NHSScotland Assure
Quality in the healthcare environment

NHS National Services Scotland

NHS Greater Glasgow & Clyde Radionuclide Facility Key Stage Assurance Review

Construction KSAR Report

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Document Overview

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Document Control Sheet

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1. Executive Summary

As a result of the Final Business Case (FBC) Key Stage Assurance Review (KSAR) and based on the information presented, NHS Scotland Assure (NHSSA) note the project is “supported” at this stage.

Since the previous KSAR, the health board has recognised several core principles requiring attention, resulting in a change of contractor and substantial alterations to the scheme. Notably, they have revised the design of the plant room in response to findings from the previous KSAR. While certain points remain unresolved due to the evolving nature of the contract and contractor design portion (CDP), the health board has demonstrated a proactive approach by engaging in discussions around risks and implementing as many mitigations as feasible.

Overall, there were no significant concerns identified throughout the course of the review that would prevent the project progressing to the next stage, however, there are additional observations recorded within this KSAR report that we recommend are considered by NHSGGC as part of their action plan going forward. NHSSA have identified a number of key themes that the health board should consider prioritising, in order to assure themselves that the project can be delivered safely:

- Assurance has not been provided that the observations identified at the OBC stage of the project have been fully addressed. These include (but are not limited to), a lack of assurance that the proposed drainage arrangement has been discussed and agreed with SEPA as recommended by NHSSA at the OBC stage. NHS Greater Glasgow and Clyde (NHSGGC) have engaged in a transparent manner throughout the KSAR and have provided a commitment to further develop their action plans as the project moves towards the Construction phase.

- From the documentation provided, we acknowledge a significant part of the facility associated with the cleanroom will be a contractor design portion (CDP) and the development of the design proposals will continue beyond FBC. NHSGGC have provided assurance that this will be reviewed via the Reviewable Design Data (RDD) process, to ensure ongoing input from relevant NHSGGC key stakeholders. The health board should ensure that all associated briefing documentation in place between NHSGGC and the PSCP has been reviewed and accepted by the relevant stakeholders within NHSGGC, particularly with respect to Contractor Design Portion (CDP) and that they have sufficient technical resources available to support the RDD process.

- NHSGGC have provided assurance that they have a documented derogation schedule in place, where the proposed derogations have been reviewed, signed off and approved. NHSSA recommend that the health board ensure that any supporting risk assessments associated with the derogations are

developed and documented. NHS GGC should continue to review derogations, particularly during the further development of the CDP elements and during the RDD process.

- Whilst we note that previous versions of the Environmental Matrix (EM) provided for review had been approved and signed off by the board, at the time of the KSAR, the current version of the EM is under review, to address observations discussed through the KSAR process. The health board should ensure that the EM is reviewed and signed off prior to Construction.

- There are a number of minor discrepancies and contradictions identified within the MEP specification documentation and other design information. NHS GGC should ensure that these are reviewed and addressed prior to the Construction stage.

- Whilst NHSGGC were able to demonstrate they had commenced planning for the commissioning stage of the project, including considering the requirements for an independent commissioning technical advisor and independent validator to support the commissioning process, the health board should ensure that these appointments are considered prior to the next stage, to support the planning for the commissioning process.

- NHSGGC provided assurance regarding the inclusion of the IPC leads for the project in the design of the facility and whilst the proposed facility is not a patient facing facility the service provided is critical for the treatment of patients across the West of Scotland. The project team have recognised the HAI sits with the clinical adjacencies for the facility within the Gartnavel Hospital campus and this is reflected within the HAISCRIBE risk assessment provided. Assurance however has not been provided regarding how the project is reported via the IPC governance structure via the infection control committee to the board and HAI Executive lead or how derogations and risks have been reviewed and signed off/approved by the IPC leads as part of the project board.

NHSSA would like to note that NHSGGC acted in a collaborative manner throughout the KSAR process and would like to thank the health board's team for their cooperation and commitment to the review process.

1.1 Summary of Findings

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

Review	No. of Issues per category				
	1	2	3	4	5
Project Governance and General Arrangements	0	1	9	9	3
Water and Internal Plumbing / Drainage Systems	0	0	7	6	0
Ventilation	0	2	7	4	0
Electrical	0	0	18	5	2
Medical Gases	N/A	N/A	N/A	N/A	N/A
Fire	0	0	0	2	0
Infection Prevention & Control Built Environment	0	0	10	1	0

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

The Radionuclide Dispensary is a proposed new two storey facility on the existing Gartnavel Campus, with the upper storey being exclusively for supporting plant and equipment. The ground floor includes the pharmaceutical accommodation with supporting offices and changing areas. The pharmaceutical accommodation is to be procured a specialist subcontractor who will also provide the design for these areas.

NHSGGC have appointed a principal supply chain partner (PSCP) to deliver the project who are also responsible for the design. The scope of the project is to construct a cleanroom facility for manufacturing of radiopharmaceutical medicines and distribution of them to Nuclear Medicine departments throughout health boards in West Central Scotland as well as other medical customers.

Whilst not a patient facility, there are considerable critical radiopharmaceutical manufacturing operations that the Radionuclide department facilitates which require bespoke environmental and resilience solutions.

The selected site on the Gartnavel Campus presents unique challenges of its own, which must be considered. Not only in terms of the Radionuclide project, but also the safe and ongoing operation of existing facilities that are in the vicinity of the project and have shared services or access with the Radionuclide project.

The primary services, such as electricity, telecoms, drainage and water all originate from within the private networks of the Gartnavel General Hospital Campus and will be subject to connection requests and liaison with the site estates team.

The project includes significant electrical, domestic water, drainage and ventilation elements, however there is no medical gas installation proposed in the building. There are no specific fire engineering proposals within the project design. These elements will be discussed in more detail throughout this review.

2. Review Methodology

2.1 Overview of NHS Scotland Assure and 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 NHSScotland Assure (NHSSA), Assurance Service was launched on 1 June 2021 following a letter issued by Scottish Government to health board Chief Executives, Directors of Finance, Nursing Directors and Directors of Estates. This letter outlined the purpose of NHS Scotland Assure, 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 the 1 June 2021, all NHS health board projects that require review and approval from the NHS Capital Group (CIG), will need to engage with NHSSA to undertake key stage assurance reviews (KSARs). Approval from the 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 NHSSA 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. NHSSA will be accountable for the services it provides that support delivery of the projects.

NHSSA 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. NHSSA 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 – project governance, water (including plumbing and drainage), ventilation, electrical, medical gases, fire safety and IPC. 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 Full Business Case (FBC) 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 Construction phase.

Additionally, the KSAR at FBC will carry out an appropriate level of checking of the design calculations and solutions adopted.

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 FBC KSAR for NHSGGC Radionuclide Dispensary project took place between April 2024 and August 2024.

2.2.2 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 FBC KSAR Workbook and FBC Deliverables list.

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

2.2.3 As part of the KSAR process, NHSGGC issued a document transmittal log which details the evidence provided in response to the KSAR Workbook and NHSSA recommended deliverables list. As part of an initial gap analysis, NHSSA reviewed the transmittal log to ensure all documents had been successfully received. The transmittal log provides a version history and audit trail of information reviewed.

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. This includes, amongst others, specific healthcare engineering guidance.

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.

The NHSScotland National Infection Prevention and Control Manual (NIPCM) was first published on 13 January 2012, by the Chief Nursing Officer (CNO (2012)1), and updated on 17 May 2012 (CNO (2012)1 Update).

The NIPCM provides IPC guidance to all those involved in care provision and is considered best practice across all health and care settings in Scotland.

The authority of guidance produced by NHS 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

This new build facility is divided into two key areas. The “hot” side includes the cleanroom manufacturing facility and the “cold” side includes the supporting ancillary staff and office accommodation. The upper floor plantroom above the “hot” side is known as the “dry” plantroom and above the “cold” side is known as the “wet” plantroom.

The new build facility is proposed to be largely supplied directly with cold water from the raw external Mains Cold Water Supply (MCWS). Reduced capacity cold water storage is indicated within the information provided, and the provision of cold-water filtration plant was verbally confirmed as included by NHSGGC and the project team during the KSAR Water workshop meeting on the 21/05/2024.

Within the “cold” side of the building the direct MCWS will serve the cold-water outlets and the local electrical point of use (PoU) water heaters which will in turn provide a domestic hot water supply (DHWS).

The ventilation strategy for the facility is also divided into a “hot” side and “cold” side. There are two distinct systems for each space. The “hot” side system is a cascade ventilation system used to control the cleanliness of the various cleanroom areas and provide the required level of heating and cooling to control the internal temperature of the spaces. The cleanroom facility is identified as being designed in accordance with EU GMP Volume 4, Annex 1. “EU Guidelines to Good Manufacturing Practice Medicinal Products for Human and Veterinary Use”

The ”cold” side system is a typical, non-clinical, supply and extract system with separate dirty extract for the WC spaces. The perimeter ground floor office and training rooms are proposed to use natural ventilation from openable windows.

The cleanroom spaces also include for fume cupboards with Local Exhaust Ventilation (LEV) systems.

The facility is to be supplied from a new 1.25MVA LV transformer connected into the existing HV infrastructure within the Gartnavel General Hospital site. A backup power supply is proposed via a 600kVA generator.

Lighting and emergency lighting is detailed within the FBC design information. Within the cleanroom areas there will be a minimum of two lighting circuits per space to ensure that if one circuit is lost there will be the provision of 50% redundancy in the room.

Fire alarm systems are provided via automatic detection and aspirating systems. The aspirating system is provided to the hot side and automatic detection provided to the cold side. The drawings and documentation note a level L1 of protection as defined in BS5839-1.

3. KSAR Review Summary

The following narrative relates directly to the FBC KSAR workbook and the evidence indicated therein. The comments associated with the points are because of the evidence presented by the 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.

NHS Scotland Assure Observations:

Since the previous KSAR, the health board has recognised several core principles requiring attention, resulting in a change of contractor and substantial alterations to the scheme. Notably, they have revised the design of the plant room in response to findings from the previous KSAR. While certain points remain unresolved due to the evolving nature of the contract and contractor design portion, the health board has demonstrated a proactive approach by engaging in discussions around risks and implementing as many mitigations as feasible.

Although NHSGGC have provided assurance in relation to the majority of KSAR observations raised at OBC, some observations remain outstanding, including the following:

- The project provided appointments for Authorising Engineers (AE) however, these were only for the OBC stage and NHS GGC have not provided assurance that the AE has been appointed for the FBC stage and beyond.
- NHSGGC have not provided assurance that the proposed drainage arrangement has been discussed and agreed with SEPA, as suggested at the OBC stage.

Assurance has been provided regarding the HAISCRIBE documentation since the previous KSAR stage. The document was reviewed, and a more detailed risk assessment has been provided. Additionally, NHSGGC evidenced increased engagement with IPC colleagues through the HAISCRIBE review and IPC review meetings.

Documents referenced are:

2024.01.04 Hai Scribe Stage 2 Version J
2024.02.24 Meeting Matrix V4
2023.08.04 IPC Facilities Review Meeting 3 combined.
OBC DRF Schedule
2024.02.28 Confirm AE Ventilation Appointment.pdf

2024.02.14 Tech Risk Issued IPC.pdf *2024.02.21 Technical Risk.pdf* *2024.03.20 Tech Risk Sign off tracker.pdf*

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.
NHS Scotland Assure Observations: No evidence has been provided by NHSGGC to confirm whether CIG recommendations have been addressed by NHSGGC as part of the FBC proposals. ***Documents referenced are:*** *No documents were provided for review*		

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.
NHS Scotland Assure Observations: NHSGGC has provided assurance that cross-referencing with NDAP and AEDET recommendations has been implemented. NDAP and AEDET OBC Stage recommendations have been reviewed during the FBC NDAP process. At the time of the KSAR this process is ongoing, however, it has been confirmed verbally by NHSSA NDAP team that any major observations have been incorporated into the design. ***Documents referenced are:*** *2023.04.06 Stage 2 NDAP 1st response*		

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	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.

	and comprehensive knowledge of patient cohorts?	Demonstrable expertise of service lead(s) / clinician(s) in providing this advice.

NHS Scotland Assure Observations:

NHSGGC have provided assurance that they continue to demonstrate service/clinical input into the design. Whilst this is not a patient-facing facility, the products manufactured for patient treatments are vital for service provision and patient safety.

NHSGGC provided evidence that the User Requirements Specifications have been developed based on input from end users, including the pharmacy department and the radiation protection advisor. Additionally, the board have provided assurance that MHRA specialist advisors were engaged during this process. Whilst there remain outstanding comments raised by the specialist cleanroom advisor for example, as noted in the following documents: ***'****RND-BAS-XX-XX-TR-Z-000001 Gartnavel Document'* and '*2024,04.12 Pressure Stabilisers Assessment.pdf'****.*** the health board has provided assurance that these are currently being addressed**.**

From the documentation provided, we acknowledge a significant part of the facility, in relation to the cleanroom, will be a Contractor Design Portion (CDP) and the development of the design proposals will continue beyond FBC. NHSGGC have provided assurance that this will be reviewed via the Reviewable Design Data (RDD) process, to ensure ongoing input to design development from relevant NHSGGC key stakeholders.

The health board have also provided assurance that their IPC team have been engaged in the proposed design of the facility. The NHSGGC IPC leads involved have been approved by the board to support the project.

Documents referenced are:

202.01.09 Delivery Group V3.
2023.08.04 IPC Facilities Review Meeting 3 combined.
2024.02.22 Production Area Room sign off 6th issue
P78 RND Stakeholder Mtg IPC 311023
Radionuclide Dispensary Project Board DRAFT MINUTE 24.11.23.docx
P78 RND Stakeholder Mtg 080823 (ventilation).docx
202.01.09 Delivery Group V3.pdf
202.02.27 Delivery Group V2.pdf
2022.09.08 Air discharge risk.pdf
2022.09.22 AHU Settings.pdf
2022.12.13 MHRA Assessor.pdf
Folder - 2023.11.09 PEP Version 2
RND-P78-XX-XX-PROJECT PLAN- V2.0
2024.02.24 Meeting Matrix V4
RND-BAS-XX-XX-TR-Z-000001 Gartnavel Document
2024,04.12 Pressure Stabilisers Assessment.pdf'

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 prevention and control quality and safety standards.	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 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.
NHS Scotland Assure Observations: The response to question 1.4 applies to this question.		

Workbook Ref No.	Areas to probe	Evidence expected
1.6	Planned approach towards determining the necessary standards for this accommodation.	Updated and current list of the relevant NHS and non-NHS guidance that is being used and adopted (see previous section of workbook FBC KSAR (Page 9) for examples of appropriate guidance). 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. Knowledge of the role of infection prevention and control advisors (IPCN

		and ICD) to be used throughout the final design stages, and details of the resource plan in place to ensure continuity into the construction phase.

NHS Scotland Assure Observations:

NHSGGC have provided details of the briefing documentation that they have in place for the project, and whilst they have confirmed that the URS takes precedence in the hierarchy of documents, they have not provided details of the hierarchy of the remaining briefing documents (for example, environmental matrix, room data sheets, derogation schedule etc).

Whilst we note that previous versions of the Environmental Matrix (EM), provided for review, had been reviewed and signed off by the board, at the time of the KSAR the current version of the EM is under review, to address observations discussed through the KSAR workshops. NHSSA note that there are a number of minor discrepancies within the EM, recorded through the KSAR, which NHS GGC should review and address. The health board should ensure that the EM is reviewed and signed off prior to Construction.

The EM also omits information in relation to the requirements for the cleanroom areas being developed as a CDP (for example, air supply, extraction, and pressure regime requirements), this is discussed further in the response to KSAR question 3.4. No engineering performance specifications relating to the CDP package for the cleanroom area have been received for review, therefore the health board should assure themselves that any engineering performance requirements are included within the briefing documentation and reviewed as part of the RDD process.

Whilst reference is made to applicable guidance within the ACRs, URS (for cleanroom areas) and the Engineering Specification (for non-cleanroom areas), it is currently not clear what relevant standards are applicable for each area of the facility, for example, whether the recommendations set out within the SHTMs are relevant throughout the whole facility.

NHSGGC have provided assurance that they have a documented derogation schedule, where the proposed derogations have been reviewed, signed off and approved. NHSSA recommend that the health board ensure that any supporting risk assessments associated with the derogations are developed and documented. NHS GGC should continue to review derogations, particularly during the further development of the CDP elements and during the RDD process.

NHSSA note that from an electrical perspective, there are inconsistencies across the project documentation with respect to the derogation on the uninterruptible power supply (UPS). This is detailed further within the response to KSAR question 4.3.

The response to KSAR question 1.4 in relation to the URS also applies to this question.

Documents referenced are:

IP07 KSAR response PG17 further upload
Technical Risk Review Meeting 27/2/2024

2024.06.27 RDD and CDP status update.pdf
2024.06.27 RND DBDA Review Procedure.pdf
2024.07.09 Project Board Ext Meeting.pdf

Workbook Ref No.	Areas to probe	Evidence expected
1.7	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? 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?	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.

NHS Scotland Assure Observations:
Assurance has been provided regarding how the IPC leads are embedded into the project through the provision of the project meeting matrix and minutes of a number of meetings where IPC are involved. This demonstrates the board and project teams commitment to the importance of IPC in the project. Assurance has been provided regarding the IPC structure within NHSGGC and how IPC leads for the project operate within the structure.

There is no assurance provided, however, regarding how the project is embedded into the IPC workplan and how it is reported through governance processes to the HAI executive lead and the board. This could be demonstrated through the IPC workplan and infection control committee minutes noting the project, the IPC resource for the project and updates on the project.

Documents referenced are:
202.02.27 Delivery Group V2
2022.12.07 HaiScribe Stage 1 Version E
2024.02.29 IPC Stakeholder Mtg
Technical Risk Review Meeting 27/2/2024

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?	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. (Ask staff) IPC are fully embedded in the project team and the FBC programme-taking cognisance of any actual or perceived risks identified provided.

NHS Scotland Assure Observations:
Assurance has been provided regarding the inclusion of IPC in the project and this is clearly demonstrated by the HAISCRIBE review provided and the design meetings which have been held with the IPC team.

Whilst this project is not a patient facility the project team and the IPC team clearly understand the importance of the facility in relation to the provision of specialist medical products for patients across the West of Scotland.

NHSGGC provided assurance that the NIPCM is embedded in the project, where applicable, inclusive of the staff rest and office areas. The project team also recognise the HAI risks to adjacent clinical and charitable spaces which support patients and clients with significant health issues as well as adjacent blood transfusion laboratories.

Documents referenced are:
RND ACRs Version 8B
2024.01.04 HaiScribe Stage 2 Version J
2024.02.29 IPC Stakeholder Mtg
RND KSAR FBC response Section 1

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.

NHS Scotland Assure Observations:
Assurance has been provided regarding NHSGGC approach to the development of the HAISCRIBE assessment for the design of the facility.

IPC leads have been involved in a number of workshops to undertake the HAISCRIBE risk assessments and associated design reviews as well as assessment of identified risks for the facility and clinical adjacencies.

However, as noted in the response to KSAR Q1.7, assurance has not been provided regarding the IPC reporting strategy for the board as the IPC workplan and strategy documents, were not provided for the KSAR review.

Documents referenced are:
RND KSAR FBC response Section 1
2023.08.04 IPC Facilites Review Meeting 3 combined
2024.02.29 IPC Stakeholder Mtg
2024.01.04 HaiScribe Stage 2 Version J

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 FBC. For example, evidence that the proposals for equipping incorporate IPC requirements?

NHS Scotland Assure Observations:
Assurance has been provided regarding IPC involvement with the FBC stage of the project including the design review and the development of the Stage 2 HAISCRIBE.

The minutes of the project board and delivery group meetings note a collaborative approach with the clinical representative, the project team and the IPC leads. The inclusion of IPC in the project board and the delivery group shows commitment by the board to ensure a collaborative approach to the design of the facility and minimising HAI risks to clinical adjacencies and patients who will receive radiopharmaceutical products manufactured in the facility.

Collaboration was also noted for the equipping of the facility across stakeholders and IPC. Whilst NHSGGC IPC have stated they will not be involved with the equipping procurement for the cleanroom facility, as this specialist knowledge will be provided by the clinical RND team, IPC will be involved with the fixtures and fittings for the remainder of the facility.

Documents referenced are:
2023.08.04 IPC Facilites Review Meeting 3 combined
RND KSAR FBC response Section 1
RND-NHS-XX-XX-WI-K-12407 P10D - RND User Requirements Spec 2024.02
2024.02.27 Delivery Group Meeting
2024.01.04 HaiScribe Stage 2 Version J
202.02.27 Delivery Group V2
RND-NHS-XX-XX-WI-K-12407 P10D - RND User Requirements Spec 2024.02

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	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. Details of how gaps in expertise are being filled. 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. 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.

NHS Scotland Assure Observations:

As noted in the response to KSAR question 1.6 NHSGGC board have provided references to applicable guidance are included in the ACRs, URS (for cleanroom areas) and the Engineering Specification (for non-cleanroom areas).

NHSGGC has provided assurance regarding the governance of the project and the roles and responsibilities of key stakeholders from the health board. Assurance has been provided with regards to the inclusion of IPC as a stakeholder across design, project**,** and IPC meetings. IPC have been involved in discussions and review of derogations however, no approval of the risks has been provided. Four risks remain outstanding within the derogation schedule, (TR03, TR04, TR05, and TR06) however, minutes were provided noting IPC have been involved in the discussions.

The governance routes for the project reporting and escalation of any risk is clear from the information provided. However**,** assurance has not been provided regarding the IPC governance route to the infection control committee and the HAI executive lead to the board.

Documents referenced are:

RND KSAR FBC response Section 1
2024.02.29 IPC Stakeholder Mtg
202.02.27 Delivery Group V2
Radionuclide Dispensary Project Board DRAFT MINUTE 24.11.23

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.	Evidence on how this requirement is being managed and how it fits with the project governance arrangements Plans to identify any gaps in the procurement approach that may require to be addressed. Evidence on how Infection Prevention and Control are involved with the conceptual procurement approach to the design stage and future plans for project. Evidence that the Health Boards selected procurement route has gone through the Board's Governance channels.

NHS Scotland Assure Observations:
The responses to question 1.11 also apply to this question.

As noted previously, a significant proportion of the facility will be a CDP element. Whilst this means that there are aspects of the design which haven't been fully designed during FBC, the health board have provided a commitment to monitor the development of the design through the RDD process. NHSSA recommend that the health board assures itself that they have sufficient technical resources available to support the RDD process and ensure the review / approval process can be undertaken to meet the contractor's programme of work.

Assurance has been provided regarding the involvement of IPC with the procurement of fixtures and fittings for the non-classified areas in the facility. The cleanroom is a specialist function and the advice for the design and procurement will be undertaken by the NSS and NHSGGC procurement teams in collaboration with the specialist cleanroom designers with approval from the NHSGGC radionuclide lead as a part of the planned RDD process.

Documents referenced are:
2023.08.04 IPC Facilities Review Meeting 3 combined.
231010 RND-CDL-XX-XX-SH-XX-000000 – Clean Room Design Interface Schedule.xlsx
RND KSAR FBC response Section 1.pdf
RND-BAM-XX-XX-SH-W-0006 - Design Responsibilities Matrix - Jan 24.pdf
RND-BAM-XX-XX-W-0003 - CDP Matrix 26-10-23.pdf

RND-BAM-XX-XX-W-0301 - Contractor Design Management WIP 3.docx *RND-BAM-XX-XX-W-0301 - Contractor Design Management.pdf*

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).	Evidence that the procurement of the lead designer will encompass these areas in their oversight and sign off of the complete design. Evidence that a clear demarcation of design responsibility is being developed.

NHS Scotland Assure Observations:

As noted previously, the cleanroom will be developed as a CDP. The response to KSAR questions 1.11 and 1.12 also apples to this question.

NHSGGC have provided assurance that the demarcation of design and responsibilities of the MEP systems within the building have been considered, with interfaces between MEP systems and specialist contractors etc., being indicated within relevant drawings and incorporated within the RDD process, however, NHSSA note that document '*231010 RND-CDL-XX-XX-SH-XX-000000 Clean Room Design Interface Schedule*' has not been signed off as being accepted.

The document '*RND-BAM-XX-XX-SH-W-0006 Design Responsibilities Matrix - Jan 24'* has not been signed off as being accepted. This document also contains a number of comments in red text, that appear to be internal document review comments, signifying outstanding information and coordination details that will need to be clarified and agreed by the board.

Documents referenced are:

2024.02.24 Meeting Matrix V4
231010 RND-CDL-XX-XX-SH-XX-000000 -Clean Room Design Interface Schedule
RND BAM clear room demarcation\52 drainage RND-CDL-XX-XX-DR-P-10001.pdf
RND BAM clear room demarcation\53 Domestic Water RND-CDL-XX-XX-DR-P-40001.pdf
RND BAM clear room demarcation\56 LTHW RND-CDL-XX-XX-DR-M-040001.pdf
RND BAM clear room demarcation\57 Vent 1 RND-CDL-XX-XX-DR-M-010001.pdf
RND BAM clear room demarcation\61 Containment RND-CDL-XX-XX-DR-E-071001.pdf
RND BAM clear room demarcation\62 Power and Data RND-CDL-XX-XX-DR-E-021001.pdf
RND BAM clear room demarcation\63 lighting RND-CDL-XX-XX-DR-E-031001.pdf
RND BAM clear room demarcation\67 Fire RND-CDL-XX-XX-DR-E-061001.pdf
RND BAM clear room demarcation\68 Security RND-CDL-XX-XX-DR-E-091000.pdf
RND-BAM-XX-XX-DR-W-01000 - Partition Demarcation.pdf

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:
NHSGGC have identified commissioning as a potential risk to the project handover and consequently a Commissioning and Validation Committee has been established. NHSGGC have provided assurance that elements of commissioning have been considered, with the development of a 'Validation master plan', where preliminary activities have been included in the contractor's programme.

NHSSA note that the planning for commissioning requires to be further developed, with further input required from specialist contractor in relation to the cleanroom commissioning and handover processes. There is no assurance that key documents have been developed, such as a commissioning plan, or designer's commissioning briefs, as required by SHTM 03-01 and SHTM 04-01.

Although NHSGGC have identified the need for a "technical specialist advisor" and an independent validator for ventilation systems to be appointed on behalf of NHSGGC to support the commissioning stage, at the time of the KSAR assurance of these appointments has not been provided. In addition, there is no assurance that these independent advisors have reviewed the design at FBC stage.

Assurance has been provided regarding the proposed IPC involvement in the commissioning process. The relevant personnel are listed as proposed members for the commissioning group for the facility within the meeting matrix and project plan documents provided.

NHSSA note that the implementation of Soft Landings is still to be developed for the project.

Documents referenced are:
2024.02.24 Meeting Matrix V4
RND-P78-XX-XX-PROJECT PLAN- V2.0 - Nov 2023

Workbook Ref No.	Areas to probe	Evidence expected
1.15	Evaluation of the Health Boards duty holder matrix.	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.

		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.

NHS Scotland Assure Observations:
Assurance has been provided by NHSGGC that there are health board personnel and roles identified within their governance structures to undertake specifically identified roles throughout the lifecycle of the project.

Assurance has been provided regarding the IPC resource allocated for the project through to handover. This is not a patient facility therefore there is no expectation of IPC support once it is handed over to the board, however it does sit within the Gartnavel Hospital site and would, if required, be supported by the IPC team for the site.

NHSGGC have not provided assurance that a Designated Person for the project has been appointed / identified. NHSGGC to identify their designated person and provide an organogram of project team structure, individuals and their roles and responsibilities.

Documents referenced are
2024.02.26 Health Physics Structure Chart
220594_NEWGGCSTRUCTURE_July 2023
Estates Service Structure Nov 23
IPC Structure Sector Chart 2022 With Names Sept 2022

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	N/A

3.2 KSAR 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?	Recorded evidence that the design team are experienced and have a comprehensive knowledge of the relevant design standards. 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? Recorded evidence that input from the Health Authorising Engineer for Water (AE(W)) has been requested. Evidence that all contractors and sub-contractor competency checks have been completed and signed off.

NHS Scotland Assure Observations:

NHSGGC have provided assurance that an assessment of healthcare experience, from a company perspective has been carried out, for designers and main contractor, through a peer review by the project managers working on behalf of the health board, however there is no evidence of an assessment of competency for individual members of the project team carried out by NHSGGC.

The documents provided are generic in nature and lack sufficient detail to demonstrate healthcare experience of individual designers or specialist subcontractors. There is no assurance that documents have been reviewed, accepted and /or 'signed off' by appropriate stakeholders.

Although competency / relevant experience is provided for 'suggested' PSCP staff involved in the project, this does not extend to other members of the PSCP team.

The AE(W) is noted as being part of the project team and there is evidence of input via meeting minutes provided for earlier stages. NHSGGC has not provided assurance that a competency check of the Authorising Engineer, Technical Advisor, or Commissioning Specialists has been undertaken at this stage.

Documents referenced are:

GGC NHS document "FBC Stage KSAR Workbook Response Section 2- Water Internal Plumbing / Drainage Systems Feb 2024 Version -V1"
Unreferenced document titled " Skill Knowledge, Experience & Resource"
Document referenced "Principal Contractor - BAM Construction Ltd Key Stage Assurance Review Infection Prevention and Control"

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 modifications to services in the future?	Evidence that the engineers are presented their co-ordination drawings (BIM model), with space for future flexibility identified, to the Board. Evidence that the Design Consultant has considered and agreed with the Board, space for future flexibility in the service installations. 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. Evidence that the Board has agreed a strategy (percentage) for spare capacity and a documented allowance to be incorporated into the design. Are plant/tank rooms, IPS sections, horizontal distribution runs and risers appropriately sized for the equipment being installed and facilitate safe adequate maintenance.

NHS Scotland Assure Observations:
NHSGGC have provided assurance with respect to consideration of system resilience, spare capacity, margins on design calculations etc. However, NHSGGC should ensure that design spare capacity, margins etc. are coherent with industry standards e.g**.** CIBSE guidelines etc and have been reviewed, agreed and signed off by relevant stakeholders.

An overview of the proposed services Revit model was provided during a workshop held on 21 May 2024. The model has still to be fully developed and is not reflective of the current stage (FBC / RIBA Stage 4). The model does not include details of plant and services distribution associated with the CDP element for the cleanroom facility.

NHSGGC have not provided assurance that the current drawing and model information, clearly indicate access / egress routes for plant installation and replacement: space provision for future plant items: space provision for plant maintenance, etc.

Documents referenced are:
Document ref RND-CDL-XX-XX-RP-Z-090201 ["RIBA STAGE 4 Resilience Report"]Drg RND-CDL-XX-XX-DR-P-040001 P02
Drg RND-CDL-XX-XX-DR-P-040002 P02
BIM 'fly through' presentation (21 May 2024)

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:
NHSGGC have provided assurance that a derogation schedule has been produced and considered and signed off by relevant stakeholders.

NHSGGC have provided both a derogation schedule and derogation tracker document. NHSGGC should consider the potential risk of conflict between the two documents and consider providing a single consolidated reference document which notes the agreed derogations and if necessary, a 'tracker' of the timeline / sign off process.

NHSGGC should review items within the derogation schedule which are technical risks rather than derogations and consider capturing these within the project risk register.

Documents referenced are:
RDN-BAM-XX-XX-SH-W-0001 - Derogation Schedule dated 15-08-24
Derogation Sign off tracker dated 12 July 2024

Workbook Ref No.	Areas to probe	Evidence expected
2.4	Water Management Strategy	Assessment of 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?

NHS Scotland Assure Observations:
NHSGGC have not provided assurance that the Water Management Strategy document has been reviewed and accepted by the appropriate stakeholders or Water Management Groups.

There is a lack of consistency between documents submitted and discussions held during KSAR workshops held on 2 and 21 May 2024. Proposals discussed during the workshops are contrary to statements submitted within supporting documents, e.g. proposed installation of filtration plant and use of PoU water heaters to directly control temperature rather than a TMV or TMT. NHSGGC to ensure that the documents are reviewed and align with requirements.

Documents referenced are:
Gartnavel General Radionuclide Dispensary FBC Stage KSAR Workbook Response Section 2- Water Internal Plumbing / Drainage Systems February 2024 Version- V1
RND-CDL-XX-XX-RP-Z-90203 – Water Management Strategy
RND-CDL-XX-XX-RP-Z-090208 Rev A 11 Jan 2024

Workbook Ref No.	Areas to probe	Evidence expected
2.5	Water governance arrangements	Has the Board commenced its 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?

NHS Scotland Assure Observations:
NHSGGC have provided assurance in relation to their existing water governance arrangements and identified staff members who are appointed as AP /CPs, however, there is no assurance that the board have considered whether existing staff have capacity to take on the new facility.

NHSGGC provided verbal/anecdotal evidence during workshops held on 2nd and 21st May 2024 that an AE(W) has been appointed for all stages of the project. The project plan also notes intent that *"AEs to be engaged by NHS PM at each RIBA stage to provide peer review advice to the Board".* However, no written confirmation of AE appointment through all stages of the project has been provided.

In the absence of input from the health board's water safety group to the project, input has been sought from key stakeholders from Estates / IPC etc. for the project.

Documents referenced are:

RND-P78-XX-XX-Management Structure v3.0 dated 20th Aug 2024
RND-P78-XX-XX-PROJECT PLAN- Version 4 dated 20th Aug 2024
Gartnavel General Radionuclide Dispensary FBC Stage KSAR Workbook Response Section 2- Water Internal Plumbing / Drainage Systems February 2024 Version- V1
NHSGGC email of 9 May 2024

Workbook Ref No.	Areas to probe	Evidence expected
2.6	Evidence that the Health Board is developing commissioning proposals.	Evaluation of the suitability of the proposed plans in the context of the FBC, are these sufficient to meet the requirements of the project, guidance and the design of the system. Evidence that the design has considered the commissioning of the water system including: • Safe storage of materials • Agreed type of chemical (to avoid warranty and corrosion issues) • Adequate time scale • Competency checks on all contractors • Water sampling scope Water sampling test results and approval process.

NHS Scotland Assure Observations:

NHSGGC have verbally advised that the water connection for the proposed unit will be from existing 'live' water main within the site, and that regular water samples are taken / monitored from this existing main supply. NHSGGC have not provided assurance in relation to water quality test/sampling results, or competency checks on staff/personnel involved in the project.

The programme period does not allow time/activity/input for witnessing and reviewing / testing / commissioning of the H&CWS by the AE/AP.

NHSGGC have not provided assurance of sign off by relevant NHSGGC stakeholder(s) of staff competency checks, acceptance of water test results

NHSGGC have not provided assurance that a commissioning engineer has been engaged or provided input to the design and programming of the water services installations.

Documents referenced are:
Delivery sub group water safety V1.0 dated 16 May 2024
RND-CDL-XX-XX-RP-Z-090208 - Designers Water Risk Assessment - Rev C dated 30th May 2024
Gartnavel General Radionuclide Dispensary FBC Stage KSAR Workbook Response Section 2- Water Internal Plumbing / Drainage Systems February 2024 Version- V1
Radionuclide Hub West Scotland / NHS GG&C Testing and Commissioning Programme 'Draft' Status dated 23rd Feb 2024
Designer's Water Risk Assessment RND-CDL-XX-XX-RP-Z-090208 Rev A dated 11 Jan 2024

Workbook Ref No.	Areas to probe	Evidence expected
2.7	Evaluation of the Health Boards planned preventative maintenance (PPM) proposals.	Has the Health Board commenced its planning and recorded the PPM requirements and approach to ensure appropriate levels of maintenance, comprehensive statutory compliance and robust management processes, including: • Adequate numbers of staff • Water management PPM including all outlets, TMT & TMV, plumbing and Drainage systems, etc.?

NHS Scotland Assure Observations:
NHSGGC verbally confirmed at the workshop of 21st May 2024 that the location and quantity of outlets / terminals has been discussed and agreed with relevant users / stakeholders.

Whilst a generic list of MEP assets has been provided with predefined codes and templates from the health board's CAFM system, there is no assurance that the health board has commenced planning of PPM requirements for the project.

NHSGGC have provided assurance that an agreed strategy has been developed for control of the cold water temperature within the system, particularly the interface of 'end of line' sensors within the BMS system, proposed measures to be taken in event of alarm and monitoring of the system by NHSGGC Estates has been discussed and accepted by Scottish Water.

Documents referenced are:
Delivery sub group water safety V1.0 dated 16 May 2024
RND-CDL-XX-XX-RP-Z-090208 - Designers Water Risk Assessment - Rev C dated 30 May 2024
Drg RND-CDL-XX-XX-DR-P-040001 P02
Drg RND-CDL-XX-XX-DR-P-040002 P02

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	Document relevance: Document reference “Operational Control Document D 9.16.20a Domestic Water Management Plan" has been submitted, however it is unclear on the relevance of this to this project given it is produced by a third party (FES) who are not part of the project team and relates to another project at Parkhead Health Centre.
3.2.2.2	NHSGGC have not provided assurance regarding the proposed means of temperature control of terminal hot water temperature directly via the point of use (PoU) water heater has been formally accepted and signed off by the NHSGGC water safety group, AE(W), IPC.
3.2.2.3	The URS notes “1no. clinical and radioactive decontamination hand wash basin is required before exiting the facility in corridor C0/02”. NHSGGC have not provided assurance that SEPA, MHRA etc., have reviewed drainage requirements.

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?	Recorded evidence that the design team are experienced and have a comprehensive knowledge of the relevant design standards. 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? Recorded evidence that input from the Health Boards Authorising Engineer for Ventilation (AE(V)) has been requested. Evidence that all contractors and sub-contractor competency checks have been completed and signed off.
NHS Scotland Assure Observations: The response to question 2.1 in relation to the competency of individual designers and members of the project team also applies to this question. No assurance has been provided that the cleanroom specialist CDP designer meets the board's competency criteria as described in the URS document. NHSGGC has also not provided assurance that a competency check of the Authorising Engineer, Technical Advisor, or Commissioning Specialists has been undertaken at this stage. ***Documents referenced are:*** *RND-NHS-XX-XX-WI-K-12407 P10D - RND User Requirements Spec 2024.02.20 signed.pdf* *Appendix A - 20240415 RND Risk Register Rev M.xlsx* *Competence SKE&R_Designer_Review Report_Rev1.pdf* *2024.02.28 Confirm AE Ventilation Appointment.pdf*		

Workbook Ref No.	Areas to probe	Evidence expected
3.2	How does the Health Board ensure that ventilation services are designed in a fashion,	Evidence that the design engineers have presented their co-ordination drawings (BIM model), with space for future flexibility identified, to the health board.

	which will retain space for minor additions and modifications to services in the future, and there is an appropriate plant access strategy?	Evidence that the design consultant has considered and agreed with the Board, space for future flexibility in the service installations. 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. Evidence that the ventilation solution has been agreed with clinical and IPC colleagues. Evidence that the Board has agreed a strategy (percentage) for spare capacity and a documented allowance to be incorporated into the design. Are plant rooms, horizontal distribution runs and risers appropriately sized for the equipment being installed and facilitate safe adequate maintenance? Evidence that a plant access strategy for the entire ventilation system has been provided to ensure safe, adequate access, including access for cleaning.

NHS Scotland Assure Observations:

The response to question 2.3 in relation to the BIM model, MEP access, and egress strategy also applies to this question.

Although NHSGGC have considered and discussed the installation space, access and maintenance strategy and space for potential future AHU plant with key stakeholders (including the potential specialist contractor for the cleanroom), given that a large part of the ventilation system will be a CDP and the designer's BIM model does not include the cleanroom area ventilation plant and distribution system, NHSGGC have not been able to provide assurance that these elements have been reviewed and confirmed at the FBC stage within the designer's BIM model.

NHSGGC have provided evidence of ventilation plant design, however, assurance has not been provided that the plant selection includes agreed margins and conforms to the agreed energy performance criteria. General arrangement ventilation drawings and schematics provided have not been supported by evidence of system calculation, selection, and sizing due to this being a CDP element requiring further detailed design development.

Documents referenced are:

RND-BAM-XX-XX-PL-W-53200-BIM Execution Plan.pdf
RND-BAM-XX-XX-RP-W-90001-BIM Coordination & Clash Report
RND-BAM-XX-XX-M3-W-90001-Federated Model.nwd
RND-BAS-XX-XX-SC-M-650001 - HVAC Schematic.pdf
RND-BAS-XX-00-DR-M-650008-Mechanical Services Plantroom - WIP.pdf
RND-CDL-XX-XX-SH-M-020601.pdf (AHU Schedule)
RND-CDL-XX-XX-SP-Z-090300.pdf (Engineering Specifications)
Ventilation Rates Calculation - P01.pdf

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 Board, and agreed with their ventilation safety group, clinical, engineering, Estates, infection control and FM teams.

NHS Scotland Assure Observations:
NHSGGC has provided assurance that the derogations have been investigated and discussed with the relevant stakeholders.

The response to question 2.3 also applies to this question.

Documents referenced are:

2024.07.12 Derogation Sign off tracker
RDN-BAM-XX-XX-SH-W-0001 - Derogation Schedule - 15-08-24
SHTM03-01 Part A
2024,04.12 Pressure Stabilisers Assessment.pdf
2024.05.08 Tech Risk Sign off tracker.pdf
RDN-BAM-XX-XX-SH-W-0001 - Technical Risk Schedule - 23-02-24.pdf
RND-BAS-XX-XX-TR-Z-000001 Gartnavel Document Tracker_P01.xlsx

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)?	Evidence of agreed environmental matrix. 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. Floor plans with associated plant locations highlighted plus simple schematic of strategy. This must also identify the air intake and exhaust strategy / locations.

NHS Scotland Assure Observations:

NHSGGC have provided assurance that there is a ventilation strategy in place for cleanroom areas and non-classified areas. The proposed URS, pressure map and room classification has been reviewed by the MHRA and approved by key NHS GGC stakeholders.

Whilst we note that previous versions of the EM provided for review had been reviewed and signed off by the board, at the time of the KSAR the current version of the EM is under review, to address observations discussed through the KSAR workshops. The health board should ensure that this is reviewed and signed off prior to Construction.

The Environmental Matrix (revision P04) omits information regarding air supply, extraction, and pressure regime requirements for the cleanroom. It is also noted within the document that the design will be confirmed by the specialist cleanroom contractor, however, it is our understanding that the briefing requirements should be determined by the URS documentation / client's brief and recorded within the EM.

Documents referenced are:

RND-CDL-XX-XX-RP-MEP-000001 - Environmental Matrix - Rev P04.pdf
RND ACRs Version 8B.pdf
RND-NHS-XX-XX-WI-K-12407 P10D - RND User Requirements Spec 2024.02.20 signed.pdf
RND-P78-XX-XX-PROJECT PLAN- V3.1.doc
Appendix G - P78 RND Stage 1+2 Deliverables_V10 - BAM.xlsx
Appendix F - DRM- 260324.pdf
RND-CDL-XX-00-DR-M-011003 P01.pdf

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: 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. g) Name of the NHS Project Manager who has agreed to the room requirements. Name of the Decontamination Manager who has agreed to the room requirements (where this is part of the project).
NHS Scotland Assure Observations: NHSGGC has provided assurance that the proposed ventilation system has been fully discussed with relevant stakeholders within GGC, including radiation protection advisor and stakeholders from MHRA (and MHRA advisors). The requirements are documented within the User Requirements Specification. ***Documents referenced are:*** *RND-CDL-XX-XX-RP-MEP-000001 - Environmental Matrix - Rev P04.xlsx* *RND-CDL-XX-XX-RP-ME-000001 - Environmental Matrix - Rev P03.xlsx* *RND-NHS-XX-XX-WI-K-12407 P10D - RND User Requirements Spec 2024.02.20 signed.pdf* *2024.06.20 notes of meeting with MHRA.pd* *2024.08.16 Summary notes of second meeting with MHRA.pdf*		

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 FBC, are these sufficient do the meet the requirements of the project, guidance and the design of the system? What plans have been made for independent validation of the ventilation systems?

		What plans have been made for independent verification of the ventilation system? What plant and ductwork cleaning has been specified? What safe adequate access has been allowed for access to dampers?

NHS Scotland Assure Observations:
The responses to KSAR question 1.14 are relevant to this question.

NHSCCG has provided assurance that it has commenced development of the ventilation commissioning proposals through the development of the 'Validation Master Plan', URS and minutes of meetings from the commissioning workstream. There is, however, a lack of assurance in relation to the requirements of SHTM 03-01 for commissioning. No assurance has been provided that a Designer's Commissioning brief has been developed or that an independent validator has been appointed for the ventilation systems, in line with the requirements of SHTM 03-01 Part A (2022).

At the time of the KSAR, the commissioning works in relation to the CDP element have still to be developed, beyond what is detailed within the URS, with further input required from specialist contractor in relation to the cleanroom commissioning and handover processes.

Documents referenced are:
P78 RND Commissioning Validation 300124.docx
Appendix A - 20240415 RND Risk Register Rev M.xlsx
RND-CDL-XX-XX-SP-Z-090300.pdf
CIBSE Commissioning Code M
20240415 RND Risk Register Revision M

Workbook Ref No.	Areas to probe	Evidence expected
3.7	Has the Health Board started developing its ventilation governance arrangements?	Has the Health Board commenced its planning and recorded how it will ensure appropriate numbers of trained staff (AP and CP) staff and appointment of AE(V) for the project and is it clear how this project will interface with the Health Boards existing arrangements for management of the ventilation installations?

NHS Scotland Assure Observations:
NHSGGC has provided assurance that it has existing ventilation governance arrangement in place and provided details of individuals appointed as APs / CPs. There is no assurance, however, whether existing APs / CPs have capacity within their workplan to take on the new facility.

The board already has an existing strategy for the management of the ventilation systems on site, which will require further review and adaptations for the new buildings. In the absence of a Ventilation Safety Group, evidence of regular engagement with the FM leadership team has been provided.

Documents referenced are:
220594_NEWGGCSTRUCTURE_July 2023_S.pdf
Estates Service Structure Nov 23.pdf
IPC Structure Sector Chart 2022 With Names Sept 2022.doc
202.03.05 Full Delivery Group Minute.pdf
202.01.09 Delivery Group V3..pdf
202.02.27 Delivery Group V2.pdf
2024.04.30 Papers in advance of Project Board Meeting.pdf

Workbook Ref No.	Areas to probe	Evidence expected
3.8	Evaluation of the Health Boards planned preventative maintenance (PPM) proposals.	Has the Health Board commenced its planning and recorded the PPM requirements and approach to ensure appropriate levels of maintenance, comprehensive statutory compliance and robust management processes?

NHS Scotland Assure Observations:
NHSGGC has not provided assurance that it has started planning the PPM proposals. Whilst a generic list of MEP assets has been provided with predefined codes and templates from the health board's CAFM system, there is no assurance that the health board has commenced planning of PPM requirements for ventilation systems for the project.

The response to question 2.3 in relation to the BIM model, MEP access, and egress strategy also applies to this question.

Although the evidence provided suggests that a CAFM system is currently used and predefined codes and templates allow the system to be expanded in such a way that new plant can be added, NHSGGC has not provided assurance on how this informed the delivery of the BIM Strategy.

NHSGGC has not provided assurance that the maintenance strategy and planning has been developed to comply with the NHSScotland Soft Landing Guidance adopted by the project. No evidence has been provided showing how the strategy has been formulated to align with Soft Landings, including elements such as

sourcing strategy, operational objectives, or budget planning as referenced in '*Appendix M - Soft Landings Guidance v01-1.0.pdf.'*

Documents referenced are:
RND ACRs Version 8B.pdf
Appendix M - Soft Landings Guidance v01-1.0.pdf
RND PPM templates and codes

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	The provided Building Management System (BMS) specification lacks details regarding the operation, specific engineering requirements, and control sequences for the cleanroom systems. The design should align with the control systems requirements detailed in the ACR documentation.
3.3.2.2	It is noted that a single intake louvre serves both air handling units in the facility, however, it is currently not clear if the louvre is designed to meet the recommendations outlined in SHTM 03-01, as required by the URS.
3.3.2.3	The location of LEV exhaust ventilation is in proximity of the accessible roof, louvre to the dry plantrooms and intake louvre located within the water tank room. There is no assurance provided showing how the board satisfied themselves that the LEV exhaust location does not pose a health and safety risk to operatives on the roof, or any risk of cross-contamination to the intake louvres.
3.3.2.4	Cleanroom CDP Designer - Ventilation Schematics Although the specialist contractor's drawings were received as "Work in Progress" (WIP) for comment only, there are discrepancies between the proposed ventilation design and MEP Specification document '*RND-CDL-XX-XX-RP-Z-090220 - RIBA Stage 3.pdf*. Examples of discrepancies include: • Fan arrangements: The drawings show fan arrangements instead of the agreed-upon fan array. • Fire dampers: The drawings specify fire dampers, whereas fire/smoke dampers were agreed upon. • Control valves: The drawings indicate 2-port motorized valves instead of the agreed-upon PICV (Pressure Independent Control Valve) valves. • Louvre details: The louvre details are not compliant with the SHTM (Smoke and Heat Transfer Management) requirements. • Drainage omissions: The drawings lack drip trays and drainage connections.

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?	Recorded evidence that the design team are experienced and have a comprehensive knowledge of the relevant design standards. 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? Recorded evidence that input from the Health Boards Authorising Engineer for Electrical (AE(E)) has been requested. Evidence that all contractors and sub-contractor competency checks have been completed and signed off.

NHS Scotland Assure Observations:

The response to question 2.1 in relation to the competency of individual designers and members of the project team also applies to this question.

Assurance has been provided that an independent peer review has been carried out with respect to the competency of the companies represented within the project design team and principal contractor by the project managers working on behalf of the health board.

The document titled *'RND-P78-XX-XX-Management Structure Ver 0.3',* dated 20 August 2024, provides assurance that AE role has been appointed to review the FBC proposals. There are a number of items noted as "*awaiting AE approval"* in the tracker document titled *'Review #19 – AR Review (Electrical)'.* This document also relates to OBC stage information.

Documents referenced are:

Email dated 20.01.2023 and titled "GGH: RND Facility – AE Electrical Services"
Document "Radionuclide Dispensary Provision, Gartnavel Hospital, Glasgow, Skills, Knowledge, Experience and Resource"
Document "Review #18 – Client Review MEP Stage 3 info"
Document "Review #19 – AR Review (Electrical) - MEP Stage 3 info"
Document "KSAR_Principal Contractor_BAM_Review"
Document "RND-P78-XX-XX-Management Structure"

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?	Evidence that the designers have presented their co-ordination drawings (BIM model) to the Board. Evidence that the designers have presented each of the main service runs plus plant rooms to the Health Board's FM team. Evidence that the Board has agreed a strategy (percentage) for spare capacity and a documented allowance has been incorporated into the design. 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.

NHS Scotland Assure Observations:

The evidence provided by NHSGGC does not provide assurance that the electrical services design proposals have been reviewed and accepted with respect to the installation providing ease of future maintenance.

Whilst evidence of meetings and workshops to discuss the BIM model have been provided, these relate to the OBC proposals and no assurance has been provided that the access for future maintenance/ minor additions for the current FBC scheme has been reviewed by the key health board stakeholders.

The MEP Stage 4 specification document does not provide assurance that the health boards electrical spare capacity requirements have been included within the FBC stage design proposals. It was confirmed at the KSAR electrical workshop on 13 May 2024 that the required spare capacity of 45% in the sizing of the main incoming electrical infrastructure and 10% in the sizing of the internal electrical capacity, has been taken account of, however this is not documented in the FBC information.

There remains a number of comments noted on FBC electrical proposals where there is no assurance that comments have been incorporated into the design, or which stakeholders have made comments:

- The drawing review tracker contains a number of comments on the MEP designer's electrical information however, the tracker does not indicate any evidence of the comments being addressed and signed off. NHSGGC should ensure that the FBC design proposals have incorporated the stakeholder comments.
- The document titled *'Review #18 – Client Review'* provided by NHSGGC does not give assurance that the key health board stakeholders have reviewed the electrical proposals at FBC stage, as the comments attributed to "NHS/Hub" are untitled.

A project risk still remains at this stage as the electrical containment information provided at FBC stage notes that the cleanroom containment requirements will be detailed as part of the CDP package at the next project stage, therefore the coordination of the electrical services to the cleanroom area will require to be updated to accommodate the cleanroom services.

Documents referenced are:
Minutes dated 19.09.2023 and titled "BIM & Information Management – Client BIM360 Workshop (AE's)"
Minutes dated 22.02.2024 and titled "BIM & Information Management – Client Federated Model Meeting"
Document "Review Report Summary_Summary of all Drawing Reviews across the team on BIM 360"
Document "Review #18 – Client Review MEP Stage 3 info"
MEP Stage 4 Specification
Document "RND-CDL-XX-XX-RP-Z-090210"
Drawing RND-CDL-XX-XX-DR-E-071001-P04

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:
The documents submitted do not provide assurance that the electrical derogations identified have been fully investigated and agreed by all relevant stakeholders due to the inconsistencies across the project documentation.

The Derogation Schedule details a potential derogation with regard to the UPS capacity/ autonomy, however, this document is contradicted by the Stage 4 MEP Specification which confirms that the UPS design is "in abeyance", which is further contradicted by the Stage 4 MEP drawings which confirm a UPS rating. A consistent suite of information is required with respect to the UPS, along with confirmation of the status of the potential derogation.

Documents referenced are:
Technical Risk Schedule
Stage 4 MEP Specification
Derogations Schedule

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. What is the Health Board's resilience strategy for the electrical infrastructure (including dual supplies, renewables, generators, UPS, etc.)?

NHS Scotland Assure Observations:
Whilst assurance has been provided that there is an adequate supply from the local utility infrastructure, there remains a lack of assurance in relation to the electrical resilience strategy, with respect to the UPS.

Assurance is provided with respect to the proposals to extend the existing HV radial feeder cable to supply a new ring main unit which will in turn supply a new 1.25MVA transformer for the Radionuclide Dispensary, with this also supplying the existing Diabetes Centre. The HV study that has been undertaken provides assurance that the existing HV radial feed, along with its protection devices, have been reviewed and deemed acceptable for accommodating the electrical load, whilst maintaining the selectivity of the existing HV protective devices.

Assurance has not been provided with respect to the UPS resilience strategy proposed as the Stage 4 Resilience Report contradicts the Stage 4 MEP Specification with regards to the UPS provision. Refer to NHSSA observation in response to Workbook question 4.3 above.

Documents referenced are:
Document RIBA Stage 4 Resilience Report
Stage 4 MEP Specification
Document RND-CDL-XX-XX-RP-Z-090202 Utilites Tech Note
Document dated 22 May 2023 and titled "Generator Hook Up File Note"
Document titled "Gartnavel Hospital HV Study"
Drawing RND-CDL-XX-XX-DR-E-015000 P02

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.

NHS Scotland Assure Observations:
NHSGGC have provided assurance that there is sufficient provision for emergency supplies during a loss of the incoming primary electrical supply. Layout drawings

have been produced which show the external generator location, the internal UPS equipment layouts and locations of UPS rooms.

The generator strategy is confirmed within the resilience report and on the schematic drawing and is noted as having an electrical capacity to operate 100% of the facility, with on-site fuel storage capable of providing 5 days continuous operation. The secondary power supply from the generator to the main switchboard is confirmed as following a diverse route from the incoming primary electrical supply.

The UPS provision is clarified in the resilience report and on the schematic drawing, however there is still a contradiction with the Stage 4 MEP Specification that was provided that noted that the UPS system is “in abeyance”. This was queried at the electrical workshop on 13 May 2024 and the UPS provision was confirmed as being correct as shown on the drawings and in the resilience report. It was noted that an updated specification will be provided to also indicate this.

Documents referenced are:
Resilience report RND-CDL-XX-XX-RP-Z-090201 P03
Drawing RND-CDL-XX-XX-DR-E-015000 P02
Drawing RND-CDL-XX-XX-DR-E-015002 P01
Drawing RND-CDL-XX-XX-DR-E-071001 P04

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 of strategy.

NHS Scotland Assure Observations:
There is a single new substation being installed as part of the Radionuclide Dispensary project and the information provided gives assurance that the location and sizing of this, and the associated switchgear, has been considered.

It is proposed that a new ring-main unit (RMU) be installed on the existing HV cable that currently supplies the Diabetes Centre. From the new RMU the intention is to re-supply the existing Diabetes Centre transformer and also take a new HV cable to supply the new transformer for the Radionuclide Dispensary. The new transformer for the Radionuclide facility is sized at 1.25MVA with calculations being provided to show that this has sufficient electrical capacity to feed the Radionuclide facility and also supply the Diabetes Centre, as the post-project intention is to remove the existing Diabetes Centre transformer and supply the building from the new Radionuclide transformer. As well as the documents referenced below this strategy was discussed at the Electrical Workshop on 13 May 2024.

Documents referenced are:
Drawing RND-CDL-XX-XX-DR-E-015000 P02

Drawing RND-CDL-XX-XX-DR-E-015002 P01 *Drawing RND-CDL-XX-XX-DR-E-015004 P03*

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:
Assurance has been provided to demonstrate that there is a strategy with regard to the location of the switchrooms on the project.

The general premise of the switchroom strategy is to locate all of the main switchgear within the building in the first-floor dedicated plant areas. This includes positioning the UPS and its associated static switches and the power factor correction equipment. There are a number of distribution boards mounted in the ground floor accommodation which serve lighting and power in the localised areas. The containment drawings are developed to show an acceptable distribution strategy both horizontally and vertically within the facility.

Documents referenced are:
Drawing RND-CDL-XX-XX-DR-E-015000 P02
Drawing RND-CDL-XX-XX-DR-E-021001 P03
Drawing RND-CDL-XX-XX-DR-E-071001 P04

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:
NHSGGC have confirmed that there is no Medical IT distribution equipment within the Radionuclide Dispensary.

Documents referenced are:
N/A

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:
Assurance has been provided that a suitable distribution and containment strategy has been developed to the expected FBC level of information.

The designers have demonstrated a containment strategy that utilises heavy duty cable ladder throughout the first-floor plant areas for the sub main cabling, which also runs vertically to the ground floor level, and subsequently the incoming cable position, to route the main and secondary incoming cabling. A horizontal and vertical distribution strategy is also demonstrated by the use of cable tray for fire alarm, data and security systems along with cable trunking for the general lighting and power services.

The containment layouts note that the cleanroom specialist shall fully develop the containment strategy in these areas and NHSGGC should review these to ensure that the CDP distribution strategy is aligned to the same specification as the MEP designers distribution strategy.

Documents referenced are:
Drawing RND-CDL-XX-XX-DR-E-071001 P04

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 FBC, are these sufficient do the meet the requirements of the project, guidance and the design of the system? Has sufficient time been allocated for a full commissioning program?

NHS Scotland Assure Observations:
The evidence provided does not provide assurance that the health board has developed the electrical commissioning proposals at FBC stage.

The commissioning validation document '*Document P87 RND Commissioning Validation 300124'* presented notes the key health board personnel that are engaged in the commissioning planning process however, this document relates to the OBC stage and it is not clear if there are any updates required for FBC stage.

The example commissioning programme provided shows that a commissioning time period has been considered at FBC stage and it was confirmed by NHSGGC at the workshop meeting held on 13th May 2024 that the project specific programme will take account of, and be updated following receipt of, the CDP proposals.

Documents referenced are:
Document P87 RND Commissioning Validation 300124
Draft commissioning programme and email dated 13.05.2024 and titled "GGH: RND Facility- FBC Stage KSAR Electrical Workshop".

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?	Has the Health Board commenced its planning and recorded how it will ensure appropriate trained staff and appointment of AE for the project and is it clear how this project will interface with the Health Board existing arrangements for management of the electrical installations, inclusive of third party providers?

NHS Scotland Assure Observations:
NHSGGC have provided assurance that they have commenced their planning, at FBC stage, for the electrical governance protocols required for the operational phase of the Radionuclide Dispensary.

NHSGGC have confirmed, in the email referenced below, that existing AE and AP appointments and roles shall cover the new Radionuclide Dispensary.

In the document titled '*Gartnavel General Radionuclide Dispensary, FBC Stage KSAR Workbook Response, Section 4- Electrical System',* NHSGGC confirm that the Gartnavel Estates Team already have responsibility for the PPM and Governance strategy for the existing RND facility. These proposals show the existing facility moving from an isolated site, onto the Gartnavel Healthcare Campus. In addition, the existing facility was at the end of its serviceable life. The new facility will be covered by a site wide strategy regarding the systems governance.

Documents referenced are:
Email from NHSGGC dated 9/05/2024 and titled "RND Facility – FBC stage KSAR Electrical".
Document titled "Gartnavel General Radionuclide Dispensary, FBC Stage KSAR Workbook Response, Section 4- Electrical Systems".

Workbook Ref No.	Areas to probe	Evidence expected
4.12	Evaluation of the Health Boards planned preventative maintenance (PPM) proposals.	Has the Health Board commenced its planning and recorded the PPM requirements and approach to ensure appropriate levels of maintenance, comprehensive statutory compliance and robust management processes, inclusive of third party providers?

NHS Scotland Assure Observations:
The PPM template document provided does not provide assurance that the health board has satisfactorily commenced the planning and recording of the projects PPM requirements.

The evidence document provided is incomplete and does not contain any PPM templates and, at this issue stage, only notes the PPM codes for the various services elements.

Documents referenced are:
Document "RND PPM Templates"

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	A Stage 4 MEP report has not been developed as part of the FBC submission. It was noted at the KSAR weekly progress meeting of 2nd May 2024 that the relevant information is contained within the Particular Specification section of the Stage 4 MEP Specification, and it was agreed that NHSGGC would provide an extract from this specification that would form a Stage 4 report for review.
3.4.2.2	NHSSA would advise the following comments on the Stage 4 MEP Specification, Part B Particular Specification: 1. There is a contradiction in Clause 1.3 which notes firstly that the specification covers fire detection and alarm in the classified areas, however it then notes that fire detection and alarm in these areas is not covered by the specification as it is provided by the cleanroom designer as part of their CDP package. 2. Clause 5.5, which notes a new 1.25MVA transformer being installed for the radionuclide building contradicts drawing '*RND-CDL-XX-XX-DR-E-15000 P02'* which indicates a 500kVA transformer being

	installed. Clause 5.5 also contradicts Clause 8.1.2 with respect to transformer size. 3. Clause 5.5, which notes a new 500kVA generator being installed contradicts drawing '*RND-CDL-XX-XX-DR-E-15000 P02'* which indicates a 600kVA generator. 4. Refer to observation associated with question 4.3 regarding the UPS specification mentioned in Clause 8.1.2. 5. The specification document does not confirm the inclusion of the electrical spare capacity noted as being required in the NHSGGC ACR document.
3.4.2.3	The document '*RND-CDL-XX-XX-RP-SY-70232 Renewable Energy Feasibility Study* 'notes a design value of 5w/m2 in Clause 3.3 for the lighting power density, however this is contradicted by Clause 3.7 in Part B of the Stage 4 MEP Specification which notes a lighting density value of 9w/m2.
3.4.2.4	The Fire Alarm Strategy Report, '*RND-CDL-XX-XX-RP-Z-90207'*, that is provided is noted as a Stage 3 document and appears to be a draft report containing several items of highlighted text. There is also no mention of the proposed evacuation strategy, and the fire alarm cause and effect, within the report.
3.4.2.5	Two differing general lighting and emergency lighting layouts have been provided as part of the FBC information issue ('*RND-CDL-XX-XX-DR-E-30001 P01'* and '*RND-CDL-XX-XX-DR-E-031001 P01'* respectively).
3.4.2.6	Document '*RND-CDL-ZZ-00-T-E-15500 General Lighting Calculations*' only contains calculations for the ground floor area, with no calculations provided for the first floor.
3.4.2.7	Document '*RND-CDL-ZZ-00-T-E-15502 Emergency Lighting Calculations*' only contains calculations for the ground floor area, with no calculations provided for the first floor.
3.4.2.8	A metering strategy document has not been provided outlining the philosophy of the metering arrangements.

3.5 Medical Gases

3.5.1 Medical Gases: KSAR Observations

Workbook Ref No.	Areas to probe	Evidence expected
5.1	Has the Health Board completed competency checks on the medical gases consultant designers?	Recorded evidence that the design team are experienced and have a comprehensive knowledge of the relevant design standards. 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? Recorded evidence that input from the Health Boards Authorising Engineer for Medical Gases (AE(MG)) has been requested. Evidence that all contractors and sub-contractor competency checks have been completed and signed off.
NHS Scotland Assure Observations: It is not proposed to install any medical gas installations in the Radionuclide Dispensary. ***Documents referenced are:*** *N/A.*		

Workbook Ref No.	Areas to probe	Evidence expected
5.2	How does the Health Board assure itself that all variations / derogations' which may be required to medical gas systems are being investigated and agreed by all parties before they are instigated?	Evidence that each variation / derogation has a detailed technical analysis and has been referred to the Board and agreed with their medical gases management group, clinical, Estates, infection control and FM teams.
NHS Scotland Assure Observations: It is not proposed to install any medical gas installations in the Radionuclide Dispensary. ***Documents referenced are:*** *N/A.*		

Workbook Ref No.	Areas to probe	Evidence expected
5.3	How does the Health Board ensure that medical gas services are 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	Evidence that the designers have presented their co-ordination drawings (BIM model) to the Board. Evidence that the designer has presented each of the main service runs to the Board's FM team.
NHS Scotland Assure Observations: It is not proposed to install any medical gas installations in the Radionuclide Dispensary. ***Documents referenced are:*** *N/A*		

Workbook Ref No.	Areas to probe	Evidence expected
5.4	Is there evidence of the Health Board developing medical gases commissioning proposals?	Evaluation of the suitability of the proposed plans in the context of the FBC are these sufficient do the meet the requirements of the project, guidance and the design of the system?
NHS Scotland Assure Observations: It is not proposed to install any medical gas installations in the Radionuclide Dispensary. ***Documents referenced are:*** *N/A.*		

Workbook Ref No.	Areas to probe	Evidence expected
5.5	Has the Health Board started developing its medical gases governance arrangements for the operational phase?	Is the Health Board considering how it will ensure appropriate numbers of trained staff (AP and CP) and AE(V) for the project? And is it clear how this project will interface with the Board existing arrangements for management of the medical gases installations?

NHS Scotland Assure Observations:
It is not proposed to install any medical gas installations in the Radionuclide Dispensary.

Documents referenced are:
N/A.

Workbook Ref No.	Areas to probe	Evidence expected
5.6	Is there recorded evidence of a strategy for bulk gas and bottle gas storage?	Floor plans with vacuum insulated evaporator (VIE) locations highlighted plus simple schematic of strategy. Confirmation that the medical gas strategy is adequate. Floor plans with pipework distribution routing and manifold locations.

NHS Scotland Assure Observations:
It is not proposed to install any medical gas installations in the Radionuclide Dispensary.

Documents referenced are:
N/A.

Workbook Ref No.	Areas to probe	Evidence expected
5.7	Evaluation of the Health Boards planned preventative maintenance (PPM) proposals	Has the Health Board commenced its planning and recorded the PPM requirements and approach to ensure appropriate levels of maintenance, comprehensive statutory compliance and robust management processes?

NHS Scotland Assure Observations:
It is not proposed to install any medical gas installations in the Radionuclide Dispensary.

Documents referenced are:
N/A.

3.5.2 Medical Gases: 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.

N/A.

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?	Recorded evidence that the design team are experienced and have a comprehensive knowledge of the relevant design standards applicable to healthcare premises. Recorded evidence that input from the Health Boards Fire Advisors has been requested. Evidence that all contractors and sub-contractor competency checks have been completed and signed off.
NHS Scotland Assure Observations: NHS Scotland Assure (NHSSA) Fire Safety is satisfied by the level of assurance provided by NHSGGC. NHSGGC has provided a copy of a competency report that provides assurance that they have carried out adequate checks to ensure that the fire engineering consultants have the requisite technical knowledge and experience**.** ***Documents referenced are:*** *Competence SKE&R_Designer_Review Report PDF document*		

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?	Is there documented evidence that fire suppression systems have been considered for life safety and property protection? Is progressive horizontal evacuation available for all patient areas that continuously moves away from the fire area? Does the design considerations of the fire and detection system, for in-patient facilities, provide L1 coverage including voids?

		Does the design provide for a compliant emergency lighting system? Are free swing arm self-closers fitted to all leafs of doors serving sleeping accommodation? Have escape lifts been considered for the evacuation of patients and others with mobility issues? Are multi sensor fire detectors installed to reduce the occurrence of unwanted fire alarm signals? Are there adequate storage facilities to ensure escape routes are not used for this purpose? Are measures in place to provide safe charging of electrical and personal electronic equipment? In addition to the prescribed list in the Building Standards Technical Handbook, have fire hazard rooms been designated based on fire load? 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?

NHS Scotland Assure Observations:

NHSScotland Assure Fire Safety (NHSSA) is satisfied by the level of assurance provided by NHSGGC.

NHSGGC has provided a copy of the current fire strategy. The fire strategy states that the building '*will generally be designed in accordance with the 2023 Non-Domestic Technical Handbook's prescriptive recommendations for factory buildings. The additional recommendations of Annex 2.B have not been considered as the building use is considered Factory (Class 1).*'

NHSSA is satisfied with the classification of the building, and as there is no patient access, we agree that the building should be designed in accordance with the Technical Handbook Non-Domestic, however, NHSGGC have been advised by NHSSA that they may wish to include particular aspects of NHSScotland Firecode to protect the infrastructure and ensure business continuity.

Documents referenced are: -
R1 Issue 4 Radionuclide Department, Glasgow PDF Fire Strategy.

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 advisors, NDAP group, clinical, engineering, Infection Prevention and Control, FM teams and regulatory authorities.

NHS Scotland Assure Observations:
The Fire Strategy and the derogation schedule do not list any variances from the '*Technical Handbook Non-Domestic'*, therefore this question is not applicable.

Documents referenced are:
R1 Issue 4 Radionuclide Department, Glasgow PDF Fire Strategy.
RDN-BAM-XX-XX-SH-W-0001 - Technical Risk Schedule - 23-02-24
RDN-BAM-XX-XX-SH-W-0001 - Derogation Schedule - 15-08-24

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?	Safe and adequate access has been allocated on both sides of all fire dampers for maintenance.

NHS Scotland Assure Observations:
NHS Scotland Assure (NHSSA) Fire Safety is satisfied by the level of assurance provided by NHSGGC.

The Fire Strategy states that '*Services penetrating fire rated walls/floors will maintain the fire resistance of the wall or floor they penetrate via fire rated construction and/or fire stopping/dampers*.' The ventilation drawings provided by NHSGGC *'RND-CDL-XX-XX-DR-M-010002'* and the report titled '*RIBA Stage 3 Mechanical, Electrical, and Public Health Specification'* provide information detailing the type of dampers to be installed and the access requirements for maintenance and inspection.

As noted previously, a substantial element of the ventilation system is a CDP and the detailed design is still to be developed. At the time of the KSAR a full review of access provision for fire dampers is not possible.

Documents referenced are:

R1 Issue 4 Radionuclide Department, Glasgow PDF Fire Strategy. *RND-CDL-XX-XX-DR-M-010002* *RIBA Stage 3 Mechanical, Electrical and Public Health Specification 1035575.* *(RND-CDL-XX-XX-RP-Z-090220)*

Workbook Ref No.	Areas to probe	Evidence expected
6.5	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 that the Health Boards fire advisors and NDAP team are satisfied with the design proposal.
NHS Scotland Assure Observations: NHS Scotland Assure (NHSSA) Fire Safety is satisfied by the level of assurance provided by NHSGGC. The Fire Strategy states that '*The stair serving the First Floor and Roof will be designed as a fire fighting stair and will be provided with one 0.5m2 ventilator at each storey on the external wall*.', and this aligns with the guidance contained in the '*Technical Handbook Non-Domestic*.' ***Documents referenced are: -*** *R1 Issue 4 Radionuclide Department, Glasgow PDF Fire Strategy.*		

Workbook Ref No.	Areas to probe	Evidence expected
6.6	Has the Health Board started the development of the fire system outline commissioning proposals?	Is there an established fire management group that will ensure the fire strategy is adhered to?
NHS Scotland Assure Observations: NHS Scotland Assure (NHSSA) Fire Safety is satisfied by the level of assurance provided by NHSGGC. ***Documents referenced are:*** *RND KSAR FBC response Section 6*		

Workbook Ref No.	Areas to probe	Evidence expected
6.7	Has the Health Board started its early thinking for the Fire Safety	Has the Health Board commenced its planning and recorded how it will ensure appropriate trained staff and

	arrangements for the operational phase?	appointment of Fire Officers for the project in the operational phase and is it clear how this project will interface with the Health Boards existing arrangements for management of the Fire Safety?
NHS Scotland Assure Observations: NHS Scotland Assure Fire Safety (NHSSA) is satisfied by the level of assurance provided by NHSGGC. **Documents referenced are: -** *RND KSAR FBC response Section 6* *Existing fire action plan*		

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	The fire strategy R1 issue 4 states '*It is the intention that there will be no Place of Special Fire Risk within the building. This will be confirmed by the design team.'* Documents referenced are: *R1 Issue 4 Radionuclide Department, Glasgow PDF Fire Strategy.*
3.6.2.2	It was noted that the HVAC schematics show alcohol extracts, however, they do not provide any detail or an explanation regarding the composition of alcohol and air within the extract system. Documents referenced are: *RND-BAS-XX-XX-SC-M-650001 - HVAC Schematic*
3.6.2.3	NHSGGC has advised NHSSA that all radioactive substances will be contained within safety cabinets or lead-lined containers during manufacturing and storage. Documents referenced are: *RND-OBE-XX-XX-SC-A-28510_Extract Derogations*

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	How does the Health Board demonstrate that there is an effective infection prevention and control management structure in place? 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?	The Health Board provides evidence that there is an IPC Management Structure with the necessary expertise and leadership skills to support the design work The Health Board provides evidence that there is an IPC Management Team with the necessary expertise and leadership skills to support the project. Executive board reports or minutes. Risk registers or equivalent, Minutes from operational and governance groups, (and action points). Structure of infection prevention and control team (IPCT) and qualifications held, previous experience supporting new build projects. 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. 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. Evidence that fixtures fitting and equipment have not been proposed for the project that would represent an identified IPC risk. Evidence that all

		contractors and sub-contractor competency checks have been completed and signed off.

NHS Scotland Assure Observations:

NHSGGC have provided assurance regarding their IPC management structure and of approved supporting experienced IPC leads' inclusion in project operational group meetings. However, assurance has not been provided regarding the IPC strategy and workplan to demonstrate IPC governance structures which would demonstrate how the project is reported through the infection control committee to the board and HAI executive lead.

The Derogation Schedule and Derogation Tracker identified by NHSGGC for the project have been provided and the board have provided assurance that IPC leads have had the opportunity to review the document. However, assurance has not been provided regarding IPC approval and sign off of any of the risks as part of the collective project team.

NHSGGC have shown through the information provided, that there is collaborative working between the project team and stakeholders, inclusive of the IPCT, when considering both design and equipment for the proposed facility. Whilst specialist knowledge for equipment for the cleanroom will be provided by the clinical team and guided by the Medicines and Healthcare Products Regulatory Agency (MHRA), IPC leads will be involved with the review of fixtures and fittings for the remainder of the facility**.**

Documents referenced are:
IPC Chart January 2024.doc
Folder PEP v3.0
2024.02.24 Meeting Matrix V4.pdf
202.02.27 Delivery Group V2.pdf
2024.02.29 IPC Stakeholder Mtg.docx
P78 RND Stakeholder Mtg IPC 311023.docx
2023.08.04 IPC Facilities Review Meeting 3 combined.pdf
RDN-BAM-XX-XX-SH-W-000-Applicable Guidance Derogation-Technical Risk Tracker (003).pdf
RDN-BAM-XX-XX-SH-W-0001-Technical Risk Schedule-10-02-24.pdf
2023.12.15 RND Risk Register Rev L.pdf

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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?	The health board provides evidence • The 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. The board can demonstrate IPC advisors have been included within the design phase and development of HAISCRIBE.

NHS Scotland Assure Observations:
Assurance has been provided by NHSGGC that IPC leads have been involved in the project design phase through the minutes provided for the project delivery groups, the Project Board and in the development of the HAISCRIBE risk assessment. The proposed facility is not a patient facing facility but will manufacture radionuclide therapies for patients across the West of Scotland. The project team recognise this but also acknowledge the potential HAI risks to high risk clinical, laboratory and charity adjacencies, however, assurance has not been provided regarding engagement with these areas, and there is no evidence of any formal discussions having taken place with senior teams.

Documents referenced are:
2024.01.04 HaiScribe Stage 2 Version J.pdf
202.02.27 Delivery Group V2
2023.08.04 IPC Facilites Review Meeting 3 combined.
P78 RND Stakeholder Mtg IPC 311023
2024.02.24 Meeting Matrix V4

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:
NHSGGC have provided assurance regarding designers' roles and responsibilities in relation to infection prevention and control and the expected guidance to be followed. However, no assurance was provided which demonstrated acknowledgement that guidance had been reviewed or followed by the designers.

There was no evidence of contractor roles and responsibilities in relation to IPC guidance or acknowledgement of having received this information. The board provided documentation which outlined competencies for some of the contractors, however, the document did not include all contractor's or information on any relevant healthcare facility experience.

Documents referenced are:
RND ACRs Version 8B.pdf
Competence SKE&R_Designer_Review Report.pdf

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 and manufacturers' instructions.

NHS Scotland Assure Observations:
NHSSA is satisfied by the level of assurance provided by NHSGGC. As the proposed facility is a specialised environment, equipment specification is determined largely by the Medicines and Healthcare Products Regulatory Agency (MHRA) with RND clinical staff input, therefore, the IPCT have not been involved in the review for procurement of cleanroom items. NHSGGC have provided assurance that furniture, fixtures and fittings will be determined through stakeholder engagement inclusive of the IPCT.

Documents referenced are:
RND KDSAR FBC response Section 7.pdf
RND-NHS-XX-XX-WI-K-12407 P10D -RND User Requirements Spec 2024.02.pdf
2023.08.04 PC Facilities Review Meeting 3 combined.pdf

Workbook Ref No.	Areas to probe	Evidence expected
7.5	Evaluation of the Health Boards planned preventative maintenance (PPM) proposals for equipment issues and the Built Environment in relation to IPC issues.	• Has the Health Board considered how they will undertake assessment of and report cleanliness of the proposed facility and equipment within the healthcare environment, this is inclusive of planned programmes of maintenance? • Does the Health Board plan to seek feedback from patients, staff and visitors for their views? • Is it clear how the work for this project will interface with the Health Board existing arrangements for management of the IPC in the Built Environment in the wider estate?

NHS Scotland Assure Observations:
NHSGGC provided a blank template as evidence of the process to be followed when considering PPM of the proposed facility, however, this does not provide assurance that the health board has commenced the planning of maintenance programmes including how these will interface with existing arrangements. NHSGGC have been advised by NHSSA to provide evidence of board meeting minutes which will offer assurance that discussions are taking place to plan and agree revenue and resource and how IPC in the built environment will be managed alongside the existing estate.

Documents referenced are:
RND PPM templates and codes.xls

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	**Design** Assurance has not been provided regarding IPC approval of the current rooms (including cleanroom) as well as water and ventilation designs for the facility. Noted IPC engagement as part of stakeholder meetings v6 layouts were signed off. At the IPC workshop (15th May 2024) NHSGGC advised that further updated drawings were available and will require approval and sign off by all stakeholders including IPC.
3.7.2.2	**Defects and snagging process** Assurance was not provided regarding the proposed snagging and defect process for the project. IPC 1.01 – Project plan – Appendix B - notes defects and snagging process for project. At the IPC workshop (15th May 2024) NHSGGC advised the formal process has yet to be developed but will be managed through the BIM 360 quality management system and will form part of the construction phase plan.
3.7.2.3	**Tap selection** Assurance was not provided regarding the final tap selection for the facility. Discussions were reported at the IPC workshop (15th May 2024) as ongoing within the board via the water safety group for final approval.
3.7.2.4	**Water filtration system** Assurance was not provided regarding the final water filtration system selection for the facility. Discussions were reported at the IPC workshop (15 May 2024) as ongoing within the board via the water safety group for final approval.

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

https://www.nss.nhs.scot/media/1540/nhs-scotland-assure-assurance-service-master-glossary-v10.docx