

**NHS Fife
Lochgelly Health Centre
Key Stage Assurance Review**

OBC KSAR Report

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Document Overview

Key Stage Assurance Review Report | OBC Stage

Prepared for:

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Document Control Sheet

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Approvals

This document requires the following signed approvals:

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Distribution

This document has been distributed to:

Version	Date of Issue	Name	Role / Area
V1.0	06/06/2022	Ben Johnston	Head of Capital Planning / Project Director, NHS Fife
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1. Executive Summary

As a result of the Outline Business Case (OBC) Key Stage Assurance Review (KSAR) and based on the information presented, NHS Scotland Assure (NHS SA) are unable to support the project progressing to Full Business Case (FBC) stage at this time due to the following key issues:

- Lack of written supporting evidence in relation to the basis of design that was used to inform the design drawings and documentation.
- The Governance processes around technical stakeholder engagement not formally defined or documented.
- Limited evidence of stakeholder review & approval of the OBC design information.
- Overheating issues identified within the thermal model that may have an impact on spatial co-ordination and building form.
- Key briefing documents in draft form, with no evidence of how the OBC has been reviewed against defined requirements – for example Authority Construction Requirements (ACRs).
- No documented governance process for reviewing and approving derogations.
- Lack of supporting risk assessments in support of design proposals e.g. electrical resilience in accordance with SHTM 06-01 Part A: Electrical services supply and distribution.
- Discrepancies between the environmental matrix and design drawings.
- Limited evidence of Infection Prevention and Control Team input.

Following the conclusion of the KSAR, NHS Fife have reiterated their commitment to address the findings of the review and have commenced preparation of their action plan. NHS Fife have also engaged with NHS Scotland Assure to commence the review/closeout of the key themes in order to progress to the next phase of the design.

Detailed Overview

Whilst the level of detail presented on the drawings is generally appropriate for a RIBA Stage 2 design (as would be expected at OBC in accordance with the Scottish Capital Investment Manual), NHS SA noted concerns with respect to limited supporting evidence being provided by NHS Fife. Particularly in relation to the basis of design and calculations that may have been used to inform what has actually been denoted in the design proposals.

Significant concerns were raised and noted during the weekly KSAR meetings and various KSAR Technical Workshops, specifically in relation to the ventilation design, including alignment with Scottish Technical Healthcare Memorandum (SHTM) 03-01 *ventilation design, validation, operational management and performance verification*. , failures noted in the building thermal modelling requiring further review (with respect to compliance with Chartered Institute of Building Services Engineers (CIBSE) TM52 “The limits of thermal comfort: avoiding overheating in European buildings”) and the resultant impact on the building design and space allocation. Following the conclusion of the KSAR, NHS Fife advise there were errors within the overheating calculations that have subsequently been addressed. As the evidence of this was not provided during the review period, this has not been considered as part of the KSAR findings.

There is a lack of evidence to support the overall derogation process on the project. Currently the only recorded derogations relate to those identified against the draft ACR. No other derogations are evidenced against standard guidance. The KSAR has identified a

number of potential departures from guidance that have not been recorded as derogations. There is no evidence to confirm the proposed derogations have been reviewed, accepted or signed off by NHS Fife and its stakeholders.

There is a lack of documentation presented to formally record the comments received from stakeholders at the various workshops and how these have informed subsequent design revisions. During the KSAR Technical Workshops, the Tier 1 contractor (the appointed construction delivery partner) and the design team were not always able to evidence the decision-making process behind the design.

There was also no evidence provided to demonstrate that NHS Fife stakeholders had reviewed and approved the OBC documents. NHS Fife clarified that the latest design had only recently been released by Hub Co to NHS Fife for review and formal approval from the Health Board was outstanding at the time of the KSAR.

NHS Fife confirmed during the weekly meetings that engagement with the Authorising Engineer (AE) is by exception only and *“where specific items (normally proposed derogations) are escalated to them for advice”*. There is no evidence of a Water Safety Group formed for the project with NHS Fife, nor is it clear whether the overarching NHS Fife Water Safety Group have reviewed the project proposals.

NHS SA has concerns that the threshold for escalation by exception is dictated by the design team and not NHS Fife. There is no formally defined process for how escalation will be assessed by the NHS Fife Project Manager, nor how they will interface with other technical stakeholders to review matters for escalation.

There is evidence that NHS Fife have undertaken a mechanical and electrical (M&E) peer review through an appointed Lead Advisor, however there is no evidence demonstrating if these comments have been addressed by the project designers.

There is no evidence of any technical risk assessments being undertaken on the project, including clinical and business continuity to support the categories denoted within the Environmental Matrix. There are a number of risk assessments detailed in the draft ACR document which were not evidenced through the KSAR process.

There are a number of technical discrepancies between the Environmental Matrix and the associated ventilation drawings. There was no evidence to demonstrate that NHS Fife health board, AE, and other relevant stakeholders have reviewed and accepted the proposed Environmental Matrix.

Fire

Only an outline fire strategy has been evidenced at OBC Stage. General reference within the outline fire strategy has been made to compliance with the Scottish Technical Standards Non-Domestic Technical Handbook (NDTH). However there is no reference to the applicable SHTM and Firecode Guidance.

Infection Prevention & Control

A project Stage 1 HAI-SCRIBE was clearly documented and a good level of detail was provided. There was no evidence presented by NHS Fife to indicate that the Stage 2 HAI-SCRIBE process had commenced, nor how IPC risks/considerations were captured within

the submitted OBC design. SHFN 30 Part B section 2.2 notes that a Stage 2 HAI-SCRIBE will cover the design and planning stage of a facility and this should be an iterative process across both the OBC and Full Business Case (FBC) stages of a project.

NHS Fife have provided limited evidence regarding the stakeholder engagement with the local IPC team (as well as other technical experts) throughout the OBC stage. This is evidenced by the HAI-SCRIBE only being undertaken to Stage 1 and no evidence to demonstrate that feedback from the IPC team on the concept design has thus far been integrated into the design. There is also a lack of evidence to support procurement and equipping strategies and design workshops, which IPC do not appear to have been included in.

1.1 Summary of Findings

The findings of this report have been collated based on information provided by NHS Fife. The following table outlines the status of key findings as derived from the KSAR and identified within the NHS SA Recommended Action Plan issued to NHS Fife, under separate cover:

Review	No. of Issues per category				
	1	2	3	4	5
Project Governance and General Arrangements	0	7	6	4	1
Water and Internal Plumbing / Drainage Systems	1	6	3	1	1
Ventilation	3	5	12	9	7
Electrical	0	6	3	3	7
Medical Gases (No medical gases are currently proposed for the project)	0	0	0	0	0
Fire	0	2	6	7	1
Infection Prevention and Control Built Environment	0	0	0	3	6

The following categories were used in relation to the findings:

Category	Definition
1.	Significant – Concerns requiring immediate attention, no adherence with guidance.
2.	Major – Absence of key controls, major deviations from guidance.
3.	Moderate – Not all control procedures working effectively, elements of noncompliance with guidance.
4.	Minor – Minor control procedures lacking or improvement identified based on emerging practice.
5.	Observation and improvement activity.

1.2 Project Overview

NHS Fife is working with Fife Health Social Care Partnership (FHSCP), local communities and wider stakeholders to help deliver a fully integrated community health and social care model. The social care model is seeking to support the people of Fife to live independent and healthier lives and enable them to access local services in a community based setting. In order to support the care model, NHS Fife is seeking OBC approval for the re-provision of Lochgelly Health Centre.

The current Lochgelly Health Centre is located within the town and houses three medical practices which provide a range of general medical services, community nursing, health visitation, mental and sexual health, podiatry, physiotherapy and speech and language services. NHS Fife has highlighted the fact that Lochgelly Health Centre is located within the greatest income deprivation areas of Scotland with the catchment patient grouping facing significant health inequality. The existing building was constructed in the 1970's and despite modification over the years, is in their opinion, no longer fit to deliver the required care model.

A new site has been identified within an existing residential area. The site was previously occupied by flats and further to their demolition in 2000, has remained a greenfield site. The site is in close proximity to Lochgelly West Primary School and Mossview Care Home. A design statement and Achieving Excellent Design Evaluation Toolkit (AEDET) have also been produced to help inform the current design and care model.

The new building will bring together three medical practices (Meadow, Thomson and Lochgelly) along with space for NHS staff and wider Community use, including bookable rooms over two storeys. Standardised Consulting Rooms are proposed throughout based on standardised Room Data Sheets (RDS) and 1:50 arrangements with non-standard rooms to be developed at the next stage.

2. Review Methodology

2.1 Overview of NHS Scotland Assure & The KSAR Process

Good management and effective control of projects is an essential element to the successful delivery and maintenance of healthcare facilities across NHS Scotland estates.

The NHS Scotland Assure (NHS SA) Assurance Service was launched on the 1 June 2021 following a letter issued by Scottish Government to Health Board Chief Executives, Directors of Finance, Nursing Directors and Directors of Estates. The letter outlined the purpose of NHS SA, with an overarching aim to deliver a co-ordinated approach to the improvement of risk management in new builds and refurbishment projects across NHS Scotland. The new service will underpin a transformation in the approach to minimising risk in our healthcare buildings and environments, protecting patients from the risk of infection and supporting better outcomes for patients in Scotland.

From 1 June 2021 all NHS Scotland health board projects that require review and approval from the NHS Capital Investment Group (CIG) will need to engage with NHS SA to undertake key stage assurance reviews (KSARs). Approval from CIG will only follow once the KSAR has been satisfactorily completed. The KSARs have been designed to provide assurance to the Scottish Government that guidance has been followed. The Scottish Government may also commission NHS SA to undertake reviews on other healthcare built environment projects. This does not change accountability for the projects; NHS health boards remain accountable for their delivery. NHS SA will be accountable for the services it provides that support delivery of the projects.

NHS SA will also work closely with health boards to identify where a KSAR may be required for projects under their Delegated Authority, utilising a triage system to assess risk and complexity of projects.

The KSARs will assess if Health Boards Project Management teams (inclusive of clinicians, appointed construction consultants, and contractors) are briefed and following best practice procedures in the provision of facilities. We will review if projects are compliant in all aspects of safety, if specific engineering systems are designed, installed, and commissioned, and for ongoing safety maintenance including Infection Prevention and Control (IPC).

The KSAR focuses on key topics, specifically IPC, water, ventilation, electrical, plumbing, medical gases installations and fire. This ensures they are designed, installed and functioning from initial commissioning of a new facility and throughout its lifetime. Health Boards are required to have appropriate governance in place at all stages of the construction procurement journey.

The purpose of the KSAR at Outline Business Case (OBC) stage is to confirm there is a good and comprehensive understanding of the category of patient, who will use the proposed facility, and that the project team consider how appropriate quality and safety standards will influence the design. It looks to provide assurance that the project can proceed to the Full Business Case.

Whilst the KSAR focusses on actions to improve the end product, it is not intended to detract from the merits of a development that will add significant benefit for the healthcare of the population served, and which has many exemplary elements. Rather, it is a reflection of the complexity of healthcare construction projects and the stage of development at which it was reviewed. Some conflicts and changes are to be expected as complex projects develop and project teams have in place mechanisms to identify and address these. This report adds a layer of scrutiny and assurance to that process to address the above requirement from government.

2.2 KSAR Process

2.2.1 The OBC KSAR took place between 31 January 2022 and 1 June 2022.

2.2.2 To inform the findings of the KSAR, the health board were issued with key information to inform the findings of the KSAR, the health board were issued with key documents outlining the assurance question set and expected level of evidence and supporting documents in accordance with relevant legislation and guidance. This included the OBC KSAR Workbook and OBC Deliverables list.

The KSAR report includes an overview of the main findings of the review, with a further itemised list of detailed observations included within the appendices of the report. The detailed observations are recorded in an action plan that should be adopted by the health board following the review and subsequently monitored by them to ensure appropriate actions are completed in a timeous manner.

2.3 Application of Standards & Legislation

2.3.1 Health Facilities Scotland (HFS) currently provides a range of advisory and delivery services across a wide variety of topics from a portfolio which covers the built estate, engineering and environment and facilities management. With some exceptions, these services are largely advisory in nature, identifying best practice and developing national guidance and standards.

2.3.2 Antimicrobial Resistance and Healthcare Associated Infection (ARHAI) Scotland currently provides advice and guidance on all aspects of infection protection and control nationally in Scotland, inclusive of expert advice and guidance on the topic of Healthcare Associated Infections (HAI) and antimicrobial resistance. It maintains and continues to develop a practice guide (National Infection Prevention and Control Manual – NIPCM) as well as a HAI Compendium of all extant guidance and policy appropriate for use in NHS Scotland.

Like HFS, these services are largely advisory in nature, identifying best practice and developing national guidance and standards. The NHS Scotland NIPCM was first published on 13 January 2012 as mandatory guidance, by the Chief Nursing Officer ([CNO \(2012\)1](#)), and updated by a second edition on 17 May 2012 ([CNO\(2012\)01-update](#)). The NIPCM provides guidance for all those involved in care provision and should be adopted for infection, prevention and control practices and procedures. The NIPCM is mandatory policy for NHS Scotland.

The authority of guidance produced by National Services Scotland (NSS) and other national organisations e.g. Healthcare Improvement Scotland is best described by the definitions outlined below (SHTM 00 – Best practice guidelines for healthcare engineering):

Regulations are law, approved by Parliament. These are usually made under the Health and Safety at Work etc Act following proposals from the Health & Safety Commission. Regulations identify certain risks and set out specific actions which must be taken.

Approved Codes of Practice give advice on how to comply with the law by offering practical examples of best practice. If employers follow the advice, they will be doing enough to comply with the law.

Approved Codes of Practice have a special legal status. If employers are prosecuted for a breach of health and safety law, and it is proved that they did not follow the relevant provisions of an Approved Code of Practice, they will need to show that they have complied with the law in some other way, or a court will find them at fault.

Standards (British or European), institutional guides and industry best practice play a large part in how things should be done. They have no direct legal status (unless specified by Regulations). However, should there be an accident; the applied safety practices at the place of work would be examined against existing British or European Standards. It would be difficult to argue in favour of an organisation where safety was not to the described level.

Guidance is issued in some cases to indicate the best way to comply with Regulations, but the guidance has no legal enforcement status.

- 2.3.3** Whilst guidance is deemed not compulsory by the Health and Safety Executive (HSE), where compliance with guidance is specified in a contract, as is the case here, it becomes a contractual requirement. Therefore, any permitted deviation from it would be expected to follow a formal process with input from all relevant parties, with clarity around how the outcome was reached, including risk assessments where appropriate and sign off by all those authorised to approve it.

2.4 Project Technical Outline Summary

The following section outlines the current NHS Fife proposals in relation to Lochgelly Health Centre and is not intended to be a technical appraisal of the systems nor an endorsement of solutions by NHS SA. Where we have identified non-compliances, derogations or variances from guidance or standards, these are discussed elsewhere within the KSAR report.

Water & Internal Drainage

The building will be served with a new combined water and fire main taken from mains water running through Francis Street. A fire hydrant branch will be taken to serve external hydrants before entering the building at ground floor low level and rising to serve the water tank located on the first floor. The water system will be fitted with a booster set located within the tank room and will have a mechanically chilled return system. The domestic cold-water flow and return pipe work are proposed to be installed out with the services distribution area within the corridors ceiling void and will be distributed above the rooms. Domestic Hot Water generation will be via local electric water heaters.

The building will be served with a fully ventilated system with Soil Vent Pipes (SVP) positioned where required and venting to atmosphere. The SVPs will be combined at high level within the first floor to minimise the number of roof penetrations.

Ventilation

The building is designed to utilise a combination of mechanical and natural ventilation. NHS SA note that the ventilation strategy is not yet finalised.

Mechanical ventilation throughout the building will be provided in the forms of dirty extract, extract only, boosted extract only, and supply and extract (via a number of Heat Recovery Units). All mechanical ventilation plant will be located within the ceiling void with future access and maintenance via the removable ceiling tiles. This was confirmed verbally during the KSAR Technical Workshops but there was no evidence provided to substantiate at this stage.

The building heating requirement will be met via an Air Source Heat Pump (ASHP) system. The outdoor units are to be located in a designated external plant area (location still to be confirmed). The internal plant room will house the buffer vessel (sizing strategy not evidenced), pump sets and all associated distribution pipework and fittings. The facility will be served with 2 No. Constant Temperature heating circuits, one of which will serve the radiant panels and the other serving the overdoor heaters and the Heat Recovery Units (HRU) heater batteries. The heat emitters will be radiant panels within occupied areas, electric wall mounted heaters within plantrooms and over door heaters at all entrances and exits.

Under the current proposal, the only room that will be served with mechanical cooling will be the Comms Room. There would appear to be 2 no. internal wall mounted units, but no further evidence of the proposed systems was provided. As well as the ASHP, the current proposal also includes the installation of a Photo Voltaic (PV) array to ensure the building is compliant with the current low carbon requirements and regulations.

Medical Gases

There are no Medical Gases proposed within this facility.

Electrical

Low Voltage Distribution

The building is designed to take a 3 phase and neutral 400V, 50Hz electrical supply derived from the local Scottish Power Energy Network (SPEN). The electrical incomer will be installed in a dedicated Low Voltage switch room on the ground floor which will also house the metered electrical switchboard required to serve the building. Local metered split board distribution boards installed within dedicated electrical cupboards are located around the building serving final lighting and power circuits.

Mechanical plant equipment will be served from a dedicated mechanical control panel installed within the first-floor dedicated plant room.

Photovoltaics will be installed on the roof.

Containment

The building will have a containment system comprising of cable ladder, cable trays and cable trunking installed within easily accessible ceiling voids of circulation spaces. Dedicated accessible risers are located in key locations for the containment system to rise and fall between each floor.

Lighting and Emergency Lighting

The building will consist of a mixture of recessed, suspended and wall mounted DALI controlled LED luminaires with an emphasis on energy efficiency. The lighting within the building will be controlled automatically with the exception of high-risk areas such as switch rooms, distribution board cupboards and plant rooms. The automated lighting controls will consist of daylight and absence sensing detectors.

The external lighting for the building perimeter, roadways, carpark, and footpaths will consist of wall mounted and column mounted energy efficient LED luminaires and automated, although the final strategy is yet to be fully developed. Feature lighting to the external courtyard will be provided by the landscape architect.

The emergency lighting for the building will be a self-test, fully addressable PC based system provided throughout the entirety of the building as well as key external points i.e. exit points in line with the industry standard regulations.

Illuminated way finding luminaires will be provided and will generally cover all exit routes, changes of direction and step as well as final exit doors.

Security and Intruder Detection System

The building will have a security and intruder detection system comprising of CCTV, access control, intruder detection and audio verification sounders. The building will also have a staff attack system.

Disabled Facilities and Nurse Call System

The building will have a networked disabled WC alarm call system, disabled refuge alarm system, audio enhancement / induction loop system fixed and portable and a nurse call system.

Information and Communications Technology

The building will have an Information and Communications Technology (ICT) network installed to provide a full Information Technology (IT) and Voice Over Internet Protocol (VOIP) Network. Cat 6a data cabling will be installed from server cabinets located within a dedicated server room and will serve RJ45 data outlets in locations as stipulated within the ACR's, Room Data Sheets and design drawings. This installation is proposed to be in compliance with NHS Fife IT guidance documentation.

Audio visual, TV, Radio, and IPTV facilities will be provided in the building.

Lightning Protection System

The building will be protected by a lightning protection system as well as surge protection devices installed to protect the LV network. Natural components of the building, i.e. structural columns will be utilised to form the down conductor components.

Passenger Lift

A single passenger lift will be installed to aid the movement of people from the ground floor and first floor. NHS Fife verbally confirmed during the course of the KSAR the lift will not be used for fire evacuation purposes.

Fire

Lochgelly Health Centre is to be constructed over two floors, with the proposed elements of structure (Stairs / Lift core) and plant rooms enclosed in 60 minutes fire resisting construction and it is indicated that hazard rooms are to be enclosed in the 30 minutes fire resisting construction with associated fire doors.

The MEP report details that a fully addressable analogue L1/P1 detection and alarm system will be installed throughout, however this is not evidenced within the design at this stage. The main fire alarm panel will be installed at the main reception of the building with a fire alarm repeater panel being installed to the rear of the building designated for staff entry. In the event of an alarm, there is a simultaneous evacuation strategy, and the detection system will be connected to an auto-dial call centre for contacting the Scottish Fire & Rescue Service (SFRS). The report indicates a smart detection system, comprising of combined smoke and heat detectors will be provided. An air aspirating system will be installed for the atrium space for ease of future maintenance compared to a conventional multi criteria detector solution.

NHS Fife confirmed during the Fire KSAR Technical Workshop that they proposed that the patient evacuation will be via refuge points in the staircases and the passenger lift will not be used for fire evacuation purposes.

Whilst NHS Fife have provided an outline fire strategy developed by the architect, no detailed fire strategy report has been evidenced.

3. KSAR Review Summary

The following narrative relates directly to the OBC KSAR workbook and the evidence indicated therein. The comments associated with the points are because of the evidence presented by the health board and their advisors during the review process.

3.1 Project Governance and General Arrangements

3.1.1 Project Governance and General Arrangements KSAR Observations

Workbook Ref No.	Areas to probe	Evidence expected
1.1	Evaluation of changes detailed from previous KSAR.	Assessment of any substantive changes in highlighted areas from previous review stage and all actions have been implemented.
<p>NHS Scotland Assure Observations:</p> <p>Not applicable as the project is entering the KSAR review at OBC Stage.</p> <p><i>Documents referenced are:</i></p> <p>Not applicable as the project is entering the KSAR review at OBC Stage.</p>		

Workbook Ref No.	Areas to probe	Evidence expected
1.2	Verification that CIG recommendations have been implemented with respect to prescribed in scope areas.	Review of the implementation of all CIG recommendations. Evaluation of any deviation from previous submissions or reviews.
<p>NHS Scotland Assure Observations:</p> <p>NHS Fife did not advise of any previous CIG recommendations relevant to the project.</p> <p><i>Documents referenced are:</i></p> <p>Not applicable as there are no previous CIG recommendations.</p>		

Workbook Ref No.	Areas to probe	Evidence expected
1.3	Has cross-referencing with NDAP and AEDET recommendations been implemented?	An assessment if there is full compliance with the applicable recommendations and actions from the preceding step.
<p>NHS Scotland Assure Observations:</p> <p>An OBC AEDET Workshop was held on 8 December 2021 with associated supporting notes evidenced.</p>		

Evidence has been provided to demonstrate an Initial Agreement AEDET Benchmark and Target Scoring has been undertaken with supporting workshop notes provided. No evidence demonstrates how these IA recommendations have been implemented in the current OBC design.

Documents referenced are:

AEDET Refresh Lochgelly Health Centre 20211208.

Project Brief – Lochgelly Design Statement (no date on document).

Lochgelly NHS Scotland Assure OBC KSAR Workbook v1.0.

AEDET Refresh Lochgelly Health Centre _ 210217_V1.

AEDET Lochgelly Comments 21.02.2017.

Workbook Ref No.	Areas to probe	Evidence expected
1.4	Does the Health Board continue to demonstrate service / clinical input into design decisions based on a current and comprehensive knowledge of patient cohorts?	Recorded and updated input taken from service lead(s) / clinician(s) about relevant patient cohort characteristics and their typical needs in terms of the accommodation's environment, safety and infection control standards. Demonstrable expertise of service lead(s) / clinician(s) in providing this advice.

NHS Scotland Assure Observations:

Whilst service and clinical inputs are evident in the overall design consultation process, a number of potential gaps were identified with respect to the applied governance, including inconsistencies in information noted across documents and a lack of documented approvals.

Service and clinical input has been evidenced through a series of stakeholder engagement workshops; the sample minutes provided as part of the KSAR response did not identify which comments related to each stakeholder. The representatives at these workshops are noted in various emails provided which also reflect those noted within the draft OBC and the Project Directory.

Service and clinical comments are noted on the Schedule of Accommodation (Rev P02); however, it is unclear how these comments have been formally captured and embedded within the design.

The draft OBC provided a brief summary of experience of the Project Board Members, however the clinical and service lead expertise are not evidenced.

There is no evidence of service or clinical input into the Environmental Matrix. Reference is made in the Hub Co New Project Request document to the Environmental Matrix being provided by Hub Co for NHS Fife review and acceptance. During the course of the KSAR review, NHS Fife provided a document containing comments on the Environmental Matrix provided by their Technical Advisors (reference to "HK Comments 01-02-22"), however there is no evidence that these comments have been embedded within the design, nor if

wider NHS Fife Technical Stakeholders were consulted in the process (e.g. estates personnel and Authorising Engineers (AE's)).

There is no evidence of a process to ensure all internal stakeholder inputs and comments are collated, agreed and signed off, prior to progressing to the next stage. There is no evidence of a sign off process being undertaken as detailed on Page 25 of the Project Execution Plan (PEP) or subsequent formal approval status being assigned to the design submitted by Hub Co to NHS Fife.

NHS Fife confirmed during the weekly KSAR meetings that Lochgelly Health Centre is a non-acute GP facility with no in-patient facilities. The Stage 1 HAI-SCRIBE was undertaken in December 2021 and identifies the range of clinical and patient services to be delivered in the facility, however no patient grouping classification is evidenced in the document. The M&E Input document authored by the Head of Capital Planning, Director of Property and Head of Estates confirms that no patients will be staying overnight and will be present with general primary care related conditions only. A Stage 2 HAI-SCRIBE has not yet been undertaken, which in our opinion should have been completed by this stage.

An email has been evidenced (November 2021) containing comments on the design by the IPC Lead Nurse after internal discussions with the Lead Microbiologist. There is also a comment stating the staff changing design will need to be reviewed. There is no evidenced to demonstrate how these comments have subsequently been captured in the design.

Documents referenced are:

PSCP and DT Appointments - NHS Fife Lochgelly New Project Request V4.

Clinical Brief - Accommodation Schedule - Lochgelly_P02_30082021.

20211221 Lochgelly HCC Environmental Matrix.

Lochgelly Environmental Matrix (HK Comments 01-02-22).

HAI Scribe Stage 1 Lochgelly - 08.12.21.

Clinical Input.

IPC 1.6 FW_ipc (IP email 23.11.21).

bishoppa_27-01-2022_08-29-02.

NHSF - HC PEP Rev. 2 (May 2021).

Workbook Ref No.	Areas to probe	Evidence expected
1.5	Project team continues to demonstrate a unified and recorded understanding of needs of main users and patient cohorts of the proposed accommodation and how this has influenced the design of critical building, engineering and infection	Updated and current list available of all stakeholders, service users and patient cohorts impacted by this project, plus the identification of any high risk groups and their specialist needs. Updated and recorded engagement on these designs issues having taken place between the project team and service

	prevention and control quality and safety standards.	lead(s) / clinician(s), infection prevention and control team, and other key stakeholders (e.g. Estates, Medical Physics, IPC, the AEDET, NDAP or other design briefing workshops). Details available of how service users / patient cohort needs and their expected use of the accommodation are influencing the design brief, including critical building, engineering and infection prevention and control quality and safety standards.
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NHS Scotland Assure Observations:

NHS Fife have demonstrated they have attempted to capture and maintain stakeholder input to the development of the design. The KSAR however has identified a number of gaps within the process (i.e. ACR, OBC and PEP documents remain in draft format with several comments and sections still be closed out. No formal Derogation Schedule evidenced, overall design only recently released by Hub Co with no NHS Fife review/acceptance in place), that ultimately do not provide assurance that all the Health Board requirements have been suitably captured in the OBC documents.

NHS Fife confirmed the building will be a non-acute GP facility with no in-patient facilities. Stakeholders are identified in various documents provided (for example, the Project Execution Plan, OBC and Project Directory) including IPC, Clinical Team and GP representatives (Practice Managers, Service Managers, HSCP representatives), albeit these documents are noted in draft format or are not fully complete. The Project Directory (January 2021) contains names and roles of those involved in the project, however it is mainly focused on the internal NHS Fife stakeholders, with the external stakeholders and Hub Co Team sections incomplete.

Stakeholder engagement is primarily evidenced through a series of nine Stakeholder Workshops undertaken over the period April to August 2021, with each workshop containing a presentation seeking to address comments raised at the previous workshop to inform the design. Whilst the approach and presentation format are clear, the associated meeting notes do not identify which stakeholders attended the workshops or which comments relate to each stakeholder.

Evidence has been provided, via a series of emails, demonstrating consultation and comment from the following stakeholders: IPC / Microbiology, GP Pitcairn Practice, GP Lochgelly Practice, NHS Fife HSCP, NHS Fife Estates, NHS Fife Head of Facilities, NHS Fife Fire Safety Advisor. It is not clear that these comments have been addressed within the OBC documents.

The schedule of accommodation has been used to inform the design and is primarily based around the requirement for GP Consulting Rooms, Podiatry / Physiotherapy Room, NHS Admin, Community Space and associated welfare and support facilities. There is also evidence of space planning, adjacencies as well as general access and security considerations.

There is evidence of IPC engagement, consultation, and feedback on the design via the Stakeholder Workshops, Project Team Meeting Minutes, and direct email communication. No clinical or business risk assessments have been evidenced.

An OBC AEDET Workshop was held on 8 December 2021 with associated supporting notes evidenced. A list of workshop attendees has not been provided, however there is evidence of representatives from the various Medical Practices and HFS being invited to the workshop. NHS Fife have confirmed the OBC NDAP process is ongoing.

Documents referenced are:

Lochgelly NRP March 21 - NHSF HC Project Directory - 18.01.21 Rev 1 (Hubco section incomplete).

Clinical Input – Stakeholder Workshops 1-9 (April to August 2022).

IPC 1.6 FW_ipc (IP email 23.11.21).

NHS Fife-Lochgelly-Hub-XX-XX-MI-100 Estates Review (28 October 2022).

Stage 1 Comments (HAI comment email 23.11.22).

Service User Re_ Fife HSCP_ Lochgelly H&WC (Head of facilities email).

Lochgelly Health Centre - AEDET Review (email).

AEDET Refresh Lochgelly Health Centre 20211208.

Re_ NHSF Health Centre Fire Strategy (NHS Fire Officer email 27.01.22).

Workbook Ref No.	Areas to probe	Evidence expected
1.6	Planned approach towards determining the necessary standards for this accommodation.	<p>Updated and current list of the relevant NHS and non-NHS guidance that is being used and adopted (see previous section of workbook OBC KSAR (Page 9) for examples of appropriate guidance).</p> <p>Updated and current list of all proposed derogations from NHS guidance with a detailed technical narrative on each derogation and/or list of known gaps in guidance that will need to be resolved in order to meet the needs of the patient / user cohort.</p> <p>Knowledge of the role of infection prevention and control and microbiologist advisors to be used throughout the design stages, and details of the resource plan in place to ensure this advice will be available.</p>

NHS Scotland Assure Observations:

A list of standard HFS guidance is evidenced identifying guidance deemed applicable to the project by NHS Fife.

The ACR (Section 5) contains a series of general construction requirements noting that NHS Scotland standards will take precedence over NHS England and Wales. The ACR also states that where there is conflict between two standards, the most onerous will apply. Section 5 also contains reference to general SHTM's and HTM's etc with no greater detail.

A Derogations Schedule (KSAR Evidence – Guidance and Derogations) has been provided by the M&E Designer, who have been appointed by the Tier 1 Contractor on behalf of Hub Co. The Derogation Schedule evidenced is seeking derogations against the draft ACR document only and not against any of the SHTM's noted 14 No. derogations have been identified but remain open and are still to be formally approved by the NHS Fife. NHS SA have identified through the KSAR a number of potential departures from SHTM guidance that are not captured within the derogations schedule currently.

NHS Fife have not evidenced a formal process for reviewing proposed derogations, nor any identified any requirement for supporting risk assessments/mitigation measures to ensure that the resultant level of performance/safety is no less than had the guidance (or ACRs) been complied with in full. NHS Fife have also not indicated who will be involved in the review of any proposed derogations.

Limited engagement with IPC team has been evidenced. An email from (November 2021) contains comments on the design by the IPC Lead Nurse after internal discussions with the Lead Microbiologist. No ongoing IPC resource plan is evidenced to ensure that the IPC resource is maintained to oversee the update and formal approval of key documents, such as the Environmental Matrix and Derogations Schedule and the completion of the Stage 2 and 3 HAI-SCRIBE, prior to the design being finalised and construction works commencing on site.

Documents referenced are:

20201209 HFS Guidance Publications.

ACR's - Combined Comments (12/08/21 v1 draft).

NHSF ACR Derogation Schedule Issue 1 (Wallace Whittle Derogation Schedule against ACR, Rev 1 27.02.22).

Workbook Ref No.	Areas to probe	Evidence expected
1.7	<p>How does the Health Board demonstrate that there is an effective infection prevention and control management structure in place and how does it relate to the development of the project?</p> <p>How does the Health Board demonstrate leadership and commitment to infection prevention and control to ensure a culture of continuous quality improvement throughout the organisation and that there is an effective IPC structure in place and how does it relate to the design development?</p>	<p>Evidence IPC and clinical teams have been integrated into all decisions regarding any derogations through the design process and are satisfied this will not impact on patient safety such as, specific sign off, supporting meeting minutes, risk assessments, risk registers relating to IPC with evidence of escalation through the agreed NHS board governance process.</p>

NHS Scotland Assure Observations:

IPC representatives have been identified within the draft PEP and OBC documents provided, along with attendance noted in the Stage 1 HAI-SCRIBE. An email from IPC (IPC 1.6) contains comments on the wider design in November 2021. IPC attendance at the OBC AEDET and Stakeholder Workshops has been confirmed verbally by NHS Fife but there is no specific list of attendees provided to verify this.

There is no evidence of any IPC related meetings or workshops beyond contribution to the Stage 1 HAI-SCRIBE and subsequent emails. There is also no evidence of an IPC related risk assessment being undertaken or IPC related risks noted in the risk register. It is unclear if any IPC matters have been escalated to the Project Board through the governance process set out in the PEP and OBC document.

There is a comment within the NHS Fife OBC KSAR Workbook response confirming that IPC will be involved in the derogation process moving forward. As highlighted in KSAR Workbook Reference 1.6, NHS Fife have not evidenced a formal process for the review and approval of derogations.

Documents referenced are:

HAI Scribe Stage 1 Lochgelly - 08.12.21.

IPC 1.6 FW_ipc (IP email 23.11.21).

L&K Risk and Issue Register - 19.11.21 - Rev. 7.

Workbook Ref No.	Areas to probe	Evidence expected
1.8	Integration with Authority Policies and Operation How does the Board demonstrate implementation of evidence based infection prevention and control measures?	<p>The Health Board can demonstrate the current version of the National Infection Prevention and Control Manual (NIPCM) has been adopted by the organisation and all staff are aware of how and where to access this. (Ask staff)</p> <p>IPC are fully embedded in the project team and the OBC programme-taking cognisance of any actual or perceived risks identified provided.</p>

NHS Scotland Assure Observations:

There is no evidence of IPC control measures being implemented beyond those evidenced above via the Stage 1 HAI-SCRIBE and IPC email comments on the design. NHS SA note there is a risk of the design being developed without consideration of IPC risks being identified or considered unless IPC colleagues are involved consistently in the design development and decision making processes.

There is no evidence provided to demonstrate that the current NIPCM has been adopted and all staff are aware how to access the manual.

There is limited evidence of IPC and Microbiology leads being involved in the project, however there are no IPC related risks noted within the risk register, no evidence of IPC risk assessments undertaken, or any IPC input to the derogations process.

Documents referenced are:

OBC HAI-Scribe - HAI Scribe Stage 1 Lochgelly - 08.12.21

IPC 1.6 FW_ipc (IP email 23.11.21)

Workbook Ref No.	Areas to probe	Evidence expected
1.9	The Health Boards Infection Prevention and Control Strategy	Assessment of the Health Boards approach to all IPC related matters in relation to the development of the design, HAISCRIBE etc. IPCT annual programme of work

NHS Scotland Assure Observations:

Limited IPC engagement has been evidenced. IPC representatives have been identified within the draft PEP and OBC documents. No IPC strategy document has been evidenced which includes the IPC support required for this project and how this will impact on the IPC annual programme of work.

The Stage 1 HAI-SCRIBE was undertaken in December 2021 and referred to previously in this report. The Stage 2 HAI-SCRIBE has not yet been undertaken.

There is no evidence of an IPCT annual programme of works.

Documents referenced are:

OBC HAI-Scribe - HAI Scribe Stage 1 Lochgelly - 08.12.21.

IPC 1.6 FW_ipc (IP email 23.11.21).

Workbook Ref No.	Areas to probe	Evidence expected
1.10	The Health Boards Monitoring and Records	Evidence that the Health Board integrating this project with wider IPC requirements within the context of the OBC. For example, evidence that the proposals for equipping incorporate IPC requirements?

NHS Scotland Assure Observations:

There is no evidence provided to demonstrate NHS Fife’s wider IPC monitoring and recording processes or proposals for equipping.

IPC Lead identified in the PEP and OBC documents and IPC are noted as a stakeholder within the overall project governance structure. IPC and Microbiology comments on the design have been evidenced as referred to previously in this report – it is not evident that these comments have been addressed within the OBC documentation.

There is no evidence of IPC input into the equipment schedule, however a comment within the NHS Fife OBC KSAR Workbook response notes it is too early for IPC involvement at

this stage (i.e. OBC). NHS SA note early and consistent engagement with IPC should be sought on all project related issues.

Documents referenced are:

Lochgelly NHS Scotland Assure OBC KSAR Workbook v1.0.

Workbook Ref No.	Areas to probe	Evidence expected
1.11	Planned approach for managing the design process to ensure successful compliance with agreed and approved standards	<p>The project governance arrangements and resource plan in place to ensure that the necessary decision-making authority and technical expertise is available to take responsibility for and deliver the project as planned and agreed.</p> <p>Details of how gaps in expertise are being filled.</p> <p>Details of how compliance with the appropriate guidance, design brief and other standards are being agreed, signed off, monitored, reported against and if necessary escalated / adjudicated throughout the design, construction and commissioning stages.</p> <p>Details of how all stakeholders' interests are being agreed, signed off, monitored, reported against and if necessary escalated / adjudicated throughout the design, construction and commissioning stages.</p>

NHS Scotland Assure Observations:

A detailed Project Organogram is evidenced in the PEP document along with stakeholder roles and responsibilities evidenced in the OBC document detailing the management of the project. Both documents are still noted in draft. The PEP identifies the various internal technical stakeholder representatives (FM, Fire, IPC, and ICT) required to review and comment upon the design. Evidence has been provided via email containing comments on the design from the internal stakeholders, however there is no evidence that these comments have been embedded within the design. NHS Fife also note various stakeholder input into the OBC AEDET, NDAP and Stakeholders workshops, however a list of attendees (including role titles) has not been evidenced to support this.

NHS Fife have appointed a Technical Advisor (through the Lead Advisor) who has provided a Mechanical and Electrical Peer Review Report on the current design. Several comments are noted within the report of December 2021 with no evidence provided that these have been closed out or that the design has been updated accordingly.

The PEP notes that following the review and acceptance of the design by the technical stakeholders (Page 24), the Technical Advisor will review and approve the design with the Project Manager to confirm final acceptance. The PEP also notes that Hub Co will offer up the design for acceptance at the end of each RIBA Stage, with NHS Fife applying an

approval status (A - approved, B - approved with comments, C - rejected). A high-level change control process is outlined within the PEP (Page 27) following the merged RIBA / Hub Stage approach. There is however no evidence of how specific stakeholder comments are being captured and addressed to help inform the overall approval process outlined above.

There is no formal letter of appointment or contract provided for the Lead Advisor. NHS Fife confirmed during the KSAR weekly meetings that no Fire Engineer has been appointed to date.

Draft appointment documents have been evidenced between the Tier 1 Contractor and their design team. It should be noted that NHS Fife provided evidence of their 'Tier 2 Interview Questions Mechanical and Electrical', 'EOI Evaluation T2 Ranking' and 'T2 PQQ Interviewing Scoring Consensus – Rev A' the appointed M&E Designers were not listed within the document. An unsigned letter dated 2 April 2021 is evidenced from the Tier 1 Contractor to Hub Co East Central Scotland Ltd stating a verbal confirmation of appointment on 13 August 2020.

A series of technical reports have been commissioned by the Tier 1 Contractor, as outlined in the NPR (New Project Request) agreement (Clause 4.2.4a), to address information gaps relating to Noise and Impact Assessment, BREEAM Pre-Assessment and Ecology (KSAR Evidence – Gaps in Expertise).

The NHS Fife draft ACR document contains the construction requirements for the project. This document is noted in draft and contains comments which have not been closed out and has appendices missing. NHS Fife confirmed during the weekly meetings the ACR had not been formally signed off by the Project Board and the supporting appendices are still in development.

An M&E Input Assessment Document has been provided by NHS Fife, authored, and signed by the Head of Capital Planning & Projects, Director of Property & Asset Management and Head of Estates. The document identifies the project as low risk from an M&E perspective with Estates and IPC resource allocated to support the project through its life cycle with AE's and Water Safety Group (WSG) only being engaged where there are derogations identified or issues to be escalated to them. As highlighted in 1.6, NHS Fife have not evidenced a formal process for the review and approval of derogations, nor is there a formal process for defining or monitoring matters for escalation.

NHS Scotland Assure note that the role of the Water Safety Group is not just to review derogations. SHTM 04-01 Part B notes "The Water Safety Group will be responsible for supporting, co-ordinating and reviewing operational management and controls in accordance with statutory requirements (such as COSHH and HSE ACOP L8) and mandatory requirements (such as SHTM 04-01), for when and where water is supplied, stored, distributed and used safely, by:

- providing leadership for the overall provision of water services management and supervision for maintenance, operational and design procedures;"

In the absence of a defined process for the Water Safety Group or delegated representative supervising the design, it is unclear as to how the intent of SHTM 06-01 Part B as noted above is being achieved.

Documents referenced are:

HC PEP Rev. 2 (May-22 draft).

Lochgelly Health Centre - Peer Review - (H&K Comments 10-12-21).

DS.AS21-001 (Robertson appointment 02.04.21).

Workbook Ref No.	Areas to probe	Evidence expected
1.12	The Health Boards approach on the procurement journey with evidence of the plans on how the Board will provide assurance, particularly emphasis on the critical system identified earlier.	<p>Evidence on how Infection Prevention and Control are involved with the conceptual procurement approach to the design stage and future plans for project.</p> <p>Plans to identify any gaps in the procurement approach that may require to be addressed.</p> <p>Evidence on how the Infection Control procedures and management will fit with the conceptual procurement approach and initial thinking on how it will be managed.</p> <p>Evidence of a detailed procurement strategy report.</p> <p>Evidence that the Health Boards selected procurement route has gone through the Health Board's Governance channels.</p>

NHS Scotland Assure Observations:

NHS Fife are procuring the project through Hub Co East Central Scotland and have also appointed a Lead Advisor / Technical Advisor direct via the HFS Framework to help support them. The Technical Advisor has undertaken a Peer Review of the project (January 2022).

There is no evidence of direct IPC involvement in the procurement approach. IPC input is evidenced in the wider design through the Stage 1 HAI-SCRIBE and emails containing comments on the design as referred to in previous sections of this report. The draft OBC document evidenced notes that the HAI-SCRIBE process will be utilised to identify and mitigate design and construction related infection risks. However, Stage 2, 3 and 4 HAI-SCRIBE have not been completed, even in part at OBC, despite concept design having taken place.

NHS Fife has confirmed in their OBC KSAR Workbook response that there are no gaps in procurement. Refer to Section 1.11 of this report noting some appointments still to be made and unsigned appointment documentation. There is no evidence of the selected Hub Co procurement route having gone through NHS Fife internal governance and being approved. The draft OBC contains the commercial case (section 6) which outlines the procurement approach as summarised above.

Documents referenced are:

bishoppa_27-01-2022_08-29-02.

LHC OBC - 03.12.21 Rev. 1.

Workbook Ref No.	Areas to probe	Evidence expected
1.13	The Health Boards approach on those areas of design that the procurement route has provided identification as possibly being Contractors Designed Portions (CDP's).	<p>Evidence that the Health Board integrating this project with wider IPC requirements within the context of the OBC. For example, evidence that the proposals for equipping incorporate IPC requirements.</p> <p>Evidence that the procurement of the lead designer will encompass these areas in their oversight and sign off on the complete design.</p> <p>Evidence that a clear demarcation of design responsibility is being developed.</p>

NHS Scotland Assure Observations:

NHS Fife appointed Hub Co East Central Scotland, incorporating a Tier 1 contractor to design and build the new Lochgelly Health Centre. Hub Co is an established procurement route to enable access to a Tier 1 contractor with the ability to appoint a design team under the contractor. Evidence of the New Project Request (NPR) form January 2021 between NHS Fife and Hub Co has been provided; however, this document remains unsigned. No further evidence of contractual appointment document between Hub Co and NHS Fife has been evidenced.

A design responsibilities matrix (DRM) has been evidenced and identifies a number of CDP with 15 out of the 27 relating to MEP services. The responsibility matrix identifies a clear demarcation of design responsibility highlighting those with primary responsibility for each area of the design as well as any supporting roles required. A significant number of the MEP CDP items are allocated against an unspecific sub-contractor to Robertson Construction with a note confirming "M & E Design for Construction to be delivered via M+E Delivery partner". The DRM does not detail how the sign off process is undertaken; this has been referred to in Section 1.11 of this report in the context of comments on the PEP.

Furniture Fixtures & Equipment (FF&E) is referred to in the DRM and noted as the primary responsibility of the architect during the design stage, handing over to a specialist sub-contractor (still to be appointed) during the construction stage.

Documents referenced are:

NHS Fife Lochgelly New Project Request V4.

LHCC-RCG-XX-XX-SH-W-001DRM.

Workbook Ref No.	Areas to probe	Evidence expected
1.14	Evaluation of the Health Boards commissioning plan.	Evidence that the Health Board has recorded plans that are comprehensive and adequate to address the needs of the project and that they are fully resourced.

NHS Scotland Assure Observations:

Based on the information provided, is it not evident that NHS Fife has a comprehensive commissioning plan in place or supporting resource. NHS Fife have noted that the development of the commissioning plan will be an ongoing activity to the end of RIBA Stage 4 (FBC Stage).

Documents referenced are:

Lochgelly NHS Scotland Assure OBC KSAR Workbook v1.0.

Workbook Ref No.	Areas to probe	Evidence expected
1.15	Evaluation of the Health Boards duty holder matrix.	<p>Evidence that the Health Board have a fully recorded matrix of the required roles and responsibilities and have a clear governance structure that is fully resourced together with plans in place for the implementation.</p> <p>Evidence that Health Boards have appropriate number of competent, qualified staff to carry out specific duties throughout the life cycle of the project e.g., IPC, Engineers, Estates staff etc. The number of competent, qualified staff will depend on the type and size of the Build Project.</p>

NHS Scotland Assure Observations:

Whilst no evidence was presented of a consolidated Health Board Duty Holder Matrix, NHS Fife have included some relevant information in other documentation. The Project Execution Plan (PEP) and Outline Business Case (OBC) documents have been provided evidencing governance structure, roles and responsibilities, duty holders and relevant experience and competency for key NHS Fife individuals. Both documents are noted in draft format and remain incomplete. Both documents contain reference to supporting appendices which were not provided as part of the KSAR (they were noted as being blank within the documents provided).

The PEP details a governance and reporting structure, generally consistent with those noted in the Project Directory evidenced. The Project Team structure however contains reference to the previous NHS Fife Project Manager and there is no reference to the NHS Fife Lead Advisor Team and how they fit into the overall project structure. The Senior Responsible Officer noted in the PEP and OBC are different individuals. A non-executive member role is still to be populated in the OBC.

There is no NHS Fife resource plan evidenced to ensure that the current resource allocated to the project is maintained to oversee the project through to completion.

Documents referenced are:

HC PEP Rev. 2 (May-22 draft)

LHC OBC - 03.12.21 Rev. 1 (03.12.21 draft)

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3.1.2 Project Governance and General Arrangements: Further Observations

In addition to the points raised via the KSAR workbook above, we also include the following observations as a result of the review, all of which relate to the evidence presented during the appraisal.

3.1.2.1

No further observations

3.2 Water and Internal Plumbing / Drainage Systems

3.2.1 Water and Internal Plumbing / Drainage Systems: KSAR Observations

Workbook Ref No.	Areas to probe	Evidence expected
2.1	Has the Health Board completed competency checks on the water and drainage consultant designers?	<p>Recorded evidence that the design team are experienced and have a comprehensive knowledge of the relevant design standards.</p> <p>Where anyone does not have a record of extensive health care experience what recorded plans are to be put in place by the Consultant Designers?</p> <p>Recorded evidence that input from the Health Authorising Engineer for Water (AE(W)) has been requested.</p>

NHS Scotland Assure Observations:

There is a lack of supporting evidence as to how NHS Fife have defined and assessed the required competencies for their appointed water and drainage designers. NHS Fife provided evidence of their 'Tier 2 Interview Questions Mechanical and Electrical', 'EOI Evaluation T2 Ranking' and 'T2 PQQ Interviewing Scoring Consensus – Rev A'. The questions listed within the 'Interview Questions' do not interrogate the competency of the water and drainage designers specifically.

NHS Fife confirmed during the weekly KSAR meetings that engagement with the Authorising Engineer (AE) is by exception only and "where specific items (normally proposed derogations) are escalated to them for advice". The AE's are not consulted on a regular basis and will not undertake general design reviews. NHS Fife have not evidenced the threshold that would constitute an area as being exceptional.

Documents referenced are:

Tier 2 Interview Questions Mechanical and Electrical.

EOI Evaluation T2 Ranking.

T2 PQQ Interviewing Scoring Consensus – Rev A.

M&E Input Assessment Rev 0.

Workbook Ref No.	Areas to probe	Evidence expected
2.2	How does the Health Board ensure that water services are designed in a fashion, which will retain space for minor additions and	Evidence that the engineers are presented their co-ordination drawings (BIM model), with space for future flexibility identified, to the Board.

	<p>modifications to services in the future?</p>	<p>Evidence that the Design Consultant has considered and agreed with the Board, space for future flexibility in the service installations.</p> <p>Evidence that the designers have presented each of the main service runs plus plant rooms to the Board's FM team, to highlight space for future flexibility.</p> <p>Evidence that the Board has agreed a strategy (percentage) for spare capacity and a documented allowance to be incorporated into the design.</p> <p>Are plant/tank rooms, IPS sections, horizontal distribution runs and risers appropriately sized for the equipment being installed and facilitate safe adequate maintenance.</p>
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NHS Scotland Assure Observations:

The level of information evidenced in relation to the services being designed in a fashion that retain space for minor additions and modifications is limited. The Design Team have verbally confirmed at weekly KSAR meetings / Technical Workshops that cognisance has been taken within the design but there is insufficient documented evidence to support this.

The Design Team confirmed at the weekly KSAR meetings / Technical Workshops that plantroom BIM models have been produced. However, these have not been provided as evidence for review and investigation into the allowance for appropriate installation space and future space requirements.

'ACR's Section 8.6.2' defines the spare capacity that should be contained within the design of each service and associated distribution network. The Design Team confirmed during the weekly KSAR meetings that cognisance of these allowances had been included within their design. However, there is no evidence of such calculations to support this statement. The stated spare capacity for Domestic Cold Water distribution pipework within the ACR's has not been justified and there is no evidence that NHS Fife have considered and agreed a strategy to deal with the associated legionella risks associated with oversizing pipework which may result in stagnant and low flow water. With respect to the domestic water services drawings, whilst generally to a RIBA Stage 2 level of detail, NHS Scotland Assure note that there are a number of details missing that may impact on the co-ordination of and access to services such as point of use water heater locations and valve locations.

Within the drainage drawings LHCC-WWL-XX-00-DR-P-52-0001 and LHCC-WWL-XX-01-DR-P-52-0001, the level of detail is generally appropriate for RIBA Stage 2. However, there is no evidence of spatial consideration, future maintenance (i.e. access hatches and rodding eyes) or subsequent IPC considerations.

There is no evidence to confirm that there is sufficient clearance above the proposed cold water storage tank located in the First Floor Store Room for access for cleaning and maintenance. Sufficient access space has been verbally confirmed by the Design Team at the weekly KSAR meetings/Technical Workshops but with no formal documented evidence provided.

Some basic 2D block diagrams were evidenced for the Plant Room areas to demonstrate the design intent. However, there is insufficient detail to confirm that there is satisfactory space for full installation, future access and maintenance and future spare capacity considerations.

A further typical service sections drawing 'LHCC-WWL-XX-XX-DR-M-50-0001' was evidenced. However, upon our review it was found inaccurate as it did not detail the full level of services that would be present within the corridor ceiling voids. The Design Team verbally confirmed at the weekly KSAR meetings / Technical Workshop that this would be revised but there were some design considerations yet to be resolved regarding the LTHW heating circuitry, i.e. one number circuit may be removed Yet there is no formal evidence regarding these considerations.

There is also a note on the typical services section advising that there has been discussion with the architect regarding lowering the ceiling if required. This was verbally confirmed by the Design Team at the weekly KSAR meetings / Technical Workshop. Whilst NHS SA acknowledge that the design is still being developed, we note concerns that the spatial co-ordination of ceiling voids is not yet suitably developed to provide a level of assurance around the size of the voids at this stage – this may ultimately lead to a compromise on client requirements as outlined in the ACRs. The extent to which ceilings may need adjusted is currently unknown as ventilation strategies are yet to be finalised, particularly in lieu of the unresolved overheating issues which may impact on cold water temperatures and increase the risk of legionella and other pathogens.

'ACR's Section 5.6 and 8.8' refer to Plant and service riser consideration and regular review throughout the design stages. No evidence has been provided to confirm that these have been reviewed and accepted by the relevant stakeholders.

'ACR's Section 8.6.3' refers to a Plant Access and Maintenance Strategy. There is no evidence of this being completed to date.

Documents referenced are:

ACR's - Combined Comments (12/08/21 v1 draft).

Drawing - LHCC-WWL-XX-00-DR-P-52-0001.

Drawing - LHCC-WWL-XX-01-DR-P-52-0001.

Drawing - LHCC-WWL-XX-XX-DR-M-50-0001.

Workbook Ref No.	Areas to probe	Evidence expected
2.3	How does the Health Board assure itself that all variations / derogations, which may be required to water systems, are investigated and agreed by all parties before they are incorporated in the design?	Evidence that each variation / derogation has a detailed technical analysis, has been referred to the Board, and agreed with their water management group clinical, engineering, Estates, infection prevention, control, and FM teams.

NHS Scotland Assure Observations:

A Derogations Schedule (KSAR Evidence – Guidance & Derogations) has been provided by the M&E Designer, who have been appointed by the Tier 1 Contractor on behalf of Hub Co.

The Derogation Schedule evidenced is seeking derogations against the draft ACR document and not against any of the SHTM's noted in the guidance document evidenced. 14 No. derogations have been identified but remain open and are still to be formally approved by the NHS Fife. NHS Fife have not evidenced a formal process for reviewing proposed derogations, nor any identified requiring supporting risk assessments/mitigation measures to ensure the resultant level of performance/safety is no less than had the guidance (or ACRs) been complied with in full. NHS Fife have also not indicated who will be involved in the review of any proposed derogations.

There is no evidence that the following risk assessments in accordance with the ACR's and SHTM 04-01 have been completed, reviewed or approved by the Board. As these have not been evidenced, there is no formal methodology to identify whether a mitigation or derogation is required to be applied.

- 'ACR's Section 8.14.4 and SHTM 04-01 Section 5.4' – Water Filtration Risk Assessment
- 'ACR's Section 8.14.8' – Risk Assessment of the utilisation of TMV's in accordance with HSG 274
- Water Tank storage capacity and resilience (SHTM 00-07) – Several emails have been evidenced highlighting the discussions to date, but no final written evidence has been provided supporting the agreed strategy. Further evidence is required for the approval of a single tank providing no level of resilience.

There is no evidence of a Water Safety Group being formed for the project with NHS Fife again confirming during the weekly KSAR meetings that the wider NHS Fife Water Safety Group will support the project where specific items are escalated to them. They have also noted engagement with the AE is by exception only. As noted within earlier sections of this report, NHS Scotland Assure have concerns over this approach.

There is no evidence of any specific items being escalated into the AE or Water Safety Group. There was no NHS Fife stakeholder representation noted at the various KSAR Technical Workshops undertaken as part of the KSAR. NHS SA have concerns regarding this approach as the validity of it being by exception is driven by the Project / Design Team and key considerations may be missed. Furthermore, there is no evidence to confirm the personnel assessing if it is an exception are qualified to do so. NHS Fife have not evidenced the threshold for escalation.

There is no evidence of a formally defined process for reviewing proposed derogations, including capturing input of other key stakeholders such as IPC.

Documents referenced are:

M&E Input Assessment Rev 0.

KSAR Evidence – Guidance & Derogations - NHSF ACR Derogation Schedule Issue 1 (Wallace Whittle Derogation Schedule against ACR, Rev 1 27.02.22).

ACR's - ACR's - Combined Comments (12/08/21 v1 draft).

Workbook Ref No.	Areas to probe	Evidence expected
2.4	Water Management Strategy	Assessment of Health Board proposed water management strategy and how this relates to the specification, guidance and project requirements.

		What involvement has there been from the water management group?
<p>NHS Scotland Assure Observations:</p> <p>There is no evidence that the proposed water management strategy has been reviewed and approved by the Water Safety Group. Furthermore, there is no evidence that the overall water strategy has undergone a formal review.</p> <p>Documents referenced are: <i>M&E Input Assessment Rev 0.</i></p>		

Workbook Ref No.	Areas to probe	Evidence expected
2.5	Water governance arrangements	<p>Has the Health Board commenced its water governance planning and recorded how it will ensure appropriate numbers of trained staff (AP and CP) and AE(W) will be appointed, is there an established project water management group that ensures the water management strategy is adhered to for the Board, and is it clear how this project will interface with this existing group?</p> <p>Evidence that the Health Boards AE(W) have been involved with and reviewed the design proposals to date.</p>
<p>NHS Scotland Assure Observations:</p> <p>There is no evidence presented that NHS Fife have commenced its water governance planning and how it will be staffed and incorporated into the existing water management group.</p> <p>As noted in previous sections, NHS Scotland Assure have concerns as to the approach for interfacing with the AE and WSG.</p> <p>Documents referenced are: <i>M&E Input Assessment Rev 0.</i></p>		

3.2.2 Water and Internal Plumbing / Drainage Systems: Further Observations

In addition to the points raised via the KSAR workbook above, we also include the following observations as a result of the review, all of which relate to the evidence presented during the appraisal.

3.2.2.1	Although there are some basic block plant room drawings provided, there is insufficient evidence and detail towards the proposed chilled cold water return system i.e. how it operates, associated plant, how it will be balanced etc. that would have been expected at this stage.
3.2.2.2	There is no evidence that consideration has been given to where the point of use water heaters will be located and whether consideration has been given to limit the connecting return cold water leg length. NHS Scotland Assure recommend that this is considered by the designer to minimise the length of pipework in order to prevent stagnation of water.
3.2.2.3	There is no evidence of a typical valving detail showing consideration for future access, maintenance.

3.3 Ventilation

3.3.1 Ventilation: KSAR Observations

Workbook Ref No.	Areas to probe	Evidence expected
3.1	Has the Health Board completed competency checks on the ventilation consultant designers?	<p>Recorded evidence that the design team are experienced and have a comprehensive knowledge of the relevant design standards.</p> <p>Where anyone does not have a record of extensive health care experience what recorded plans are to be put in place by the Consultant Designers?</p> <p>Recorded evidence that input from the Health Boards Authorising Engineer for Ventilation (AE(V)) has been requested.</p>

NHS Scotland Assure Observations:

There is a lack of supporting evidence as to how NHS Fife have defined and assessed the required competencies for their appointed ventilation designers. NHS Fife provided evidence of their 'Tier 2 Interview Questions Mechanical and Electrical', 'EOI Evaluation T2 Ranking' and 'T2 PQQ Interviewing Scoring Consensus – Rev A'. The questions listed within the 'Interview Questions' do not interrogate the competency of the ventilation designers specifically.

NHS Fife confirmed during the weekly KSAR meetings that engagement with the Authorising Engineer (AE) is by exception only and "where specific items (normally proposed derogations) are escalated to them for advice". The AE's are not consulted on a regular basis and will not undertake general design reviews. NHS Fife have not evidenced the threshold that would constitute an area as being exceptional.

Documents referenced are:

Tier 2 Interview Questions Mechanical and Electrical.

EOI Evaluation T2 Ranking.

T2 PQQ Interviewing Scoring Consensus – Rev A.

M&E Input Assessment Rev 0.

Workbook Ref No.	Areas to probe	Evidence expected
3.2	How does the Health Board ensure that ventilation services are designed in a fashion, which will retain space for minor additions and modifications to services in the future, and there is an	<p>Evidence that the design engineers have presented their co-ordination drawings (BIM model), with space for future flexibility identified, to the Board.</p> <p>Evidence that the design consultant has considered and agreed with the Health Board, space for future flexibility in the service installations.</p>

	appropriate plant access strategy?	<p>Evidence that the design engineers have presented each of the main service runs plus plant rooms to the Board's Estates team and / or FM team, to highlight space for future flexibility.</p> <p>Evidence that the Health Board has agreed a strategy (percentage) for spare capacity and a documented allowance to be incorporated into the design.</p> <p>Are plant rooms, IPS sections, horizontal distribution runs and risers appropriately sized for the equipment being installed and facilitate safe adequate maintenance?</p> <p>Evidence that a plant access strategy for the entire ventilation system has been provided to ensure safe, adequate access, including access for cleaning.</p>
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NHS Scotland Assure Observations:

The level of information evidenced to demonstrate the ventilation services being designed in a fashion that retain space for minor additions and modifications is limited.

NHS Fife have verbally confirmed at weekly KSAR meetings / Technical Workshops that cognisance has been taken within the design but there is insufficient evidence to support this. NHS Fife also confirmed at these meetings that plantroom BIM models have been produced. However, these have not been provided as evidence for review and investigation into the allowance for appropriate installation space and future space requirements.

'ACR's Section 8.6.2' defines the spare capacity that should be contained within the design of each service and associated distribution network. The Design Team confirmed within the weekly KSAR meetings that cognisance of these allowances had been included within their design. However, there is no recorded evidence of such calculations to support this statement.

Whilst the content/presentation of the drawings appear to be consistent with a RIBA Stage 2 level of detail, there is minimal evidence to demonstrate the calculations completed to inform the initial plant sizing.

The Design Team provided limited mechanical calculations in the form of 'Mechanical File Note 001'. This outlines the basic air volume calculations associated with the mechanical ventilation heat recovery plant selection. Within these calculations, there is no evidence that the designers have considered any requirement for spare capacity. Consideration and acceptance of these margins are critical to accurate plant technical selection and resultant spatial considerations.

There is no evidence provided for the sizing or strategy for other mechanical systems, i.e. Air Source Heat Pumps, buffer vessel, radiant panels, over door heaters, AHU heating coils etc.

This was highlighted within the KSAR Technical Workshops where the Design Team verbally confirmed that initial sizing had been completed and stated that the remaining detailed sizing would be completed at the following design stages. NHS SA have concerns

with this approach and potential implications on the current space provision with these items not being sized or considered fully at this stage.

Although there is a notional Air Source Heat Pump (ASHP) layout and compound area identified within the drawings, there is no evidence that the compound design has taken cognisance of the required clearance around the units for both operational airflow and future access and maintenance requirements. Furthermore, there is no evidence that NHS Fife have been party to these strategies, reviewed and confirmed acceptance of such.

Additionally, there is no evidence to support how the ASHP buffer vessel has been sized and if consideration has been given to ASHP resilience levels, ASHP defrost cycle performance, reduced ASHP capacity during winter conditions etc. The Design Team verbally confirmed at the KSAR Technical Workshop that the vessel sizing had been completed by the manufacturer, but no formal evidence has been provided. The Design Team also confirmed that the proposal is in fact for 3 no. buffer vessels opposed to the 1 no. detailed within the heating schematic 'LHCC-WWL-XX-XX-SK-M-56-0001'. Although verbally advised, there is no evidence of this change in the hydraulic strategy.

Due to the reduced water flow temperatures associated with ASHP systems and the potential for reduced heating capacity within extreme winter conditions, these must be factored into the radiant panel, AHU coil and over door heater selections. The Design Team verbally confirmed at the weekly KSAR meeting / Technical Workshop that these have been considered throughout the emitter selections but there is no formal evidence of the sizing and consideration given to spatial co-ordination. The Design Team advised at the KSAR Technical Workshop that spatial co-ordination had also been considered and they may have to revise the heating strategy and utilise radiators if there is insufficient space within the co-ordinated ceiling. There is no evidence provided about this potential change in strategy or whether NHS Fife accept this as it would be a derogation from the ACR's and with potential IPC considerations.

Basic block diagrams in the layouts were evidenced for the Plant Room areas to demonstrate the design intent. However, there is insufficient detail evidenced to confirm that there is satisfactory space for full installation of all necessary plant, future access and maintenance and future space capacity considerations.

A further typical service sections drawing 'LHCC-WWL-XX-XX-DR-M-50-0001' was evidenced. However, upon review it was found inaccurate as it did not detail the full level of services that would be circulated within the Corridor ceiling voids. The Design Team verbally confirmed that this would be revised but there were some design considerations yet to be resolved regarding the LTHW heating circuitry, i.e. one number circuit may be removed, that were currently under consideration, yet there is no formal evidence of this.

Although the Design Team verbally confirmed at the KSAR Technical Workshop, there is no formal evidence that consideration has been given to the space required for the installation of fire dampers in accordance with manufacturer's certified/approved installation methodologies.

A note on the typical services section advises that there has been discussion with the architect regarding lowering the ceiling if required. This was verbally confirmed by the Design Team at the weekly KSAR meetings / Technical Workshop. Whilst NHS SA acknowledge that the design is still being developed, we note concerns that the spatial co-ordination of ceiling voids is not yet suitably developed to provide a level of assurance around the size of the voids at this stage – this may ultimately lead to a compromise on client requirements as outlined in the ACRs. The extent to which ceilings may need adjusted

is currently unknown as ventilation strategies are yet to be finalised, particularly in lieu of the unresolved overheating issues.

'ACR's Section 5.6 and 8.8' refer to Plant and service riser consideration and regular review throughout the design stages. No evidence has been provided to confirm that these have been reviewed and accepted by the relevant stakeholders.

'ACR's Section 8.6.3' refers to a Plant Access and Maintenance Strategy. There is no evidence of this being completed to date.

Documents referenced are:

ACR's - ACR's - Combined Comments (12/08/21 v1 draft).

Drawing - LHCC-WWL-XX-XX-DR-M-50-0001.

Drawing - LHCC-WWL-XX-XX-SK-M-56-0001.

Workbook Ref No.	Areas to probe	Evidence expected
3.3	How does the Health Board assure itself that all variations / derogations, which may be required to the ventilation systems, are investigated and agreed by all parties before they are incorporated in the design?	Evidence that each variation / derogation has a detailed technical analysis, has been referred to the Health Board, and agreed with their ventilation safety group, clinical, engineering, Estates, infection control and FM teams.

NHS Scotland Assure Observations:

A Derogations Schedule (KSAR Evidence – Guidance & Derogations) has been provided by the M&E Designer, who have been appointed by the Tier 1 Contractor on behalf of Hub Co. The Derogation Schedule evidenced is seeking derogations against the draft ACR document and not against any of the SHTM's noted in the guidance document evidenced. 14 No. derogations have been identified but remain open and are still to be formally approved by the NHS Fife. NHS Fife have not evidenced a formal process for reviewing proposed derogations, nor identified any requirement for supporting risk assessments/mitigation measures to ensure that the resultant level of performance/safety is no less than had the guidance (or ACRs) been complied with in full. NHS Fife have also not indicated who will be involved in the review of any proposed derogations.

Both the ACR's and the 'Stage 1 M&E Services Report – October 2021' state that the ventilation design and associated plant are SHTM 03-01 compliant and there are no specific SHTM derogations listed within the derogation schedule. However, due to the maturity of the design and lack of specific plant information available there is insufficient evidence to support these statements.

There is no evidence of a formally defined process for reviewing proposed derogations, including capturing input of other key stakeholders such as IPC and Authorising Engineers.

Documents referenced are:

M&E Input Assessment Rev 0.

KSAR Evidence – Guidance & Derogations - NHSF ACR Derogation Schedule Issue 1 (Wallace Whittle Derogation Schedule against ACR, Rev 1 27.02.22).

ACR's - ACR's - Combined Comments (12/08/21 v1 draft).

Stage 1 M&E Services Report – October 2021.

Workbook Ref No.	Areas to probe	Evidence expected
3.4	Does the Health Board have a strategy for ventilation (for rooms where this is permitted within the SHTM/SHPN guidance)?	<p>Evidence of agreed environmental matrix.</p> <p>Evidence that the Dynamic thermal modelling confirms what the design must include (e.g. structure, solar shading/protection, orientation, equipment optimisation, etc.) to ensure that room temperatures comply with SHTM guidance, in naturally ventilated rooms.</p> <p>Floor plans with associated plant locations highlighted plus simple schematic of strategy. This must also identify the air intake and exhaust strategy / locations.</p>

NHS Scotland Assure Observations:

NHS Fife propose to utilise a mixed ventilation strategy (i.e. mixture of natural and mechanical ventilation) in accordance with SHTM and associated thermal modelling calculations, with a preference to utilise natural ventilation where possible to address the building overheating issues.

NHS Fife have provided evidence of a TM52 overheating analysis ('TM52 Overheating Analysis – LHCC-WWL-XX-XX-RP-M-XX-0004'), which indicates only 9 out of 41 rooms currently 'pass' against the stipulated overheating criteria. A strategy to resolve this issue has not been fully validated by the Design Team – they have indicated they believe that by increasing the size of the openable windows, they should be able to address the overheating issues. This has yet to be proven by calculation or confirmed by the architect as to whether the openable window size can increase. If this is not possible, the ventilation strategy (including spatial co-ordination) may be impacted. The latter has associated risks and implications to the plant sizing, spatial consideration, distribution systems and schedule of accommodation that are all critical to the design – these do not currently appear to have been considered by NHS Fife.

The Design Team evidenced 'Lochgelly HCC Environmental Matrix' dated 21 December 2021 which details the proposed ventilation strategy and associated air change rates for mechanically ventilated spaces. However, there are a number of discrepancies between the Environmental Matrix and the associated Ventilation drawings. The Design Team verbally confirmed at the KSAR Technical Workshop that these have to be reviewed and corrected, however there was no evidence of the updated documents provided during the KSAR. It was also noted that NHS Fife Board, AE, and other relevant stakeholders have not yet reviewed and accepted the proposed Environmental Matrix.

The Ventilation Strategy and high-level ventilation drawings indicating the proposed location of the AHU's and associated main distribution ductwork routes were evidenced. However, there is no evidence to indicate the basis of design for example equipment schedules or

evidence of the plant selection to back up the proposed concept drawings and confirmation of spatial consideration. This is not only for the AHUs that are located within the ceiling void, which are proposed to be accessed through the ceiling grid, but also the ductwork and associated fittings including fire dampers in the service corridors. The Design Team verbally confirmed at the weekly KSAR meeting / Technical Workshops that full spatial cognisance has been considered but no evidence has been provided.

The proposed fresh air intake and exhaust louvre terminals for each system are shown but there are no separating distances identified to confirm compliance with SHTM and the targeted BREEAM requirements. The Design Team verbally confirmed at the KSAR Technical Workshop that they were compliant in accordance with SHTM, but no evidence has been provided.

There is no evidence to confirm that consideration and compliance has been given to 'managing the risk of contamination of ventilation systems by fungi from bird droppings' as stated with ACR's Section 8.12.10.

Although the 'Environmental Matrix' identifies the required air change rates for the mechanically ventilated spaces, there is no make-up provision strategy for spaces under negative pressure detailed within the ventilation outline drawings. The Design Team verbally confirmed at the KSAR Technical Workshop that this was an error, and the drawings would be revised accordingly. Consideration will have to be given to the AHU plant sizing to accommodate the additional supply air volume. No evidence of either has been provided.

Documents referenced are:

Lochgelly HCC Environmental Matrix.

TM52 Overheating Analysis – LHCC-WWL-XX-XX-RP-M-XX-0004.

Lochgelly Health Centre Noise Survey and Initial Assessment.

Workbook Ref No.	Areas to probe	Evidence expected
3.5	Is there evidence of stakeholder input to ventilation strategies?	Addition to or supplement to the Environmental Matrix which confirms the following, on a room by room basis: <ul style="list-style-type: none"> a) The type of ventilation (to SHTM 03-01) b) Patient group and / or function related to the space. c) Name of the Consultant, Clinical Lead or Department Lead who has agreed to the room requirements. d) Name of the Infection Prevention and Control Doctor or equivalent who has agreed to the room requirements. e) Name of the Infection Prevention and Control Nurse who has agreed to the room requirements. f) Name of the Estates / FM team representative who has agreed to the room requirements.

		<p>g) Name of the NHS Project Manager who has agreed to the room requirements.</p> <p>h) Name of the Decontamination Manager who has agreed to the room requirements (where this is part of the project).</p>
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NHS Scotland Assure Observations:

A general 'Lochgelly Environmental Matrix' was evidenced that outlined the proposed ventilation strategies. There is no evidence of any input from NHS Fife stakeholders (Clinical Team, IPC personnel, Estates / FM Team or NHS Project Manager) in the production of this document. The Design Team confirmed verbally at the KSAR Technical Workshop that the document had yet to be reviewed and approved.

Documents referenced are:

Lochgelly HCC Environmental Matrix.

Workbook Ref No.	Areas to probe	Evidence expected
3.6	Is there evidence of the Health Board developing Ventilation Commissioning Proposals?	Evaluation of the suitability of the proposed plans in the context of the OBC, are these sufficient do they meet the requirements of the project, guidance and the design of the system?

NHS Scotland Assure Observations:

There is no evidence to date that NHS Fife have started to develop any ventilation commissioning proposals.

Documents referenced are:

ACR's - ACR's - Combined Comments (12/08/21 v1 draft).

Workbook Ref No.	Areas to probe	Evidence expected
3.7	Has the Health Board started developing its ventilation governance arrangements?	<p>Is the Health Board considering how it will ensure appropriate numbers of trained staff (AP and CP) and AE(V) for the project?</p> <p>Evidence that the Health Boards AE(V) have been involved with and reviewed the design proposals to date.</p>

NHS Scotland Assure Observations:

There is no evidence at this stage that NHS Fife have commenced its ventilation governance or how it will be staffed and incorporated into the existing ventilation governance group.

As noted in previous sections, NHS Fife have indicated engagement with AEs' and Safety Groups is to be escalation only. NHS Scotland Assure have concerns with this approach.

Documents referenced are:

M&E Input Assessment Rev 0 .

3.3.2 Ventilation: Further Observations

In addition to the points raised via the KSAR workbook above, we also include the following observations as a result of the review, all of which relate to the evidence presented during the appraisal.

3.3.2.1	There is disparity between the hierarchy of standards detailed within the ACR Section 5.1 and the M&E Strategy Document. The ACR states “Where there is an equivalent NHS England and Wales Standard, which is more recent than the Scotland Standard, Hub Co shall consult the Authority and highlight the difference and the impact to design and Construction” The NHS England HTM 03-01 was issued June 2021, however the M&E Strategy Document refers to SHTM 03-01 (2014). It is unclear if the Authority had been made aware of any differences that may effect the design. NHS SA also note that an Interim SHTM 03-01 (based on HTM 03-01 2021) has been published January 2022 if the Board wish to consider.
3.3.2.2	There are a number of internal areas, e.g. WCs, DSR and Dirty utility rooms, that have no heating shown on the heating drawings. No evidence has been provided to demonstrate how winter room design temperature will be achieved as detailed in the environmental matrix.
3.3.2.3	‘Lochgelly Health Centre Noise Survey and Initial Assessment’ was evidenced but the report concentrated on the external plant noise and associated levels at neighbouring properties. There was no consideration evidenced to the breakout noise from the AHU casing to the space below. The Design Team confirmed at the KSAR Technical Workshop that the manufacturer’s break out noise levels were within acceptable industry standards but there is no evidence provided to support this statement.
3.3.2.4	ACR’s Section 8.6.4 states ‘All new ductwork shall be provided to allow inspection and cleaning of internal surfaces and components to be undertaken in accordance with the Health and Safety Approved Code of Practice 33, and as detailed in the BESA TR19 2nd edition 2013, Cleanliness of Ventilation Systems and SHTM03’. The cleanliness standard of the ductwork has not been identified and simply cross-references between the SHTM and BESA TR19 document (2nd edition).

3.3.2.5

There is no evidence that consideration and allowance has been made at this stage for all the associated access hatches within the ductwork and ceiling. The Design Team confirmed at the KSAR Technical Workshop that most of the ceilings are tile type construction that will facilitate the access to the ductwork, but ductwork hatches are still to be considered. It should be noted that the current BESA TR19 is in fact the 3rd Edition.

3.4 Electrical

3.4.1 Electrical: KSAR Observations

Workbook Ref No.	Areas to probe	Evidence expected
4.1	Has the Health Board completed competency checks on the electrical consultant designers?	<p>Recorded evidence that the design team are experienced and have a comprehensive knowledge of the relevant design standards.</p> <p>Where anyone does not have a record of extensive health care experience what recorded plans are to be put in place by the Consultant Designers?</p> <p>Recorded evidence that input from the Health Boards Authorising Engineer for Electrical (AE(E)) has been requested.</p>

NHS Scotland Assure Observations:

There is a lack of supporting evidence as to how NHS Fife have defined and assessed the required competencies for their appointed electrical designers. NHS Fife provided evidence of their 'Tier 2 Interview Questions Mechanical and Electrical', 'EOI Evaluation T2 Ranking' and 'T2 PQQ Interviewing Scoring Consensus – Rev A'. The questions listed within the 'Interview Questions' do not interrogate the competency of the electrical designers specifically.

NHS Fife confirmed during the weekly KSAR meetings that engagement with the Authorising Engineer (AE) is by exception only and "where specific items (normally proposed derogations) are escalated to them for advice". The AE's are not consulted on a regular basis and will not undertake general design reviews. NHS Fife have not evidenced the threshold that would constitute an area as being exceptional.

Documents referenced are:

Tier 2 Interview Questions Mechanical and Electrical.

EOI Evaluation T2 Ranking.

T2 PQQ Interviewing Scoring Consensus – Rev A.

Workbook Ref No.	Areas to probe	Evidence expected
4.2	How does the Health Board ensure that electrical services are being designed in a fashion which will provide ease of access for future maintenance and which will retain space for minor additions and modifications to services in the future?	<p>Evidence that the designers have presented their co-ordination drawings (BIM model) to the Board.</p> <p>Evidence that the designers have presented each of the main service runs plus plant rooms to the Health Board's FM team.</p> <p>Evidence that the Board has agreed a strategy (percentage) for spare capacity and</p>

		<p>a documented allowance has been incorporated into the design.</p> <p>Are sub stations, switch rooms, distribution board cupboards, horizontal distribution runs and risers appropriately sized for the equipment being installed and facilitate safe, adequate maintenance.</p>
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NHS Scotland Assure Observations:

The level of information evidenced in relation to the services being designed in a fashion that retain space for minor additions and modifications is limited. NHS Fife have verbally confirmed at weekly KSAR meetings/Technical Workshops that cognisance has been taken within the design but there is insufficient evidence to support this. NHS Fife confirmed at the weekly KSAR meetings/Technical Workshops that plantroom BIM models have been produced. However, these have not been provided as evidence for review and investigation into the allowance for appropriate installation space and future space requirements.

'ACR's Section 8.6.2' defines the spare capacity that should be contained within the design of each service and associated distribution network. The Design Team confirmed within the weekly KSAR meetings that cognisance of these allowances had been included within their design. There is no evidence of such calculations to fully support this statement.

The Electrical Distribution Layout drawings detail indicative routes only and in NHSSA's opinion, contains the required detail at OBC stage. However, there is limited supporting evidence demonstrating the Basis of Design to support these drawings. Drawing 'LHCC-WWL-XX-00-DR-M-50-0001' was evidenced, however this details two sections only, termed pinch points with no further section drawings provided as evidence.

There is no evidence of containment calculations and distribution board capacity sizing to demonstrate spatial co-ordination has been fully considered. It has been verbally confirmed by the Design Team at the weekly KSAR meetings / Technical Workshops that these calculations have been carried out, however, not submitted for evidence.

Drawing 'LHCC-WWL-XX-XX-SC-E-60-0001' details sub-main cable references, however, a sub-main cable schedule was not provided for review. As the main Low Voltage panel is termed top entry, top exit i.e. all sub-main cables are located above the main Low Voltage panel, there is no evidence provided demonstrating sufficient void spaces for the bending radius of these sub-main cables.

Drawing 'LHCC-WWL-XX-00-DR-E-60-0001' does not detail any door access to the Low Voltage switch room. It has been verbally confirmed by Hub Co, Tier 1 Contractor and the Design Team at the weekly KSAR Meetings / Technical Workshops that these drawings will be updated at the next design stage.

Documents referenced are:

ACR's Section 8.6.2.

Drawing - LHCC-WWL-XX-00-DR-M-50-0001 Ceiling Void Pinch Points.

Drawing - LHCC-WWL-XX-XX-SC-E-60-0001 Low Voltage Schematic.

Drawing - LHCC-WWL-XX-00-DR-E-60-0001 Proposed Electrical Distribution Layout.

Lochgelly Health & Care Centre - Stage 1 M&E Services Report LHCC-WWL-XX-XX-RP-M-XX-0001 Oct 2021.

Workbook Ref No.	Areas to probe	Evidence expected
4.3	How does the Health Board assure itself that all variations / derogations, which may be required to electrical systems, are investigated and agreed by all parties before they are instigated?	Evidence that each variation / derogation has a detailed technical analysis, has been referred to the Board, and agreed with their electrical safety group, clinical, Estates, infection prevention and control and FM teams.

NHS Scotland Assure Observations:

A Derogations Schedule (KSAR Evidence – Guidance and Derogations) has been provided by the design team, who have been appointed by the Tier 1 Contractor on behalf of Hub Co.

The Derogation Schedule evidenced is seeking derogations against the draft ACR document and not against any of the SHTM’s noted in the guidance document evidenced. 14 No. derogations have been identified but remain open and are still to be formally approved by the NHS Fife.

NHS Fife have not evidenced a formal process for reviewing proposed derogations, nor any identified any requirement for supporting risk assessments/mitigation measures to ensure that the resultant level of performance/safety is no less than had the guidance (or ACRs) been complied with in full. NHS Fife have also not indicated who will be involved in the review of any proposed derogations, including whether there will be any interaction with the AE.

Documents referenced are:

M&E Input Assessment Rev 0.

KSAR Evidence – Guidance & Derogations - NHSF ACR Derogation Schedule Issue 1 (Wallace Whittle Derogation Schedule against ACR, Rev 1 27.02.22).

ACR’s - ACR's - Combined Comments (12/08/21 v1 draft).

Workbook Ref No.	Areas to probe	Evidence expected
4.4	Has the Health Board assured itself of availability of adequate supply from the local utility infrastructure?	Confirmation from the Regional Electricity Company as to how the supply will be provided from their network and if single or dual supplies are being made available.

NHS Scotland Assure Observations:

The availability of adequate supply from the local utility infrastructure has been evidenced by NHS Fife, however a few points are noted as requiring further investigation for example, the current Scottish Power Energy Network application does not contain an allowance for the potential future expansion of car charging points.

A Scottish Power Energy Networks (SPEN) application was submitted on the 13th of July 2021 by the Design Team. The application requested a connected load of 215kVA which aligns with the maximum demand calculations also evidenced from NHS Fife.

A budget quotation and drawing with the reference number 616525582 was provided by SPEN on the 27 July 2021 and subsequently detailed budget costs for the extent of the works, single point of connection derived from existing network and the diversion works of existing SPEN LV infrastructure required for the site. SPEN confirmed no new substation is required for this site.

Electrical loads associated with car charging points have been allowed for within the maximum design calculations by NHS Fife, however the number of car chargers detailed in report 'Lochgelly Health & Care Centre - Stage 1 M&E Services Report LHCC-WWL-XX-XX-RP-M-XX-0001 Oct 2021' differ to drawing 'LHCC-WWL-XX-XX-DR-E-96-0001' which details 4No. 22kW charging units.

Original maximum demand calculation allows for 1No. 22kW charger. Hub Co, the Design Team and Tier 1 Contractor verbally confirmed during the KSAR meetings / Technical Workshops that a load management system for the car charger units will be introduced upon confirmation of final number of car charger units, however, the ACR's requests a future expansion of up to 20No. car charger bays may be required at a later date.

There is no evidence to suggest how this will be achieved within the supporting documentation other than stating a load management system will be required. Furthermore, there is no evidence provided with regards to ducting strategy of site wide infrastructure to support this future expansion.

Documents referenced are:

616525582 Budget Drawing.

616525582 Budget Quote.

Lochgelly Health & Care Centre - Stage 1 M&E Services Report LHCC-WWL-XX-XX-RP-M-XX-0001 Oct 2021.

Drawing - LHCC-WWL-XX-XX-DR-E-96-0001 Proposed Electrical Site Services.

Workbook Ref No.	Areas to probe	Evidence expected
4.5	Evidence of provisions for emergency supplies during loss of the utility incoming supply.	Floor plans with standby generator locations highlighted plus simple schematic. Capacity of generators UPS provision

NHS Scotland Assure Observations:

There has been no evidence provided that demonstrates consideration or provisions for emergency supplies during loss of the utility incoming supply. There is no evidence of consideration and or assessment to emergency supplies and medical locations as required within BS 7671 Section 710 or SHTM 06-01. It is also unclear from the evidence provided as to whether the project team have considered the requirement for any backup supplies to other life safety systems.

As requested within the 'ACR's Section 8.16.3 back-up power for life systems', standby generators are to be provided for the evacuation lift. Despite this, no evidence has been submitted detailing a back-up generator provision for the lift within the building. In response to this question, Hub Co and the Design Team verbally confirmed during the KSAR meetings / Technical Workshops that the lift is a passenger lift only and is not intended to be used as an evacuation lift and as such does not require a back-up generator configuration. There is no supporting evidence detailing the discussions around this and how the decision was made in determining that this is not deemed to be an evacuation lift.

The 'ACR's Section 8.16.5 essential / non-essential supplies', note a hook up point for a temporary generator will be provided to support the building in the event of a power outage. There is no evidence detailed within the OBC documentation that indicates this has been provided. The Tier 1 Contractor and the Design Team verbally confirmed during the KSAR meetings / Technical Workshops that in this situation, the power outage would be resolved quicker than getting a temporary generator to site and as such are currently reviewing this requirement with NHS Fife.

The assumption by the Design Team is that a power outage will only last for a short duration of time. However, in the event of a catastrophic failure in which power may be off for days, no consideration has been evidenced in detailing business continuity. There is no evidence of a collaborative approach between NHS Fife, Hub Co, Tier 1 Contractor and the Design Team of a clinical and business continuity risk assessment being carried out as recommended within SHTM 06-01 section 3 Initial Considerations and section 4 Understanding Risk and Ownership.

Furthermore, in relation to the temporary generator, there is no evidence of consideration towards spatial requirements for a temporary generator location within the external services drawing 'LHCC-WWL-XX-XX-DR-E-96-0001' and no evidence of this being reviewed within the documentation 'HAI Scribe Stage 1 Lochgelly - 08.12.21'. There is a limited amount of information on the temporary generator operation within the 'Lochgelly Health & Care Centre - Stage 1 M&E Services Report LHCC-WWL-XX-XX-RP-M-XX-0001 Oct 2021'.

There is also no evidence towards the operational detail of the generator and the integration with the buildings Low Voltage network. This includes how the earthing system has been considered, how low load conditions have been assessed, reviewed, and mitigated, how

prospective fault levels and disconnection time have been assessed and reviewed against the temporary generator, and the building earth fault levels and disconnection times.

Documents referenced are:

ACR's - ACR's - Combined Comments (12/08/21 v1 draft).

Drawing - LHCC-WWL-XX-XX-DR-E-96-0001 Proposed Electrical Site Services.

HAI Scribe Stage 1 Lochgelly - 08.12.21.

Lochgelly Health & Care Centre - Stage 1 M&E Services Report LHCC-WWL-XX-XX-RP-M-XX-0001 Oct.

Workbook Ref No.	Areas to probe	Evidence expected
4.6	Is there a strategy for locating substations?	Floor plans with substation locations highlighted plus simple schematic.

NHS Scotland Assure Observations:

No new substation is being proposed on this site. Please refer to Workbook Ref No. 4.4 for context.

Documents referenced are:

Please refer to Workbook Ref No. 4.4 for reference documents.

Workbook Ref No.	Areas to probe	Evidence expected
4.7	Is there a strategy for locating switch rooms?	Floor plans with switchroom locations highlighted plus simple schematic.

NHS Scotland Assure Observations:

The strategy for locating switch rooms is evidenced on the MEP drawings provided as part of the OBC documentation.

Drawing 'LHCC-WWL-XX-00-DR-E-60-0001' clearly identifies the electrical switch room to the top left of the building. It must be noted however that the drawings do not detail any door access to the Low Voltage switch room.

A Low Voltage schematic 'LHCC-WWL-XX-XX-SC-E-60-0001' has been provided with sufficient detail for OBC stage and is discussed in greater detail within Section 4.9 of this report, however it was noted that there was no provision for the mobile breast screening unit (as noted within the ACRs) detailed on the schematic.

Documents referenced are:

Drawing - LHCC-WWL-XX-00-DR-E-60-0001 Proposed Electrical Distribution Layout.

Drawing - LHCC-WWL-XX-XX-SC-E-60-0001 Low Voltage Schematic.

Workbook Ref No.	Areas to probe	Evidence expected
4.8	Is there a strategy for locating Medical IT distribution equipment?	Floor plans with Medical IT board locations highlighted plus simple schematic. Compliance with BS7671 section 710. Compliance with SHTM 06-01.

NHS Scotland Assure Observations:

No medical IT systems are identified within the OBC documentation. There is no supporting medical locations assessment in accordance with BS7671 Chapter 710 or SHTM 06-01 to justify this decision.

Treatment rooms have been identified on the MEP drawings as well as the 'Accommodation Schedule - Lochgelly_P02_30082021'. There is no evidence to demonstrate what level of treatment will be carried out within the treatment rooms, nor whether any "applied parts" will be utilised in the space that may require the provision of supplementary equipotential bonding.

Documents referenced are:

'Accommodation Schedule - Lochgelly_P02_30082021' .

Workbook Ref No.	Areas to probe	Evidence expected
4.9	Is there a strategy for distribution?	Floor plans with containment distribution routing (horizontal and vertical).

NHS Scotland Assure Observations:

The strategy for distribution is detailed within the MEP Designers Electrical Distribution Layouts. It must be noted that the Electrical Distribution Layout drawings detail indicative routes only and whilst appropriate for OBC stage maturity, there is no supporting evidence demonstrating the Basis of Design.

Drawing 'LHCC-WWL-XX-00-DR-M-50-0001 Ceiling Void Pinch Points' was evidenced, however, details two sections only and termed the pinch point. No further section drawings have been provided as evidence.

There is no evidence of containment calculations to demonstrate spatial co-ordination has been fully reviewed.

Drawing 'LHCC-WWL-XX-XX-SC-E-60-0001' details sub-main cable references, however, no sub-main cable schedule was available for review. Other than drawing 'LHCC-WWL-XX-

00-DR-M-50-0001', there is no further evidence provided to establish if the containment is suitably sized and spatially co-ordinated.

Within drawing 'LHCC-WWL-XX-00-DR-M-50-0001' there is a note stating 'Ongoing discussions with architect to reduce ceiling height in crossover zones'. Whilst it is acknowledged within RIBA Plan of Work 2020 that architectural and engineering spatial co-ordination is a RIBA stage 3 exercise, NHS SA have concerns that the spatial co-ordination of ceiling voids is not yet suitably developed in conjunction with the MEP strategy to provide a level of assurance around the size of the voids at this stage. This may lead to a compromise with the client's requirements, as outlined in the ACRs.

The Proposed Electrical Distribution Layout drawings detail riser locations, however, no evidence has been provided showing co-ordinated riser details.

There is no proposed Electrical Distribution Layout for the roof level provided within the OBC package and as such, there is no evidence to support spatial co-ordination of the containment system for the photovoltaic panels and aerials situated on the roof space.

Within the ACR document, there was no appendices detailed specifically Appendix E (Electrical, ICT and AV matrix) and as such, no information has been evidenced with regards to the number of data and small power outlets required for each room.

No evidence has been provided detailing how the Distribution Boards and LV trunking sizes were calculated without this information. In not providing Appendix E to the Design Team, this may affect the schedule of accommodation and in turn may impact on sub-main cable sizing, breaker sizing and switchboard sizing.

Documents referenced are:

Drawing - LHCC-WWL-XX-00-DR-M-50-0001 Ceiling Void Pinch Points

Drawing - LHCC-WWL-XX-00-DR-E-60-0001 Proposed Electrical Distribution Layout

Drawing - LHCC-WWL-XX-XX-SC-E-60-0001 Low Voltage Schematic

ACR's - ACR's - Combined Comments (12/08/21 v1 draft)

Workbook Ref No.	Areas to probe	Evidence expected
4.10	Is there evidence of the Health Board developing electrical commissioning proposals?	Evaluation of the suitability of the proposed plans in the context of the OBC, are these sufficient do they meet the requirements of the project, guidance and the design of the system?
<p>NHS Scotland Assure Observations:</p> <p>There is no evidence to date that NHS Fife or HubCo have started to develop any electrical commissioning proposals.</p> <p>Documents referenced are:</p> <p><i>No documents referenced.</i></p>		

Workbook Ref No.	Areas to probe	Evidence expected
4.11	Has the Health Board starting on its early thinking for the electrical governance arrangements for the operational phase?	Is the Health Board considering how it will ensure appropriate numbers of trained staff (AP(HV), AP(LV), CP(HV), CP(LV), AE(HV) and AE(LV) for the project, inclusive of third party providers? Evidence that the Health Boards AE(E) have been involved with and reviewed the design proposals to date.
<p>NHS Scotland Assure Observations:</p> <p>There is no evidence at this stage that NHS Fife have commenced its electrical governance or how it will be staffed and incorporated into the existing electrical governance group.</p> <p>There is no evidence as to how NHS Fife will ensure suitably qualified APs, CPs and AEs are in place for the facility.</p> <p>As noted previously, the current NHS Fife strategy for engagement with the current AE is by exception only. NHS Scotland Assure reiterate their concerns over this approach.</p> <p>Documents referenced are:</p> <p><i>M&E Input Assessment Rev 0.</i></p>		

3.4.2 Electrical: Further Observations

In addition to the points raised via the KSAR workbook above, we also include the following observations as a result of the review, all of which relate to the evidence presented during the appraisal.

3.4.2.1	There is no evidence provided detailing a lightning protection risk assessment. It has been verbally confirmed by the Design Team at the weekly KSAR Meetings / Technical Workshops that a lightning protection risk assessment has been carried out but was not submitted for evidence.
3.4.2.2	On drawing 'LHCC-WWL-XX-01-DR-E-60-0001 Electrical Services Distribution Layout', the MCC1 is shown on the 1st floor, however, it is then detailed on the ground floor of drawing 'LHCC-WWL-XX-XX-SC-E-60-0001, LV schematic.
3.4.2.3	There is no evidence within the OBC documentation of a UPS provision, or if it has been considered for the ICT Comms racks.
3.4.2.4	No evidence has been provided of a sub-main cable schedule for review. There is also a discrepancy between the forms of separation on the schematic 'LHCC-WWL-XX-XX-SC-E-60-0001' and the MEP strategy report 'Lochgelly Health & Care Centre - Stage 1 M&E Services Report LHCC-WWL-XX-XX-RP-M-XX-0001 Oct 2021'.
3.4.2.5	A Form 4 Type 7 configuration will increase the footprint of the main Low Voltage panel, which would require further consideration to the spatial co-ordination within the switch room. No evidence has been provided detailing discussions between NHS Fife and the Design Team regarding forms of separation and how the final decision was made in proposing a Form 4 Type 7 configuration.

3.5 Medical Gases

3.5.1 Medical Gases: KSAR Observations

NHS Fife have confirmed at the weekly KSAR meeting and within the draft ACR document that there is no requirement for medical gases within Lochgelly Health Centre. Therefore, NHS SA deem this section not applicable.

3.6 Fire

3.6.1 Fire: KSAR Observations

Workbook Ref No.	Areas to probe	Evidence expected
6.1	Has the Health Board completed competency checks on the Fire Engineering consultant designers?	<p>Recorded evidence that the design team are experienced and have a comprehensive knowledge of the relevant design standards.</p> <p>Where anyone does not have a record of extensive health care experience what recorded plans are to be put in place by the Consultant Designers?</p> <p>Recorded evidence that input from the Health Boards Fire Advisors has been requested.</p>
<p>NHS Scotland Assure Observations:</p> <p>There is no evidence of a written fire strategy report being produced or a fire engineering consultant appointed at this stage. The initial strategy information has been produced by the Architects, however there is no evidence to demonstrate how NHS Fife has considered the competency of the architect to fulfil this obligation.</p> <p>There is email evidence provided confirming that input has been sought from the NHS Fife Fire Safety Advisor and it has been confirmed that the comments received will be captured in the updated drawings and any fire strategy report that is produced.</p> <p>Documents referenced are:</p> <p><i>Email (Subject: Re: NHSF Health Centre Fire Strategy, dated 27/01/2022)</i></p> <p><i>Fire Strategy extract from 2021-08-31_Lochgelly Design Workshop 09.</i></p>		

Workbook Ref No.	Areas to probe	Evidence expected
6.2	Has a written fire strategy been completed and does it provide evidence, where there is a variance from statutory and mandatory guidance, that an equivalent level of safety has been achieved by alternative means?	<p>Is there documented evidence that fire suppression systems have been considered for life safety and property protection?</p> <p>Is progressive horizontal evacuation available for all patient areas that continuously moves away from the fire area?</p> <p>Does the design considerations of the fire and detection system, for in-patient facilities, provide L1 coverage including voids?</p> <p>Does the design provide for a compliant emergency lighting system?</p>

		<p>Are free swing arm self-closers fitted to all leafs of doors serving sleeping accommodation?</p> <p>Have escape lifts been considered for the evacuation of patients and others with mobility issues?</p> <p>Are multi sensor fire detectors installed to reduce the occurrence of unwanted fire alarm signals?</p> <p>Are there adequate storage facilities to ensure escape routes are not used for this purpose?</p> <p>Are measures in place to provide safe charging of electrical and personal electronic equipment?</p> <p>Have fire hazard rooms been designated based on fire load?</p> <p>Where there is a mechanical ventilation system - have all compartments, sub-compartments and corridors serving sleeping accommodation been designed to be fitted with fire and smoke dampers?</p>
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NHS Scotland Assure Observations:

There has been no written fire strategy report produced at this stage and the detail is limited in the extract from the architect's report. As such, there is no evidence of any variances from statutory and mandatory guidance or detail that an equivalent level of safety has been achieved by alternative means.

Although, the Non Domestic Technical Handbook should be adhered to, this is a healthcare facility and the guidance in Scottish Health Technical Memoranda 'Firecode' should be followed to ensure NHS Scotland mandatory standards are achieved. NHS Fife should consult with their fire safety advisory team and NHS SA Fire Safety Advisors to determine the extent of application of 'FireCode' guidance as it is not an in-patient facility and there are certain elements that will not apply. It was verbally confirmed during the KSAR Technical Workshop, that NHS Fife would not be installing a fire suppression system as part of this project. The reason for exclusion was given as NHS Fife did not consider the installation of fire suppression as a legislative requirement. There is no supporting evidence to demonstrate that consideration has been given in accordance with NHS 'Firecode' Guidance.

The MEP report details the provision of an L1 detection and alarm throughout the building, however there is no evidence in the form of drawings, showing the coverage of the system. In the KSAR Technical Workshop, NHS Fife confirmed that coverage will be provided to voids in the building, but there is no detailed design as of yet. The MEP report also details emergency lighting shall be provided throughout the building, comprising of standalone self-contained LED emergency luminaires with optics selected to suit application. No evidence has been provided to confirm the locations of these and the coverage that will be provided.

There is no evidence of risk assessments relating to high-risk task areas in accordance with BS 5266 or CIBSE LG2.

The MEP report details that hold open devices (as specified by the architect) shall be provided on corridor/escape route doors, however, there is no evidence of this in the initial fire strategy or drawings.

The passenger lift is not intended to be used for evacuation as confirmed verbally in the KSAR Technical Workshop. However, the evacuation of patients and others with mobility issues has not been evidenced in the fire strategy extract. There is no evidence of the client requirement or that consideration has been given regarding the need for evacuation lifts along with the cause-and-effect strategy in the event of a fire.

The MEP report references automatic heat/smoke detection which will reduce the likelihood of unwanted alarms, but there are no drawings evidenced showing the coverage of these. Reference is also made to an aspirating detection system for the atrium, but there is no detail evidenced at this stage.

Adequate storage facilities are evidenced on the drawings to prevent storage in escape routes. There is no evidence provided detailing measures in place to provide safe charging of electrical and personal electronic equipment. Potential fire hazard rooms are shown on the plans to be enclosed in fire resisting construction. The requirement for fire hazard rooms should be detailed in the fire strategy.

The MEP report details that automatic combined fire and smoke dampers will be provided to all areas where ventilation ductwork passes through fire rated walls, floors, or fire curtains. There is no design evidenced to show how they will be installed in accordance with the manufacturers certified detail or co-ordinated with the building structure.

Documents referenced are:

Fire Strategy extract from 2021-08-31_Lochgelly Design Workshop 09.

MEP report - LHCC-WWL-XX-XX-RP-M-XX-0001.

Fire Workshop minutes - 2022-02-24 NHS Fife Fire Technical Workshop Minutes v1.1.

KSAR Evidence M&E Assessment - bishoppa_27-01-2022_08-29-02.

Workbook Ref No.	Areas to probe	Evidence expected
6.3	How does the Health Board assure itself that all variations / derogations, which may be required to fire systems, are investigated and agreed by all parties before they are instigated?	Evidence that each variation / derogation and any fire engineering proposals are being referred to the Board and agreed with their fire safety group, clinical, engineering, infection prevention and control and FM teams.
<p>NHS Scotland Assure Observations:</p> <p>The fire strategy provided does not list any derogations or variances from guidance. It should be noted that variations from the fire safety guidance should be detailed in the fire strategy report as well as the derogations schedule.</p>		

NHS Fife have not evidenced a formal process for reviewing variations/derogations.

Documents referenced are:

Fire Strategy extract from 2021-08-31_Lochgelly Design Workshop 09.

Workbook Ref No.	Areas to probe	Evidence expected
6.4	How does the Health Board assure itself that all fire dampers and fire/smoke dampers are designed to allow for inspection, resetting and maintenance?	<p>Evidence that the designers have presented their co-ordination drawings (BIM model) to the Board.</p> <p>Evidence that the designers have presented each of the fire dampers and smoke / fire dampers to the Board's FM team.</p> <p>Safe and adequate access has been allocated on both sides of all fire dampers for maintenance.</p>

NHS Scotland Assure Observations:

The MEP report references that fire and smoke dampers are to be provided, however, there are no drawings detailing where the dampers will be located and there is no strategy for inspection, resetting and maintenance evidenced at this stage. There is no design evidenced to show how they will be installed in accordance with the manufacturers certified detail or co-ordination with the building structure.

Documents referenced are:

MEP report - LHCC-WWL-XX-XX-RP-M-XX-0001

Workbook Ref No.	Areas to probe	Evidence expected
6.5	How does the Health Board assure itself that any fire rated ductwork is correctly installed?	Evidence that the system is certificated and that the installation follows the installation details which were used for the certification. Written confirmation from the design consultant.

NHS Scotland Assure Observations:

It was confirmed verbally in the KSAR Technical Workshop that fire/smoke dampers will be adopted rather than fire rated ductwork. There is no evidence that this has been included within the fire design or strategy, nor that it has been discussed and agreed with NHS Fife, particularly the NHS Fife Fire Safety Advisor.

Documents referenced are:

Fire Workshop minutes - 2022-02-24 NHS Fife Fire Technical Workshop Minutes v1.1

Workbook Ref No.	Areas to probe	Evidence expected
6.6	How does the Health Board assure itself that any smoke control and/or clearance systems are fit for purpose?	Evidence that the smoke system is being designed by an accredited Fire Engineer. Evidence that Building Control are being consulted. Confirmation from the Building Services Design Consultant that the operating sequence for the smoke system has been discussed regarding being integrated into the control of other building systems.

NHS Scotland Assure Observations:

There is no evidence of a smoke control system being considered within the fire strategy, however, as there is an atrium, there may be a need for a smoke control system required as part of a fire engineered strategy. There is no evidence that this has been considered.

During the KSAR Technical Workshop, NHS Fife confirmed that a smoke extract system would be fitted on stair enclosures. Full details of this should be included within the fire strategy.

Documents referenced are:

Fire Workshop minutes - 2022-02-24 NHS Fife Fire Technical Workshop Minutes v1.1

Workbook Ref No.	Areas to probe	Evidence expected
6.7	Evidence that the Health Board is ensuring fire safety input into the design process together with early design decision-making.	<p>Input from Fire lead(s) and HFS / SFRS on fire safety into site / option selection. Documents e.g. option appraisal report, fire strategy report, meeting minutes.</p> <p>Demonstrable and appropriate engagement and expertise of relevant Fire lead(s). Signed off documents, e.g. reports, role profiles, minutes.</p> <p>Evidence that the Health Boards Fire Advisor have been involved with and reviewed the design proposals to date.</p>

NHS Scotland Assure Observations:

It was confirmed verbally at the weekly KSAR meeting that a fire engineer will be appointed at the next stage to develop the detailed fire strategy report in accordance with the relevant standards and guidance documents.

As per the email from the NHS Fife Fire Safety Advisor, early engagement has been sought and comments provided, although they have not been incorporated to date.

Documents referenced are:

Fire Workshop minutes - 2022-02-24 NHS Fife Fire Technical Workshop Minutes v1.1.

Email (Subject: Re: NHSF Health Centre Fire Strategy, dated 27/01/2022).

Workbook Ref No.	Areas to probe	Evidence expected
6.8	Has the Health Board started the development of the fire system outline commissioning proposals?	Has the Health Board designed appropriate trained staff and appointed a fire officer for the project, is there an established fire management group that will ensure the fire management strategy is adhered to?

NHS Scotland Assure Observations:

There is no evidence of commissioning proposals within the fire strategy extract or associated documents.

Similarly, there is no evidence of a fire management group or detail regarding staff training, although initial contact has been made with the NHS Fife Fire Safety Advisor as evidenced in the email exchange.

Documents referenced are:

Email (Subject: Re: NHSF Health Centre Fire Strategy, dated 27/01/2022).

Fire Strategy extract from 2021-08-31_Lochgelly Design Workshop 09.

3.6.2 Fire: Further Observations

In addition to the points raised via the KSAR workbook above, we also include the following observations as a result of the review, all of which relate to the evidence presented during the appraisal.

3.6.2.1

No further observations to note.

3.7 Infection Prevention & Control Built Environment

3.7.1 Infection Prevention & Control Built Environment: KSAR Observations

Workbook Ref No.	Areas to probe	Evidence expected
7.1	<p>How does the Health Board demonstrate that there is an effective infection prevention and control management structure in place?</p> <p>How does the Board demonstrate leadership and commitment to infection prevention and control to ensure a culture of continuous quality improvement throughout the organisation and that there is an effective IPC structure in place; inputting into the design process?</p>	<p>The Health Board provides evidence that there is an IPC Management Structure with the necessary expertise and leadership skills to support the design work.</p> <p>The Health Board provides evidence that there is an IPC Management Team with the necessary expertise and leadership skills to support the project.</p> <p>Executive board reports or minutes. Risk registers or equivalent, Minutes from operational and governance groups, (and action points).</p> <p>Structure of infection prevention and control team (IPCT) and qualifications held, previous experience supporting new build projects.</p> <p>Evidence IPC and clinical teams have been involved with any derogation through the design process and are satisfied this will not impact on patient safety. This can be meeting minutes, risk assessments, and risk registers. There is IPC evidence of escalation through the agreed NHS board governance process.</p> <p>Evidence the Executive board member assigned to lead on IPCT has been kept informed of IPC risks identified and associated with the project this can be demonstrated by the board.</p> <p>Evidence that fixtures fitting and equipment have not been proposed for the project that would represent an IPC risk.</p>

NHS Scotland Assure Observations:

No evidence has been provided regarding the IPC management structure within NHS Fife and how it would relate to development of the project. No evidence has been provided to describe the IPC structure, qualifications, or experience to support the project or escalation of project risks to the HAI executive lead.

A derogation schedule has been evidence by the Design Team in relation to ACRs only and not SHTMs etc. However, no sign off has been evidence by any of the project team, including IPCT. The Tier 1 contractor and design team acknowledged verbally at the IPC

KSAR Technical Workshop that the process is incomplete and that derogations relating to SHTMs will be managed and signed off during FBC stage.

There is limited evidence regarding input by the local IPC team to the project been provided and the limited consideration has been evidenced in the HAI-SCRIBE risk assessment and supporting e-mails. Only Stage 1 of the HAI-SCRIBE was completed. An e-mail between the IPCT and the board lead has been provided and highlighted questions raised on the design of the facility as evidence of IPC input to any design features of the project. There is no evidence that these comments have been embedded within the design.

SHFN 30 Part B section 2.2 notes that a Stage 2 HAI-SCRIBE will cover the design and planning stage of a facility and this should be an iterative process across both the OBC and Full Business Case (FBC) stages of a project.

Documents referenced are:

HAI-SCRIBE.

ACR.

Risk and Issue Register.

Draft OBC.

Project execution plan.

NHSF ACR Derogation Schedule Issue 1.

Workbook Ref No.	Areas to probe	Evidence expected
7.2	How does the Health Board demonstrate implementation of evidence based infection prevention and control measures during the design process?	<p>The Health Board evidences that:</p> <p>The Health Board can demonstrate the current version of the National Infection Prevention and Control Manual has been adopted by the organisation and all staff are aware of how and where to access this and it is being referred to during the design process.</p> <p>IPC work programme and planned IPC audit programme for new building taking cognisance of any actual or perceived risks identified.</p>

NHS Scotland Assure Observations:

There is no evidence to demonstrate National Infection Prevention and Control Manual (NIPCM) has been adopted by NHS Fife and that it is used where applicable to the project. Verbal confirmation has been provided by Lead IPCN at an NHS SA and NHS Fife IPC meeting, confirming that the NIPCM is embedded in the health board and is referred to during the project.

No evidence has been provided to reflect the impact of the project on IPC work programme or audit programme. An IPC resource has been allocated for the project by the NHS Fife project team however, a verbal update provided by the Lead IPCN, at an NHS SA and NHS

Fife IPC meeting, noted that the IPC team have submitted a request to the board for additional resource so as not to impact on IPC business as usual.

Tier 1 Contractor design drawings (unspecified list) were sent to IPC for review and IPC comments were provided on the 23 November 2021, however there is no evidence that these comments have been addressed prior to OBC KSAR submission in late December 2021. At an NHS SA and NHS Fife IPC meeting, the Lead IPCN for NHS Fife noted that there was not enough time allocated for the IPC review of the draft drawings.

Documents referenced are:

HAI SCRIBE.

Draft OBC.

KSAR IPC 1.6.

Workbook Ref No.	Areas to probe	Evidence expected
7.3	How does the Health Board assure itself that the designers have a proper understanding of the infection prevention and control procedures required?	The Health Board evidences that: All relevant staff within the designers' organisation are provided with clear guidance on roles and responsibilities in relation to infection prevention and control. The contractors' organisation will provide evidence of education in relation to infection prevention in the built environment for all staff involved in the project.

NHS Scotland Assure Observations:

No evidence was submitted by NHS Fife regarding designers and contractors having a clear understanding of their roles and responsibilities in relation to IPC or any IPC education undertaken to support the project. IPC have been involved at some points in the early design, such as the Stage 1 HAI-SCRIBE, but this is inconsistent with the Project Execution Plan which refers to IPC inclusion at all project stages.

Documents referenced are:

HAI SCRIBE.

ACR.

Draft OBC.

Project Execution Plan.

Workbook Ref No.	Areas to probe	Evidence expected
7.4	How does the Health Board assure itself that equipment being proposed meets the required IPC standards?	The IPC Team are involved and IPC advice followed in all procurement decisions for new equipment prior to purchase. IPCT are satisfied that all equipment purchased can be decontaminated safely in line with National

		Guidance NIPCM and manufacturers' instructions.
<p>NHS Scotland Assure Observations:</p> <p>No evidence was provided to demonstrate the equipping strategy for the project has been undertaken. The Tier 1 Contractor and Design Team confirmed verbally at the IPC KSAR Technical Workshop that this will be planned and undertaken at FBC stage.</p> <p>Documents referenced are:</p> <p>ACR.</p> <p>Draft OBC.</p>		

3.7.2 Infection Prevention & Control Built Environment: Further Observations

In addition to the points raised via the KSAR workbook above, we also include the following observations as a result of the review, all of which relate to the evidence presented during the appraisal.

3.7.2.1	MEP concept drawings show clinical wash hand basins adjacent to work surfaces/desk. NHS Fife should consider CWHB placement within consultation rooms at the FBC design stage to minimise the risk of splash contamination to clinical worksurfaces and/or equipment which may cause infection in patients receiving care in the area.
3.7.2.2	Room sizing – Noted smaller sizes of dirty utility and consultation room and treatment room queries by IPC team. The functions of all proposed rooms should be assessed to ensure room sizes will be appropriate for their proposed function.
3.7.2.3	NHS Fife should give consideration to possible COVID-19 risks/requirements going forward. The hierarchy of controls should be applied to the functionality of the facility/spaces. E.g. sizes of waiting rooms, GP rooms assessing respiratory patients, training rooms and possible ventilation requirements.

4. Appendices

Appendix 1: Glossary

Please refer to NHS Scotland Assure – Assurance Service Master Glossary document available to download from [NHS National Services Scotland website](#).

