expiry (16th June 2013) can run for a period of up to two years following expiry (up to 16th June 2015).

We have advised other customers that if their work is expected to continue longer than the 2 years then it is up to them to evaluate the risk of a potential challenge to their decision should they extend the delivery period beyond the 2 years. We believe the risk of challenge is minimal but it is up to each client to assess this risk based on their requirements and advice from their own legal/policy teams.

Please let me know if you require anything further.

Regards

Darren

Crown Commercial Service

Darren Moore MCIPS
Category Manager
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delivering value for the nation through outstanding commercial capability and quality customer service

Hearing Commencing 26 February 2024

Bundle 13 - Miscellaneous

Volume 14