NHS Greater Glasgow and Clyde	**Paper No. 23/10**
Meeting:	**NHSGGC Board Meeting**
Meeting Date:	**28 February 2023**
Title:	**Radionuclide Dispensary Replacement – Outline Business Case (OBC) Submission Approval**
Sponsoring Director/Manager	**Tom Steele – Director of Estates & Facilities** **Ann Traquair Smith, Director of Diagnostics**
Report Author:	**John Donnelly, Property & Capital Planning**

1. Purpose

The purpose of the attached paper is to:

Seek approval for submission of the attached updated Outline Business Case (OBC) v2.2 to the Scottish Government Capital Investment Group (SGCIG). The OBC has gone through the relevant NHSGCG governance approvals as noted in Section 7.

If agreed at the board the OBC will aim for submission to the meeting of SGCIG on 22nd March 2023.

2. Executive Summary

The paper can be summarised as follows:

This OBC details the case to create a modern Radiopharmacy facility to continue the manufacture of radiopharmaceutical medicines and distribution of them to Nuclear Medicine Departments throughout Health Boards in West Central Scotland. It clearly defines the clinical imperative that this is necessary to meet the present and future levels of production and distribution in line with the needs of the patient population.

To maintain the ability to manufacture radiopharmaceuticals it is essential to meet the regulatory requirements the Office for Nuclear Regulation (ONR), Scottish Environmental Protection Agency (SEPA), the Health and Safety Executive (HSE) and Medicines and Healthcare Products Regulatory Agency (MHRA).

The existing Radionuclide Dispensary (RND) is a standalone building on NHS Greater Glasgow & Clyde's former Western Infirmary site. Since April 2016, the grounds on which the current RND Building is located are under ownership and management of University of Glasgow, from which NHSGGC operate and maintain the current RND Unit via a lease

agreement with the University. It is not possible to replace the current facility on the current site due to the University's plans for the site.

Operating from this facility for the last 30 years, the RND provides a daily service manufacturing radiopharmaceutical medicines. This level of production is the largest centralised NHS Radiopharmacy in the UK manufacturing 35,000 individual patient doses annually.

Nuclear Medicine is used diagnostically to visualise physiological processes in the body. In most pathological processes physiological change precedes anatomical change and Nuclear Medicine techniques can often diagnose illness and monitor response to treatment before other imaging techniques are able to. The wide range of Radiopharmaceuticals and techniques used make diagnostic Nuclear Medicine an essential tool on many different care pathways, from the assessment of renal disease through cancer staging to the diagnosis of Alzheimer's and Parkinson's.

Therapeutic Nuclear Medicine techniques have a widening role in a growing number of care pathways where they are used both palliatively and potentially curatively to treat conditions including Thyrotoxicosis, Neuroendocrine tumours, bone and liver metastases and a range of other diseases. The delivery of Nuclear Medicine is dependent on the safe and secure supply of radiopharmaceuticals provided by the Radionuclide dispensary. As such the dispensary is an integral point on the care pathway of 35,000 patients per year.

Need for Change:

Whilst in the current dated facility it is not possible to adapt, extend, modernise or implement advancements in technology without complete loss of production. This means some areas are no longer utilised, compromises in compliance processes are required and ongoing maintenance is made difficult.

Maintenance is further complicated as much of the operational systems are original, 30+ years old and beyond their life expectancy. All of these items are noted in recent MHRA reports on the facility and have required some modifications to the existing equipment and facility to ensure it can continue to meet standards in the short term. As modifications have been made and accepted on an interim basis, maintaining the MHRA's support for a manufacturing licence is noted as an ongoing NHSGGC risk. A specific project team meets regularly to manage and mitigate this risk.

As highlighted the main issues causing the need for change are in direct response to problems with the existing facility and the resulting impact is the inability to maintain the MHRA manufacturing licence and therefore support the clinical services noted above.

However while maintaining the MHRA licence is a key driver for change due to the type of facility, there are wider ranging compliance requirements that the current facility is at risk of not meeting, which may impact on the RND's legal ability to manufacture, including:

- Health Building Note 14-01 Medicines management: Pharmacy and Radiopharmacy facilities
- NHS Pharmaceutical Quality Assurance Committee - Design, Build and Maintenance of Pharmacy Aseptic Units
- ONR Guide – Office for Nuclear Regulation: "Carriage of Dangerous Goods and use of Transportable Pressure Equipment Regulations 2009" and "The Ionising Radiation Regulations 2017(IRR17)"

- MHRA, Medicines and Healthcare Products Regulatory Agency; "Rules and Guidance for Pharmaceutical Manufacturers and Distributors 2017"
- SEPA. "Environmental Authorisations (Scotland) Regulations 2018"

OBC Project Development

Following approval of the Initial Agreement the design was developed to an advanced level before it was confirmed that it would need to be included in the new NHSS Assure process. The NHSS Assure Key Stage Assurance Review (KSAR) assessment, which concluded in June 2022, identified a significant number of areas that the proposals would need to be modified to attain "supported" status. Scottish Government confirmed that it would not consider the OBC until a "supported" status was achieved.

The new Sustainable Design and Construction Guide (SHTN 02-01), was issued by Scottish Government on 17th August 2022 under DL(2022)27. The Director Letter outlined that the guide was mandatory for all new-builds from that date. It was confirmed by NHSS Assure that the new guide would be applicable to this project irrespective of its level of development at that stage.

Work was caried out between June 2022 and December 2022 to address the issues in the KSAR and the application of SDAC, namely in regard to Mechanical, Electrical and Plumbing systems with particular focus on ventilation and the requirements for 100% resilience, all of which require additional floor area. The resultant updated design was re-costed. OBC v2.2 reflects these updates and is presented for approval.

Programme

The provision of the new facility is time-critical in order to maintain the support of the Medicines and Healthcare Products Regulatory Agency (MHRA) who are sighted on elements of risk associated with the current facility and arrangements. It was previously anticipated the new facility would be operational during Q4 2024. There has inevitably been some delay whilst the re-design process noted in the previous section has been undertaken. The current programme is noted below.

OBC Approval	March 2023
FBC Approval	February 2024
Site Start	March 2024
Completion	May 2025
Service Commencement	July 2025*

*The delayed service commencement is a risk to the ongoing support of the MHRA and the ability to continue to manufacture in the existing facility. Some work has been undertaken to explore if the development of an advance works package could offer an earlier completion. This package would include groundworks, utilities and drainage works. This would require an instruction in advance of final Full Business Case (FBC) approval but could bring forward the completion date by up to 3 months. This would be subject to further discussion and approval at a point when market testing has been concluded and there is a higher degree of certainty on the final price.

Cost

The project will be centrally funded by Scottish Government.

The predicted costs prior to the NHSS KSAR review were **£13,178,863.** The total cost of the project has increased significantly due to a number of factors including KSAR and SDAC compliance, revised briefing and increased inflation and Optimism Bias allowances, reflecting the volatility in the current market reflected in pricing and tender returns.

The total costs can be summarised below:

Construction Cost	£10,967,700
Inflation Provision	£893,868
Risk Allowance	£889,618
Enabling Works	£130,000
PSCP Fee	£510,047
Design Team Fees	£1,275,119
Total Construction	**£14,665,352**
Equipment Total	£1,081,000
NHS Direct Costs	£440,000
VAT	£3,237,470
Optimism Bias	£1,456,862
Total Costs	**£20,881,683**

The increased costs have been advised by the Board's independent cost advisor. These costs, and particularly the rates used, within the cost plan have been vigorously challenged by the Board's capital planning team. The cost advisor maintains that the construction cost rates reflect those seen in tenders in the last quarter and current market intelligence.

We have discussed the updated costs with Scottish Government and they have asked that a detailed cost report, with evidence of the basis of rates accompanies a submission of the OBC. This has now been instructed and will be available prior to submission to SGCIG. Because the facility is unique, and has been developed to meet newly applied standards, there is no directly comparable completed project to easily benchmark costs against. A second cost consultant has now been appointed to review the information and allow further independent assurance around the advice provided.

Risk

Because a significant level of detailed review has taken place during OBC, the risk of future change requirements is reduced in respect of the client group, NHSS Assure and Health Facilities Scotland.

- Site investigation surveys have been undertaken and the existing ground conditions are well understood and reflected in the current cost plan.

- The proposals have been shared with GCC Planning and have received positive response, reducing the likelihood of any significant changes required to achieve Planning Consent.

- Building Warrant is staged and an element of risk remains until the detailed technical design is approved. There are no known areas of contention at this point, and no significant issues are anticipated.

- An inflation risk allowance of 8% has been included for the remainder of the project. This is in line with current indexes, albeit there are some indications that inflation may reduce over the coming twelve months.

Irrespective of the above the costs plan includes several risk allowances. The contractor's costs include a 7.5% risk allowance of £889,618. A client-held risk allowance is also included in the form of an Optimism Bias figure of £1,456,862.

Revenue
It is anticipated that Scottish Government will fund the capital element of the project, plus the additional depreciation costs of c. £0.5-0.7m per year. These depreciation costs are additional as the existing facility and equipment was fully written down and impaired when NHS GGC ceased to own the site and the equipment reached the end of its useful life.

Other additional revenue cost implications are minimal as the clinical service is expected to be mostly "lift and lay" with the exception of a new member of staff (Band 3) to operate isolators which are not part of the existing facility at £41k per year. However, there are additional facilities costs of between £0.25-0.35m compared with current funding, both sets of additional costs are anticipated to be funded regionally across WoS Boards and will be submitted to WoS Boards for support following OBC approval. As such, there is no significant revenue implication to our Board from this development.

3. Recommendations

The Great Glasgow Health Board is asked to consider the following recommendation:

- Approve the OBC to proceed to the SGCIG based on approval from the NHSGGC groups noted in section 7.

4. Response Required

This paper is presented for, and recommended for, **approval**.

5. Impact Assessment

The impact of this paper on NHSGGC's corporate aims, approach to equality and diversity and environmental impact are assessed as follows: *(Provide a high-level assessment of whether the paper increases the likelihood of these being achieved.)*

- **Better Health** **Positive**
- **Better Care** **Positive**
- **Better Value** **Positive**
- **Better Workplace** **Positive**
- **Equality & Diversity** **Positive**
- **Environment** **Positive**

6. Engagement & Communications

The issues addressed in this paper were subject to the following engagement and communications activity:

The previous OBC details extensive engagement and consultation at all stages with a wide range of stakeholders in its development, including:

- Clinical, management and support service teams across NHSGGC
- Third Sector representatives
- West of Scotland Boards
- National and Regional Pharmacy Services
- Scottish Government
- NHSS Assure

The detail of this engagement is contained within the submission. Engagement has continued whilst developing the updated proposals.

7. Governance Route

The NHSGGC governance route for sign-off of the OBC is detailed below. The OBC has been circulated to the following groups and approved.

- RND Project Board – February 2023
- Capital Planning Group – February 2023
- Property and Asset Strategy Group – February 2023

The OBC was approved at:

- Corporate Management Team on 2nd February 2023
- FP&P on 7th February 2023

The OBC is currently for approval at:

- NHSGGC Board on 28th February 2023

The OBC will be submitted for approval to:

- SG Capital Investment Group meeting to be held on 22nd March 2023

8. Date Prepared & Issued

The OBC was developed over the period September 2021 to January 2023 and issued on 27th January 2023.

End.

NHS
Greater Glasgow and Clyde

Outline Business Case

Radionuclide Dispensary

Project Reference: 18CP002

January 2023

Version Control

Version	Changes	Date	Author
0.1 DRAFT	Initial draft	14 May 2020	M Cassells
0.2 DRAFT	Revised to reflect inclusion of site selection	26 Oct 2020	T Mills
0.3 DRAFT	Updated and issued for comment	17 Dec 2021	T Mills
0.4 DRAFT	Updated to include Economic & Financial cases	04 Apr 2022	T Mills
Revision 1.0	Final version for submission to governance process	21 Apr 2022	T Mills
Revision 1.1	Update to Section 5.8 and Tables 30 and 31	25 Apr 2022	T Mills
Revision 2.1	Design refresh and OBC update	27 Jan 2022	I Docherty
Revision 2.2	Minor typos updated	2 February 2023	A Baillie

Contents

1 INTRODUCTION

The purpose of this Outline Business Case is to identify the preferred option for implementing the strategic / service solution confirmed at Initial Agreement stage remains valid. It will demonstrate that the preferred option optimises value for money and is affordable. It will also set out the supporting commercial and management arrangements to be put in place to successfully implement that option.

To confirm this, the Outline Business Case will address each of the following questions:

- Does the proposal support a compelling case for change; providing national and local strategic synergy? – the **STRATEGIC CASE**.
- Will the proposal optimise value for money? – the **ECONOMIC CASE**.
- Is the proposal commercially viable? – the **A summary** of the results of the economic and risk appraisals are presented in Table 19. This confirms the selection of Solution 2 Gartnavel New Build as the preferred option to be taken forward.

- COMMERCIAL CASE.
- Is it financially affordable – the **FINANCIAL CASE**.
- Is it achievable and deliverable? - the **MANAGEMENT CASE**.

As identified in the preceding Initial Agreement stage, a replacement facility located with NHS Greater Glasgow & Clyde's geographical footprint was identified as the preferred option. Works since the completion of the Initial Agreement have identified the Gartnavel General Hospital as the preferred site. The content of this document demonstrates the case for this decision and the outline design options have been based on developing the option of the Gartnavel site.

2 STRATEGIC CASE

2.1 Strategic Case: Overview

The main purpose of the Strategic Case at OBC stage is to confirm that the background for selecting the preferred strategic / service solution for the Radionuclide Dispensary (RND) at Initial Agreement stage has not changed. It will do this by revisiting the Strategic Case set out in the Initial Agreement whilst responding, as appropriate, to the following questions:

Strategic Case (OBC)		
	Question	**Response**
Strategic Case	Have the current arrangements changed?	Confirm details on (for example): • Proposed changes to service model • Service activity changes • Service provider & workforce changes • Impact on Board's assets
	Is the case for change still valid?	Summary confirmation of the: • Need for change • Investment objectives
	Is the choice of preferred strategic / service solution(s) still valid?	Confirmation of the preferred strategic / service solution(s)

2.2 Have the current arrangements changed?

Since the submission of the Initial Agreement, there have been no changes to the current arrangements. The Radionuclide Dispensary continues its service from NHS Greater Glasgow & Clyde's (NHSGGCs) former Western Infirmary site which is under ownership and management of the University of Glasgow. There have been no changes to the lease agreement with the university.

The RNDs daily service of manufacturing radiopharmaceutical medicines and distribution of them to Nuclear Medicine Departments throughout Health Boards in West Central Scotland and the West of Scotland continues to operate at the same levels of production as previously shown.

Manufacture and distribution collectively provide services to 60% of the Scottish patient population. This level of production remains the largest centralised NHS Radio-Pharmacy in the UK at 31,000 individual patient doses annually. Products manufactured are used diagnostically and therapeutically to investigate and treat many human health conditions including heart and cancer conditions.

Doses are manufactured for the catchment population with all doses being distributed directly from the existing RND. Distribution is to numerous nuclear medicine departments across the West and Central Scotland. The percentage split of distribution to these departments was detailed in the IA and is included again below in Table 1: (the % of Doses Production have not changed from the IA figures).

Table 1 - Percentage of Doses Distribution

NHS Board	Hospital Site	% of Doses Supplied
Greater Glasgow & Clyde	Glasgow Royal Infirmary Queen Elizabeth University Hospital Gartnavel General Hospital New Stobhill Hospital New Victoria Hospital Royal Hospital for Children Royal Alexandra Hospital	26.5% 21.7% 7.9% 5.6% 5.5% 0.6% 0.2%
Ayrshire and Arran	University Hospital Crosshouse University Hospital Ayr	10.5% 8.9%
Forth Valley	Forth Valley Royal Hospital	3.5%
Lanarkshire	University Hospital Monklands	9.1%

As of November 2022, the current daily workload remains at approximately 115 manufactured Technetium doses plus dispatch of 20-25 long lived doses. When compared with previous years (as shown in

Table 2) demand has remained relatively consistent over the last five-year period. Radiopharmaceutical manufacture is determined by requests from Nuclear Medicine Departments which in turn are regulated by the number of gamma cameras available.

Table 2 - Number of doses manufactured annually (NHSGGC)

Year	Manufactured doses (Tc99m and long lived doses)	Commercially supplied doses	Total
2016	31041	3204	34245
2017	32842	3503	36345
2018	31329	3611	34940
2019	30427	3054	33481
2020	27241	2200	29441
2021	29400	3200	32600
2022*	27816	3250	31066

* 2022 figure annualised from Jan-Oct statistics

Over the past six years the number of doses manufactured has remained constant with a slight drop in demand in 2019 and 2020. The 2019 reduction was due to the temporary loss of two gamma cameras within NHSGGC for two months while replacement works were undertaken. The 2020 reduction was due to the impact the COVID-19 pandemic and the resulting reduction in patient procedures. The demand in 2021 has continued to be impacted by the COVID-19 pandemic but has started to increase as patient procedures have increased towards previous levels. It is expected that demand will continue to remain constant once patient services return to pre COVID-19 levels. For significant changes in demand to occur there would have to be substantial changes in equipment numbers (gamma cameras & PET CT) and resource to match the increased demand. Demand is unlikely to vary in the near future. Any potential long-term change in approach would be a move from Gamma camera to PET CT with the impact being a different type of production method and workstation within the clean room environment. The proposal has been developed so a change of this type could be accommodated and would be done so by replacing the type of workstation within the facility, rather than provision of additional workstations.

Currently the provision of this service is supported by a workforce comprising 10 staff and demand is not expected to significantly change. Proposals include the addition of Gallium production with an additional staffing requirement. This will be further reviewed through FBC and any change in workforce requirements highlighted.

Production within the facility is licensed and the building, its operational systems, personnel and

environment must continue to meet the regulatory requirements of the Office of Nuclear Regulation (ONR), Scottish Environmental Protection Agency (SEPA) and Medicines and Healthcare Products Regulatory Agency (MHRA). As the licensing authority, the MHRA have continued to review, audit and report on the existing facility with the licence remaining in place to date. Due to their position as a licensing authority for this and other facilities within NHSGGC, MHRA have also been engaged in the outline design review process for the proposed new facility and will continue to be engaged through the FBC, construction and commissioning stages.

NHSGGC holds one MHRA multi-site licence covering any facility with the ability to manufacture and distribute medicines. Within NHSGGC the MHRA licence currently covers the following facilities:

- RND: Licence covers manufacture of radioactive medicines and radioactive medicines for clinical trials.
- RHC Aseptic: Licence covers manufacture of sterile medicines.
- Distribution Centre: Licence covers distribution of medicines.
- PET radio pharmacy has a licence for PET radiopharmaceutical manufacture and clinical trials.

Whilst the licence covers numerous facilities, each is identified specifically and as a standalone unit requires ongoing audit and reporting by MHRA. For the purposes of this document, references to the MHRA licence, and potential loss of, are associated with the licence specific to the RND and not the single licence NHSGGC hold.

As described in the IA, whilst in the current facility it is not possible to adapt, extend, modernise or implement advancements in technology without complete loss of production. This means some areas are no longer utilised, compromises in compliance processes are required and ongoing maintenance is made difficult. Maintenance is further complicated as much of the operational systems are original, 30+ years old and beyond their life expectancy. These items are noted in recent MHRA inspections with the latest inspection report from 15 June 2021 escalating the status of their categorisation from “Major Failures” to “Critical Failures”. Some modifications have been made to the existing equipment and facility to ensure it can continue to meet standards in the short term. Inspection follow up is ongoing with routine two-monthly progress updates being submitted to the MHRA. This is likely to continue until the service moves to the new facility. As modifications have been made and accepted by the MHRA on a short-term basis, maintaining

the manufacturing licence is noted as an ongoing significant NHSGGC risk. NHSGGC Estates and Facilities continually monitor the building fabric condition and the building services and infrastructure maintenance backlog via Health Facilities Scotland Estate Asset Management System (HFS EAMS). The latest EAMS survey was completed in March 2021 which identified a number of systems and the building fabric as poor condition. The survey identified £1.9M worth of maintenance and lifecycle replacement works required of which £0.3M was for backlog maintenance. The survey information related to the building does cover standard elements of statutory compliance; it does not however reflect the specific compliance elements associated with MHRA licences. Therefore, costs and information contained with the EAMS system do not reflect the true extent of works required to retain and sustain this facility's compliance.

AEDET reviews for both stage 1 and stage 2 have been carried out noting the performance of the existing facility (stage 1) and the design response (stage 2). Output of this is included in Appendix A.

As noted previously, the RND in Glasgow provides services to 60% of the Scottish patient population. The remaining 40% of the population is served by similar facilities in Edinburgh, Dundee, Aberdeen, and Inverness. This percentage split has not changed, and a summary of the national provision is provided in Table 3:

Table 3 - Number of doses manufactured annually (Nationally)

Location	Board Areas Served	Manufactured Doses	Unit has MHRA licence?
Glasgow	Greater Glasgow & Clyde Ayrshire & Arran Forth Valley Dumfries & Galloway Lanarkshire	31,000	Yes
Edinburgh	Lothian Fife Borders	11,000	Yes
Dundee	Tayside	8,200	No
Aberdeen	Grampian	10,300	No
Inverness	Highland	3,000	Yes

Also noted in Table 3 is whether the facilities have a MHRA licence or not. This remains key for the facility development and the case being presented and therefore the numerous elements and impact of having or not having the MHRA licence are detailed below:

Without a MHRA licence the facility:

- Can only provide medicines for patients within their own Health Board area. Therefore, if lost NHSGGC couldn't supply other health boards.
- Can only provide limited support for clinical trials. An exemption in the legislation may allow some manufacture for diagnostic radio pharmacy trials only.
- Requires all manufactured products to be released by a registered pharmacist.
- Require alternative means of audit by a Regional QA Pharmacist (who will assess to same standards as MHRA inspectors)

With a MHRA licence the facility:

- Can manufacture and distribute for patients out with their own Health Board area.
- Can manufacture products to support diagnostic and therapy clinical trials.
- Can carry out manufacture, product release and distribution with a technical team managed by a pharmacist, so requires less pharmacist resource.
- Operates under a single all-encompassing licence without further pharmaceutical audit.

Therefore, should NHSGGC lose its MHRA licence the impact would:

- Mean loss of ability to manufacture and distribute materials to other boards with impact on the Nuclear Medicine service for these boards.
- Require further audit and QA review by Regional QA Pharmacist
- Require product release to be by registered pharmacist(s) to continue to manufacture and distribute (with staffing implications)
- Mean reduced ability to manufacture and distribute materials for clinical trials
- Require recruitment for additional pharmacists to release products and slow down current manufacturing output until in place
- Lead to workforce restructuring

- Due to the single MHRA Licence covering other facilities, be seen as a failure of NHSGGC to support the licence overall and potentially lead to increased scrutiny of other facilities.

2.3 Is the case for change still valid?

2.3.1 Need for change.

The Initial Agreement identified a need for change based on problems identified with the current arrangements, other drivers for change and opportunities for improvement. A summary of the need for change is provided in Table 4. Since the submission of the IA there have been no material changes that alter the needs for change.

Table 4 - Summary of Needs for Change

Cause of the need for change:	Effect of the cause on the organisation:	Why action now:
Inability to maintain MHRA manufacturing licence and continue manufacture.	Loss of manufacturing ability impacting treatment and diagnosis for patients in West and Central Scotland.	MHRA carry out ongoing audits on the facility noting recommendations for compliance. Carrying out this project shows commitment to achieving compliance.
Inefficiencies of service location relative to treatment and diagnosis facilities where products are utilised.	Inefficiencies due to facility being remote from nuclear medicine departments where products are utilised.	Provide a more coordinated and efficient approach to service delivery. Benefit from clinical adjacencies.
Inefficiencies of service location relative to support facilities.	Inefficiencies due to facility being remote from NHSGGC support services	Provide a more coordinated, consistent and knowledgeable response and delivery for Estates, Facilities and Nuclear Medicine Physics teams.
Lack of control of site environment.	Terms of lease agreement in place with university require permissions to alter or upgrade building. Ongoing works by university creates changes to access and egress to site impacting delivery and distribution.	Issues noted will be prolonged due to delivery time of University Master plan of the former Western Infirmary site. Delivery and distribution form part of licensing recommendations so may impact on this.
Limited manufacturing	Could lead to loss of therapeutic	Numerous risks identified for the

contingency	and diagnostic service provision.	current facility. Limited contingency available to support service delivery.
Existing building lacks flexibility to accommodate works or be adapted while maintaining output.	Existing facility has not been designed and constructed with view to adapt without shut down and decant of service.	Proper mitigation for risk associated with loss of manufacture is development and completion of the project.

As presented in the Initial Agreement an evaluation was undertaken to inform where, based on existing issues, this proposal would provide further opportunities for improvement. The opportunities considered included:

- Improvements in sustainability standards with regards to NHSGGCs Carbon Reduction Strategy and NHS Scotland Net Zero Carbon targets for all new buildings from April 2020.

- Improvements in training and development opportunities through the collocation of services and providing more efficient opportunities for education, training, and development of the department's own staff as well as for other collocated services.

- Potential to collocate with or near to the West of Scotland PET CT production unit that is currently being considered for expansion.

2.3.2 Investment Objectives

The Initial Agreement identified six investment objectives based on the need for change. These objectives are not solution focused instead they set out what any potential solution should achieve for the proposal to be consider successful. The investment objectives remain unchanged from the submission of the Initial Agreement and have been summarised in table 5.

Table 5 - Investment Objectives

Cause of the need for change	Achievements required to deliver change (Investment Objectives)
Ability to maintain MHRA manufacturing licence and continue manufacture.	Objective 1 - A facility compliant with the MHRA production licence requirements.
Inefficiencies of service location relative to treatment and diagnosis facilities where products are utilised.	Objective 2 - Improvement in clinical adjacencies.
Inefficiencies of service location relative to support facilities.	Objective 3 - Provision of easily accessible and knowledgeable response team.

Lack of control of site environment.	Objective 4 - Location on a site which represents long term NHS control and investment.
Lack of manufacturing contingency.	Objective 5 - Delivery of a resilient production capability.
Existing building lacks flexibility to accommodate works or be adapted while maintaining output.	Objective 6 - Provision of a facility that provides flexibility for maintenance and adaptation.

Each investment objective has been implemented in the development of this proposal. How this has been achieved and how the objective will be implemented in the next stages is described below.

2.3.2.1 A facility compliant with the MHRA production licence requirements

Early and continued engagement has taken place with MHRA. The MHRA have provided feedback on the design approach and entrance sequence to the clean room elements. This amended approach has been further discussed and agreed with the clinical teams, has been incorporated in the outline design and will be developed further during the next design stage.

Engagement with the MHRA will continue to ensure the facility is designed, constructed, and managed in accordance with their requirements.

2.3.2.2 Improvement in clinical adjacencies

This will be achieved by having the facility located on a site with a prominent nuclear medicine service. Improvements will be associated with both ease of delivery of product as well as opportunities for educational development and enhanced communication and links with users. The potential for clinical adjacencies has been considered as part of the scoring criteria for the site option selection.

2.3.2.3 Provision of easily accessible and knowledgeable response team

This will be achieved by locating the facility on a site with suitably qualified and experienced staff knowledgeable in the functions of the radio-pharmacy and wider nuclear medicine field. Improvements will be associated with the ability to share staff knowledge and expertise. Local operational teams who support the existing facility have been involved in the design process to ensure knowledge of the facility prior to taking ownership. This knowledge of the existing facility and ongoing engagement has been extremely beneficial in this stage of the design development. Engagement with these local teams will continue through the detail design, construction, and

commissioning phases.

2.3.2.4 Location on a site which represents long term NHS control and investment

The strategic options assessment identified a site within NHSGGC as the preferred solution. As a result, consideration has been given as part of the assessment criteria to a site's long-term investment during the site options appraisal.

2.3.2.5 Delivery of a resilient production capability

This will be achieved by ensuring that the facility is designed to provide a resilient solution to maintain production in the event of a loss of site infrastructure. In the development of the outline design, consideration has been given to numerous scenarios where utilities or systems are lost, their impact and how the design can help respond.

The design deployment will continue to consider and refine the design to mitigate loss of service where possible.

2.3.2.6 Provision of a facility that provides flexibility for maintenance and adaptation

Adaptation has been a key consideration through design work to date and applies both internally & externally.

The outline design has included the features described below:

- Doors with side panels to clean rooms designed with deconstruction in mind. Doors and panels can be removed to allow for large equipment removal and replacement.
- Internal partitions will extend beyond the ceiling finish height. This will allow the ceiling height to be amended to take any larger equipment or equipment with greater activity or access spatial requirements.
- Foundation and floor slab below all clean rooms designed to accommodate heaviest PET safety cabinet to allow for labs to accommodate any change in production type.
- Inclusion of hermetically sealed door within clean room area. Door acts as an escape door and location and route will allow for direct access to clean room suite without need to disruption or amend support rooms and facilities.
- Platform at plant room entrance to allow for set down and activity space for any plant

equipment removal and replacement.

- Expansion zone within plant room to allow for services replacement with minimal disruption.
- Clear zone on site to allow for potential future expansion.
- Support services spaces designed for flexibility to accommodate additional personnel on site for training and educational purposes.

Further design development is still required and, in addition to the layout descriptions above, will consider building services equipment type, size, weight etc for relative ease of change.

2.4 Is the choice of preferred strategic solution still valid?

At the Initial Agreement stage the strategic options in Table 6 were assessed with Strategic Option 4 identified as the preferred solution.

Table 6 - Strategic Options

Option Number	Description
Strategic Option 1	Do Minimum
Strategic Option 2	Scotland Wide Centralised Facility
Strategic Option 3	West of Scotland Centralised Facility (Out with NHSGGC)
Strategic Option 4	West of Scotland Centralised Facility (Within NHSGGC)
Strategic Option 5	Dispersed West of Scotland Solution
Strategic Option 6	Dispersed Nuclear Medicine Department Solution
Strategic Option 7	Outsourced Solution (Building Only)
Strategic Option 8	Outsourced Solution (Full Service)

Through review of the strategic case and development of the preferred solution there has been no change that has materially altered the outcome of the initial selection process. The development of a West of Scotland Centralised Facility within NHSGGC remains the preferred solution with further work undertaken to select a preferred site.

3 ECONOMIC CASE

3.1 Economic Case: Overview

The purpose of the Economic Case is to undertake a detailed analysis of the costs, benefits, and risks of a short list of options, including a do nothing and/or do minimum option, for implementing the preferred strategic / service solution(s) identified within the Initial Agreement.

The objective is to demonstrate the relative value for money of the chosen option in delivering the required outcomes and services.

With Strategic Option 4 - West of Scotland Centralised Facility (Within NHSGGC) identified as the preferred option from the IA a long list of proposed sites was developed. This process formed the first stage of the economic appraisal by developing the short list of site options to be considered further in this proposal.

With knowledge of NHSGGCs estate and assets, the Estates, Property and Capital Planning teams were able to present information on NHSGGC sites that offered new build or refurbishment options. For each site identified, specific refurbishment or potential development areas were described. Site options were identified on the basis that the facility would be located within an existing NHSGGC controlled site. This would achieve investment objective 4 (Location on a site which represents long term NHS control and investment) as well as comply with the NHSGGC strategy to use the existing estate prior to procuring new land.

The long list of proposed sites is included in the Site Options Appraisal Summary in Appendix B.

3.2 Identify a short-list of site options

The long list of options was further assessed through the site options appraisal process presented in the following sections. Workshops were held involving representatives from the project team as presented in the Site Options Appraisal in C.

3.2.1 Assessment Criteria

To assess the long list of proposed sites the assessment criteria and weightings set out in Table 7 were developed through feedback from the stakeholder engagement process. These criteria were discussed and agreed prior to carrying out the options appraisal to ensure each criterion represented a true benefit and was measurable.

Table 7 - Assessment Criteria

Criteria No.	Description	Weighting (Out of 100)
1	**Material Delivery:** Proximity of site to M74 which is the main delivery route for materials for production. Measure was provided from a fixed point on the M74 to each of the sites with time and distance noted.	8
2	**Material Distribution:** Proximity of site to Scottish motorway networks for national and local distribution.	14
3	**Clinical Adjacencies:** Proximity of site to clinical services where materials are used. Measure was distance and ease of travel to those sites within GGC where materials are utilised.	14
4	**Proximity of material delivery / distribution area to vehicles:** Ability of site option to offer close vehicle access / parking to building. Travel distance to be minimised and forms part of MHRA guidance and ONR. (Distribution vehicles).	10
5	**Expert Support & Education Links:** Proximity to clinical and estate support on site. Enhanced score if Medical Physics associated with Radionuclide on site.	16
6	**Security:** Ability of site to provide building and staff security along with complete separation of service from public areas.	8
7	**Future Business Continuity:** Ability for site to offer a design that will aid ongoing maintenance and ability to adapt to advancement in technologies.	8
8	**Compliance:** Site to offer best means of compliance and to minimise derogations. Sites may only offer refurbishment opportunities which will impact ability to comply.	4
9	**Programme:** Sites in NHS GG&C ownership and ready for development will provide a less complicated and better timescale for delivery. Current facility has no contingency and therefore those sites offering best delivery timescales reduce risk associated with loss of manufacture.	8
10	**Staff Transport Access:** Proximity to public transport routes at 6am to assist staff reaching work.	6
11	**NHS GG&C Investment:** Utilisation of existing site / estates vs. lease / purchase options.	4

With a long list of options, assessment criteria and agreed weighting, a scoring and assessment system was in place to carry out the Site Options Appraisal. Scoring was completed to provide a ranked outcome as well as identify any option that failed to provide the criteria identified, regardless of weighting.

3.2.2 Short List of Site Options

Using the agreed assessment criteria presented in Table 7 a Site Options Appraisal was undertaken to identify the short list of site options. A summary of the process undertaken is provided within Appendix B. The appraisal process identified the site options shown in Table 8 as the top five ranked options.

Table 8 - Site Option Appraisal

Option	Rank	Description
Option 22	1	**Glasgow Royal Infirmary** New build facility on area identified for site development
Option 15	2	**Queen Elizabeth University Hospital** New build facility on area identified for site development
Option 6	- 3	**Gartnavel General Hospital** New build facility on area identified for site development. Area adjacent to Centre for Integrative Care
Option 7	- 3	**Gartnavel General Hospital** New build facility on areas identified for site development. Former Shelley Court residencies site / transport hub
Option 5	5	**Gartnavel General Hospital** New build facility on area identified for site development. Area adjacent to boiler house, south of Beatson

The ranked options were developed purely on the benefit that they would provide in achieving the project's objectives. A further assessment was carried out that considered the options against the likely availability of a suitable development site and how the options aligned with proposed site's existing use. This assessment discounted several options due to the lack of available developable space or the site's development plan, these options along with the reason they were discounted are shown in Table 9.

Table 9 - Discounted Site Options

Option	Rank	Site Option Description	Reason Discounted
Option 22	1	**Glasgow Royal Infirmary** New build facility on area identified for site development	Without significant reconfiguration of the existing Glasgow Royal Infirmary site there is only one developable space available. The potential site is in the centre of the existing acute hospital and was deemed unlikely to be able to accommodate the spatial requirements of the new facility. The central location of the site in an area of high traffic would also have implications on the need to separate the activities of the Radionuclide Dispensary from clinical and public activity. As the site is significantly developed the use of this space for the new facility would restrict any future expansion of the existing site clinical activities.
Option 15	2	**Queen Elizabeth University Hospital** New build facility on area identified for site development	The Queen Elizabeth University Hospital site is a major acute site, the masterplan for the site identifies several developable areas. However, the areas identified are earmarked for any potential expansion of clinical activity with the requirement to directly interface with patients. While the Radionuclide Dispensary has a requirement for clinical adjacencies there is no requirement for direct links to provide patient access. The high traffic flow across the QEUH site would also have implications on the need to separate the activities of the Radionuclide Dispensary from clinical and public activity.
Option 6	3	**Gartnavel General Hospital** New build facility on area identified for site development. Area adjacent to Centre for Integrative Care	The site considered at Gartnavel General Hospital is constrained by the adjacent Centre for Integrative Care, Scottish Ambulance Service West Station and the railway line. These constraints limit the developable area with the footprint available considered insufficient to support the requirements of the new facility.
Option 5	5	**Gartnavel General Hospital** New build facility on area identified for site development. Area adjacent to boiler house, south of Beatson.	The proximity of the proposed site to the Beatson West of Scotland Cancer Centre and the West of Scotland PET Centre meant that the site had already been identified as a site for future development of clinical activities. The proximity would provide the opportunity for direct patient links with other facilities on the site. As this link is not required to support the Radionuclide Dispensary it was felt that the development site should be retained for future clinical expansion.

Option 9	6	**Gartnavel Royal Hospital** New build facility on areas identified for site development. Area Adjacent to Tate Ward	Gartnavel Royal Hospital is primarily used to support Mental Health Services. The site also accommodates some of NHSGGCs administrative services however there are no acute services on site. Locating the new facility on the Gartnavel Royal Hospital would introduce an acute service to a mental health site which is not in line with the site's strategy. While there are currently no confirmed plans previous discussions have identified parts of the site for potential disposal, this places the risk of any new facility becoming isolated from the healthcare estate and repeat some of the issues being experienced by the current Radionuclide Dispensary.
Option 8	7	**Gartnavel General Hospital** New build facility in place of existing dialysis and diabetic centre.	The proposed site would require the relocation of existing clinical services as well as the demolition and clearance of the existing building. There are currently no suitable facilities identified to accommodate the relocation of the existing services. The developable space available following demolition of the existing building would have the potential to provide direct patient links to the existing hospital buildings and would therefore be identified to support future expansion for clinical activities. The location in the centre of the campus in an area of high traffic would also have implications on the need to separate the activities of the Radionuclide Dispensary from clinical and public activity.
Option 4	8	**Gartnavel General Hospital** Refurbishment of vacated areas (levels 0 & 1) within SNBTS.	Vacant space was identified within the Scottish National Blood Transfusion Service (SNBTS) building on the Gartnavel Campus. While this building is located on an NHSGGC site the building is owned and operated by SNBTS. While vacant at the time of the appraisal further works have been undertaken within the building with the establishment of the West of Scotland COVID Testing Laboratory. There is no confirmed timescale for how long this space will be occupied and has been discounted accordingly.
Option 11	10	**Stobhill Hospital** Refurbishment of retained vacant buildings not forming part of demolition plan.	The retained estate on the Stobhill Hospital site is primarily within the Mental Health site and the introduction of an acute service does not align with the site's use. The current vacant buildings provide the opportunity to accommodate clinical service expansion and would require significant works to convert from a patient facility to the cleanroom production facilities required to support the Radionuclide Dispensary. Following assessment, it was considered that a new build option at Stobhill would provide the more suitable facility in a location more aligned with other acute services on site.
Option 20	11	**Royal Alexandra Hospital** New build facility on area identified for site development.	The topography of the Royal Alexandra Hospital site limits the development opportunities for a new build facility. Much of the site is built across steep slopes with the only remaining flat areas used for car parking or the helipad. Neither locations are available for development. No suitable developable site was identified however a refurbishment option was identified for consideration.

From this further assessment and associated discussions on all options, it was agreed that the following options in Table 10 should be taken forward as the short-listed options for further appraisal.

Table 10 - Short List of Site Options

Proposed Solution	Option No.	Description
Do Minimum	Option 2	(Do Minimum) Former Western Infirmary remains in place with refurbishment of existing facility.
Solution 1	Option 3	Royal Alexandra Hospital Refurbishment of level in laboratories building.
Solution 2	Option 7	Gartnavel General Hospital New build facility on areas identified for site development. Former Shelley Court residencies site / transport hub.
Solution 3	Option 10	Stobhill Hospital new build facility in place of area undergoing demolition / identified for development.

3.2.3 Do Nothing / Minimum Option

The Do-Nothing option would maintain the current arrangements and would fail to meet the investment objects of the project. However more crucially the MHRA have confirmed in their formal inspection letter from March 2020 that maintaining the current arrangements would result in the loss of the MHRA Production Licence and therefore the service would be unable to operate fully. The MHRA inspection letter from June 2021 continues this point with project timescales a key element in retaining the current licence. The loss of the manufacturing facility would restrict the ability of West and Central Scotland Health Boards to continue to deliver patient services requiring the use of radiopharmaceutical medicines. It is for this reason that the Do-Nothing option has not been considered further in the Site Options Assessment.

While the Do-Nothing option is not considered feasible the opportunity remains to carry out works to the existing facility to maintain the requirements of the MHRA production licence. The IA presented the extensive works that would be required under a Do Minimum option. It remains the case that to carry out these works, a temporary facility would be the only option available to take over manufacture for the duration of the works. Due to manufacturing being licensed, any facility, temporary cabins or other means will require a location to be confirmed, a design process, statutory consents, procurement of specialist equipment (circa £1.1m), construction, testing, commissioning, and validation by MHRA as a suitable temporary facility. The IA noted the Do Minimum option as “Rejected” following the Strategic Options Assessment however it has been considered in the Site Options Assessment to provide a benchmark for the other site options

considered.

3.3 Monetary Costs and Benefits

Table 11 outlines the capital costs that have been identified for the four options as either the costs of refurbishing the existing facility, the refurbishment of a site at the Royal Alexandra Hospital in Paisley and the two new build options at the Gartnavel and Stobhill campuses. These costs have been input into the GEM model.

Table 11 and Table 12 set out the initial capital costs (Table 11) and revenue costs (Table 12) for the scheme, they are expressed as an undiscounted annual recurring cost for each implication with relevant comments noted within the appropriate section.

Table 11 - Initial Capital Cost Implications

Initial Capital Cost Implications:	Do Minimum	Solution 1 RAH Refurbishment	Solution 2 Gartnavel New Build	Solution 3 Stobhill New Build
	£'000's	£'000's	£'000's	£'000's
Opportunity Costs	0	34	49	28
Initial Capital Costs:				
Construction Costs including enabling costs	8,712	14,123	13,776	13,724
Furniture & Equipment	1,051	1,051	1,051	1,051
Additional Quantified Risk	953	1,665	890	1,086
Direct NHS Costs	516	516	470	491
Unquantified Risk/Optimism Bias	2,246	3,470	1,214	1,635
Initial Capital Costs Total	**13,478**	**20,859**	**17,450**	**18,015**
Transitional Period Costs	0	0	0	0
Costs of Embedded Accommodation	0	0	0	0
Total of Initial Capital Cost Implications	**13,478**	**20,859**	**17,450**	**18,015**

We have taken the approach for each of the categories noted above as follows: -

- **Opportunity costs**: Except for the do minimum option, which NHSGGC has a limited lease with the University of Glasgow to March 2051, the sites noted are already in the ownership of NHS Greater Glasgow & Clyde on behalf of the Scottish Minsters and therefore represent an opportunity cost. The land at each of these 3 sites has been pro-

rated against the overall footprint of the 3 sites to identify the opportunity cost.

- **Initial Capital Costs:**
    - **Construction Costs:** were provided by the joint cost advisors on the project, working closely with the preferred construction company and have been updated to reflect current market conditions for the duration of the project. This also includes construction related fees for design, net zero carbon allowances and preliminaries.
    - **Furniture& Equipment:** The need for complete clinical replacement of existing equipment has been identified as the current equipment is now past its useful economic life. Therefore, equipment costs will be the same for all options.
    - **Risk:** To reflect the uncertainty of issues like material costs, supply chain issues, the specialist nature of this service and its needs we have also included a value for optimism bias which we will refine further when we progress to the Full Business Case.

Direct NHS Costs includes fees from our professional advisors and fees for provision of as built digital construction documentation.

Table 12 sets out recurring revenue implications that have been identified. These costs represent the additional costs of delivering the service and running the facility.

Table 12 - Revenue Cost Implications

Revenue Cost Implications	Do Minimum	Solution 1 RAH Refurbishment	Solution 2 Gartnavel New Build	Solution 3 Stobhill New Build
	£'000's	£'000's	£'000's	£'000's
Life Cycle Costs (average)	204	252	240	240
Clinical Service Costs	41	41	41	41
Non-clinical Support Service Costs	0	0	0	0
Building Related Running Costs	0	38	94	94
Net Income Contribution	0	0	0	0
Revenue Costs of Embedded Accommodation	0	0	0	0
Displacement Costs	0	0	0	0

Total recurring revenue cost implications	**245**	**331**	**375**	**375**

Lifecycle costs for all four options have been provided by our Cost Advisors which covers the indicative maintenance and replacement costs for the asset. This is the average cost taken for the 60-year period.

The clinical costs are expected to be mainly a “lift and lay” process and no significant costs are expected to be incurred. The only addition is for a 1 WTE Band 3 to assist with the operation of new isolators that are currently not in operation in the existing service but possibly will be required, this will be finalised in the FBC.

Building related running costs - there is an increase for both the RAH refurb and new build options. These options are bigger in GIFA than the existing facility and therefore there is a resultant increase in running costs such as utility costs, cleaning, estates costs and for the new builds increase in business rates. We are still investigating what the impact on the energy costs will be as it expected the building will have either a ground or air source heat pump and therefore have reduced costs. This will be finalised and reflected for the FBC.

No costs or income are anticipated for Net Income Contribution, Embedded Accommodation and Displacement Costs.

Whilst not noted in detail in this section (it is noted in more detail included in the Financial Case) there is a significant impact on non-recurring costs as the service would have to be re-provided on an existing NHS site with materially significant cost impact. Costs of £2.7m have been estimated for enabling utility connections, planning permission and rental costs of appropriate units as well as further decommissioning costs. This has been included in the NPV calculations for the Do Minimum option.

3.4 Non-Monetary Costs and Benefits

Through the site options appraisal process all options on the long list were scored against the agreed benefit criteria. The four options selected as the short list for further assessment are presented in Table 13 along with the agreed weighted scores.

Table 13 - Options Appraisal Scoring

Benefit Criteria	Weighting (%)	Weighted Score			
		Do Minimum	Solution 1 RAH Refurbishment	Solution 2 Gartnavel New Build	Solution 3 Stobhill New Build
Material Delivery	8	24	24	24	16
Material Distribution	14	42	28	42	28
Clinical Adjacencies	14	0	28	56	42
Proximity of material delivery / distribution areas to vehicles	10	10	20	40	40
Expert Support & Education Links	16	0	32	64	48
Security	8	8	24	32	24
Future Business Continuity	8	0	16	32	32
Compliance	4	12	8	16	16
Programme	8	8	24	32	24
Staff Transport Access	6	24	12	24	12
NHS GG&C Investment	4	12	12	16	12
Total Weighted Score:		140	228	378	294
Rank:		4	3	1	2

The benefit criteria used in the options appraisal scoring are described in greater detail in Table 7. These criteria were developed through the stakeholder engagement workshops as part of the option appraisal process and were developed to provide measurable criteria that would achieve the key themes of the investment objectives.

3.5 Non-financial Risk Appraisal

The non-financial risks have been extracted from the main project risk register. The impact score applied to each of the potential options in Table 14 has been taken from the post mitigation scores within the main project risk register.

Table 14 - Non-financial Risk Appraisal

Risk	Impact Score	Risk Score (Impact x Probability)							
		Do Minimum		Solution 1 RAH Refurbishment		Solution 2 Gartnavel New Build		Solution 3 Stobhill New Build	
		Prob	Score	Prob	Score	Prob	Score	Prob	Score
The project disrupts day to day business operations	4	5	**20**	4	**16**	2	**8**	2	**8**
Poor stakeholder involvement results in a lack of support for the project	3	3	**9**	3	**9**	3	**9**	3	**9**
A safe environment for staff, patients and visitors is not maintained during the course of the project	3	4	**12**	3	**9**	2	**6**	2	**6**
A safe clinical environment is not maintained during the course of the project	2	4	**8**	3	**6**	2	**4**	2	**4**
Adverse publicity occurs due to an issue with the project	3	3	**9**	3	**9**	3	**9**	3	**9**
Demand for the service does not match the levels planned, projected or presumed	4	2	**8**	2	**8**	2	**8**	2	**8**
The accommodation remains empty following completion of works	5	1	**5**	1	**5**	1	**5**	1	**5**
The available accommodation is unable to support the proposed service model	3	5	**15**	5	**15**	2	**6**	2	**6**
Unable to decant staff from one site to another in a timely manner	5	4	**20**	1	**5**	1	**5**	1	**5**
Local community objects to the project	3	2	**6**	3	**9**	3	**9**	3	**9**
There are objections to the use of the proposed site	3	2	**6**	2	**6**	3	**9**	4	**12**
There is insufficient car parking for the number of occupants	3	4	**12**	2	**6**	2	**6**	2	**6**
Total Risk Score:		**130**		**103**		**84**		**87**	
Rank:		**4**		**3**		**1**		**2**	

3.6 Net Present Value

This process identifies the capital and revenue costs of the scheme for 60 years associated with each of the 3 short-listed options and the Do Minimum. each of the options is in the form of an NPV using discounted cash flow techniques according to SCIM guidance.

Table 15 below provides a summary of the Net Present Value (NPV) along with the relevant non-financial appraisal score for the 4 options. This then creates a cost per non-financial appraisal score by dividing the NPV by the NFA score as noted.

In accordance with guidelines, depreciation, inflation, and VAT have been excluded in the NPV

calculation.

Table 15 - Net Present Value

Net Present Value	Do Minimum	Solution 1 RAH Refurbishment	Solution 2 Gartnavel New Build	Solution 3 Stobhill New Build
	£'000's	£'000's	£'000's	£'000's
Net Present Values - Based on 60 years	18,439	24,333	22,498	22,948
Non-Financial Appraisal (NFA) Weighted Score	140	228	378	294
Cost Per NFA Score	131.71	106.72	59.52	78.05
Rank	**4**	**3**	**1**	**2**

3.7 Assessing Uncertainty

As sensitivity analysis is fundamental to the evaluation of each of the options by examining how robust the ranking of the options is and the selection of the preferred solution, we have carried out testing to both the financial assumptions and also the non-financial rankings of each solution.

The NPV cost per NFA score has been tested to for two scenarios, one for an increase in capital costs and one for an increase in revenue costs for the highest ranked solution.

Table 16 - Financial Sensitivity Analysis

Financial Sensitivity Analysis	Do Minimum		Solution 1 RAH Refurbishment		Solution 2 Gartnavel New Build		Solution 3 Stobhill New Build	
	Cost Per NFA Score	Rank	Cost Per NFA Score	Rank	Cost Per NFA Score	Rank	Cost Per NFA Score	Rank
Scenario 1: no changes	131.71	4	106.72	3	59.52	1	78.05	2
Scenario 2: Construction Costs increase by 61% for Gartnavel Option only	131.71	4	106.72	3	78.11	2	78.05	1
Scenario 3: Revenue Costs increase by 262% for Gartnavel Option Only	131.71	4	106.72	3	78.13	2	78.05	1

As is noted above, it would take an increase in capital costs of 62% to change the ranking for Solution 3 - Stobhill to be the highest ranked. Given that the capital costs are identical for both new build options it is considered highly unlikely that this would be the case in Solution 2 -

Gartnavel only.

Similarly, it would take for revenue costs to increase by 262% for Solution 3 - Stobhill to become the preferred option, given that most revenue costs are lift and lay, it is very unlikely that this scenario could occur and cause the rankings to be altered.

Table 17 - Non-Financial Benefits Sensitivity Analysis

Non-Financial Benefits Sensitivity Analysis	Do Minimum		Solution 1 RAH Refurbishment		Solution 2 Gartnavel New Build		Solution 3 Stobhill New Build	
	Weighted Score	Rank	Weighted Score	Rank	Weighted Score	Rank	Weighted Score	Rank
Scenario 1: no changes	140	4	228	3	378	1	294	2
Scenario 2: Equal weight	173	4	236	3	382	1	300	2
Scenario 3: Exclude top rank score	140	4	196	3	314	1	246	2

As noted above when the sensitivity analysis is applied to the non-financial scoring Solution 2 Gartnavel New Build remains the number one ranked option. By removing the weighting or the top rank score had no impact on the overall ranking. Testing this further removing the top five ranked score did not impact on the number one ranked option.

3.8 Identifying the Preferred Option

The outcome of the economic appraisal identified Solution 2 Gartnavel New Build as the preferred option based on the Net Present Value per Weighted Benefit Score as shown in Table 18.

Table 18 – Net Present Value per Weighted Benefit

	Do Minimum	Solution 1 RAH Refurbishment	Solution 2 Gartnavel New Build	Solution 3 Stobhill New Build
Net Present Value (£'000's) per weighted benefit score	131.71	106.72	59.52	78.05

Solutions 2 and 3 provide the greatest opportunity to deliver a facility that fully meets the investment objectives of the project. This is reflected in the lower and somewhat comparable scores. The higher score against the Do Minimum option reflects the challenges that this would present with refurbishing an existing facility while trying to maintain service delivery. Solution 1 has been impacted by the physical restrictions that a refurbishment would bring and the remoteness of the site that would lead to inefficiencies in service delivery.

The difference between solutions 2 and 3 reflect the Gartnavel site's ability to provide improved clinical adjacencies, connectivity to the main clinical users and access to a knowledgeable local response team to provide ongoing support to the delivery of the service.

The sensitivity analysis has shown that the option appraisal results are robust as realistic and plausible changes in the underlying assumptions around costs and benefits do not result in a change in the choice of a preferred solution. Furthermore, there would need to be substantial change in Weighted Benefit Scores or NPV for there to be a change in the ranking of the solutions.

Table 19 - Evaluation Results

Evaluation Results	Do Minimum	Solution 1 RAH Refurbishment	Solution 2 Gartnavel New Build	Solution 3 Stobhill New Build
	Rank	Rank	Rank	Rank
Economic Appraisal	4	3	1	2
Risk Appraisal	4	3	1	2

A summary of the results of the economic and risk appraisals are presented in Table 19. This confirms the selection of Solution 2 Gartnavel New Build as the preferred option to be taken forward.

4 COMMERCIAL CASE

4.1 Commercial Case: Overview

The main purpose of the Commercial Case at OBC is to outline the proposed commercial arrangements and implications for the project. It will do this by responding, as appropriate, to the following questions:

	Question	Response
Procurement Strategy	What is the appropriate procurement route for the project?	Outline: • Procurement route selected • Compliance with EU Rules and Regulations • Procurement plan & timescales
Scope of Works & Services	What is the scope and content of the proposed commercial arrangement?	Outline: • Scope & content of included services • Scope of building works • Scope of other works
Risk Allocation	How will the risks be apportioned between public and private sector?	Outline: • Risk allocation table
Payment Structure	How is payment to be made over the life span of the contract?	Outline: • Proposed payment structure • Other payment principles • Any non-standard arrangements
Contractual Arrangements	What are the main contractual arrangements?	Outline: • Type of contract proposed • Key contractual issues • Personnel implications

The availability of the requested information for this section of the OBC may be affected by the selected procurement route, therefore, in such instances the response provided should cover the key principles as outlined, whilst explaining when more detailed information will be confirmed at FBC stage.

4.2 Procurement Strategy

	Question	Response
Procurement Strategy	What is the appropriate procurement route for the project?	Outline: • Procurement route selected • Compliance with EU Rules and Regulations • Procurement plan & timescales

4.2.1 Procurement Route

This project is a health project with an investment cost in excess of £1m. It is to be publicly funded under the NHSScotland Frameworks Scotland2 arrangement. Utilisation of the NHSScotland Frameworks gives NHSGGC access to framework consultants, Principal Supply Chain Partners (PSCPs) and designers that possess the most relevant and specialist knowledge to deliver projects of this scale and complexity.

4.2.2 Procurement Rules and Regulations

The use of the NHSScotland Frameworks negates the requirement to advertise in the UK Find a Tender (FTS) e-tendering platform. For the appointment of the framework consultants and PSCPs NHSGGCs Property & Capital Planning team developed the required documentation through engagement with HFS to ensure compliance with the framework selection process.

4.2.3 Procurement Plan

The appointments described in Table 20 have been procured using the NHSScotland frameworks.

Table 20 – Consultant & Contractor Appointments

Role	Organisation	Route
Project Manager	Thomson Gray	Consultant Project Manager Framework
Joint Cost Advisor	AECOM	Consultant Joint Cost Advisor Framework
PSCP	Graham Construction	Frameworks Scotland 2
CDM Advisor	Thomson Gray	Consultant CDM Advisor Framework

Supervisor / Clerk of Works	AECOM	Consultant Supervisor Framework

All appointments followed the NHSScotland Frameworks Scotland2 procurement route and utilised a single stage approach with qualitive and commercial submissions. The procurement process was supported by the stakeholder group with representation from the Clinical Team, Operational Estates and Capital Finance as appropriate for the discipline being procured. The stakeholders supporting the process were selected based on those who would likely be working closest with the appointed consultant/contractor and were involved in developing the evaluation criteria, quality submission review and attended the appropriate interviews.

An HFS Capital Project Advisor was consulted on all documentation issued to ensure compliance with the framework process. They also undertook the commercial review and tender clarifications as well as attending all interviews.

The Consultant Project Manager, Joint Cost Advisor and PSCP were all appointed during the IA stage, the CDM Advisor during the OBC Stage and while selected during the OBC stage the Supervisor / Clerk of Works will commence their duties from the start of the FBC Stage.

4.3 Scope and Content of Proposed Commercial Arrangements

	Question	Response
Scope of Works and Services	What is the scope and content of the proposed commercial arrangements?	Outline: • Scope & content of included services • Scope of building works • Scope of other works

4.3.1 Scope of Services

As part of the consultant/contractor appointment process outlined in section 4.2.3 a High Level Information Pack (HLIP) was developed for each appointment. The HLIP was developed from the framework template that identifies the scope of services required for each discipline under the framework agreement.

4.3.2 Scope of Building Works

The scope of the building works has been developed through the OBC stage and have been

based on the progression of the preferred Gartnavel site. Enabling works to prepare the site have been completed as part of a previous project with the site cleared and prepared for a potential new building. The opportunity has been taken to undertake Site Investigation survey works at an earlier stage to minimise the risk exposure from both adverse ground conditions and existing services conditions.

The construction of the new 2 storey facility will be undertaken by the appointed PSCP in line with the design statement agreed with the key stakeholders through the NHSScotland Design Assessment Process (NDAP).

A NDAP design statement was initially developed at IA stage through engagement with key stakeholders for the project. A further NDAP submission was produced on completion of the OBC stage design. HFS and A&DS identified a series of essential and advisory recommendations based on this submission. A further AEDET Refresh workshop has taken place during OBC development. The workshop was attended by key stakeholders with the purpose to score the design proposals relative to the target established at IA stage.

An extract of the AEDET content showing the established target and current scores are provided in Figure 1 and Figure 2 below.

Figure 1 - AEDET Target Summary Score OBC

Figure 2 - AEDET OBC Scores relative to target

Category	IA Benchmark	IA Target	OBC	OBC Refresh	FBC
Use	3.1	4.6	4.3	5.0	0.0
Access	0.7	4.3	3.9	4.4	0.0
Space	3.0	4.5	4.5	5.3	0.0
Performance	2.1	4.5	3.8	4.3	0.0
Engineering	2.4	4.2	2.9	4.1	0.0
Construction	0.0	4.0	0.0	4.1	0.0
Character and Innovation	1.9	4.5	4.0	5.3	0.0
Form and Materials	2.0	4.6	4.1	4.8	0.0
Staff and Patient Environment	2.7	4.6	4.0	4.9	0.0
Urban and Social Integration	2.0	4.5	4.0	4.5	0.0

The AEDET Target & Current scores are summarised above with the full completed AEDET design refresh data provided in Appendix A.

4.3.3 Scope of other works

Manufacture of radiopharmaceutical medicines within the RND relies on the use of numerous types of specialist equipment. The design refresh has offered the opportunity to incorporate recent changes in process or technology that could improve service delivery. A refreshed equipment list has been developed to establish the equipment required, its location, number, spatial, power and ventilation requirements. This information has been used to inform the design as equipment such as the Technetium Isolator for long lived and short-lived clean rooms and the Gallium Isolator for the PET clean room, have very specific requirements. These specific spatial requirements including activity spaces and safe working areas have dictated room sizes to ensure they can be accommodated, be utilised, and maintained safely.

Commercially the equipment cost forms part of the overall project costs identified in section 5.2. Costs have been developed through early engagement with suppliers of the equipment with a procurement exercise to commence along with FBC activities. Procurement of the equipment will be managed by the NHSGGC project team and assisted by the NHS Scotland procurement team. Supply and installation will then be co-ordinated by the NHSGGC project team and PSCP. As all equipment will be provided and managed within NHSGGC, ongoing maintenance costs and agreements will be arranged and funded by NHSGGC. These details are not yet confirmed but will be developed through FBC and the equipment procurement exercise.

4.3.4 Net Zero Carbon (NZC) Response

The response to the global climate emergency is one of the Scottish Governments highest priorities.

The Infrastructure Commission report of January 2020 confirmed a key priority of working towards a zero-carbon future. It states that: -

"All Scottish Government funded projects included in its 2020 Infrastructure Investment Plan should be prioritised against available inclusive net zero carbon economy outcomes."

The NZC agenda presents a particular challenge to specialist high energy facilities such as the RND Radionuclide Dispensary. This challenge has been tackled in three areas: -

1. Consider new production technology and assess if this could offer improved service and support a reduced energy model.
2. Review environmental conditions set out in the URS to consider where these can be challenged to reduce the energy impact.
3. Ensure that both the building fabric and services are as energy efficiency as possible.

Computer simulation of the energy model is provided by the TM54 methodology for forecasting the operational energy efficiency of a building. The current proposals have been fully modelled and evaluated by a specialist consultancy team. The executive summary to the output report highlights that the proposals would result in a highly efficient building, which offers significant improvements on established benchmarks derived from the UK Green Building Council. The model indicates that the combined whole building of Production areas (hot zone) and support areas (cold zone) offer a 57% improvement over the appropriate benchmark.

4.3.5 NHS Scotland Design Assessment Process (NDAP)

As part of the embedding of the design process in the various business case stages, the Scottish Government has advocated a formalised design process facilitated by Architecture and Design Scotland (A&DS) and Health Facilities Scotland (HFS). NHS GGC has taken steps to consult with both bodies in the development of the design of the Radionuclide facility.

An initial Design Statement (DS) was prepared by NHS GGC in conjunction with Stakeholders, in late 2019, with workshop support from A&DS. This has been used as a key quality control document to measure the developing design against the project's design objectives. This has been re assessed during the design refresh and minor adjustments have been collated and

approved by the Project Board. A workshop has been undertaken with HFS to review the revised proposals and this has been well received. HFS recognise the significant improvements implemented to address their previous concerns. We await the formal NDAP Report.

4.3.6 NHS Scotland Assure

NHS Scotland Assure was established in June 2021 and seeks to move the culture around projects to one of more rigorous control of compliance, and adherence to technical guidance and standards.

NHS Scotland Assure will provide reassurance to NHS GGC that the project has been developed with due consideration to the Health Associated Infection System for Controlling Risk in the Built Environment (HAI-SCRIBE) and infection control, and compliance on the main building services e.g., ventilation, drainage, electrical, and that sufficient briefing and governance arrangements are in place.

The Key Stage Assurance Review (KSAR) guidance and checklist for the OBC stage were published in June 2021 and the project team have worked collaboratively with NHS Assure to address the requirements at the Outline Business Case stage. The review process commenced with a first meeting in December 2021 and the Final Report was issued on the June 2022. The KSAR assessment identified a significant number of areas that the design did not satisfy their requirements. The majority of these issues related to Mechanical, Electrical and Plumbing (MEP) systems. However, compliance with these required a significant increase in plant room size and separation /compartmentation of some services. NHSS Assure recognised the national importance of the facility and asked for further changes to ensure long-term resilience and the ability to readily replace items of plant whilst the facility is operational. The resultant design changes have improved the ability to maintain the facility over the long term but have increased floor area.

4.3.7 NHS Scotland Sustainable Design and Construction (SDAC)

The project team are cognisant of the requirement for NHSScotland to be a ‘net-zero’ Greenhouse Gas (GHG) organisation by 2040 at the latest, and for all NHSScotland new buildings and major refurbishments to be designed to have net-zero GHG emissions from April 2020.

The Net Zero Carbon requirements have been considered by NHS GGC through the development of this OBC and the development will comply with the Scottish Health Technical note 02-01 NHS

Scotland Sustainable Design and Construction Guide (SDaC).

A route map for the project has been developed with and supported by NHSS ASSURE. This has included:

- Passive design – reduce energy demand.
- Operational energy – delivering building services effectively.
- Eliminate fossil fuels – choice of system types/fuels.
- Renewable energy and storage – local renewables and energy purchase
- Upfront embodied carbon – reduce embodied carbon during the construction of the building.
- Whole life carbon – consider the ongoing maintenance, replacement, and end of life implications.

NHSGGC have established a Climate Change and Sustainability Governance Group to oversee their transition to a net-zero emissions service, and the project team are working collaboratively with this group to ensure this investment aligns with their work across the board.

4.3.8 HAI-Scribe

Following the redesign, a HAI-Scribe Stage 1 was completed for September 2022.

A number of hazards were identified, and mitigation measures agreed to ensure staff, patients and public remain staff during these works.

A key action to come out of the review is the need for close liaising with the adjacent Clinical Teams on site to ensure that appropriate mitigation measures are implemented, particularly around the control of dust. Measures have already been agreed and these will be carried through and further considered in the Stage 2 HAI-Scribe, which will be completed early into the FBC stage.

4.4 Risk Allocation

	Question	Response
Risk Allocation	How will the risks be apportioned between public and private sector?	Outline: • Risk allocation table

4.4.1 Key Principles

Development of the risk register has been carried out in collaboration between the NHSGGC project team, stakeholder group, project board and the appointed consultants and PSCP. A review of the risk register takes place at every project progress meeting to ensure the register remains a live document allowing risks to be added, amended, and removed and mitigation measures to be updated as required.

Risk identified at IA stage were identified at high level and were strategic risks under five main categories, these have been developed during the OBC stage and now cover:

- Client / Business Risks
- Planning & Design Risks
- Construction / Procurement Risks
- Finance Risks
- External Risks

Risk register review through OBC stage has also identified risk ownership and through increased knowledge of the works, specific construction project related risks have been identified.

4.4.2 Risk Allocation Table

Risk allocation has been collaboratively agreed at OBC stage. There is an expectation that design, and construction risks will transfer from NHSGGC to the PSCP as the design and construction programme are finalised during the FBC stage. The current allocation of risk is described in Table 21.

Table 21 - Risk Allocation Table

Risk Category	Potential allocation of risk		
	Public	Private	Shared
Client / Business Risks	100%	0%	
Planning & Design Risks	86%	14%	✓
Construction / Procurement Risks	62%	38%	✓
Finance Risks	100%	0%	

External Risks	100%	0%	

A full version of the risk register is available in Appendix D which includes further information on risk analysis, scoring, mitigation, ownership, and effect on the project.

4.5 Payment Structure

	Question	Response
Charging Mechanism	How is payment to be made over the life span of the contract?	Outline: • Proposed payment structure • Non-standard arrangements • Other payment principles

4.5.1 Payment Structure Adopted

This project has utilised NHSScotland Frameworks Scotland 2 (FS2) for the appointment of both PSCs and PSCP. All are appointed under the Frameworks Scotland 2 NEC form of contract; Option C. Option C is a target price paid monthly up to the target cap. Appointment of the PSC and PSCP is made on a stage-by-stage basis with formal contracts in place for both IA and OBC. Payments for each stage of the contract have been made monthly for the duration of each stage.

Another requirement of the FS2 is the utilisation of Project Bank Accounts. This requirement was included in the tender packs issued to PSCs and the PSCP. Discussions have commenced with setting up the account for full utilisation during construction stage.

4.5.2 Contract Variations

From the time of appointment of both the PSCs and the PSCP there have been variations to the contractual amount agreed at the outset. These variations have been dealt with as Compensation Events to the contract and once agreed, included within monthly payments.

Evaluation of Compensation Events for the PSCP has been, and will continue to be, made by the appointed consultant Project Manager and Cost Advisors. Evaluation has been carried out in line with the timescales and procedures required by the FS2 Option C form of contract. With Option C being an open book approach, the PSCP remains part of the evaluation process and works collaboratively with the team to reach agreement.

4.5.3 Risk Contingency Management

At this stage the value of risk has been identified predominantly as percentage allowances within various parts of the total project costs. Currently identified in the project costs as risk allowances are:

- PSCP Risk, 7.5% on OBC construction cost for Gartnavel Option, 10% for Stobhill Option and 15% for both refurbishment options to capture higher risk calculation on lesser developed options plus refurbishment of existing sites.

- NHS Risk provision applied to all PSCP & NHS Costs -7.5% for the more developed Gartnavel Option, 10% for Stobhill new build and 20% for the refurb options of do minimum and at RAH (generated by standard OB calculator toolkit).

Note: we would expect both risk allowances to reduce significantly as we moved through to FBC stage.

- Specialist MEP works - risk of market returns variance from cost plan allowance.

- Specialist equipment - risk of market returns variance from overall project cost allowance

These allowances and management of them has been considered by the NHS project team, the appointed Professional Services Consultants (PSCs) and PSCP. They exist at this stage as allowances as detail design work, market testing and agreement on costs are required before they can be realised, partially realised or mitigated. It should also be noted that the percentage allowances are considered figures and deemed appropriate for projects of this scale, type and status.

As the project develops through FBC stage a costed risk register will be collaboratively developed. Percentage allowances will remain where appropriate at this stage, but the target will be to accurately detail the cost of those risks identified as well as ownership of them.

4.6 Contractual Arrangements

	Question	Response
Contractual Arrangements	What are the main contractual arrangements?	Outline: • Type of contract • Key contractual issues • Personnel implications

4.6.1 Type of Contract

In line with the Scottish Government Construction Procurement Handbook 2018, the project is utilising the NHS Scotland Frameworks Scotland 2 (FS2) for the appointment of both PSCs and PSCP. Utilising this process allows access to a suite of contractual documents agreed between HFS and all consultants on the framework that may be appointed. All contracts have an agreed scope of service and Z Clauses are established as part of the framework appointment the PSCP has with HFS.

Those currently appointed are under the Frameworks Scotland 2 NEC form of contract, Option C. For the Project Manager, Cost Advisor and CDM Advisor, the appointment utilises the NEC4 contract, for the PSCP appointment is based on NEC3. For the anticipated appointment of NEC Supervisor and Clerk of Works the appointment will utilise the NEC Option C contract.

4.6.2 Key Contractual Issues

4.6.2.1 Initial Appointment

Prior to formal appointment of the PSCs and PSCP tendering information is issued confirming the scope of works and associated timescales for each stage. The scope and timescales defined are used as the basis for the commercial bids. Those commercial bids submitted include activity schedules and a project programme for each stage which then form part of the appointment contract, on a stage-by-stage basis. Appointment on a stage-by-stage basis is done so that the starting commercial, activity schedules and associated programme duration is in line with the initial bid submission. Any changes to this will be managed accordingly once the project commences.

4.6.2.2 Roles and Responsibilities

The roles, responsibilities and governance arrangements have been presented in section 6.2.1 with key consultant staff identified in Table 28.

Within the NHSScotland Frameworks Scotland 2 contract documentation a RACI (Responsible, Accountable, Consulted, Informed) Matrix has been developed that confirms the roles and responsibilities of all those with a contractual position.

4.6.2.3 Administering Change

Once the project is underway, a key task for all parties in contract is the monitoring and reporting on progress of activities in line with programme along with providing notification of any delay or required additional activities. These items are key as they can cause a delay (prolongation) or increased cost (Compensation Event). Processes and timescales for reported prolongation or notifying of a Compensation Event are defined within the contract.

Further support on administering the contractual arrangements is provided by the HFS Contract Administration Toolkit (CAT). The CAT and use of it is a contractual requirement and provides all associated pro-forma to administer the contract. The CAT toolkit is also set up accordingly to each named role within the contract so only those with the designated authority may take action to notify of events, amend the contractual conditions. Whilst processes are well defined contractually for each role, there is an overarching collaborative approach.

This change management process only relates to the contractual change process. The management of scope change is detailed in section 6.3.

4.6.2.4 Contractual Compliance

The Design Compliance standards for this project has been developed and agreed in the project specific User Requirements Specification (URS) and the Authorities Construction Requirements (ACR`s). This will be further reviewed and updated at FBC as required. This information forms part of NHSGGCs contract data. Further requirements to comply with all SHTMs, HTMs, HBNs etc. are covered by the PSCPs framework appointment with HFS. Any element of non-compliance is to be reported by the PSCP along with reasoning for and the impact of in the form of a derogation schedule. This schedule is reviewed by the Project Board and approved, or otherwise, by NHSGGC with an agreed schedule then forming part of the contractual documentation. The URS will be further updated at FBC stage.

4.6.2.5 Dispute

Provision is made within the NEC contracts for methods of dispute resolution between the main contractual parties with the preferred method agreed with HFS for inclusion. The contract also notes, within each parties' objectives, means of avoiding dispute for the benefit of the project. Further contractual requirements are also included to ensure progress is made and payments made in event of there being a dispute.

4.6.2.6 Remedies for Failure

Provision exists both within the project contracts and through the framework appointment with HFS to deal with the failure or poor performance of a party or individual. At project level, contractually this can be through following the termination clauses and citing the reason why. With a more collaborative approach, performance issues will be raised with the party or individual with a view to seek improvement rather than seek immediate termination. This will be carried out with assistance with HFS, be monitored and reflected in the projects monthly report to HFS and KPIs.

4.6.3 Personnel Implications

Part of the bid submission identifies those individuals who will deliver the project. Should any of these individuals need to be replaced or leave their position; a replacement will need to be proposed along with identification of their experience and suitability. Review and formal approval of any individual will need to be provided.

All of the key contractual issues outlined above have been followed from the outset. They remain in place and will continue to be utilised as the project progresses.

At present there are no proposed changes to the workforce arrangements. Working hours and workload will remain as existing but within a new facility. Should works be developed on the Gartnavel site, there will be an amended workplace location. All staff are aware of the proposed relocation and relevant staff unions and Human Resources will be advised so any implications for employees can be discussed and agreed.

5 FINANCIAL CASE

	Financial Case	
	Key Steps	**Outcomes for OBC**
1.	Prepare the financial model	Detailed narrative & summary information on key inputs to financial model.
2.	Review capital & revenue financed impact	Completed cost template & supporting information for capital or revenue financed project.
3.	Assess affordability	Statement of affordability and explanation of any funding gaps.
4.	Confirm stakeholder support	Duly signed letter(s) of stakeholder support.

5.1 Introduction

Financial assessment of the four potential sites the Radionuclide Dispensary could be relocated to is detailed in this section. This has been done in collaboration with our Cost Advisors and the PSCP on this project and both Capital and Revenue Finance colleagues within NHSGGC.

5.2 Indicative Capital Costs

The indicative costs in

Table 22 have been updated from the IA by our cost advisors.

Costs have increased from the IA, and the major factors in this are in the GIFA increase, move to a ground source heat pump as part of Net Zero Carbon requirements, market conditions/supply issues due to the war in Ukraine, change in frame following a SDAC review along with other lower value changes to the costs as the design has progressed and has been refined. This has also led to an increase of the percentage-based costs such as the PSCP Fee and Risk, both project and client held.

Additionally, there is a compounded increase to PSCP Fees which affect the bottom-line cost.

These costs will be refined and reviewed further in the Full Business Case.

Table 22 below details the anticipated construction costs for the new facility with the following assumptions:

- Construction start date: March 2024
- Construction Completion: June 2025, followed by approximately 2-month GG&C Operational Commissioning.
- Construction risk is allowed for at 7.5% for the Gartnavel option as it is further progressed Stobhill is 10% as it would be the same design, but site investigation is not as developed For RAH and Do Minimum refurb options it is assessed as 15%.
- Inflation- Our Cost Advisors have used current Building Cost Information Service (BCIS) indices (including TPI and BCIS) to calculate a construction inflation allowance. This is calculated as 5% for Oct 2023 for the PSCP beginning to order materials etc and then a further 3% on the original construction cost plus the October 23 uplift to reflect uncertainty in market conditions.
- The new facility will be built on land already owned by the Scottish Ministers except for the do minimum option which is located at the former Western Infirmary Site now owned by the University of Glasgow. NHSGGC has a lease on this site which permits limited access and expires in March 2051
- Equipment – A detailed equipment list has been provided by the department and will be progressed in conjunction with procurement colleagues. Due to the age of the equipment, the need for service continuity and an upgrade to current production practices, all existing clinical items will require to be replaced.

Table 22 - Capital Cost Summary

Capital Cost	Do Minimum	Solution 1 RAH Refurbishment	Solution 2 Gartnavel New Build	Solution 3 Stobhill New Build
	SG Additional Funding Requirement £000s	SG Additional Funding Requirement £000s	SG Additional Funding Requirement £000s	SG Additional Funding Requirement £000s
Construction Costs (PSCP)	6,356	11,098	10,968	10,858
Inflation Adj. (Oct 23)	318	555	548	543
Inflation Adj. (May 24)	200	350	345	342
Quantified Construction Risk	953	1,665	890	1,086
Total Construction costs	**7,827**	**13,668**	**12,751**	**12,829**
Relocation of Transport Hub	0	0	130	0
PSCP Fee	292	574	510	597
Design Team Fees	1,546	1,546	1,275	1,384
Total other construction related costs	**1,838**	**2,120**	**1,915**	**1,981**
Furniture	40	40	40	40
IT	52	52	52	52
Medical Equipment	959	959	959	959
Statutory Consents	36	36	30	36
Total furniture and equipment	**1,087**	**1,087**	**1,081**	**1,087**
Total estimated cost before NHS Costs & VAT	**10,752**	**16,875**	**15,747**	**15,897**
Direct NHS Costs	65	65	65	65
Professional Fees	415	415	375	390
VAT	2,246	3,471	3,238	3,270
Total estimated cost including VAT and fees but before optimism bias	**13,478**	**20,826**	**19,425**	**19,622**
Allowance for optimism bias	2,697	4,165	1,457	1,963
Total estimated cost	**16,175**	**24,991**	**20,882**	**21,585**

5.3 Indicative Capital Spend Funding Profile

Table 23 - Indicative Capital Spend Funding Profile

Year	Do Minimum	Solution 1 RAH Refurbishment	Solution 2 Gartnavel New Build	Solution 3 Stobhill New Build
	SG Additional Funding Requirement £000s	SG Additional Funding Requirement £000s	SG Additional Funding Requirement £000s	SG Additional Funding Requirement £000s
2020/21	100	100	100	100
2021/22	200	200	200	200
2022/23	634	634	634	634
2023/24	2,369	3,660	3,058	3,161
2024/25	12,872	20,397	16,890	17,490
Total	**16,175**	**24,991**	**20,882**	**21,585**

5.4 Indicative Recurring Revenue Costs

Table 24 - Recurring Revenue Costs

Recurring Revenue Costs	Do Minimum	Solution 1 RAH Refurbishment	Solution 2 Gartnavel New Build	Solution 3 Stobhill New Build
	£000's	£000's	£000's	£000's
Clinical Service Costs	41	41	41	41
Non-Clinical Service Costs	0	38	94	94
Building Related Running Costs	204	252	240	240
Depreciation	706	607	524	538
Total Additional Revenue Costs	**951**	**938**	**899**	**913**
Sources of Funding:				
NHSGGC	245	331	375	375
WoS Boards	0	0	0	0
SG (Depreciation)	706	607	524	538
Total Sources of Funding	**951**	**938**	**899**	**913**

Table 25 - Non-Recurring Revenue Costs

Non-Recurring Revenue Costs	Do Minimum	Solution 1 RAH Refurbishment	Solution 2 Gartnavel New Build	Solution 3 Stobhill New Build
	£000's	£000's	£000's	£000's
Decommissioning of existing facility	0	186	186	186
Temporary Provision of Unit at other NHSGGC site	2,702	0	0	0
Total Non-Recurring Revenue Costs	**2,702**	**186**	**186**	**186**

As noted in the Initial Agreement, the clinical service was expected to be mostly a “lift & lay” from the existing facility to the new one. However, the opportunity has been taken to upgrade the service delivery with the introduction of isolators in the new facility which does not exist at present, therefore, because of this, there is only a small increase in staffing costs of 1 WTE band 3 to operate these.

There is no increase in clinical non pay costs as it is envisaged that this cost will remain the same.

The project will deliver either a new building or an upgrade on a larger footplate (except for the do minimum option). Therefore, there is an increase in non-clinical recurring revenue costs such as Heat, Light & Power, cleaning & rates costs. The costs for these have been calculated using the existing facility current values and adjusting pro-rata to the proposed GIFA of the options, albeit there will be some additional costs for the do minimum option due to increased plant and associated running costs. It should be noted that the energy use in the new facilities would be significantly more efficient than a do minimum option and would address the Scottish Governments requirement for Net Zero Carbon. We would look to complete the calculation of the utility costs at FBC stage considering current market volatility in energy prices whilst recognising that any new facility would be more efficient to heat.

Property Maintenance Costs have been developed with our Cost Advisors who have utilised industry benchmark rates, these will be refined further once we move to FBC,

5.5 Depreciation

The existing facility is fully written down in Land, Building and Equipment. Land & Buildings were impaired due to NHSGGC no longer owning the site and equipment is fully written down due to the useful economic life being fully utilised.

The NHS Scotland Capital Accounting Manual has been followed and the following lives have

been used to calculate projected depreciation for the assets.

- Buildings – 50 years.
- Do Minimum Building – 26 years.
- Equipment – 10 years.
- IT – 5 Years.

The Do Minimum Building Asset life is calculated as 26 years due to the lease expiration date for the site (March 2051) less the estimated construction completion date (Q2 2025)

5.6 Indicative Non-Recurring Revenue Costs

Decommissioning costs have been calculated and uprated using costs from other buildings we have moved from. Due to the unique nature of this service, we have added an additional 20% to allow for any additional costs that may be incurred in the moving process.

There is no available decant space on the existing site for the do minimum refurb option therefore space would have to be found at an existing NHSGGC site. We have compared costs incurred on modular units we have hired for Minor Injury Units and Endoscopy Suites and added in enabling works such as utility connection costs etc. NHSGGC have incurred on these projects. We have estimated a 24 month hire period plus enabling costs of £300k, it is recognised that this type of temporary facility is rare for a service of this kind, so again, costs will be refined as we progress the FBC. This would not be required on the other three options but, conversely, there would no need for decommissioning costs on the existing site as it would be refurbished rather than de-commissioned.

5.7 Affordability

The expectation is that SG will fund the capital element of the project.

Discussions are ongoing at a local and regional level to ascertain the sharing of the additional revenue costs, but it is anticipated that SG will fund the deprecation costs which are the majority (60% to 70%)) of the additional revenue costs.

Any additional revenue cost implications are relatively small in context to the existing revenue budget but given the nature of this regional service we will engage with relevant stakeholders, mainly, but not limited to, the West Of Scotland Boards to support funding the implications

of this move as we progress the FBC. For the moment, we have assumed NHSGGC will fund the increase in costs in Table 24.

5.8 Stakeholder Support

Through the governance process detailed in section 6.2.1 the project has consulted with internal NHSGGC stakeholders. This business case and the options that have been considered are supported by the Project Board with representation from NHSGGC stakeholders.

As the facility provides a service to other health boards as identified in Table 1, the project has previously been presented to the West of Scotland Directors of Pharmacy group and the NHS Scotland Chief Pharmacist both of which confirmed support for the project and specifically the proposals to locate the facility within the NHSGGC geographical footprint. The options developed in this OBC were presented to the West of Scotland Directors of Pharmacy group on 22 March 2022 with the group reconfirming their support for the project and the proposal to locate a new facility on the Gartnavel site.

The current service delivery levels will remain constant between the existing and new facility. As the delivery procedures are revised for the new facility during the FBC stage, discussions will take place with other health boards in the West of Scotland to confirm their ongoing support for the project and the service delivery proposals.

6 MANAGEMENT CASE

6.1 Management Case: Overview

The main purpose of the Management Case is to demonstrate that the organisation is ready and capable of delivering a successful project.

NHS Assure completed a KSAR Report in June 2022, which identified that there were failings in the robustness of the proposed OBC. This including gaps in the governance processes and a need to review and record decisions taken some 2 years prior. GG&C fully embraced these comments and undertook an 8-month refresh of the OBC submission that went all the way back to the Client Brief and through the design and engagement process. The opportunity was taken to bring on board any changes in process or technology that could be incorporated to improve the service out puts.

The Governance process was restructured, and wider stakeholder involvement was identified.

In terms of the Management, the effort required will be dependent upon the size and complexity of the project and therefore the response to the following questions should be proportionate to the level of risk of not delivering the project successfully:

	Question	Response
Project Management	What are the project management arrangements are in place?	Outline: • Reporting structure & governance arrangements • Key roles & responsibilities • Project recruitment needs • Project plan
Change Management	What change management arrangements are being planned?	Outline, where appropriate: • Operational & service change plans • Facilities change plan • Stakeholder engagement & communication plan
Benefits Realisation	How will the project's benefits be realised?	Outline: • Updated benefits register • Full benefits realisation plan
Risk Management	How are the project risks being managed?	Outline: • Updated risk register • Risk control measures • Governance arrangements
Commissioning	What commissioning arrangements are being planned?	Outline: • Reporting structure aligned to main project structure • Person dedicated to leading this process • Key stages • Resource requirements
Project Evaluation	How will the success of the project be assessed?	Outline: • Person dedicated to leading this process • Key stages • Resource requirements

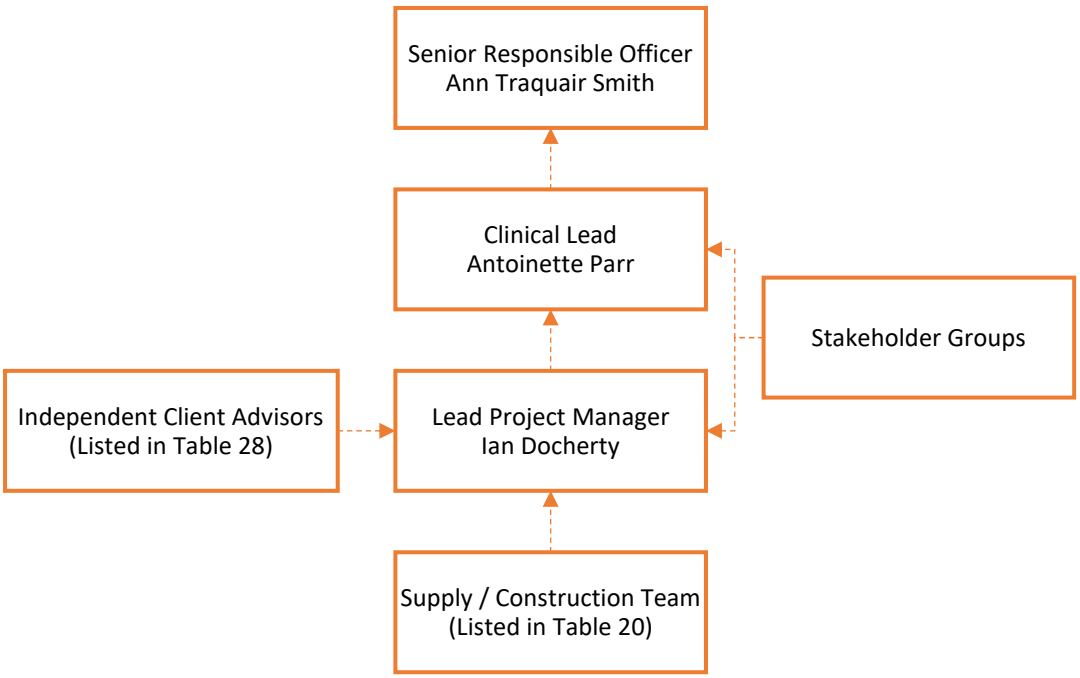
6.2 Project Management Proposals

	Question	Response
Project Management	What project management arrangements are in place?	Outline: • Reporting structure & governance arrangements • Key roles & responsibilities • Project recruitment needs • Project plan

6.2.1 Reporting structure and governance arrangements

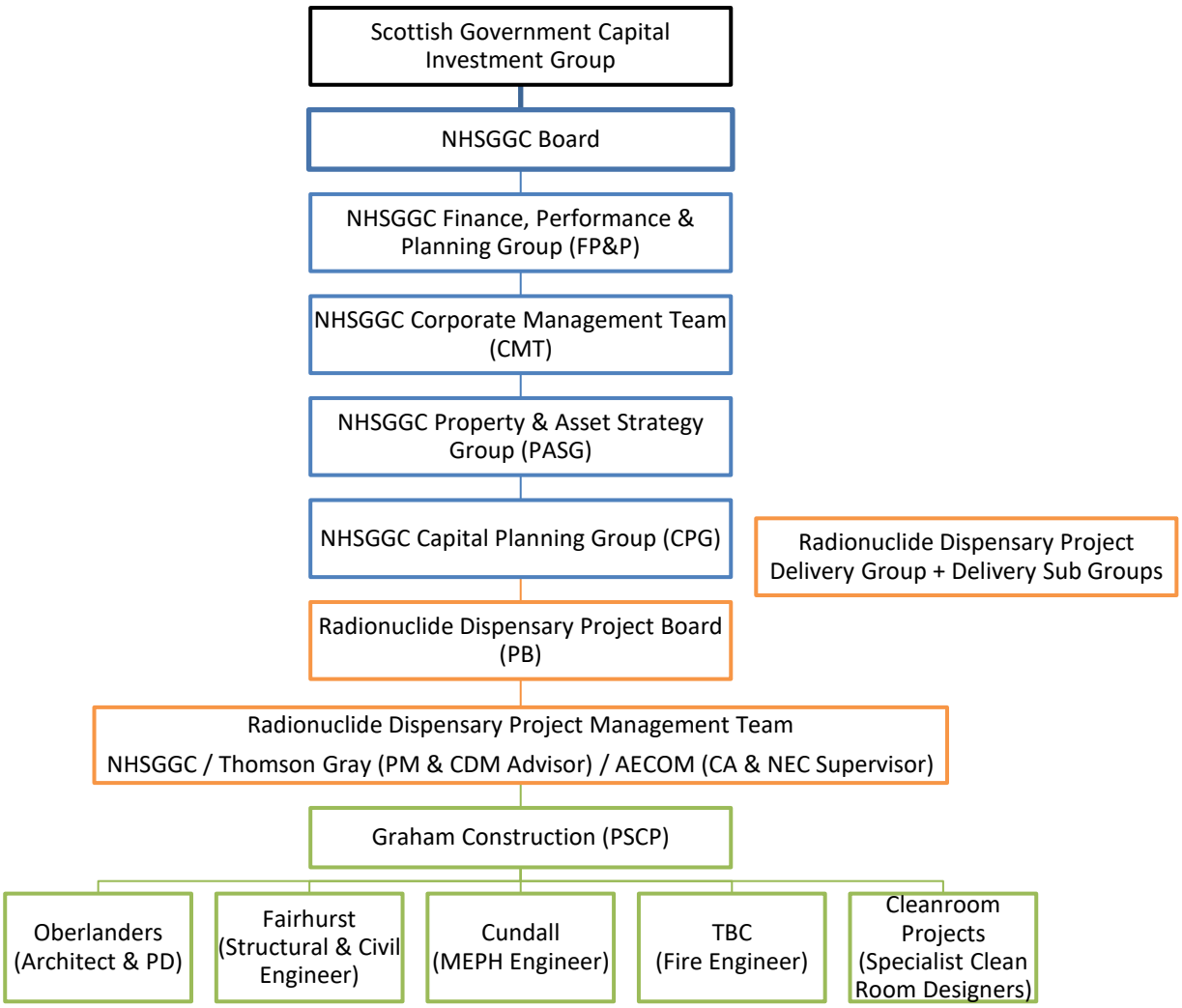
The project's reporting structure is shown in Figure 3 below. A more detailed explanation of the key roles and responsibilities is provided in section 6.2.2.

Figure 3 - Project Reporting Structure



In support of the project reporting structure several governance groups provide oversight of the project. This governance structure is made up of project level, NHSGGC governance and Scottish Government groups. The structure and reporting lines of these groups is outlined in Figure 4 below.

Figure 4 - Project Governance Structure

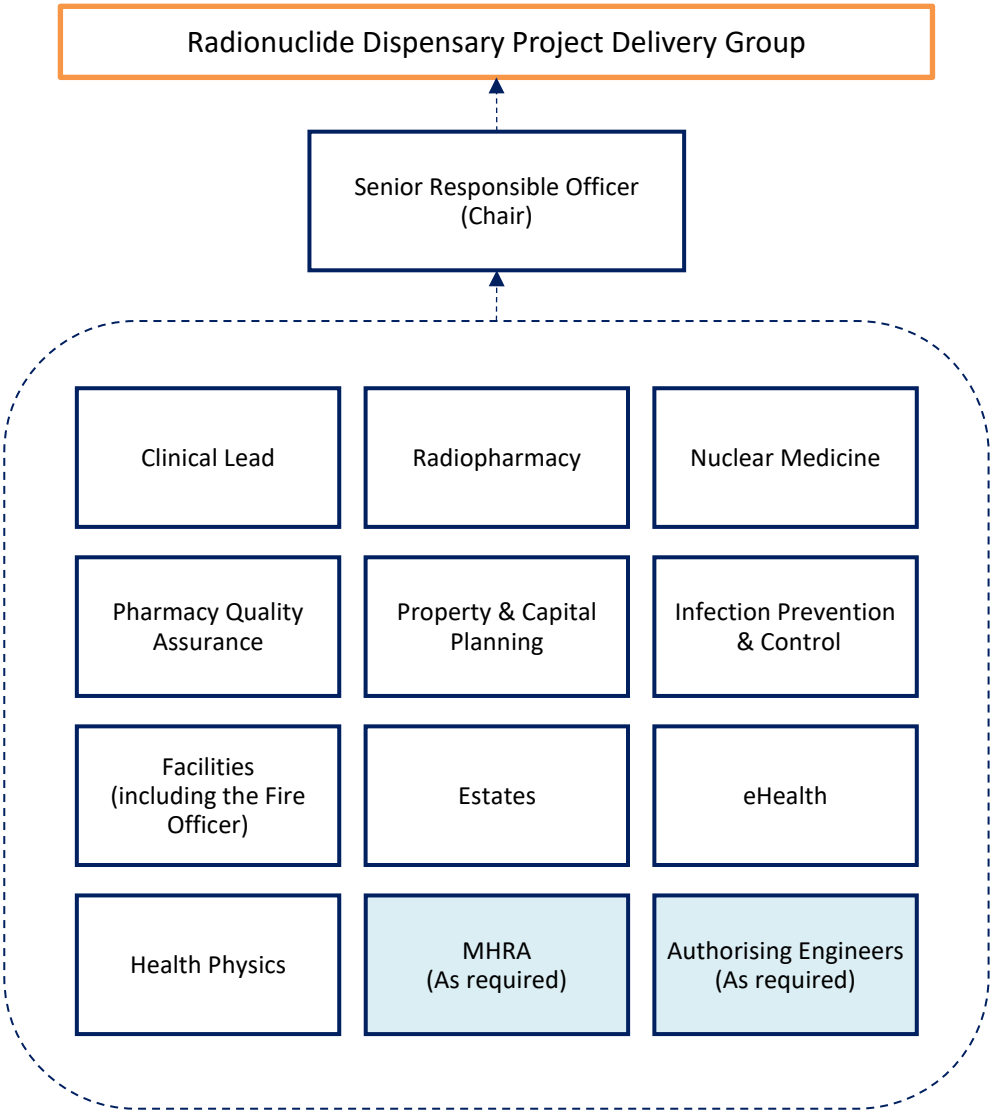


The Radionuclide Dispensary Project Board reports to those groups identified above. Except for the Scottish Government Capital Investment Group these Groups/Committees oversee the delivery of all NHSGGC Capital projects. These Groups are chaired by the appropriate Director/Chief Executive/Board Member and include representatives from other Project Boards within NHSGGC, Capital Planning, Facilities, and Finance.

Due to the technical complexity of the project a Project Delivery Group and focus Delivery Sub Groups have been established during the design refresh stage to provide technical oversight as the project develops. This group will be chaired by the Senior Responsible Officer and will be

made up of the stakeholders identified in Figure 5. This group will also act as the link to the MHRA to ensure communication and engagement is maintained as the project is developed.

Figure 5 - Project Delivery Group



6.2.2 Key Roles and Responsibilities

The personnel highlighted in Table 26 form the core reporting structure responsible for the delivery of the project. This team is supported by the wider project structure shown in Figure 3 and Figure 4.

Table 26 – Core Project Team

Key Roles:		
Role:	**Named person:**	**Role Description:**
Senior Responsible Officer	Anne Traquair Smith	See Table below (27)
Clinical Lead	Antoinette Parr	Antoinette is the General Manager of the Medical Illustration / Department of Clinical Physics and Bioengineering (DCPB), including the RND facility. In this role Antoinette manages those forming the stakeholder group providing an existing relationship with the group and a detailed understanding of their service needs.
Lead Project Manager	Ian Docherty	Ian is a Senior Project Manager within the Property & Capital Planning Department forming part of the team tasked with delivering the Boards' capital plan. Ian will provide expertise in contract, procurement, stakeholder and project management. His role in this project will be to lead, manage and co-ordinate the project team and he will be the day-to-day contact for the NHSGGC project team and the appointed client advisors. Ian will continue with the project into FBC stage.

A Project Board has been established comprising of the Core Project Team supported by those detailed in Table 27. Regular project board meetings are held along with those scheduled at key milestones during the project programme.

Table 27 - Project Board Members

Project Board Members:		
Project Role:	**Named person:**	**Experience:**
Organisation's senior business / finance representative - Representing the organisation's business & financial interests.	Ann Traquair Smith Director of Diagnostics (Chair)	Ann has 33 years of NHS experience, 16 of those years as a senior manager level, during which time she has been the Senior Responsible Officer (RSO) on many high value capital projects, including the New Victoria Infirmary theatre suite/day ward and the new Audiology and ENT treatment room capital builds in the QEUH. As well as various capital replacement of Air handling Units with a variety of critical care and theatres suites throughout NHSGG&C. As SRO for these projects Ann was responsible for ensuring the project was met on time in line with requirements of my organisation to the stand required by relevant regulatory authorities.
	Michael McGrory Senior Capital Accountant	Michael is the Senior Capital Accountant within NHSGGC's Capital Finance Department. He has extensive experience of delivering Capital Projects, both minor and major and also through the SCIM process and has reviewed the costs for this project with the Board's Cost Advisors to ensure they are robust. His role on the Project Board is to provide financial advice as the project progresses, advise Scottish Government Capital Finance colleagues of any financial issues and monitor and report spend.
	Jill Flanagan Head of Finance, Diagnostics & Regional	Jill's role as Head of Finance (HOF) is responsible for the overall management and performance of the two Directorates finance provision which include the services based in the Radionuclide Dispensary. In this role, Jill leads on the implementation of developments (Short, Medium and Long-Term) including capital and revenue developments. Her specific purpose on the RND Board is to oversee the operational financial management arrangements and revenue implications for any change to services as part of this development.

Senior service representative - Representing the end user interests.	Antoinette Parr General Manager Medical Illustration & DCPB (Deputy Chair)	As General Manager Antoinette is responsible for the management of the Department of Clinical Physics and Bioengineering, the Radionuclide Dispensary is part of this overall service. Over a number of years through a number of transitional phases, Antoinette has worked very closely with this team providing support and guidance. She has 38 years of NHS managerial experience crossing many disciplines. Her role on the Project Board is to bring these skills and vast knowledge to each phase of the development providing a link across the project, maintaining a focus and delivering on the actions while keeping to the timeline.
	Kay Pollock Head of Radio Pharmacy	As head of the service Kay has experience and knowledge of how the whole facility operates. This experience includes the MHRA licensing requirements and liaising with those providing a service to or receiving a service from the facility. Kay has worked in NHS manufacturing facilities for 30 years.
	Elaine Millen Production Manager for the Radionuclide Dispensary	Elaine has worked in RND for over 30 years and since 2009 has been the Production Manager and Lead Technician. She brings vast experience of specific operational needs, procedures and policies as well as existing failings.
	Sandy Small Consultant Physicist, Head of Nuclear Medicine (NW Sector)	Sandy is responsible for delivery of Nuclear Medicine services (including PETCT and Therapies) on the Gartnavel Campus, he also has a role providing Medical Physics Expert advice to the existing Radionuclide Dispensary. Sandy's role on the project is twofold: 1. To provide Medical Physics Expert (MPE) and general scientific advice to the project and 2. To represent the views of the Radionuclide Dispensary service users / customers across the West of Scotland.
	Andrew Reilly Scientific Director	As professional and scientific lead for clinical physics and bioengineering services across NHS Greater Glasgow and Clyde Andrew is responsible for the operational delivery, performance and ongoing development of both the radionuclide dispensary (RND) and the wider nuclear medicine service, along with ensuring a smooth working relationship between these services.

Senior Technical / Estates / Facilities representative - Representing the technical aspects of the project	Ian Docherty Senior Project Manager	Ian has been a Senior Project Manager with Capital Planning for 9 years and has been the GG&C Project Manager for number of major projects in recent years including Eastwood, Gorbals and Clydebank Health and Care Centres with a combined value of £57 million. Ian's role encompasses the general GG&C management of the Capital Project and provide the conduit for the various service interfaces with the Design Team. His key areas of focus are on the design and technical review of the proposals during the design and detailed phase and to see the project through the construction phase to handover.
	John Donnelly Program Director – Major Projects.	John has acted as Program Lead on a number of NHSGGC new build projects over the last 10 years. These have included: Completed Projects (Maryhill H&CC, Eastwood H&CC, Woodside H&CC, Gorbals H&CC, Inverclyde Integrated Care, Greenock H&CC, (Clydebank H&CC) and Stobhill Mental Health Wards) Projects currently on site: (North East HUB Health and Care Centre)
	Andrew Baillie Depute Program Director – Major Projects.	Andrew has acted as Project Manager and Technical Lead on a NHSGGC new build projects over the last 7 years. These have included: Completed Projects (Maryhill H&CC, Woodside H&CC, Inverclyde Integrated Care, and Stobhill Mental Health Wards) Projects currently on site: (North East HUB Health and Care Centre)
	Donald Bain Site Estates Manager	Donald has 37yrs NHS experience and has worked within an Estates function for all of these years. He has knowledge at depth of the current SHTM's and will be able to assist with technical input into the project. The build is expected to be on the GGH site, which is one of his hospitals and as such, it will be extremely beneficial to for him to be able to see this process from start to finish. There will also of course, be multiple requests made of Estates within this process, and as such, Donald's involvement will allow him to direct such requests to the appropriate people and ensure this is done in a timeous manner.

	Joanne Freel eHealth Representative	The project has previously engaged with David Daly for the eHealth team. David has recently retired from NHSGGC and his replacement has now been confirmed.
Stakeholder representative(s) - Representing stakeholders' interests:	Allana Kelly Infection Prevention and Control Lead Nurse	Allana is a qualified registered nurse with a post graduate diploma in Infection Control. She qualified in 2009 and worked in various posts within the medical directorate NHSSGGC before moving into infection control. In her role within infection control Allana worked closely with estates and capital planning on projects.
	Aleksandra Marek Consultant microbiologist /Infection Control Doctor,	• Fully registered with GMC • Consultant Microbiologist • Provides leadership to medical staff within Infection Control on clinical issues • Act as a key member of the Senior Infection Control Team • Support the Infection Control Manager • Work closely with the ICM and the other members of the Senior Infection Control Team to develop the service and implement change
	David Gentle Head of Health Physics	David is the Head of the Health Physics section which provides advice regarding radiation protection matters to the Greater Glasgow and Clyde Health Board. This includes providing advice on compliance with regard to the Ionising Radiations Regulations (IRR17), the Environmental Authorisations (Scotland) Regulations (EASR18), the Carriage of Dangerous Goods Regulations 2009 (CDG) and the Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPIR). David is also a certificated Radiation Protection Adviser under IRR17 and appointed by NHS GG&C to this role. Together with his colleague Michael Watt he will provide advice to ensure the new facility will meet all extant regulations relating to work with ionising radiations.

	Michael Watt Consultant Clinical Scientist, Health Physics	Michael is a Radiation Protection Adviser (RPA) working in the NHS GGC Health Physics team, with over 10 years' experience providing radiation safety and legal compliance advice to radionuclide production facilities. Currently he is the lead RPA to both the Radionuclide Dispensary and the PET Radiopharmaceutical Production Unit. It is a requirement of the Ionising Radiations Regulations 2017 that an RPA must be consulted on the plans for the new facility, and he will also provide advice relating to the Environmental Authorisations (Scotland) Regulations 2018 and the Carriage of Dangerous Goods Regulations 2009. Michael's advice will address radiation safety and compliance with the regulations, and may have implications for the design, layout and construction of the facility along with the equipment installed within it.
	Lynn Morrison Regional Quality Assurance Pharmacist	As Regional QA lead for pharmacy Lynn is lead for the GGC MHRA multi-site licence. She has worked in pharmacy QA for over 30 years and has extensive experience in pharmacy new builds, especially aseptic facilities; – New Victoria Hospital 2008/9, Forth Valley Royal Hospital 2008, Queen Elizabeth University Hospital and Royal Hospital for Children 2014/2015, Dumfries and Galloway Royal Infirmary 2018. Pharmaceutical Specials Service, 2019. Experience and skills – design and installation of production and aseptic facilities, dispensaries, URS development, IQ,OQ,PQ and development of validation master plans, validation test result review and facility sign off. Process mapping and QMS development.
	Andrew Ferguson Ehealth SDPM	

Independent Client Advisors have been appointed to support the project from a technical perspective as well as support the management and delivery of the works. The appointments are made from a mixture of external consultant appointments as well as internal NHSGGC specialists. The advisors detailed in Table 28 below are in addition to the PSCP appointment detailed in section 4.2.3 that will also provide specialist appointments to support the delivery of the project.

Table 28 - Independent Client Advisors

Independent Client Advisors:	
Project Role	**Organisation and Named Lead**
NHS Procurement Lead (Equipment)	To be confirmed during FBC stage
Commissioning Manager	To be confirmed during FBC stage
Project Manager	Thomson Gray – Wesley Bathgate
Joint Cost Advisor	AECOM – Scott Mathieson
CDM Advisor	Thomson Gray – Stuart Deans
NEC Supervisor & Clerk of Works	AECOM, named individual to be confirmed during FBC stage

6.2.3 Project Recruitment Needs

NHSGGC has the required resource and individual capacity to fill the key roles identified within the project structure. Additional support will be provided within NHSGGC and from those confirmed as client advisors. Recruitment to the vacant posts will be completed during the FBC stage and will make use of NHSGGC existing resource.

Those individuals identified under section 6.2.2 have been involved and engaged in the process from various stages and have been selected as they have the necessary skills and capabilities to assist the successful delivery of the project. Should any replacement of those individuals be required, NHSGGC recognise that any replacement will have to demonstrate sufficient knowledge and capabilities and provide confidence that no gap in resource ability occurs at any stage.

6.2.4 Project Plan and Key Milestones

A detailed project programme is in place with the key milestone dates summarised in Appendix D. The provision of the new facility is tome-critical to maintain the support of the Medicines and Healthcare Products Regulatory Agency (MHRA) who are sighted on elements of risk associated with the current facility and arrangements. The IA outlines a programme which noted the new facility being operational during Q4 2023. There has inevitably been some delay whilst the OBC design and Redesign process noted before has been undertaken.

Key Milestone	Date
OBC SGCIG Approval	March 2023
FBC SGCIG Approval	February 2024
Commencement of Construction Stage	March 2024
Construction Complete	May 2025
Service Commencement	July 2025

The delay completion is a risk to the ongoing support of the MHRA and the ability to continue to manufacture in the existing facility. We are therefore reviewing options to minimise the delay as much as possible.

Some work has been undertaken to explore if the development of an advanced works package could offer an earlier completion. This package would include groundworks, utilities and drainage works. This would require an instruction in advance of final FBC approval but could bring forward the completion date by up to a further 3 months. This would be subject to further discussion and approval at a point when market testing has been concluded and there is a higher degree of certainty on the final price.

6.3 Change Management Arrangements

	Question	Response
Change Management	What change management arrangements have been put in place?	Outline: • Operational & service change plan • Facilities change plan • Stakeholder engagement & communication plan

6.3.1 Operational & Service Change Plan

Service output will remain consistent with no anticipated changes to staff and minimal change to staffing levels. All works will however be carried out from a new facility with new higher spec equipment. Operational policies and procedures will all have to be updated or new documents developed and put in place to suit. Developing these documents will be by the clinical team and

include engagement with MHRA to ensure compliance. These will be developed through FBC stage and be based on detailed design developed and 1/50 room layout process.

Training and familiarisation for all equipment will be required. This relates to not only the specialist clinical equipment but all plant services, control panels, monitoring systems and the BMS. The leads for training and familiarisation will be dependent on the procurement route. For all specialist equipment, this will be arranged through individual suppliers and, as part of the procurement requirements, attendance for training will form part of the commercial offer.

For training and familiarisation for all plant services, control panels, monitoring systems and the BMS, this will be carried out by the PSCP as part of their soft-landings process. To assist with this process, the estates and FM teams on the Gartnavel site, those who will ultimately take over maintenance, will be engaged through the design process. This will ensure they are part of the product selection, design arrangement and coordination process and are aware of standalone items and those which need to integrate with existing systems. We have in recent projects been video recording the training sessions in order that this can be sourced at a later date to inform new members of the team. It would be the intent to do this again for the RND project.

6.3.2 Facilities Change Plan

As noted above, the process for adopting the required changes to the FM service at the Gartnavel site will follow the Government Soft Landing Principles. This forms part of the PSCP service and will be led by their soft landings champion who will be confirmed during FBC stage.

Part of this process will ensure that at pre-handover stage, relevant staff will be able to spend time gaining an understanding of interfaces and new systems and check that the output and functionality expected are provided. At this stage it is anticipated that this will be a transitional process with elements of manufacture taking place at both the existing and proposed new facility. By approaching in a transitional manner, it will allow the clinical, estates and FM teams to occupy and gain an understanding of how facility will really function in sequence and for it to be tested in terms of M&E systems, equipment, furniture, layout, robustness etc. – critical for a successful handover.

Initial aftercare will also be part of the service provided by the PSCP should any issues arise during the initial handover, testing and familiarisation period. The initial timescale forming part of the initial commercial submission is 6 weeks. This duration, and its appropriateness, will be discussed and confirmed through the FBC and stage 4 contract award processes along with any extended period in coordination with the long-term post occupancy evaluation process. It is

expected that the PSCP team will retain a presence on site to deal with emerging issues, assist with understanding how systems are operating, measured, monitored, and adjusted to ensure the facility meets the users' expectations and requirements.

6.3.3 Stakeholder Engagement and Communication Plan

A Project Execution Plan (PEP) was in place for the original OBC stage which details the process of stakeholder engagement and communication. The PEP includes details of the reporting structure, processes, and culture to ensure communication is effective from a contractual and consultive perspective. The key elements of the plan are outlined in the sections below.

During the design refresh, the same structure and process was followed. However, it was not felt necessary to update the original plan.

6.3.3.1 Project Board and Delivery Group

The Project Board and Project Delivery Group primarily provide governance and oversight of the project. However, they also provide the opportunity to engage with the project stakeholders and consult on project issues as they arise. Those issues which have been resolved by the groups will be communicated within the structure presented in Figure 4. Similarly, those decisions out-with the remit of the board will be communicated to the required governance groups along with recommendations to allow informed decision making.

In addition to the formal governance arrangements the Project Delivery Group will provide a link to the MHRA. Although as the licencing authority the MHRA will not formally accept or endorse the design this ongoing communication and consultation will be vital in ensuring the new facility will be capable of achieving the production licence requirements.

6.3.3.2 Project Organisation

The project organisation chart identifies the formal communication lines at project team level. A Responsibility Assignment Matrix has also been agreed to identify the project team members and stakeholders who should be involved in key activities during the project stages.

All reporting communication and engagement out with the project team structure will be the NHSGGC project and clinical lead. This includes engagement with stakeholders such as the RPA and regional QA pharmacist. Along with the identified structure, the roles, and responsibilities of those named are included in the PEP.

6.3.3.3 Project Meetings and Reporting

Throughout the OBC stage a series of meetings have taken place to provide the opportunity to engage with the project team and stakeholders. These will continue during the FBC and construction stages. The meetings have been grouped into the following categories:

- Clinical / User Group Meetings – Weekly and often twice weekly at certain stages during design phases
- Project Progress Meetings – Monthly
- Project Quality Meetings – Monthly
- Commercial Meetings – Monthly
- Commissioning Meetings – Bi-monthly (from FBC onwards)

All meetings are scheduled in advance for the appropriate stage of the project and are minuted for future reference. In addition to the formal meetings progress reports are prepared monthly by the PSCP and Project Manager ahead of the appropriate meeting.

6.3.3.4 Stakeholder Engagement Plan

A stakeholder engagement plan was developed by the PSPC for the OBC stage of the project. This aligned with the project programme and key activity dates. The document provided the PSCP with an opportunity to summarise the output needed to develop the project along with timing and sequencing of the meetings. The Project Team then ensured that those required for attendance did attend. A copy of the engagement plan for OBC is provided in 0F.

The NHS Assure KSAR identified that there were failings in the governance process around engagement and a 8 month design refresh was undertaken. The Governance was re-structured and wider stakeholder involvement was identified. There was particularly good engagement from stakeholders during the refresh process.

A new plan will be developed for FBC stage following the established principles.

6.3.3.5 Communication and Information Management

The PEP describes the project culture for communication and notes that; project teams perform better where individuals within the teamwork in a spirit of mutual trust and cooperation towards a

common goal. This is the type of culture that the project has adopted and wishes to continue to develop and promote through its various forms of interactions:

- Interface Management - Lines of communication should generally follow the organisational structures contained in Figure 4. This will help to avoid confusion and miscommunication between the parties.

- Emails - Email correspondence on the project is acceptable for day-to-day communication. Emails should be copied into the relevant parties and the subject field should contain an appropriate title including the project title and subject matter.

  All emails should be drafted in a professional subjective manner.

- Asite Protocols - Asite is a Common Data Environment (CDE) to be used as a central location for all project documentation to be stored to support configuration control across the project team.

- External Communication - All external communication requests should be authorised by the project lead in advance of publication / release.

- Contractual Correspondence - All contractual correspondence and notifications must be in a form which can be read, copied, and recorded. The CAT Toolkit must be used by all parties via Asite.

For the PEP content generally, it should also be noted that it is a live document and its ongoing review forms part of the core team agenda, ensuring its contents are regularly reviewed and updated as required. This is not the only opportunity for review and change, this is a document that is shared with the core team and it is understood that it can be updated at any time through core team members' awareness of any change.

6.4 Benefits Realisation

	Question	Response
Benefits Realisation	How will the project's benefits be realised?	Outline: • Updated benefits register • Full benefits realisation plan • Community benefits objective

6.4.1 Benefits Register

The Benefits Register is included in Table 29, this was originally developed during the IA stage and has been revised during the OBC stage. This will continue to be monitored and evaluated during the development of the project to maximise the opportunities for them to be realised.

Table 29 - Benefits Register

Blurb on register development.

Identification						Prioritisation
Ref No.	**Benefit**	**Assessment**	**Measured?**	**Baseline Value**	**Target Value**	**Relative importance (RAG[1])**
1	**Person Centred** Improved safety for staff and handling of hazardous materials.	Qualitative	Staff Survey / Risk Assessment / Quality Management Procedures	No. of Datix reports Current No. of non-conformances of MHRA (June 2021) % Satisfaction on I-Matters Questionnaire? Staff satisfaction survey to be identified pre move to new facility Measured Staff and Environmental radiation dose levels	Reduction in incidents. Reduction in non-conformances in MHRA audit Staff satisfaction on H&S and wellbeing. Staff and Environmental Radiation dose levels showing no increase, and deemed via radiation risk assessment to be As Low As Reasonably Practicable	5
2	**Person Centred** Improve the quality / physical condition of the healthcare estate.	Quantitative	EAMS – Survey undertaken in August 2020	Fabric and service condition noted as poor for 19 items	Relates to planned preventative works as well as emergency responses. Completion of decommissioning works and handing facility over to Glasgow University.	3
3	**Safe** A modern facility which fully complies with MHRA Standards.	Qualitative	MHRA Report	Current MHRA Report on the existing facility. Current No. of non-conformances of MHRA (June 2021)	MHRA licence updated and in place for new facility. Successful commissioning of manufacturing environment.	5
4	**Safe** Reduction in risk of microbiological contamination of products.	Quantitative	Environmental Monitoring / Testing	Current and historic % of out of specification results. Change to procedure for manufacture of products, better process flows required for new facility. Staff satisfaction survey to be identified pre move to new facility	Reduction in incidents. Policies and procedures in place that dictate flow of microbiological products. Staff satisfaction that process works well.	4
5	**Effective Quality of Care** Meets future demand for the manufacture and supply of radiopharmaceutical agents in the treatment of cancer in the West of Scotland.	Quantitative	Data available on existing and projected usage.	Currently no capacity to support GA-68 PET within GG&C.	Success of space & environment designed to be adaptable to accommodate additional or different type, size and weight of specialist equipment and associated users.	3
6	**Effective Quality of Care** New facility will reduce the risk of loss of service for diagnostic testing.	Quantitative	Part of Waiting Times / RTT Pathway.	Number of loss of service incidents within the last 12 months Number of disruption/delays of service incidents within the last 12 months	Reduction in incidents causing loss of service production. Improvement in response times.	4
7	**Health of Population** PET Generation will support the early detection of cancer and treatment.	Quantitative	Patient booking data.	Currently no capacity to support GA-68 PET within GG&C.	Provision of PET generation from new facility. Improvement in ability to meet Referral to Treatment (RTT) and Treatment Time Guarantee (TTG). Measuring targets for treatment and diagnostics: RTT and TTG.	3
8	**Value & Sustainability** Potential opportunity to collate with similar services to enable flexible use of staff (Cyclotron)	Quantitative	Data from suppliers	Not currently possible to share resource as site is remote from other NHSGGC facilities	Increased skills, training and educational records associated with staff development. Increase in recorded training sessions held within facility.	3

9	**Value & Sustainability** Potential for improved space utilisation and optimised running costs.	Qualitative	GG&C data	Energy efficiency saving from new cabinets and reduced number of cabinets Current operational costs?	Meeting or showing improvement on predicted life cycle costs associated with the new facility.	2

[1] RAG rating is based on 1 = Fairly Insignificant, 3 = Moderately Important and 5 = Vital

6.4.2 Benefits Realisation Plan

During the OBC stage the benefits register has been expanded to provide the Benefits Realisation Plan in Table 30. This identifies who will be responsible for realising the benefit and the timescale to do this.

Table 30 - Benefits Realisation Plan

Identification		Realisation					
Ref No.	**Main Benefit**	**Who Benefits?**	**Who is responsible?**	**Investment Objective**	**Dependencies**	**Support Needed**	**Date of Realisation**
1.	**Person Centred** Improved safety for staff and handling of hazardous materials.	Staff	Head of Radionuclide Dispensary / Production Manager RND / Radiation Protection Advisor	Objective 1 - A facility compliant with the MHRA production licence requirements.	Policies and procedures in place that are compliant with IRR17, EASR18 and CDG19 requirements and not reliant on compromise.	Long term monitoring required demonstrating numbers of incidents typically associated with the former facility have reduced and staff and environmental radiation dose levels are not increased. Radiation safety audits and risk assessments to determine regulatory compliance and confirm if dose levels are as low as reasonably practicable.	Within 24 months of commissioning
2.	**Person Centred** Improve the quality / physical condition of the healthcare estate.	Staff	Assistant Head of Estates (Partnerships)	Objective 4 - Location on a site which represents long term NHS control and investment.	Up to 36 months will allow time to establish if predicted life cycle costs associated with the new facility are accurate and represent the anticipate improvement in estate.	EAMS updated annually. Decommissioning programme to commence following transitional period and completion of soft-landing and handover.	Within 12-36 months of commissioning
3.	**Safe** A modern facility which fully complies with MHRA Standards.	Staff / Patients / Public	Head of Radionuclide Dispensary / Production Manager RND / Regional QA Pharmacist	Objective 1 - A facility compliant with the MHRA production licence requirements.	MHRA licence updated and in place for the new facility.	Engagement with the MHRA through the design, construction and commissioning stages. Agreement to commence production once facility fully commissioned	Within 12 months of commissioning
4.	**Safe** Reduction in risk of microbiological contamination of products.	Staff / Patients	Head of Radionuclide Dispensary / Production Manager RND / Regional QA Pharmacist	Objective 1 - A facility compliant with the MHRA production licence requirements.	Policies and procedures in place that dictate product and process flow to minimise microbiological risk to products while minimising radiation risk to staff.	Routine microbiological monitoring of the clean room environment	Within 12 months of commissioning
5.	**Effective Quality of Care** Meets future demand for the manufacture and supply of radiopharmaceutical agents in the treatment of cancer in the West of Scotland.	Staff / Patients	General Manager DCPB / Scientific Director	Objective 5 - Delivery of a resilient production capability.	NHSGGC Board strategy and replacement of gamma cameras	Potential additional staff to support increase in demand	Target date unknown. Will be dictated by increased demand of existing production type or change in approach from Gamma camera to PET CT.
6.	**Effective Quality of Care** New facility will reduce the risk of loss of service for diagnostic testing.	Staff / Patients	Assistant Head of Estates (Partnerships)	Objective 2 - Improvement in clinical adjacencies.	Co-location on site with estates and medical physics support will ease problem solving.	Response from support teams to failure of equipment of building fabric	Within 12 to 24 month from commissioning
7.	**Health of Population** PET Generation will support the early detection of cancer and treatment.	Staff / Patients	General Manager DCPB / Scientific Director	Objective 6 - Provision of a facility that provides flexibility for maintenance and adaptation.	NHSGGC Board strategy and development of PET service	Potential additional staff to support increase in demand	Up to 5 years from commissioning
8.	**Value & Sustainability** Potential opportunity to collate with similar services to enable flexible use of staff (Cyclotron)	Staff	General Manager DCPB / Scientific Director	Objective 3 - Provision of easily accessible and knowledgeable response team.	Co-location with existing radiopharmaceutical production unit. Increased opportunities for closer co-operation between facilities to share knowledge, training and potential contingency.	Transitional bedding in period with time to develop training and educational programmes.	Within 36 months of commissioning

9.	**Value & Sustainability** Potential for improved space utilisation and optimised running costs. A key benefit now would be in relation to reduction in energy use for the facility and meeting the Scottish Governments Energy Targets in relation to NZC.	Staff	Head of Radionuclide Dispensary / Production Manager RND / Assistant Head of Estates (Partnerships)	Objective 1 - A facility compliant with the MHRA production licence requirements.	Successful implementation of environmental and services strategy.	EAMS updated annually Ability to adapt services strategy with a view to react to performance requirements accordingly.	Within 36 months of commissioning

6.4.3 Community Benefits

NHSGGC has developed and implemented a set of benchmarks related to community benefits and incorporating supported businesses. This development has been carried out in collaboration with the Construction Industry Training Board with minimum targets set and a tracker template established. Targets and objectives generated are done so based on the project value. These targets were established prior to the appointment of the PSCP and compliance with and monitoring of form part of their duties under the agreed appointment.

Through the appointment process the PSCP demonstrated their ability to exceed the targets set by NHSGGC and it is against these enhanced targets that success will be measured. Part of the team provided by the PSCP includes Debbie Rutherford as the Community Liaison Officer. Debbie will work closely with NHSGGC to ensure that the investment made by this project maximises opportunities that are both real and tangible to the local community. A record of progress will be kept through the monthly updating of the community benefits tracker.

A copy of the agreed targets and tracker document are included in 0G of this submission.

It is understood that to successfully deliver the community benefits plan early engagement is paramount. The PSCP identified commitments from the outset included:

- Development of a bespoke Employment & Skills Plan.
- Collaboration with NHSGGC, our supply chain, educational partnerships, employment and training partners.
- Engaging with local Supported Businesses and SMEs.
- Supporting employment by specifying recruitment and training targets as part of supply chain contract conditions.
- Mentoring and supporting new entrant trainees and work experience placements
- Promoting Healthy Working Lives Directives through, training and awareness campaigns led by their Health & Wellbeing Champion, Michael Smyth.

6.5 Risk Management

	Question	Response
Risk Management	How are the project risks being managed?	Outline: • Updated risk register • Risk control measures • Governance arrangements

A risk register was established in October 2018 at the project initiation stage. Since then, a risk register review has formed part of the agenda for core team meetings ensuring its contents are regularly reviewed and updated as required. A risk management report is included within the Project Managers monthly dashboard which highlights the high risks, risk mitigation progress and any new risks within the period.

The current risk register has been reviewed by the project team which includes the appointed PSCP. Following PSCP appointment further risks related to design development, construction and overall project programme have been added along with associated control measures. At this stage further information has been added to record the risks' potential impact as well as recording the risk owner and manager. Additional comments are now included allowing for reporting on progress with mitigation measures and any change to the approach.

Within the risk register the current 3 highest scoring risk are:

Risk No	Risk Description	Mitigation	Score
C-03	Economic Impact	Regarding a new wave of Covid, follow government guidance and amend business practices accordingly. Identify alternative suppliers and/or resource where possible. Follow GG&C and/or SG guidance on market issues e.g. energy, inflation etc.	15
AF-02	Continuity of Service	Business Continuity Plan (BCP) to be maintained. NHS GG&C to monitor building condition and implement maintenance/temporary repairs as required. Regular engagement with MHRA is ongoing. RND Oversight Group established to address immediate recommendations from MHRA inspection to maintain the function of the existing facility. BCP in place and reviewed as required. GG&C reviewing alternative contingency plans regarding the lease of mobile units in case this is required - could be up to 18months for manufacture and delivery if buying outright.	20
FIN-01	Funding Shortfall	Additional funding being sought at OBC refresh. NZC is currently an issue for the project. Risk allowances have been included in the OBC cost plan. A fully costed construction risk register will be developed during the FBC stage	20

A copy of the risk register is included in Appendix D of this submission.

As the project develops through the FBC stage a more detailed and quantified risk register will be developed. The figure identified as a total risk contingency represents an agreed total percentage figure against the estimated works cost. This figure will be developed during the FBC stage based on the quantified risk register. The risk allowance along with existing and newly identified risks will continue to be monitored through the design, procurement and construction phase and form part of ongoing overall project cost reporting.

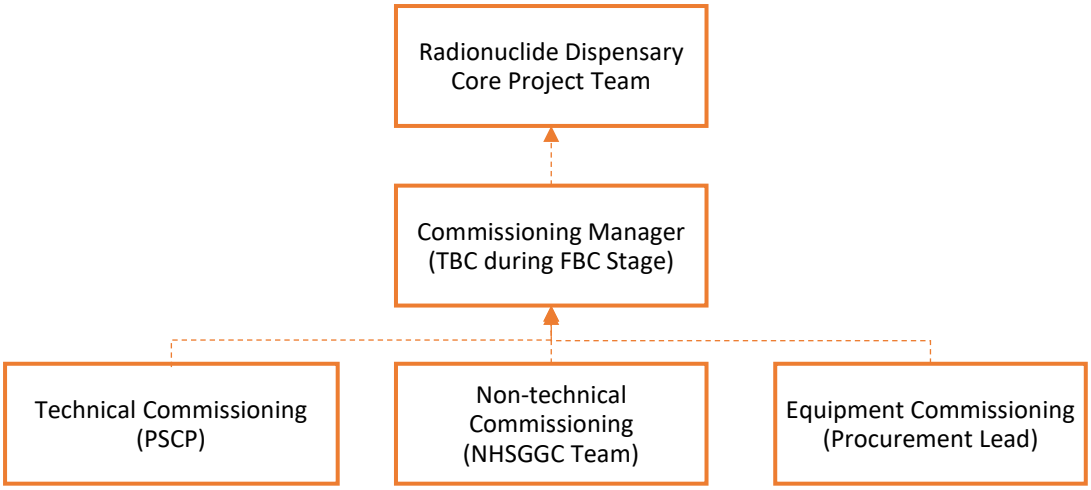
Regular reporting and reviewing of the risk register occurs at the project team meeting. As described in the governance structure, this group reports into the Project Board where further risk review and escalation takes place. A reporting structure has been agreed where all high risks identified are reported into this group along with any escalations regarding resource, performance or mitigation options for approval. Ultimately the Project Board has overall ownership of the project risk register and ensures the risks are mitigated appropriately.

6.6 Commissioning

	Question	Response
Commissioning	What commissioning arrangements are being planned?	Outline: • Reporting structure aligned to main project structure. • Person dedicated to leading this process • Key stages • Resource requirements

Section 6.2.1 identifies those that comprise the project team along with the project's governance structure. The Figure 6 below identifies the structure of the commissioning arrangements and how this will feed into the RND project team.

Figure 6 - Commissioning Structure



As illustrated above, commissioning for this project will comprise of 3 elements to be coordinated by the Commissioning Manager. The scope of their role will be to oversee the varying commissioning types which are further described below. The appointment of the commissioning manager will be undertaken during the FBC stage.

6.6.1 Technical Commissioning

This role will be carried out by the PSCP who have identified Andrew Smith, Clean Room Lead, and Paul Fingland, Building Service Coordinator as their commissioning leads. At OBC the PSCP approach to be led by Andrew and Paul has been defined as follows:

- Establish a Validation Steering Group comprising those required as part of the

NHSGGC and contractual process for validation.

- Develop a Validation Master Plan and Strategy for the following stages:
- Pre-Qualification
- User Requirement Specification
- Factory Acceptance Tests
- Qualification
- Installation Qualification
- Operational Qualification
- Performance Qualification
- Cleaning Validation
- Process Validation
- Revalidation
- Develop a programme for commissioning verification. Includes identifying testing and commissioning outputs required and demonstrating compliance or methods of rectification. This includes demonstration of service integration with existing where required.
- Develop a programme with NHSGGC for training and demonstrations schedule.
- Implement a ‘count-down procedure’ early on to generate momentum and ensure all parties are fully aware of their role in close out activities.
- Coordinate handover activities from Stage 3 FBC to ensure commissioning is ‘designed in’.
- Drive handover procedures focussed on optimising operations
- Identify and provide testing and commissioning certification for statutory compliance and for recording and inclusion in projects H&S and O&M manuals.

- Liaise with MHRA in collaboration with NHSGGC.

- Compile evidence to provide assurance that the Radionuclide Dispensary and equipment performs consistently for the manufacture of products, complying with the principles of Good Manufacturing Practices (GMP).

- Coordinate GMP inspections onsite and work with the clean room contractor.

Working alongside the PSCP, in a contractual capacity, during the technical commissioning process will be an NHSGGC appointed project supervisor and clerk of works. Their role will be to review the service install works for compliance with the proposals as well as ensuring the commissioning leads roles are fulfilled to the requirement and satisfaction of NHSGGC as a client. Personnel have not been confirmed for this role, but the appointment has been made to AECOM, personnel will be confirmed at the start of the FBC stage.

The Project Delivery Group will provide oversight of the commissioning process and will be involved in developing the overall commissioning master plan during the FBC stage.

6.6.2 Non-Technical Commissioning

A non-technical commissioning group will be established through the FBC process and will be initiated on completion of room data and component sheets and the full schedule of FF&E components. Completion of this process will mean all components have been identified; their procurement route will have been established and identified as either PSCP or direct by NHSGGC. Leading this process and this group will be the lead project manager who will be further supported by core project team. The group to be formed will include representation from the user group, procurement, FM, IT, telecoms, and infection control. Through the process further members may be identified and included as required.

Upon identification of the non-technical items for commissioning this group will be responsible for the following:

- Agreeing procurement routes for items including understanding if existing routes and supply chains exist or if new are required. Should now be required, routes to tendering and setting them up will be carried out in accordance with NHSGGCs standing financial instructions.

- Establish timescales for item commissioning, review and agree in line with project

programme. Timescales to include lead in, install and testing, commissioning, and training required.

- Establish if item commissioning requires PSCP input regarding any preparatory or install works. If required, this will be coordinated with the works programme and beneficial access agreed through the construction contract.

The group will draw on knowledge and experience from previous NHSGGC Capital Planning new build projects within the wider NHSGGC Capital Planning team. With this support and experience available, further recruitment for commissioning is not anticipated. Should there be any change to the availability of this team then the scope of works described above will be added to the scope of works to be carried out by the commissioning manager.

6.6.3 Equipment Commissioning (including IT systems)

As described in section 6.2.2, the appointment of a Procurement Lead has been identified for the specialist equipment. It is anticipated this role will be provided by NHSGGC and be key not only to procurement but also the associated commissioning requirements. In collaboration with the project team and project lead, the procurement lead will be advised of those elements that will either have an impact on design and commissioning or require individual commissioning. This information, as detailed below, will be requested from all suppliers through the procurement stage.

Specialist Equipment Key Information:

- Spatial requirements including height, weight, depth and loading.
- Spatial requirements for clear activity spaces and maintenance access.
- Electrical services requirements.
- Requirements for mechanical and environmental conditions.
- Provision of BIM information.
- Lead in time from order confirmation.
- Product delivery information including set down spaces, access routes and associated spatial requirements.

- Product installation requirements including site condition, personnel and CDM and H&S requirements.
- Duration of installation or assembly time.
- Duration of commissioning works.
- Duration, proposals, and methods for training.
- Product aftercare and warranty periods.

Once information becomes available from the procurement exercise it will be provide to the PSCP and commissioning manager and to populate the project programme through, pre-construction, construction, and commissioning stages. It will also be used to inform both the design works as well as the overall commissioning master plan.

The procurement lead is noted as a key role for providing this information however it should be noted that the responsibility for utilisation and implementation of the commissioning information accordingly will be that of the commissioning manager.

6.7 Project Evaluation

	Question	Response
Project Evaluation	How will the success of the project be assessed?	Outline: • Person dedicated to leading this process • Key stages • Resource requirements

Post Project Evaluation will be undertaken in line with the SCIM guidelines to determine the project's success and identify lessons to be learned.

Leading this process and ensuring compliance with SCIM guidelines will be NHSGGCs Property and Capital Planning's Post Project Evaluation Manager. The PPE Manager has experience of leading and carrying out all Post Project Evaluation processes within NHSGGCs Capital Planning Department. An outline of the roles that they will undertake is provided below:

- Assist with developing benefits plan detailing service benefits expected on completion

of project and programme of when these will be realised.

- Advise/ aid Project Board in drawing up a measurable Benefits Realisation and Evaluation Plan.
- Review the benefits of a project then assess the outcomes following completion.
- Initial Post Project Evaluation - reviewing the performance of the project in terms of the original project objectives.
- Post Occupancy Evaluation now all service benefits have been realised.
- Request and summarise information from NHSGGCs property team on building performance, EAMS records and life cycle costing.
- Request and evidence ongoing compliance with MHRA.
- Undertake staff and user group satisfaction surveys, questionnaires, or workshops. Includes feedback from end users within NHSGGC and other boards.
- Organise Lessons Learned Workshop for project team/ key stakeholders.
- Key stakeholders to assist in assessing benefit outcomes.

These roles are further described in stages below.

During construction, the project will be monitored with regards to time, cost, the procurement process contractor's performance, and any initial lessons learned.

Six to twelve months after commissioning of the facility a wider ranging evaluation (Stage 3) will take place. This will assess, amongst other factors, how well the project objectives were achieved; was the project completed on time, within budget and in line with specification; whether the project delivered value for money; how satisfied staff and other stakeholders are with the project results and the lessons learned about the way the project was developed, organised, and implemented. A key focus will be sharing the information gathered so that the lessons to be learned are made available to others.

Longer term outcomes (Stage 4) will be evaluated 2 to 5 years post migration to the new facility as by this stage the full effects of the project will have materialised. The evaluation will be undertaken by the PPE Manager and both quantitative and qualitative data will be collected during

stages 3 and 4 evaluation using questionnaires and workshops.

Part of the post project evaluation will comprise the conclusion of the AEDET/ NDAP process. The Post Occupancy Evaluation will take place six to twelve months after commissioning and occupancy and will aim to be reviewed with the established stakeholder group. Further insight at this stage can be gained by input from those staff that have transferred from the existing facility as well as any new staff, or those who are benefiting from the co-location with the cyclotron. Lessons learned can therefore be gained from those with a detailed knowledge of the project and process and those with only an insight into the completed project.

A full Project Evaluation Plan will be presented in the Full Business Case.

6.8 Building Design and Construction Quality

There has been a considerable increased focus on quality in recent years following upon high-profile issues in publicly procured facilities across the country.

Radionuclide represents a significant public investment in manufacturing of vital medical products. It is therefore critical that the investment is secured in a facility that truly represents best quality alongside value for money.

Considerable focus has been placed on quality throughout the development of the Radionuclide project and is embedded in the project management plans, and more importantly, has been implemented in all activities to date. Quality is not achieved simply by improving site inspections. It needs to be embedded in a project from its inception. The key actions taken to date to ensure quality are:

- Appropriately experienced and resourced client team.
- Clear governance structure.
- High quality briefing documentation.
- Realistic budget and programme.
- Quality-led design team selection.
- Design Team appointment with enhanced independent reporting requirements.
- Quality-led Tier 1 contractor selection with clear requirements for design team

reporting.

- Comprehensive stakeholder engagement through site selection and design development process.
- Open and honest culture about quality throughout the development process.

As we move into the next stages the focus on quality will continue. This has been adopted by the PSCP and the design teams, and therefore quality is part of the culture of the project development. Some of the key actions that will be taken forward include:

- Sense checking all aspects of design proposals as they are developed.
- Ongoing review of ACRs as current projects complete and lessons learned processes are undertaken.
- Stakeholder engagement and updates throughout the development process.
- Thorough processes for examination of Contractors Proposals utilising experienced in-house resource supplemented by appointed Technical Advisers.
- Quality Control meetings during the construction process.
- Proposed appointment of Site Monitor (NEC Supervisor) through construction period.
- Fortnightly 3rd party photo-shoot of construction process and recording of structure, fireproofing and M&E installation prior to covering up.

6.9 Soft Landings

Soft Landings is a key element of the design and construction process maintaining the “golden thread” of the building purpose through to delivery and operation, with early engagement of the end users and inclusion of a Soft Landings champion on the project team, and commitment to aftercare post construction.

The project will follow the Soft Landings process set out the NHS Scotland Soft Landings Guidance document.

Key activities carried during the OBC stage were:

- Appointment a Soft Landings Champion, Donald Bain.
- Undertake a soft landings kick-off meeting.
- Adoption of an approach that addresses the outcomes required and how targets will be set, delivered, and measured.
- Using BIM and associated digital simulation techniques to assess the early design.
- Agree key performance indicators and targets for the design and completed building to be measured against.
- Detailed engineering assessment of previously completed buildings of this type to ensure systems and processes are optimised.
- Early engagement with NHS estates and compliance teams to ensure lessons from operational buildings are included.
- Embed soft landings into the tender process.

Key activities going forward will include:

- Creation of a Post Project Evaluation Plan and continue to update.
- Establishing when SL gateway review meetings are required and their purpose.

7 GLOSSARY

A&DS	Architecture & Design Scotland
AEDET	Achieving Excellence Design Evaluation Toolkit
AHU	Air Handling Unit
BCIS	Building Cost Information Service
BMS	Building Management System
BREEAM	Building Research established Environmental Assessment Method
CAT	Contract Administration Toolkit
CDMA	Construction Design & Management Advisor
CT	Computerised Tomography
EAMS	Estate Asset Management System
FBC	Full Business Case
GPR	Ground Penetrating Radar
H&S	Health & Safety
HBN	Health Building Note
HFS	Health Facilities Scotland
HTM	Heath Technical Memorandum
IA	Initial Agreement
KPIs	Key Performance Indicators
M&E	Mechanical & Electrical
MEP	Mechanical, Electrical & Plumbing
MHRA	Medicines and Healthcare Products Regulatory Agency
NDAP	NHS Scotland Design Assessment Process
NHSGGC	NHS Greater Glasgow & Clyde
OBC	Outline Business Case
ONR	Office for Nuclear Regulation

PAMS	Property & Asset Management Strategy
PEP	Project Execution Plan
PET	Positron Emission Tomography
PPM	Planned Preventative Maintenance
PSC	Professional Service Consultant
PSCP	Principal Supply Chain Partner
RND	Radionuclide Dispensary
RTT	Referral to Treatment
SCIM	Scottish Capital Investment Manual
SEPA	Scottish Environment Protection Agency
SHTM	Scottish Heath Technical Memorandum
SNBTS	Scottish National Blood Transfusion Service
SGHDCIG	Scottish Health Directorate Capital Investment Group
TTG	Treatment Time Guarantee
VfM	Value for Money
WTE	Whole Time Equivalent

8 APPENDICES

8.1 Appendix A – AEDET.

OBC | **GG&C RND** | **AEDET Refresh** v1.1 Feb 2016

Functionality

Use

		Weight	Score	Notes
A.01	The prime functional requirements of the brief are satisfied	2	5	YES
A.02	The design facilitates the care model	0	0	YES
A.03	Overall the design is capable of handling the projected throughput	1	6	YES
A.04	Work flows and logistics are arranged optimally	1	5	YES
A.05	The design is sufficiently flexible to respond to clinical /service change and to enable expansion	2	6	YES
A.06	Where possible spaces are standardised and flexible in use patterns	1	5	YES
A.07	The design facilitates both security and supervision	2	4	YES
A.08	The design facilitates health promotion and equality for staff, patients and local community	1	5	YES
A.09	The design is sufficiently adaptatable to external changes e.g. Climate, Technology	1	4	YES
A.10	The benchmarks in the Design Statement in relation to building USE are met	2	5	NO

Access

		Weight	Score	Notes
B.01	There is good access from available public transport including any on- site roads	2	5	NO
B.02	There is adequate parking for visitors/ staff cars/ disabled people	1	4	YES
B.03	The approach and access for ambulances is appropriately provided	0	0	YES
B.04	Service vehicle circulation is well considered and does not inappropriately impact on users and staff	2	5	YES
B.05	Pedestrian access is obvious, pleasant and suitable for wheelchair/ disabled/ impaired sight patients	1	5	YES
B.06	Outdoor spaces wherever appropriate are usable, with safe lighting indicating paths, ramps, steps etc.	1	5	YES
B.07	Active travel is encouraged and connections to local green routes and spaces enhanced	1	6	YES
B.08	Car parking and drop-off should not visually dominate entrances or green routes	1	4	YES
B.09	The benchmarks in the Design Statement in relation to building ACCESS are met	2	5	NO

Space

		Weight	Score	Notes
C.01	The design achieves appropriate space standards	1	5	YES
C.02	The ratio of usable space to total area is good	1	5	YES
C.03	The circulation distances travelled by staff, patients and visitors is minimised by the layout	1	5	NO
C.04	Any necessary isolation and segregation of spaces is achieved	2	6	YES
C.05	The design maximises opportunities for space to encourage informal social interaction & wellbeing	1	5	NO
C.06	There is adequate storage space	2	5	YES
C.07	The grounds provided spaces for informal/ formal therapeutic health activities	1	6	YES
C.08	The relationships between internal spaces and the outdoor environment work well	1	5	YES
C.09	The benchmarks in the Design Statement in relation to building SPACE are met	2	5	NO

Build Quality

Performance

		Weight	Score	Notes
D.01	The building and grounds are easy to operate	1	5	YES
D.02	The building and grounds are easy to clean and maintain	1	5	YES
D.03	The building and grounds have appropriately durable finishes and components	1	4	YES
D.04	The building and grounds will weather and age well	1	4	YES
D.05	Access to daylight, views of nature and outdoor space are robustly detailed	1	5	YES
D.06	The design maximises the opportunities for sustainability e.g. waste reduction and biodiversity	1	4	YES
D.07	The design minimises maintenance and simplifies this where it will be required	2	4	YES
D.08	The benchmarks in the Design Statement in relation to PERFORMANCE are met	2	4	NO

Engineering

		Weight	Score	Notes
E.01	The engineering systems are well designed, flexible and efficient in use	2	5	YES
E.02	The engineering systems exploit any benefits from standardisation and prefabrication where relevant	0	0	YES
E.03	The engineering systems are energy efficient	1	5	YES
E.04	There are emergency backup systems that are designed to minimise disruption	1	5	YES
E.05	During construction disruption to essential services is minimised	1	4	YES
E.06	During maintenance disruption to essential healthcare services is minimised	1	5	YES
E.07	The design layout contributes to efficient zoning and energy use reduction	1	5	YES

Construction

		Weight	Score	Notes
F.01	If phased planning and construction are necessary the various stages are well organised	1	4	YES
F.02	Temporary construction work is minimised	1	4	YES
F.03	The impact of the building process on continuing healthcare provision is minimised	1	3	YES
F.04	The building and grounds can be readily maintained	1	5	YES
F.05	The construction is robust	1	5	YES
F.06	Construction allows easy access to engineering systems for maintenance, replacement & expansion	1	5	NO
F.07	The construction exploits opportunities from standardisation and prefabrication where relevant	0	0	YES
F.08	The construction maximises the opportunities for sustainability e.g. waste and traffic reduction	1	3	YES
F.09	The construction contributes to being a good neighbour	1	3	YES
F.10	Infection control risks for options, design and construction recorded/ minimised using HAI Scribe	1	5	YES

Impact

Character and Innovation

		Weight	Score	Notes
G.01	There are clear ideas behind the design of the building and grounds	2	6	YES
G.02	The building and grounds are interesting to look at and move around in	1	5	YES
G.03	The building, grounds and arts design contribute to the local setting	1	4	YES
G.04	The design appropriately expresses the values of the NHS	1	5	YES
G.05	The project is likely to influence future designs	1	6	YES
G.06	The design provides a clear strategy for future adaptation and expansion	2	6	YES
G.07	The building, grounds and arts design contribute to well being and a sustainable therapeutic strategy	1	4	YES
G.08	The benchmarks in the Design Statement in relation to CHARACTER & INNOVATION are met	2	5	NO

Form and Materials

		Weight	Score	Notes
H.01	The design has a human scale and feels welcoming	1	5	YES
H.02	The design contributes to local microclimate, maximising sunlight and shelter from prevailing winds	1	4	YES
H.03	Entrances are obvious and logical in relation to likely points of arrival on site	2	6	YES
H.04	The external materials and detailing appear to be of high quality and are maintainable	2	5	NO
H.05	The external colours and textures seem appropriate and attractive for the local setting	1	4	YES
H.06	The design maximises the site opportunities and enhances a sense of place	1	5	YES
H.07	The benchmarks in the Design Statement in relation to FORM & MATERIALS are met	2	4	NO

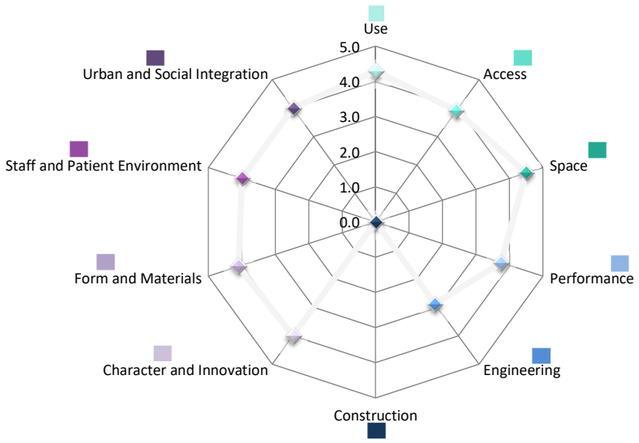
Staff and Patient Environment

		Weight	Score	Notes
I.01	The design reflects the dignity of patients and allows for appropriate levels of privacy	0	0	YES
I.02	The design maximises the opportunities for daylight/ views of green natural landscape or elements	2	5	YES
I.03	The design maximises the opportunities for access to usable outdoor space	1	6	YES
I.04	There are high levels of both comfort and control of comfort	2	5	YES
I.05	The design is clearly understandable and wayfinding is intuitive	2	4	YES
I.06	The interior of the building is attractive in appearance	1	4	YES
I.07	There are good bath/ toilet and other facilities for patients	0	0	YES
I.08	There are good facilities for staff with convenient places to work and relax without being on demand	2	5	YES
I.09	There are good opportunities for staff, patients, visitors to use outdoors to recuperate/ relax	1	6	YES
I.10	The benchmarks in the Design Statement in relation to STAFF & PATIENT ENVIRONMENTare met	2	5	NO

Urban and Social Integration

		Weight	Score	Notes
J.01	The height, volume and skyline of the building relate well to the surrounding environment	1	4	YES
J.02	The facility contributes positively to its locality	1	4	YES
J.03	The hard and soft landscape contribute positively to the locality	1	4	YES
J.04	The design contributes to being a good neighbour and is sensitive to neighbours and passers- by	1	4	YES
J.05	There is a clear vision behind the design, its setting and outdoor spaces	2	5	YES
J.06	The benchmarks in the Design Statement in relation to INTEGRATION are met	2	5	NO

AEDET Refresh OBC Summary



Target		Progress Prev	Progress Curr
4.6	Use	4.6	4.3
4.3	Access	4.3	3.9
4.5	Space	4.5	4.5
4.5	Performance	4.5	3.8
4.2	Engineering	4.2	2.9
4.0	Construction	4.0	0.0
4.5	Character and Innovation	4.5	4.0
4.6	Form and Materials	4.6	4.1
4.6	Staff and Patient Environment	4.6	4.0
4.5	Urban and Social Integration	4.5	4.0

Weighting	=	Target
2	= >	5 - 6
1	>	3 - 4
0	<	3

NHS National Services Scotland

Health Facilities Scotland

GG&C RND

Ref	Note
A.01	Brief captured due to extensive user group engagement, some technical queries to be resolved over time. Requirement to meet MHRA licensing requirements.
A.02	Care model not applicable as project part of a patient pathway. Not a patient area.
A.03	Matches the throughput required with scope for expansion (i.e. isolators).
A.04	Requirement to meet MHRA licensing requirements.
A.05	PET Lab big enough for 2no. Cabinets. Scope for expansion included within design (isolators, plant room). Allocated expansion zone for 2nd phase if required.
A.06	elements in the office space which could change over time. Agile model accommodated within office area to provide enhanced flexibility.
A.07	Design based on Secure by Design fundamentals. Engagement with CTSA ongoing. More detail will be available in FBC stage. Dedicated vehicle and staff entrances. Vision
A.08	available.
A.09	investigated.
A.10	
B.01	
B.02	Design has dedicated parking for staff and visitors (i.e. drivers).
B.03	Not applicable due to service use.
B.04	Dedicated car park for service vehicles, swept path analysis undertaken.
B.05	Access designed for wheelchair users, accessible toilet and change available in facility. Not a patient facility.
B.06	access to car park directy from facility.
B.07	external garden. Walkways around Gartnavel campus provides opportunity for outdoor activity.
B.08	Landscaping and external works still to be evolved - minimal car parking spaces required. Functionality supersedes location.
B.09	
C.01	Design meets ACR and URS requriements. Not a patient facility - no public access.
C.02	Agile working and breakout rooms included within the design.
C.03	
C.04	"Hot" and "Cold" areas within ground floor, "Wet" and "Dry" plant room spaces segregated in 1st floor.
C.05	
C.06	rather than at RND facility.
C.07	Included in part of wider campus facilities e.g. walking routes, Tai Chi, running groups etc. Not a patient facility.
C.08	cleanroom side of building but windows provided where feasible - increase from OBC stage.
C.09	
D.01	provide a more sustainable building (easier to achieve within office areas than cleanroom environments due to strict requirements in these areas). Concrete frame
D.02	strict requirements to achieve MHRA licensing. Office spaces will be reviewed by IPCT during the FBC design to ensure all surfances are compliant for the facility. Elements
D.03	Design to comply with lifespans of materials detailed in ACRs (based on healthcare standards and experience).
D.04	Appropiate materials have been selected within the design to address this.
D.05	requirement for cleanroom side of building but windows provided where feasible - increase from OBC stage, to be developed further in FBC.
D.06	design. Sub-strategies to be developed during FBC Stage. Zero Waste Strategy during the construction build stage being developed. Site wide waste strategy also in
D.07	maintenance.
D.08	
E.01	ventilation controlled via BMS with natural ventialtion available via windows. Lighting dimmable in some office spaces as required. Spare capacity included within the
E.02	Bespoke facility with limited scope for standardisation and pre-fabrication.
E.03	however the design has pushed this to the most efficient energy strategy that can be achieved within these restrictions / requirements for these spaces. Within the office
E.04	Back up systems have been embodied in the design.
E.05	local network in surrounding buildings. No likely disruption to existing water netwrok during construction. Completed Stage 1 HAI SCRIBE and consulted with GG&C
E.06	- minimal disruption). RND activities undertaken 6am-4pm Mon-Fri therefore maintenance can be undertaken outwith these hours to minimise disruption to the service.
E.07	Zoning & Control strategy developed in line with MHRA licensing requirements. Separate "hot" and "cold" energy stratgies to maximise efficiencies in each area.
F.01	developed as design progresses.
F.02	opportunities to retain temporary works as permament features in the design.
F.03	project. Good dialogue with onsite Estates Management team around deliveries and access and also the IPCT team.
F.04	Mansafe access provided in design via internal ladder. Soft landscaping requires minimal maintenance.
F.05	e.g. installing large M&E plant, with the Estates management team.
F.06	
F.07	Bespoke facility with limited scope for standardisation and pre-fabrication.
F.08	Construction Phase Plan will include environmental plan - to be developed.
F.09	Community Benefits to be developed during FBC stage for Construction. Dedicated resource within Graham to support Community Benefits for the project.
F.10	include wipeable surfaces etc in line with IPC requirements and will be further developed in FBC stage.
G.01	hospital setting on Gartnavel campus.
G.02	achieving the functionality it requires. Dedicated access and maintenance strategies considered as part of design as well as dedicasetd car parking for staff and visitors.
G.03	hill adjacent. Stage 4 Report will detail site surroundings and building form etc. Pre-planning assessment issued, awaiting feedback.
G.04	consideration for resilience in both materials and function.
G.05	equipmnt has been considered as part of the design. Energy model will be influential / possible benchmark in labs or similar projects.
G.06	Expansion and adaptation has been considered within the design e.g. expansion zone, concrete slab, routing of services, fire alarm panel.
G.07	Aligns with the wider Gartnavel campus strategies.
G.08	.
H.01	Scale appropriate to the functionality of the facility. Windows designed where feasible to include as much daylight as possible throughout the facility.
H.02	Building fucntion dictates the nature of this on the site. Considerations around microclimate have been addressed e.g. recess near entrances, light quality assessments.
H.03	room spaces.
H.04	
H.05	External colours still to be selected. Materials appropriate. Pre-planning assessment issued, awaiting feedback.
H.06	project. Site topography utilised when building the facility to reduce impact on the site.
H.07	
I.01	Not applicable as not a patient facility.
I.02	Design strives to meet as much daylight and greenery as possible for a staff environment, not a patient facility. Where functionality permits, windows have been allocated.
I.03	staff. Design has been amended to prevent removal of tress where feasible.
I.04	ventilation controlled via BMS with natural ventialtion available via windows. Lighting dimmable in some office spaces as required. TM52+ model used to provide a higher
I.05	Signage strategy to be developed at the next stage. Good user engagement during design stage to confirm optimum staff process flows thorughout the facility.
I.06	guidance and MHRA requirements.
I.07	Not applicable as not a patient facility.
I.08	rooms and training rooms have been identified in the design. Retail facilities in nearby Gartnavel hospital.
I.09	staff. Not a patient facility. Limited visitors will attend e.g. drivers, maintenance.
I.10	
J.01	amended appropriately during OBC Refresh considering adjacent buildings e.g. chapel. Facility built into the hill adjacent. Stage 4 Report will detail site surroundings and
J.02	Building is appropriate for a hospital setting. Removal of the transport hub adds benefit to the aesthetic of the site. Functionality of this building drives how it relates to its surroundings. Pre-planning assessment issued, awaiting feedback.
J.03	Landscape around the building has been considered. The building is not directly on Shelley Road close to existing properties. Car park has been minimised as much as possible with trees protected where feasible. Low maintenance landscaping proposals within the design.
J.04	Derelict blocks of flats and the transport hub being removed is an improvement to the area for the neighbours. Open building for the site with a CCTV strategy to be developed to help those passing by feel safe.
J.05	Bespoke and challenging building to address strict MHRA requirements while creating a safe and functional facility for the staff.
J.06	

Health Facilities Scotland

Weighting
High = High Priority to the Project (2)
Normal = Desirable (1)
Zero = Not Applicable (0)

Scoring
Virtually Total Agreement (6)
Strong Agreement (5)
Fair Agreement (4)
Little Agreement (3)
Hardly Any Agreement (2)
Virtually No Agreement (1)
Unable to Score (0)

Guidance for Outline Business Case Stage

1. AEDET OBC to be recorded near end of OBC Stage and must be submitted for NDAP
2. The OBC and FBC Stage AEDET reviews will be monitored against IA Stage. Boards will require to provide an explanation of the reason for deviation from the IA Target
3. The note section to be completed to provide further briefing information
4. If any of the criteria is weighted as zero (not applicable) a note should state the reason for this
5. Boards may add project specific criteria. A note must be provided stating the reason for this.
6. Key actions arising from AEDET discussions to be recorded

Ref	Actions	by date	Owner	Completed

NHS National Services Scotland

8.2 Appendix B - Summary Options Appraisal

18CP002 – Radionuclide Dispensary
Site Options Appraisal Workshop Summary
14th May 2019

An option appraisal workshop, facilitated by Thomson Gray, was held on 24th April 2019 and was attended by the following:

Antoinette Parr	Project Sponsor, NHSGGC.
Tom Murray	Head of Radiopharmacy, NHSGGC.
Kay Pollock	Production Unit Manager, NHSGGC.
Elaine Millen	Section Leader Radionuclide Pharmacy, NHSGGC.
Sandy Small	Head of Nuclear Medicine, NHSGGC.
Michael Cassells	Capital Planning, Senior Project Manager, NHSGGC.
Ken Fraser	Regional Director, Thomson Gray.
Wesley Bathgate	Associate Project Manager, Thomson Gray.

Prior to the workshop, a long list of site options & site option assessment criteria had been drafted by Capital Planning.

To develop the long list of site options, any NHSGGC site that offered new build or refurbishment options was noted. Where possible, specific refurbishment or specific site areas for development were described and identified. Identification was with site plans and further aided by Google satellite images and street view. Those with more knowledge of each site were also able to provide additional information for discussion.

Those sites and development options are identified as follows:

Long List Option	Site	Description
1	Former Western Infirmary	Do nothing – maintain the status quo.
2	Former Western Infirmary	Remain in place & refurbish of existing facility.
3	Royal Alexandra	Refurbishment of level in laboratories building.
4	Gartnavel General Hospital	Refurbishment of vacated areas (levels 0 & 1) within SNBTS.
5	Gartnavel General Hospital	New build facility on area identified for site development. Area adjacent to boiler house, south of Beatson.
6	Gartnavel General Hospital	New build facility on area identified for site development. Area adjacent to Centre for Integrative Care
7	Gartnavel General Hospital	New build facility on areas identified for site development. Former Shelley Court residencies site / transport hub.

8	Gartnavel General Hospital	New build facility in place of existing dialysis and diabetic centre.
9	Gartnavel Royal Hospital	New build facility on areas identified for site development. Area Adjacent to Tate Ward
10	Stobhill Hospital	New build facility in place of area undergoing demolition / identified for development.
11	Stobhill Hospital	Refurbishment of retained vacant buildings not forming part of demolition plan.
12	Inverclyde Royal Hospital	New build facility on area identified for site development.
13	Inverclyde Royal Hospital	Refurbishment of retained vacant buildings not forming part of demolition plan.
14	Lightburn	New build facility on area identified for site development.
15	Queen Elizabeth University Hospital	New build facility on area identified for site development
16	Vale of Leven	New build facility on area identified for site development.
17	Vale of Leven	Refurbishment of retained vacant buildings not forming part of demolition plan.
18	Dykebar	New build facility on area identified for site development.
19	Dykebar	Refurbishment of retained vacant buildings not forming part of demolition plan.
20	Royal Alexandra	New build facility on area identified for site development.
21	Royal Alexandra	Refurbishment of retained vacant buildings not forming part of demolition plan.
22	Glasgow Royal Infirmary	New build facility on area identified for site development.

Site Option Assessment Criteria was developed using notes and feedback compiled through the briefing process. These criteria were discussed and amendments made to ensure each represent a true benefit and a means of measuring.

The long List of Site Options and agreed Assessment Criteria were compiled by Thomson Gray in an Option Appraisal Scoring Template. Part of the template also required the attendees to discuss and provide weighting to each of the assessment criteria. The weighting agreed for each element is identified along with the details of the agreed Assessment Criteria below:

Criteria No.	Description	Weighting Out of 100
1	Material Delivery: Proximity of site to M74 which is the main delivery route for materials for production. Measure was provided from a fixed point on the M74 to each of the sites with time and distance noted.	8
2	Material Distribution: Proximity of site to Scottish motorway networks for national and local distribution.	14
3	Clinical Adjacencies: Proximity of site to clinical services where materials are used. Measure was distance and ease of travel to those sites within GGC where materials are utilised along with percentage of usage: *Gartnavel, 11%* *Queen Elizabeth University Hospital, 14%* *Royal Alexandra, ≥1%* *Royal Hospital for Children, 3%* *Glasgow Royal infirmary, 28%* *Stobhill, 5%* *New Victoria VIC, 3-4%*	14
4	Proximity of material delivery / distribution area to vehicles: Ability of site option to offer close vehicle access / parking to building. Travel distance to be minimised and forms part of MHRA guidance and ONR. (Distribution vehicles).	10
5	Expert Support & Education Links: Proximity to clinical and estate support on site. Enhanced score if Medical Physics associated with Radionuclide on site.	16

6	Security: Ability of site to provide building and staff security along with complete separation of service from public areas.	8
7	Future Business Continuity: Ability for site to offer a design that will aid ongoing maintenance and ability to adapt to advancement in technologies.	8
8	Compliance: Site to offer best means of compliance and to minimise derogations. Sites may only offer refurbishment opportunities which will impact ability to comply.	4
9	Programme: Sites in NHS GG&C ownership and ready for development will provide a less complicated and better timescale for delivery. Current facility has no contingency and therefore those sites offering best delivery timescales reduce risk associated with loss of manufacture.	8
10	Staff Transport Access: Proximity to public transport routes at 6am to assist staff reaching work.	6
11	NHS GG&C Investment: Utilisation of existing site / estates vs. lease / purchase options.	4

On agreement of the weighting each site option was scored, on a consensus basis, against each assessment criteria. Scoring was done so in order to provide a ranked outcome as well as identify any site that failed to provide the criteria identified, regardless of weighting. Advice on scoring was provided as follows:

Evaluation Criteria for Selection		
Score	**Pass/ Fail Classification**	**Definition**
0 Unacceptable	Fail	This location fails to satisfy the stated requirement and is therefore not capable of providing the required solution.
1 Poor	Fail	This location partially satisfies some elements of relevance to the stated requirement but provides a poor solution to properly satisfy the relevant criteria.
2 Acceptable	Pass	This location broadly satisfies most of the requirements but does not fully satisfy the relevant criteria.
3 Good	Pass	This location satisfies the vast majority of the requirements of the criteria but does not provide the ideal solution to fully satisfy the relevant criteria.
4 Excellent	Pass	This location provides a setting that fully satisfies the requirements of this criteria

On completion of the options appraisal workshop a draft scoring document was issued to the Project Board members for review and comment on 1st May 2019. A further review of the scoring document took place on 1st May with those previous workshop attendees identified joined by:

Jack Cairns Sector Estates Manage, NHSGGC.

This discussion provided further insight and perspective on weighting, descriptions and scoring with amendments made as agreed. Outputs described in this document and associated appendices reflect the agreed amendments.

Options Appraisal Scoring Output

The following table shows the site options ranks based on the scores applied. Those with a score of '0' represent those options that are deemed to have failed in their ability to provide some of the assessment criteria.

Position	Option Nr.	Score	Description
1	Option 22	386	Glasgow Royal Infirmary New build facility on area identified for site development.
2	Option 15	382	Queen Elizabeth University Hospital New build facility on area identified for site development.
3	Option 6	378	Gartnavel General Hospital New build facility on area identified for site development. Area adjacent to Centre for Integrative Care
3	Option 7	378	Gartnavel General Hospital New build facility on areas identified for site development. Former Shelley Court residencies site / transport hub.
5	Option 5	374	Gartnavel General Hospital New build facility on area identified for site development. Area adjacent to boiler house, south of Beatson.
6	Option 9	362	Gartnavel Royal Hospital New build facility on areas identified for site development. Area Adjacent to Tate Ward
7	Option 8	350	Gartnavel General Hospital New build facility in place of existing dialysis and diabetic centre.
8	Option 4	310	Gartnavel General Hospital Refurbishment of vacated areas (levels 0 & 1) within SNBTS.
9	Option 10	294	Stobhill Hospital New build facility in place of area undergoing demolition / identified for development.
10	Option 11	274	Stobhill Hospital Refurbishment of retained vacant buildings not forming part of demolition plan.
11	Option 20	272	Royal Alexandra New build facility on area identified for site development.

12	Option 3	228	Royal Alexandra Refurbishment of level in laboratories building.
12	Option 21	228	Royal Alexandra Refurbishment of retained vacant buildings not forming part of demolition plan.
14	Option 1	0	Former Western Infirmary Do nothing – maintain the status quo.
14	Option 2	0	Former Western Infirmary Remain in place & refurbish of existing facility.
14	Option 12	0	Inverclyde Royal Hospital New build facility on area identified for site development.
14	Option 13	0	Inverclyde Royal Hospital Refurbishment of retained vacant buildings not forming part of demolition plan.
14	Option 14	0	Lightburn New build facility on area identified for site development.
14	Option 16	0	Vale of Leven New build facility on area identified for site development.
14	Option 17	0	Vale of Leven Refurbishment of retained vacant buildings not forming part of demolition plan.
14	Option 18	0	Dykebar New build facility on area identified for site development.
14	Option 19	0	Dykebar Refurbishment of retained vacant buildings not forming part of demolition plan.

It was noted during discussions that some options presented will be further reviewed by NHSGGC. These reviews would be in the context of wider NHSGGC policies, site strategies site capacities etc. to ensure a realistic short list of site options is agreed and identified at this stage.

8.3 Appendix C - Options Appraisal Scoring

Position	Option Nr.	Score	Description
1	Option 22	386	Glasgow Royal Infirmary New build facility on area identified for site development.
2	Option 15	382	Queen Elizabeth University Hospital New build facility on area identified for site development
3	Option 6	378	Gartnavel General Hospital New build facility on area identified for site development. Area adjacent to Centre for Integrative Care
3	Option 7	378	Gartnavel General Hospital New build facility on areas identified for site development. Former Shelley Court residencies site / transport hub.
5	Option 5	374	Gartnavel General Hospital New build facility on area identified for site development. Area adjacent to boiler house, south of Beatson.
6	Option 9	362	Gartnavel Royal Hospital New build facility on areas identified for site development. Area Adjacent to Tate Ward
7	Option 8	350	Gartnavel General Hospital New build facility in place of existing dialysis and diabetic centre.
8	Option 4	310	Gartnavel General Hospital Refurbishment of vacated areas (levels 0 & 1) within SNBTS.
9	Option 10	294	Stobhill Hospital New build facility in place of area undergoing demolition / identified for development.
10	Option 11	274	Stobhill Hospital Refurbishment of retained vacant buildings not forming part of demolition plan.
11	Option 20	272	Royal Alexandra New build facility on area identified for site development.
12	Option 3	228	Royal Alexandra Refurbishment of level in laboratories building.
12	Option 21	228	Royal Alexandra Refurbishment of retained vacant buildings not forming part of demolition plan.
14	Option 1	0	Former Western Infirmary Do nothing – maintain the status quo.
14	Option 2	0	Former Western Infirmary Remain in place & refurbish of existing facility.
14	Option 12	0	Inverclyde Royal Hospital New build facility on area identified for site development.
14	Option 13	0	Inverclyde Royal Hospital Refurbishment of retained vacant buildings not forming part of demolition plan.
14	Option 14	0	Lightburn New build facility on area identified for site development.
14	Option 16	0	Vale of Leven New build facility on area identified for site development.
14	Option 17	0	Vale of Leven Refurbishment of retained vacant buildings not forming part of demolition plan.
14	Option 18	0	Dykebar New build facility on area identified for site development.
14	Option 19	0	Dykebar Refurbishment of retained vacant buildings not forming part of demolition plan.

Long List Option	Site	Description
1	Former Western Infirmary	Do nothing – maintain the status quo.
2	Former Western Infirmary	Remain in place & refurbish of existing facility.
3	Royal Alexandra	Refurbishment of level in laboratories building.
4	Gartnavel General Hospital	Refurbishment of vacated areas (levels 0 & 1) within SNBTS.
05a	Gartnavel General Hospital	New build facility on area identified for site development. Area adjacent to boiler house, south of Beatson.
05b	Gartnavel General Hospital	New build facility on area identified for site development. Area adjacent to Centre for Integrative Care
05c	Gartnavel General Hospital	New build facility on areas identified for site development. Former Shelley Court residencies site / transport hub.
6	Gartnavel General Hospital	New build facility in place of existing dialysis and diabetic centre.
7	Gartnavel Royal Hospital	New build facility on areas identified for site development. Area Adjacent to Tate Ward
8	Stobhill Hospital	New build facility in place of area undergoing demolition / identified for development.
9	Stobhill Hospital	Refurbishment of retained vacant buildings not forming part of demolition plan.
10	Inverclyde Royal Hospital	New build facility on area identified for site development.
11	Inverclyde Royal Hospital	Refurbishment of retained vacant buildings not forming part of demolition plan.
12	Lightburn	New build facility on area identified for site development.
13	Queen Elizabeth University Hospital	New build facility on area identified for site development
14	Vale of Leven	New build facility on area identified for site development.
15	Vale of Leven	Refurbishment of retained vacant buildings not forming part of demolition plan.
16	Dykebar	New build facility on area identified for site development.
17	Dykebar	Refurbishment of retained vacant buildings not forming part of demolition plan.
18	Royal Alexandra	New build facility on area identified for site development.
19	Royal Alexandra	Refurbishment of retained vacant buildings not forming part of demolition plan.
20	Glasgow Royal Infirmary	New build facility on area identified for site development.

Evaluation Criteria for Selection		
Score	**Pass/ Fail Classification**	**Definition**
0 Unacceptable	Fail	This location fails to satisfy the stated requirement and is therefore not capable of providing the required solution.
1 Poor	Fail	This location partially satisfies some elements of relevance to the stated requirement but provides a poor solution to properly satisfy the relevant criteria.
2 Acceptable	Pass	This location broadly satisfies most of the requirements but does not fully satisfy the relevant criteria.
3 Good	Pass	This location satisfies the vast majority of the requirements of the criteria but does not provide the ideal solution to fully satisfy the relevant criteria.
4 Excellent	Pass	This location provides a setting that fully satisfies the requirements of this criteria

Greater Glasgow & Clyde Radionuclide Dispensary - Option Appraisal Scoring Template

Site Appraisal Detailed Criteria
24/04/2019

1,2,4	**Transportation & Logistics**
1.1	Proximity of site to M74 which is the main delivery route for mateirals for production.
1.2	Proximity of site to Scottish motorway networks for national distribution.
1.3	Work flows and logistics are arranged optimally.
1.4	There is good access from available public transport including any on-site roads.
1.5	There is adequate parking for visitors/ staff cars / service / delivery vehicles.
1.6	The approach and access for service / delivery vehicles is appropriately provided.
1.7	Service vehicle circulation is well considered and does not inappropriately inpact on users and staff
1.8	Pedestrian access is obvious, pleasant and suitable for all users.
1.9	Outdoor spaces wherever appropriate are useable, with safe lighting indicating paths, ramps, steps ect.
1.10	Ability of site option to offer close vehicle access / parking to building. Travel distance to be minimised and forms part of MHRA guidance.
3	**Clincial Adjacencies**
3.1	Proximity of site to clincial services where materials are used.
3.2	The site / design facilitates the care model.
5	**Site air quality**
5.1	Clean room ventilation system may be impacted by poo air quality. Surrounding site activity to be considered.
5.2	The height, volume and skyline of the building relate well to the surrounding environment.
6	**Security**
6.1	Ability of site to provide building and staff security along with complete seperation of service from public areas.
6.2	The design facilities both security and supervision.
6.3	Waiting areas within site of staff for sense of security and access to information and assistance as needed.
6.4	Entrances are obvious and logical in relation to likely points of arrival on site
7	**Future Business Continuity**
7.1	Ability for site to offer a design that will aid ongoing maintenance and ability to adapt to advancement in technologies.
7.2	Flexibility to allow future change.
7.3	The design is sufficiently flexible to respond to clinical / service change and to enable expansion.
7.4	Where possible spaces are standardised and flexible in use patterns.
7.5	There is adequate storage space.
8	**Compliance**
8.1	Site to offer best means of compliance and to minimise derogations. Sites may only offer refurbihsment opportunities which will impact ability to comply.
8.2	Planning restrictions on building useage, noise and flue heights.
9	**Programme**
9.1	Ability to maintain production is key. Compliance issues ongoing within existing facility and sites in NHS GG&C owndership or ready for development will reduce risk associated with loss of production.
10	**Efficiency**
10.1	Site to offer efficient design opportunity with production and dispatch on same floor.
10.2	Work flows and logistics are arranged optimally.
10.3	The ratio of useable space to total area is good.
10.4	The design achieves approriate space standards.
10.5	The building and grounds are easy to operate.
10.6	The engineering systems are energy efficient.
10.7	There are emergency backup systems that are designed to minimise disruption.
10.8	The design provides a clear strategy for future adaptations and expansion.
11	**Neighbours**
11.1	Proximity of production facility to residential or sensitive types of neighbour - may impact planning process.
11.2	The height, volume andskyline of the building relates well to the surrounding environment.
12	**NHS GG&C Investment**
12.1	Utilisation of existing site / estates vs lease / purchase options.

Greater Glasgow & Clyde Radionuclide Dispensary - Option Appraisal Scoring Template

Site Appraisal Pass / Fail Criteria
Revision 2 - 01/12/2021

			Rank	14		14		12		8	
			Score	0		0		228		310	
			Pass/Fail	Fail		Fail		Pass		Pass	
			Option	Option 1		Option 2		Option 3		Option 4	
				Former Western Infirmary Do nothing – maintain the status quo.		Former Western Infirmary Remain in place & refurbish of existing facility.		Royal Alexandra Refurbishment of level in laboratories building.		Gartnavel General Hospital Refurbishment of vacated areas (levels 0 & 1) within SNBTS.	
			Weightings	Score	W/Score	Score	W/score	Score	W/score	Score	W/score
1	**Material Delivery**										
1.1	Proximity of site to M74 which is the main delivery route for materials for production.	8	3	24	3	24	3	24	3	24
2	**Material Distribution**										
2.1	Proximity of site to Scottish motorway networks for national and local distribution.	14	3	42	3	42	2	28	3	42
3	**Clinical Adjacencies**										
3.1	Proximity of site to clinical services where materials are used.	14	0	0	0	0	2	28	4	56
4	**Proximity of material delivery / distribution areas to vehicles**										
4.1	Ability of site option to offer close vehicle access / parking to building. Travel distance to be minimised and forms part of MHRA guidance and ONR. (Distribution vehicles).	10	1	10	1	10	2	20	2	20
5	**Expert Support & Education Links**										
5.1	Proximity to clinical and estate support on site. Enhanced score if Medical Physics associated with Radionuclide on site.	16	0	0	0	0	2	32	4	64
6	**Security**										
6.1	Ability of site to provide building and staff security along with complete separation of service from public areas.	8	1	8	1	8	3	24	3	24
7	**Future Business Continuity**										
7.1	Ability for site to offer a design that will aid ongoing maintenance and ability to adapt to advancement in technologies.	8	1	8	0	0	2	16	2	16
8	**Compliance**										
8.1	Site to offer best means of compliance and to minimise derogations. Sites may only offer refurbishment opportunities which will impact ability to comply.	4	0	0	3	12	2	8	2	8
9	**Programme**										
9.1	Sites in NHS GG&C ownership and ready for development will provide a less complicated and better timescale for delivery. Current facility has no contingency and therefore those sites offering best delivery timescales reduce risk associated with loss of manufacture.	8	2	16	1	8	3	24	3	24
10	**Staff Transport Access**										
10.1	Proximity to public transport routes at 6am to assist staff reaching work.	6	4	24	4	24	2	12	4	24
11	**NHS GG&C Investment**										
11.1	Utilisation of existing site / estates vs lease / purchase options.	4	3	12	3	12	3	12	2	8
	Total	**100**	**18**	**144**	**19**	**140**	**26**	**228**	**32**	**310**

Greater Glasgow & Clyde Radionuclide Dispensary - Option Appraisal Scoring Template

Site Appraisal Pass / Fail Criteria
Revision 2 - 01/12/2021

		Rank	5		3		3		7	
		Score	374		378		378		350	
		Pass/Fail	Pass		Pass		Pass		Pass	
		Option	Option 5		Option 6		Option 7		Option 8	
			Gartnavel General Hospital New build facility on area identified for site development. Area adjacent to boiler house, south of Beatson.		Gartnavel General Hospital New build facility on area identified for site development. Area adjacent to Centre for Integrative Care		Gartnavel General Hospital New build facility on areas identified for site development. Former Shelley Court residencies site / transport hub.		Gartnavel General Hospital New build facility in place of existing dialysis and diabetic centre.	
		Weightings	Score	W/score	Score	W/score	Score	W/score	Score	W/score
1	**Material Delivery**									
1.1	Proximity of site to M74 which is the main delivery route for materials for production.	8	3	24	3	24	3	24	3	24
2	**Material Distribution**									
2.1	Proximity of site to Scottish motorway networks for national and local distribution.	14	3	42	3	42	3	42	3	42
3	**Clinical Adjacencies**									
3.1	Proximity of site to clinical services where materials are used.	14	4	56	4	56	4	56	4	56
4	**Proximity of material delivery / distribution areas to vehicles**									
4.1	Ability of site option to offer close vehicle access / parking to building. Travel distance to be minimised and forms part of MHRA guidance and ONR. (Distribution vehicles).	10	4	40	4	40	4	40	4	40
5	**Expert Support & Education Links**									
5.1	Proximity to clinical and estate support on site. Enhanced score if Medical Physics associated with Radionuclide on site.	16	4	64	4	64	4	64	4	64
6	**Security**									
6.1	Ability of site to provide building and staff security along with complete separation of service from public areas.	8	4	32	4	32	4	32	3	24
7	**Future Business Continuity**									
7.1	Ability for site to offer a design that will aid ongoing maintenance and ability to adapt to advancement in technologies.	8	4	32	4	32	4	32	4	32
8	**Compliance**									
8.1	Site to offer best means of compliance and to minimise derogations. Sites may only offer refurbishment opportunities which will impact ability to comply.	4	4	16	4	16	4	16	4	16
9	**Programme**									
9.1	Sites in NHS GG&C ownership and ready for development will provide a less complicated and better timescale for delivery. Current facility has no contingency and therefore those sites offering best delivery timescales reduce risk associated with loss of manufacture.	8	4	32	4	32	4	32	2	16
10	**Staff Transport Access**									
10.1	Proximity to public transport routes at 6am to assist staff reaching work.	6	4	24	4	24	4	24	4	24
11	**NHS GG&C Investment**									
11.1	Utilisation of existing site / estates vs lease / purchase options.	4	3	12	4	16	4	16	3	12
	Total	**100**	**41**	**374**	**42**	**378**	**42**	**378**	**38**	**350**

Greater Glasgow & Clyde Radionuclide Dispensary - Option Appraisal Scoring Template

Site Appraisal Pass / Fail Criteria
Revision 2 - 01/12/2021

			Rank	6		9		10	
			Score	362		294		274	
			Pass/Fail	Pass		Pass		Pass	
			Option	Option 9		Option 10		Option 11	
				Gartnavel Royal Hospital New build facility on areas identified for site development. Area Adjacent to Tate Ward		Stobhill Hospital New build facility in place of area undergoing demolition / identified for development.		Stobhill Hospital Refurbishment of retained vacant buildings not forming part of demolition plan.	
			Weightings	Score	W/score	Score	W/score	Score	W/score
1	**Material Delivery**								
1.1	Proximity of site to M74 which is the main delivery route for materials for production.		8	3	24	2	16	2	16
2	**Material Distribution**								
2.1	Proximity of site to Scottish motorway networks for national and local distribution.		14	3	42	2	28	2	28
3	**Clinical Adjacencies**								
3.1	Proximity of site to clinical services where materials are used.		14	4	56	3	42	3	42
4	**Proximity of material delivery / distribution areas to vehicles**								
4.1	Ability of site option to offer close vehicle access / parking to building. Travel distance to be minimised and forms part of MHRA guidance and ONR. (Distribution vehicles).		10	4	40	4	40	4	40
5	**Expert Support & Education Links**								
5.1	Proximity to clinical and estate support on site. Enhanced score if Medical Physics associated with Radionuclide on site.		16	4	64	3	48	3	48
6	**Security**								
6.1	Ability of site to provide building and staff security along with complete separation of service from public areas.		8	3	24	3	24	3	24
7	**Future Business Continuity**								
7.1	Ability for site to offer a design that will aid ongoing maintenance and ability to adapt to advancement in technologies.		8	4	32	4	32	4	32
8	**Compliance**								
8.1	Site to offer best means of compliance and to minimise derogations. Sites may only offer refurbishment opportunities which will impact ability to comply.		4	4	16	4	16	2	8
9	**Programme**								
9.1	Sites in NHS GG&C ownership and ready for development will provide a less complicated and better timescale for delivery. Current facility has no contingency and therefore those sites offering best delivery timescales reduce risk associated with loss of manufacture.		8	3	24	3	24	2	16
10	**Staff Transport Access**								
10.1	Proximity to public transport routes at 6am to assist staff reaching work.		6	4	24	2	12	2	12
11	**NHS GG&C Investment**								
11.1	Utilisation of existing site / estates vs lease / purchase options.		4	4	16	3	12	2	8
	Total		**100**	**40**	**362**	**33**	**294**	**29**	**274**

Revision 01 - 24 April 2019
Original Options Site Appraisal Workshop

Antoinette Parr - Project Sponsor, Greater Glasgow & Clyde NHS
Tom Murray - Head of Radiopharmacy, Greater Glasgow & Clyde NHS
Sandy Small – Head of Nuclear Medicine, Greater Glasgow & Clyde NHS
Kay Pollock – Production Unit Manager, Greater Glasgow & Clyde NHS
Elaine Millen – Section Leader Radionuclide Pharmacy, Greater Glasgow & Clyde NHS
Michael Cassells – Capital Planning Project Manager, Greater Glasgow & Clyde NHS
Ken Fraser - Regional Direct, Thomson Gray
Wesley Bathgate - Associate Project Manager, Thomson Gray

Attending follow up discussion along with the above:
Jack Cairns - Sector Estates Manager, Greater Glasgow & Clyde NHS

Revision 02 - 01 December 2021
Review to confirm no material changes since original workshop

Antoinette Parr - Project Sponsor, Greater Glasgow & Clyde NHS
Kay Pollock - Head of Radiopharmacy, Greater Glasgow & Clyde NHS
Sandy Small - Head of Nuclear Medicine, Greater Glasgow & Clyde NHS
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8.4 Appendix D - Project Risk Register

Gartnavel General RND Facility Combined Development / Operational Risk Register

09/12/2022

Risk Ref No.	Date Identified	Summary Description of Risk		Risk Category	Risk Manager(s)	Accountable Owner	PRE-CONTROL				Risk Treatment Approach	Control and Mitigation Actions	POST-CONTROL				Date Reviewed	Movement in the period	Planned Next Steps and Future Actions Required	Next Review Date
		Risk Title	Risk Description				Likelihood	Impact / Consequence	Inherent Risk	Risk Status			Likelihood	Impact / Consequence	Residual Risk	Risk Status				
S-01	Pre OBC	Site strategy	**RISK:** Anticipated site strategy is flawed. **CAUSE:** Information used as part of the project brief is unreliable **EFFECT:** Additional cost and delay to the project, with unanticipated additional remediation works.	**Development Risk**	PSCP	NHS GG&C	3	4	12	High	Treat	SI undertaken and report now available, water infrastructure and grading surveys to be undertaken. Costs for site surveys captured within the OBC stage, however allowance for any survey results and consequential design solutions within the FBC cost report. Engagement with site Estates Team ongoing.	1	3	3	Low	16/11/2022	Remained Static	Omit assumptions from business case and replace with survey results. Outstanding surveys to be undertaken.	31/01/2023
S-02	Pre OBC	Asbestos throughout site	**RISK:** Potential asbestos around the site **CAUSE:** below demolished buildings and/or existing infrastructure not identified in Site Information **EFFECT:** Additional cost and delay to the project, with unanticipated additional remediation works.	**Development Risk**	PSCP	NHS GG&C	2	3	6	Medium	Treat	WAC (Waste Acceptance Classification) testing detailed as a requirement as part of Site Information which will be undertaken by PSCP. SI undertaken and report now available, extent of asbestos to be confirmed. Risk will remain until ground works on site complete.	2	3	6	Medium	16/11/2022	Remained Static	Confirm SI results and continue to monitor during construction works.	31/01/2023
S-03	Pre OBC	Gabion wall	**RISK:** Gabion wall requires reinstatement **CAUSE:** Condition of existing gabion wall is poor **EFFECT:** Additional cost to the project	**Development Risk**	PSCP	NHS GG&C	3	2	6	Medium	Treat	Undertake a visual survey of the existing gabion wall to confirm any requirements for reinstatement. Once survey complete, confirm way forward with GG&C. Make allowance for reinstatement in FBC stage costs.	3	2	6	Medium	16/11/2022	New	Undertake visual survey.	31/01/2023
U-01	Pre OBC	Utility requirements	**RISK:** Delay in clarifying SEPA requirements **CAUSE:** Lack of engagement by third party **EFFECT:** Project uncertainties regarding costs and programme.	**Development Risk**	Both PSCP & GG&C	NHS GG&C	1	4	4	Low	Transfer	Engagement with NHS GG&C Radiation Protection Advisor (RPA) commenced within OBC Refresh. Design to be developed and agreed to meet SEPA licencing requirements. Engagement with SEPA commenced during OBC Refresh via email. New SEPA licence to be applied for once design confirmed during FBC stage. Pre-application process to be defined in advance of SEPA licence application.	1	1	1	Low	16/11/2022	Remained Static	RPA engaged during OBC design process. Sink locations agreed, existing SEPA licences shared to inform design. New SEPA licence to be applied for once design confirmed during FBC stage.	31/01/2023
U-02	Pre OBC	Utility requirements	**RISK:** Water flow and pressure of mains water and fire hydrant is insufficient **CAUSE:** Existing flow and pressure is too slow / weak **EFFECT:** Water booster or pump may be required or alternative supply (upgrade or new) to be identified	**Development Risk**	Both PSCP & GG&C	NHS GG&C	2	3	6	Medium	Treat	Water flow and pressure test being undertaken. If insufficient, way forward to be confirmed with GG&C Estates. - Water booster or pump may be required or alternative supply (upgrade or new) to be identified.	2	3	6	Medium	16/11/2022	Increased	Water flow and pressure test to be undertaken.	31/01/2023
U-03	Pre OBC	Utility requirements	**RISK:** Insufficient capacity of existing substation to support proposed electrical design **CAUSE:** Capacity used elsewhere on site **EFFECT:** Alternative substation to be identified or upgrade / new substation required	**Development Risk**	Both PSCP & GG&C	NHS GG&C	3	4	12	High	Treat	Grading study to be undertaken on existing LV substation to confirm capacity. If insufficient, way forward to be confirmed with GG&C Estates.	2	4	8	Medium	16/11/2022	Remained Static	Grading study to be undertaken.	31/01/2023
U-04	Pre OBC	Utility requirements	**RISK:** Connection to a combined sewer not accepted by Scottish Water **CAUSE:** existing infrastructure being utilised **EFFECT:** New connection to be identified or new infrastructure required, additional cost and programme	**Development Risk**	NHS GG&C	NHS GG&C	2	4	8	Medium	Treat	Early engagement with Scottish Water. PDE (Pre Development Enquiry) raised noting a connection to the combined sewer will be undertaken.	1	4	4	Low	16/11/2022	New	Continue engagement with SW. Await response on PDE.	31/01/2023
TP-01	Pre OBC	Local Authority / Regulatory Approval	**RISK:** Third Party approvals from Local Authority and SEPA are more challenging and protracted than anticipated. **CAUSE:** Challenge of engagement with parties. Complexities not appreciated. **EFFECT:** Delay to commencement on site or invalidation for completion.	**Development Risk**	PSCP	NHS GG&C	4	3	12	High	Treat	The project programme should consider the complexity of design in relation to Planning and Building Standards risks when projecting a reasonable time period for this stage. The Local Authority and SEPA should be engaged at an early stage once design proposals are formed to understand any constraints or further expectations. Pre-Planning Assessment issued during OBC Refresh on 30.09.22. Proposing to issue a staged warrant to help speed up response times from Building Control.	3	3	9	Medium	16/11/2022	Increased	Early engagement with Planning at FBC stage identified on the programme. Risk allowances have been made in the cost plan for future changes.	31/01/2023
TP-02	Pre OBC	Planning- Site selection	**RISK:** Objections to this use for the site. **CAUSE:** Immediate local community don't support this. **EFFECT:** Complexities for journey through Planning.	**Development Risk**	PSCP	NHS GG&C	3	2	6	Medium	Treat	Public consultation for the proposed use of the site required - engagement with GG&C Public Engagement Officer required to commence process. Any feedback to be considered as part of Planning application.	3	2	6	Medium	16/11/2022	Increased	Preferred option is being developed on a brownfield site within an existing acute hospital site. Similar uses exist on the site currently.	31/01/2023
TP-03	Pre OBC	Planning Considerations	**RISK:** Existing mature trees impact on Planning appraisal. **CAUSE:** Proximity of building in relation to TPO`s. **EFFECT:** Complexity for Planning. Additional costs.	**Development Risk**	PSCP	NHS GG&C	3	3	9	Medium	Tolerate	Design to be developed taking account of existing trees where possible. Arboriculturist to undertake survey to assess the condition and quality of the trees. The design will aim to retain as many trees as possible and/or plant alternative to balance out the number of trees potentially lost. Engagement with Planning commenced at OBC Stage. Design reviewed to make adjustments to protect trees where possible.	2	2	4	Low	16/11/2022	Remained Static	Design of the building being developed around the existing trees where possible. Allowance in the Cost Plan for Tree removal. Planning may require compensation for tree loss. Tree survey to be undertaken.	31/01/2023
TP-04.1	Pre OBC	Inadequate Business	**RISK:** OBC Refresh stage approval delay from CIG. **CAUSE:** Business case is not robust. 3rd party approval withheld **EFFECT:** Project delay / Knock on effect with MHRA license.	**Development Risk**	Both PSCP & GG&C	NHS GG&C	2	5	10	Medium	Treat	Engagement with NHS Assure, HFS / NDAP and CIG ongoing. The project is required to achieve the NDAP and NHS Scotland Assure supported status. Early and continued engagement is required to align expectations and avoid confusion. Accelerating the FBC stage at risk prior to obtaining OBC Refresh approval in order to maintain the programme is being considered. RND Action Plan issued to NHS Assure on 10.11.22 addressing key concerns previously raised. NDAP workshop to be arrange for late Nov / early Dec.	2	3	6	Medium	16/11/2022	Decreased	Review of design underway to mitigate delay in project approval. Awaiting NHS Assure feedback on Action Plan. NDAP Workshop to be arranged.	31/01/2023
TP-04.2	Pre OBC	Inadequate Business	**RISK:** FBC stage approval delay from CIG. **CAUSE:** Business case is not robust. 3rd party approval withheld **EFFECT:** Project delay / Knock on effect with MHRA license.	**Development Risk**	Both PSCP & GG&C	NHS GG&C	2	5	10	Medium	Treat	Engagement with NHS Assure, HFS / NDAP and CIG.	2	5	10	Medium	16/11/2022	Decreased	Await OBC Refresh feedback and incorporate into FBC design.	31/01/2023

Risk Ref No.	Date Identified	Summary Description of Risk		Risk Category	Risk Manager(s)	Accountable Owner	Likelihood	Impact / Consequence	Inherent Risk	Risk Status	Risk Treatment Approach	Control and Mitigation Actions	Likelihood	Impact / Consequence	Residual Risk	Risk Status	Date Reviewed	Movement in the period	Planned Next Steps and Future Actions Required	Next Review Date
		Risk Title	Risk Description																	
TP-05	Pre OBC	Operational date	**RISK:** Delay to project handover **CAUSE:** Commissioning tests do not meet SEPA / MHRA / RPA required standards. **EFFECT:** Delay to handover and Operational Commissioning.	**Development Risk**	Both PSCP & GG&C	NHS GG&C	2	4	8	Medium	Treat	Healthcare specialists appointed throughout the project team. Project Board established to oversee the development on the commissioning plan. Plans to be fully developed during the FBC stage. Ensure that the operational commissioning plan is aligned with any construction programme and that service move arrangements are in place and ready to move at the appropriate time. GG&C to appoint a Technical Specialist / Advisor to support the commissioning process and to review the design proposals.	1	4	4	Low	16/11/2022	Remained Static	GG&C Commissioning team to be engaged at an early stage.	31/01/2023
D-01	Pre OBC	Informed design process.	**RISK:** Design does not meet complex service needs **CAUSE:** Failure in briefing information or in design. Technology developments over period. **EFFECT:** Build is not fit for purpose in some respects.	**Development Risk**	Both PSCP & GG&C	NHS GG&C	1	5	5	Medium	Treat	Review service model & activity levels at early design planning stages and test assumptions throughout design development and implementation. Develop a Project Execution Plan to engage with the service provider to fully understand the service needs. Develop detailed URS and ACR`s. Embrace KSAR process by NHS Assure. Opportunities to take advantage of potential future technology advances should be explored as part of OBC Refresh. In depth engagement with RND Team and RPA via stakeholder workshops covering both design and sustainability topics ongoing throughout design phases. Regular engagement with 3rd parties to ensure requirements are captured within the design.	1	4	4	Low	16/11/2022	Remained Static	Service leads have been involved throughout the design development to ensure that the design proposals meet the future service model. New technologies explored during the design development in relation to service. New technology being considered as part of the design review ahead of FBC stage.	31/01/2023
D-02	Pre OBC	Changes in technology result in services being provided using non-optimal technology	**RISK:** Current energy trends are not reflected in proposals. **CAUSE:** Rapidly changing environment and targets. Specialist facility. **EFFECT:** Failure to meet SG targets. CIG approval withheld.	**Development Risk**	PSCP	NHS GG&C	3	4	12	High	Treat	Potential future technology advances being explored as part of the OBC Refresh and as part of SDaC process. Continue to monitor SG guidance on energy.	2	4	4	Low	16/11/2022	Remained Static	New technologies explored during the design development in relation to the building fabric and requirement for Net Zero Carbon. New technology being considered as part of the design review ahead of FBC stage for service delivery. Allowance provided within the cost plan to be developed during FBC Stage	31/01/2023
D-03	Pre OBC	Meeting brief	**RISK:** Difficulties in meeting brief **CAUSE:** Design requirements have challenging technical requirements **EFFECT:** Design / Build does not fully meet Client needs or third party approvals	**Development Risk**	PSCP	NHS GG&C	2	4	8	Medium	Treat	Ambitions for complexity of design should be balanced with the design team and contractor's capabilities to implement such designs. Derogations to be raised where required to discuss where some items cannot achieve compliance - these would need to be reviewed and approved by Project Board.	2	3	6	Medium	16/11/2022	Remained Static	Specialist consultants have been identified to be engaged during the FBC stage to deliver the more complex areas of the facility eg clean room. The design team have been selected partially on their ability to deliver similar requirements. Requirements around NZC to be clarified through SDaC process.	31/01/2023
D-04	Pre OBC	Meeting brief / brief inadequacies	**RISK:** Security strategy is inadequate **CAUSE:** Complexities are not fully understood. **EFFECT:** Difficulty in achieving sign off by all parties.	**Development Risk**	PSCP	NHS GG&C	2	3	6	Medium	Transfer	Early engagement required with external bodies (MHRA etc). Industry best practice to be applied to the design proposals. SBD included within project brief. Comments from SBD to be considered within the design as practicably as possible. CTSA engagement commenced and any changes to the proposed design to be confirmed. Allowance for external CCTV requirements included in cost plan. Design to be developed further within FBC Stage. Security workshop to be held during OBC refresh.	1	3	3	Low	16/11/2022	Remained Static	OBC design developed using 'secure by design' standards. Allowance for external CCTV requirements included in cost plan. Design to be developed further within FBC Stage.	31/01/2023
C-01	Pre OBC	Loss of PSCP side resource	**RISK:** Loss of specialist knowledge **CAUSE:** Key personnel are lost to project. **EFFECT:** Delay or design / Build does not fully meet Client needs	**Development Risk**	PSCP	NHS GG&C	2	2	4	Low	Tolerate	Appoint a competent PSCP. Get CV for any change of appointments.	2	2	4	Low	16/11/2022	New		31/01/2023
C-02	Pre OBC	Delay to commissioning	**RISK:** Delay to building commissioning. **CAUSE:** Delay to main contract. **EFFECT:** Delayed hand over.	**Development Risk**	PSCP	NHS GG&C	3	4	12	High	Treat	A construction based risk register to be developed and confirmed at FBC stage to minimise changes to programme, budget or specification. Regular project team meetings to manage project cost and programme. EWs to be raised as per the contract.	3	4	12	High	16/11/2022	Increased	Risk register to continue to be developed during FBC stage. Full construction risk to be identified as design is developed.	31/01/2023
C-03	Pre OBC	Economic impact	**RISK:** Supply chain delays / labour shortages **CAUSE:** Potential new wave of Covid or financial impact due to the current economy / market **EFFECT:** Increased cost and programme	**Development Risk**	NHS GG&C	NHS GG&C	3	5	15	High	Tolerate	Regarding a new wave of Covid, follow government guidance and amend business practices accordingly. Identify alternative suppliers and/or resource where possible. Follow GG&C and/or SG guidance on market issues e.g. energy, inflation etc.	3	5	15	High	16/11/2022	New		31/01/2023
C-04	Pre OBC	Lead in times for specialist equipment	**RISK:** Delay to the completion of the RND building **CAUSE:** Long lead in time for Specialist / Group 2 equipment **EFFECT:** Increased programme and cost	**Development Risk**	NHS GG&C	NHS GG&C	3	5	15	High	Treat	Early engagement with suppliers and NHS procurement commenced during OBC Refresh.	2	5	10	Medium	16/11/2022	New		31/01/2023

Operational Risks

AF-01	Pre OBC	Site disruption	**RISK:** The site works impact on the operation of hospital campus. **CAUSE:** Interuption / distruption to utility services and access. **EFFECT:** Service delivery impacted on site. Magnitude of both dictated by service change and timing.	**NHS Operational Risk**	GG&C	Director of Diagnostics	3	4	12	High	Transfer	Governance groups to be established to monitor the impact of the project on day to day business operations. Appropriate resourcing to be allocated to provide the necessary capacity to minimise any impact on operations. Project Board and Project Delivery Group established to monitor and manage the delivery of the project. Good engagement practices to be put in place between site Team and Estates Team. Verify continuity plan for overall site.	3	2	6	Medium	09/12/2022	Remain Static	Verify continuity plan for overall site. Site surveys being completed.	31/01/2023
AF-02	Pre OBC	Continuity of Service delivery.	**RISK:** Failure in existing RND facility **CAUSE:** Programme delay causing fabric / services failure or License revoked. **EFFECT:** Alternative service delivery.	**NHS Operational Risk**	GG&C	Director of Diagnostics	4	5	20	V High	Tolerate	Business Continuity Plan (BCP) to be maintained. NHS GG&C to monitor building condition and implement maintenance/temporary repairs as required. Regular engagement with MHRA is ongoing. RND Oversight Group established to address immediate recommendations from MHRA inspection to maintain the function of the existing facility. BCP in place and reviewed as required. GG&C reviewing alternative contingency plans regarding the lease of mobile units in case this is required - could be up to 18months for manufatcure and deilvery if buying outright.	4	5	20	V High	09/12/2022	Increased	Continue doing what we are doing.	31/01/2023

Risk Ref No.	Date Identified	Summary Description of Risk		Risk Category	Risk Manager(s)	Accountable Owner	Likelihood	Impact / Consequence	Inherent Risk	Risk Status	Risk Treatment Approach	Control and Mitigation Actions	Likelihood	Impact / Consequence	Residual Risk	Risk Status	Date Reviewed	Movement in the period	Planned Next Steps and Future Actions Required	Next Review Date
		Risk Title	Risk Description																	
CB-01	31/03/2022	Client brief changes	**RISK:** Client requirement / URS changes **CAUSE:** Changes to clinical or other legislation regulations **EFFECT:** Programme delay / cost uplift.	**NHS Operational Risk**	GG&C	Director of Diagnostics	3	3	9	Medium	Treat	Status of clinical regulations and other related legislation should be regularly reviewed and current status confirmed prior to each business case submission. GG&C to continue engagement with MHRA. Project Steering Group to advise of any (potential) regulation changes from MHRA. Specific risks have been identified for changes to MHRA requirements. All other clinical regulations applicable to the project have been identified in the URS and will be reviewed through out the project stages. Review of the application of these regulations also forms part of the NHS Scotland Assure KSAR process. A Project Delivery Group has been established with regular engagement with the MHRA. Any changes to comply with new regulations would need to be formally instructed through the contract (via a PMI). URS update within the period to capture current design and guidance updates accordingly and agreed with the GG&C RND Team. Clean Room Projects appointed and specialist consultant to be appointed to support any regulatory changes on the project. VHP allowance included within cost plan however exact cost unknown at this stage.	1	2	2	Low	09/12/2022	Remained Static		31/01/2023
CB-02	31/03/2022	Client brief changes	**RISK:** Client requirements change **CAUSE:** Changes or uncertinty regards non-legislation future policy changes **EFFECT:** Cost increase / project delay.	**NHS Operational Risk**	GG&C	Director of Diagnostics	3	3	9	Medium	Transfer	Project Delivery Group established with representation from a wide range of stakeholders to aid in the early identification of policy changes. Applicable standards and guidelines identified in the URS. Governance groups in place to monitor for changes to future policy that may impact on the project requirements. URS update within the period to capture current design and guidance updates accordingly and agreed with the GG&C RND Team. ACR updated within the period.	1	3	3	Low	09/12/2022	Increased		31/01/2023
CB-03	Pre OBC	Regulatory Approval	**RISK:** Third Party approvals from MHRA / SEPA / HSE are more challenging and protracted than anticipated. **CAUSE:** Challenge of engagement with parties. Complexities not appreciated. **EFFECT:** Change to client brief, delay to commencement on site or in validation for completion.	**NHS Operational Risk**	GG&C	Director of Diagnostics	3	4	12	High	Treat	The project programme should consider the complexity of design in relation to Planning and Building Standards risks when projecting a reasonable time period for this stage. The Local Authority and SEPA should be engaged at an early stage once design proposals are formed to understand any constraints or further expectations. Governance groups established with membership from internal regulators and links to MHRA. Engagement ongoing during the design development and planned to continue for future stages. Future proofing elements included within the design to help mitigate the impact on the design if any third party feedback requires any change to the design. Engagement with and appointment of a specialist consultant to ensure compliance with all third party requirements.	3	3	9	Medium	09/12/2022	Increased	Continue engagement with stakeholders.	31/01/2023
PD-01	Pre OBC	GG&C resource	**RISK:** Commitment to project affects existing service delivery. **CAUSE:** Time constraints on key individuals. **EFFECT:** Quality of existing service delivery is impacted.	**NHS Operational Risk**	GG&C	Director of Diagnostics	3	3	9	Medium	Treat	Governance group established to monitor the impact of the project on day to day business operations and to assess the memberships' skills and experience. Appropriate resourcing to be allocated to provide the necessary capacity to minimise any impact on operations.	3	3	9	Medium	09/12/2022	Remained Static	Operational delegation . Protect time by reaching out to other disciplinesfor assistance.	31/01/2023
PD-02	Pre OBC	Operational date	**RISK:** Delay from handover to building being operational **CAUSE:** Operational commissioning is not aligned with main programme. **EFFECT:** Delay in providing service and decommissioning.	**NHS Operational Risk**	GG&C	Director of Diagnostics	2	2	4	Low	Terminate	Ensure that the operational commissioning plan is aligned with any construction programme and that service move arrangements are in place and ready to move at the appropriate time. Project Board established to oversee the development on the commissioning plan. Plans to be fully developed during the FBC stage	1	1	1	Low	09/12/2022	Remained Static	GG&C Commissioning team engaged at early stage.	31/01/2023
PD-03	Pre OBC	Operational date	**RISK:** Delay from handover to building being operational **CAUSE:** Operational processes are not approved by MHRA. **EFFECT:** Delay in providing service and commissioning.	**NHS Operational Risk**	GG&C	Director of Diagnostics	3	3	9	Medium	Treat	Ensure that the operational commissioning plan is aligned with any construction programme and that service move arrangements are in place and ready to move at the appropriate time. Project Board established to oversee the development on the commissioning plan. Plans to be fully developed during the FBC stage. Develop the comissioning programme during FBC. Continue engagament with MHRA.	3	3	9	Medium	09/12/2022	Increased	GG&C Commissioning team engaged at early stage.	31/01/2023
PD-04	Pre OBC	Delay to commissioning	**RISK:** Delay to Operational commissioning and going live. **CAUSE:** Delay to main contract. **EFFECT:** Issues with timing of deliveries and facility being operational.	**NHS Operational Risk**	PSCP	Director of Diagnostics	3	4	12	High	Treat	A construction based risk register should be developed and confirmed at FBC stage to minimise changes to programme, budget or specification. Current facility remains operational.	3	4	12	High	09/12/2022	Remained Static	Risk register to continue to be developed during FBC stage. Full construction risk to be identified as design is developed.	31/01/2023
PD-05	Pre OBC	Critical programme dates are unrealistic	**RISK:** Programme is not realistic **CAUSE:** PSCP assumption are not correct or reflect complexities **EFFECT:** Delay to handover	**NHS Operational Risk**	GG&C	Director of Diagnostics	2	5	10	Medium	Transfer	The programme has been developed from FBC through to Construction and thorough detail has been added and reviewed between all parties to ensure accuracy based on current information. Performance is recorded against the programme dates and progress is monitored through the Project Board	1	5	5	Medium	09/12/2022	Increased		31/01/2023
PD-07	Pre OBC	Loss of Client side resource	**RISK:** Loss of specialist knowledge **CAUSE:** Key personel are lost to project. **EFFECT:** Delay or design / Build does not fully meet Client needs	**NHS Operational Risk**	GG&C	Director of Diagnostics	3	2	6	Medium	Treat	Detailed URS and ACR`s has been developed and updated within the period to reflect current project requirements and guidance. Process to be implemented for recording decisions and changes to project information. Governance groups to be established to ensure the sharing of information. Handover processes to be developed where changes in personnel are unavoidable. Robust process in place for recording decisions and changes to the project information. Project governance groups in place to enable the sharing of knowledge. Clean Room Projects now appointed to support design development, specialist contractor to be appointed to support.	2	2	4	Low	09/12/2022	Remained Static	Investigate potential cover from other Health Boards.	31/01/2023
PD-08	Pre OBC	Delay due to Covid-19	**RISK:** Elongation of programme and delayed Completion **CAUSE:** COVID-19 - Workplace distancing measures resulting in extra time to complete activities or handle supplies and materials coming into work site. **EFFECT:** Delay to Practical Completion and services occupying the new building.	**NHS Operational Risk**	GG&C	Director of Diagnostics	2	3	6	Medium	Tolerate	Process established for Project Manager to report on programme delays due to COVID-19 to the Executive Steering Group. Project Manager to hold regular review meeting with PSCP and report to Executive Steering Group. Unless there is significant change in government guidance, risk now sits with Contractor.	2	3	6	Medium	09/12/2022	Remained Static	Project Manager to hold regular review meeting with HUB and BAM and report to Executive Steering Group.	31/01/2023
PD-09	Pre OBC	Brexit or other materials delays	**RISK:** Lack of manufacture resource affects deliveries and installation of materials on critical path. **CAUSE:** Workload pressures on other projects. **EFFECT:** Delay in completing commissioning installation and occupancy of building.	**NHS Operational Risk**	GG&C	Director of Diagnostics	3	3	9	Medium	Treat	Procurement entering into dialogue with suppliers at the appropriate time. Specialist equipment or long lead time materials to be identified during the design development and allowances made within the programme. Post FC risk passes to PSCP. FBC and Construction programme now details long lead items.	2	2	4	Low	09/12/2022	Remain Static	Equipment lists developed identifying key items. To be reviewed during FBC stage with ongoing engagement between the PSPC and their Supply Chain. Post FC risk transfers to PSCP.	31/01/2023
PD-10	Pre OBC	Group 2 +3 items, Brexit or other materials delays	**RISK:** Lack of manufacture resource affects deliveries and installation of materials on critical path. **CAUSE:** Workload pressures on other projects. **EFFECT:** Delay in completing commissioning installation and occupancy of building.	**NHS Operational Risk**	GG&C	Director of Diagnostics	3	3	9	Medium	Treat	Procurement entering into dialogue with suppliers at an early stage. Specialist equipment or long lead time materials to be identified during the design development and allowances made within the programme. Post FC risk passes to PSCP. FBC and Construction programme now details long lead items.	2	2	4	Low	09/12/2022	Remain Static	Get NHS Scotland procurement team involved early. Procurement to advise as the project progresses. Equipment lists developed identifying key items. To be reviewed during FBC stage with ongoing engagement between the PSPC and their Supply Chain. Post FC risk transfers to PSCP.	31/01/2023
PD-11 / U-01	Pre OBC	Utility requirements	**RISK:** Delay in clarifying SEPA requirements **CAUSE:** Lack of engagement by third party **EFFECT:** Project uncertinties regarding costs and programme.	**PSCP / NHS Shared Risk**	Both PSCP & GG&C	Director of Diagnostics	1	3	3	Low	Transfer	NHS GG&C Radiation Protection Advisor (RPA) to be engaged from OBC stage. Design to be developed and agreed to meet SEPA licencing requirements. New SEPA licence to be applied for once design confirmed during FBC stage. RPA engaged during OBC design process. Sink locations agreed, existing SEPA licences shared to inform design	1	2	2	Low	09/12/2022	Remained Static	.	31/01/2023

Risk Ref No.	Date Identified	Summary Description of Risk		Risk Category	Risk Manager(s)	Accountable Owner	Likelihood	Impact / Consequence	Inherent Risk	Risk Status	Risk Treatment Approach	Control and Mitigation Actions	Likelihood	Impact / Consequence	Residual Risk	Risk Status	Date Reviewed	Movement in the period	Planned Next Steps and Future Actions Required	Next Review Date
		Risk Title	Risk Description																	
BC-01	Pre OBC	Change strategy	**RISK:** The clinical need for change and expected outcomes isn't clearly defined **CAUSE:** Breif and Business case not fully developed. **EFFECT:** Delay in Business case approvals and lack of service buy-in.	**NHS Operational Risk**	GG&C	Director of Diagnostics	3	3	9	Medium	Terminate	Develop a Project Execution Plan to engage with the service provider to fully understand the service based need for change and the expected benefit from investment. This links with URS and Business Case.	3	3	9	Medium	17/07/2022	Remained Static	The PEP has been developed and agreed outlining the project governance and engagement strategy. The need for change has been clearly defined in the Initial Agreement and investment objectives and a benefit plan have been developed outlining the expected outcome	Sep-22
BC-02	Pre OBC	Service Planning	**RISK:** Service demand does not match planned levels. **CAUSE:** Poor predictive data / change in service delivery. **EFFECT:** Benefits Realisation are not acheived. Financial case is not reflective. Facility does not meet capacity needs.	**NHS Operational Risk**	GG&C	Director of Diagnostics	2	2	4	Low	Tolerate	Carry out sensitivity testing of assumptions behind service demand projections to understand and manage any underlying risks, Demand levels reviewed for past 6 years and presented in the IA and OBC. Business cases demonstrate that demand remains constant with the criteria identified that would cause any increase	2	2	4	Low	09/12/2022	Remain Static	Continue engagement with stakeholders.	31/01/2023
BC-03	Pre OBC	Service Changes.	**RISK:** New service models cant be implemented **CAUSE:** Operational factors not in place to support transition. **EFFECT: F**ailure to achieve improvements in Benefit Realisation. Business Case failure.	**NHS Operational Risk**	GG&C	Director of Diagnostics	2	3	6	Medium	Tolerate	A service change plan should be developed which is closely aligned to the design development process and implementation of the project. Service plans are being developed to align with the new facility. The project board has been established that will oversee the service change plan and move to the new facility including updating the Business Continuity Plan and Operating Procedures. Service leads have been and continue to be involved in the design development	2	3	6	Medium	09/12/2022	Remained Static	Continue engagement with stakeholders.	31/01/2023
BC-04 (TP-04)	Pre OBC	Inadequate Business	**RISK:** OBC / FBC stage approval delay from CIG. **CAUSE:** Buisness case is not robust. 3rd party approval witheld **EFFECT:** Project delay / Knock on effect with MHRA license.	**PSCP / NHS Shared Risk**	Both PSCP & GG&C	Director of Diagnostics	3	4	12	High	Transfer	Accelerating the FBC stage at risk prior to obtaining OBC approval in order to maintain the programme.	2	4	8	Medium	09/12/2022	Remained Static	Review of design underway to mitigate delay in project approval	31/01/2023
NEH 030	Pre OBC	PSCP Capacity	**RISK:** PSCP delivery is sporadic and poor quality. **CAUSE:** Insufficient capacity to deliver within PSCP Team **EFFECT:** Delay to project and quality issues.	**NHS Operational Risk**	GG&C	Director of Diagnostics	2	5	10	Medium	Terminate	The capacity and capability of the PSCP and the design team should be fully explored by the client and contractor during the procurement stage, and evidenced in the project's OBC.	1	2	2	Low	31/03/2022	Remained Static	The tender and appointment process has been fully detailed in the OBC. Procurement of design services has been completed via HFS Framework 2 with capability checks completed as part of the tender process. Design team identified with processes in place to mitigate changes in personnel	Sep-22
COM-01	Pre OBC	Project Support	**RISK:** Poor Stakeholder engagement. **CAUSE:** Project Board and Delivery Groups not in place or not representative. **EFFECT:** Lack of wider support for project and local support.	**NHS Operational Risk**	GG&C	Director of Diagnostics	2	3	6	Medium	Tolerate	Project governance and management groups now in place and which will engage with all appropriate stakeholders at appropriate stages of the project. Project Board and Project Delivery Group established to maintain communication with appropriate stakeholders through out the project stages. Project Board will highlight, if required, any concerns regards lack of engagement.	1	2	2	Low	09/12/2022	Remain Static	Continue doing what we are doing.	31/01/2023
COM-02	Pre OBC	Negative publicity.	**RISK:** Adverse publicity in relation to project. **CAUSE:** Various **EFFECT:** Reputational damage and political pressures.	**NHS Operational Risk**	GG&C	Director of Diagnostics	3	5	15	High	Tolerate	Reputational risk to be considered in the impact of all risk. Regular engagement with key stakeholders to be managed and NHS GG&C public affairs team to be consulted before any public information is released (i.e.. planning application) RND Oversight Group established to maintain communication with MHRA as main external regulator. Planning submission planned for FBC stage, public affairs team to be consulted prior to submission	2	5	10	Medium	09/12/2022	Remain Static	Continuation of existing actions.	31/01/2023
COM-03	Pre OBC	Poor communication	**RISK:** Ineffective engagement. **CAUSE:** Poor communications. **EFFECT:** Stakeholder interests ignored.	**NHS Operational Risk**	GG&C	Director of Diagnostics	2	2	4	Low	Tolerate	Ensure that the project communication plan covers issues of public perception / consultation feedback / media interest / parliamentary interest / organisational reputation, etc. Governance groups established to monitor and manage engagement with stakeholders. Comms team to be consulted at appropriate stage prior to any public engagement	2	2	4	Low	09/12/2022	Remain Static	Staff news letter via comms team. All Governance groups up to CEO sighted in progress.	31/01/2023
FIN-01	Pre OBC	Funding shortfall	**RISK:** Project costs over run. **CAUSE:** Various **EFFECT:** Additional funding required	**NHS Operational Risk**	GG&C	Director of Diagnostics	5	4	20	V High	Treat	Additional funding being sought at OBC refresh. NZC is currently an issue for the project. Risk allowances have been included in the OBC cost plan. A fully costed construction risk register will be developed during the FBC stage	5	4	20	V High	09/12/2022	Remained Static		31/01/2023
FIN-02	Pre OBC	Cost risk	**RISK:** Cost risk **CAUSE:** Changes in legislation or taxes **EFFECT:** Increase in project costs.	**NHS Operational Risk**	GG&C	Director of Diagnostics	3	4	12	High	Tolerate	Legislation should be regularly reviewed and current status confirmed prior to each business case submission. Risk allowances have been included within the cost plan. Specific risks have been identified to address the impact from likely legislation changes such as BREXIT.	3	4	12	High	09/12/2022	Remained Static		31/01/2023
FIN-03	Pre OBC	Project unaffordable	**RISK:** Cost estimates are not reflective of tender returns **CAUSE:** Various, including volatile economic conditions **EFFECT:** Project is put at risk.	**NHS Operational Risk**	GG&C	Director of Diagnostics	4	4	16	High	Tolerate	The level of detail required for project cost estimates should align with guidance on each planning stage. The affordability of the project tested at IA stage and further explored as part of the OBC and FBC stages of the project. Cost models have been developed in line with the SCIM guidance. Suitable allowances have been made for assumptions and risks presented at the business case stages. Project affordability has been tested and presented in the IA and OBC with appropriate funding profiles developed, risk allowances and assumptions made.	4	3	12	High	09/12/2022	Remained Static		31/01/2023
FIN-04	Pre OBC	Specification uplift	**RISK:** Increased project costs **CAUSE:** Specialist consultants requirements are not currently costed **EFFECT:** Specification is uplifted resulting in cost pressures.	**NHS Operational Risk**	GG&C	Director of Diagnostics	2	3	6	Medium	Treat	Appointment of specialist Fire Engineer, Clean Room Consultant and Technical Advisor to be undertaken early in FBC stage. Cost currently allowed.	2	2	4	Low	09/12/2022	Remained Static	Design currently based on architect's interpretation of requirements. Specialist appointments required early in FBC stage	31/01/2023

Risk Ref No.	Date Identified	Summary Description of Risk		Risk Category	Risk Manager(s)	Accountable Owner	Likelihood	Impact / Consequence	Inherent Risk	Risk Status	Risk Treatment Approach	Control and Mitigation Actions	Likelihood	Impact / Consequence	Residual Risk	Risk Status	Date Reviewed	Movement in the period	Planned Next Steps and Future Actions Required	Next Review Date
		Risk Title	Risk Description																	
FIN-05	Pre OBC	Disruption to supplies / material due to Covid-19 or other economic factors	**RISK:** Disrupted or cancelled supplies/materials orders to the work site **CAUSE:** Supply chains affected by financial viability, workplace measures and/or staff availability, resulting in delays in programme and additional costs from sourcing materials from other suppliers or waiting for existing orders to be fulfilled; **EFFECT:** Costs increase from time delays, extra staff time and commodity price changes. Delay to Practical Completion and services occupying the new building.	**NHS Operational Risk**	GG&C	Director of Diagnostics	4	3	12	High	Transfer	Procurement entering into dialogue with suppliers at the appropriate time. Specialist equipment or long lead time materials identified during the design development and allowances made within the programme. Post FBC risk passes to PSCP with exception of group 2 and 3 items.	2	3	6	Medium	09/12/2022	Remained Static		31/01/2023

8.5 Appendix E - Project Programme

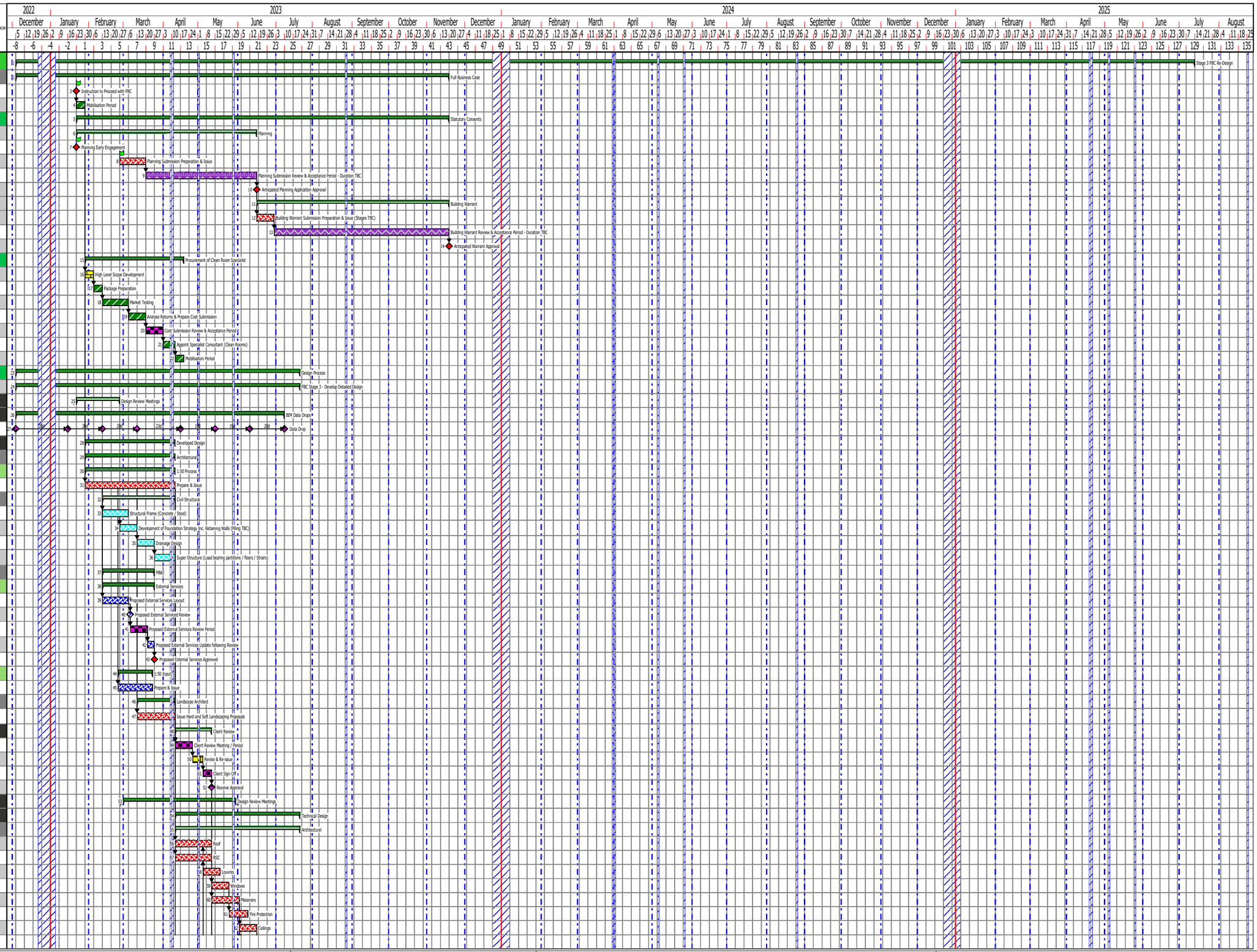
NHS Greater Glasgow and Clyde

27/10/2022

Radionuclide – Stage 3 Re-Design – 2022
NHS GGC

GRAHAM

Line	Name	Start	Duration	Finish	Finish variance
1	**Stage 3 FBC Re-Design**	05/12/22	127w 1d	14/07/25	-11d
2	**Full Business Case**	05/12/22	47w	20/11/23	
3	Instruction to Proceed with FBC	23/01/23		23/01/23	-10d
4	Mobilisation Period	23/01/23	1w	27/01/23	-10d
5	**Statutory Consents**	20/01/23	42w	20/11/23	
6	**Planning**	20/01/23	20w	16/06/23	
7	Planning Early Engagement	20/01/23		20/01/23	
8	Planning Submission Preparation & Issue	27/02/23	3w	17/03/23	
9	Planning Submission Review & Acceptance Period - Duration TBC	20/03/23	12w	15/06/23	
10	Anticpated Planning Application Approval	16/06/23		16/06/23	
11	**Building Warrant**	16/06/23	22w	20/11/23	
12	Building Warrant Submission Preparation & Issue (Stages TBC)	16/06/23	2w	29/06/23	
13	Building Warrant Review & Acceptance Period - Duration TBC	30/06/23	20w	17/11/23	
14	Anticpated Warrant Approval	20/11/23		20/11/23	
15	**Procurement of Clean Room Specialist**	30/01/23	11w	18/04/23	-10d
16	High Level Scope Development	30/01/23	1w	03/02/23	-10d
17	Package Preparation	06/02/23	1w	10/02/23	-10d
18	Market Testing	13/02/23	3w	03/03/23	-10d
19	Analyse Returns & Prepare Cost Submission	06/03/23	2w	17/03/23	-10d
20	Cost Submission Review & Acceptance Period	20/03/23	2w	31/03/23	-10d
21	Appoint Specialist Consultant (Clean Rooms)	03/04/23	1w	11/04/23	-10d
22	Mobilisation Period	12/04/23	1w	18/04/23	-10d
23	**Design Process**	05/12/22	30w	21/07/23	-11d
24	**FBC Stage 3 - Develop Detailed Design**	05/12/22	30w	21/07/23	-11d
	Design Review Meetings	20/01/23	5w	24/02/23	
	BIM Data Drops	05/12/22	28w 1d	10/07/23	-5w
27	Data Drop	05/12/22		10/07/23	-5w
	Developed Design	30/01/23	10w	11/04/23	5w
29	**Architectural**	30/01/23	10w	11/04/23	5w
30	**1:50 Process**	30/01/23	10w	11/04/23	9d
31	**Prepare & Issue**	30/01/23	10w	11/04/23	-11d
32	**Civil Structural**	13/02/23	8w	11/04/23	
33	Structural Frame (Concrete / Steel)	13/02/23	3w	03/03/23	-5d
34	Development of Foundation Strategy Inc. Retaining Walls (Piling TBC)	27/02/23	2w	10/03/23	
35	Drainage Design	13/03/23	2w	24/03/23	
36	Super Structure (Load bearing partitions / floors / Strairs)	27/03/23	2w	11/04/23	
37	**M&E**	13/02/23	6w	27/03/23	5w
38	**External Services**	13/02/23	6w	27/03/23	13d
39	Proposed External Services Layout	13/02/23	3w	03/03/23	15d
40	Proposed External Serviced Review	07/03/23		07/03/23	15d
41	Proposed External Services Review Period	07/03/23	2w	20/03/23	13d
42	Proposed External Services Update following Review	21/03/23	4d	24/03/23	13d
43	Proposed External Services Approved	27/03/23		27/03/23	13d
44	**1:50 Input**	24/02/23	4w	23/03/23	4w 1d
45	**Prepare & Issue**	24/02/23	4w	23/03/23	1d
46	**Landscape Architect**	13/03/23	4w	11/04/23	-5d
47	Issue Hard and Soft Landscaping Proposals	13/03/23	4w	11/04/23	-5d
	Client Review	12/04/23	4w	11/05/23	
49	Client Review Meeting / Period	12/04/23	2w	25/04/23	
50	Revise & Re-issue	26/04/23	1w	03/05/23	
51	Client Sign Off	04/05/23	1w	10/05/23	
52	Receive Approval	11/05/23		11/05/23	
	Design Review Meetings	01/03/23	12w 1d	31/05/23	
	Technical Design	12/04/23	14w	21/07/23	-11d
55	**Architectural**	12/04/23	14w	20/07/23	-11d
56	Roof	12/04/23	4w	10/05/23	4d
57	RSC	12/04/23	4w	10/05/23	4d
58	Louvres	04/05/23	2w	17/05/23	-1d
59	Windows	11/05/23	2w	24/05/23	-6d
60	Masonary	11/05/23	3w	01/06/23	-6d
61	Fire Protection	25/05/23	2w	08/06/23	-6d
62	Ceilings	02/06/23	2w	15/06/23	-6d



Drawn by: CM	Programme No. HFS-NHSGGC-RND-ST3D	Revision No. 1	Programme Status:For Comment	Notes:

NHS Greater Glasgow and Clyde

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Radionuclide – Stage 3 Re-Design – 2022
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Line	Name	Start	Duration	Finish	Finish variance
63	Partitions	02/06/23	3w	22/06/23	-6d
64	Flooring	16/06/23	2w	29/06/23	-6d
65	Doors and Ironmongery	16/06/23	2w	29/06/23	-6d
66	Wall Finishes Inc. Protection	23/06/23	2w	06/07/23	-6d
67	IPS	23/06/23	2w	06/07/23	-6d
68	FF&E inc. Recepetion Desk	30/06/23	2w	13/07/23	-6d
69	Blinds	07/07/23	2w	20/07/23	-11d
70	Signage	07/07/23	2w	20/07/23	-11d
71	Architectural NBS	23/06/23	4w	20/07/23	-11d
72	Issue Detail work packages / NBS	20/07/23		20/07/23	-11d
73	**Civil & Structural**	**12/04/23**	**13w**	**14/07/23**	**-11d**
74	Structural Frame (Concrete & Steel)	12/04/23	3w	03/05/23	9d
75	First Floor Hot Zone Lightweight Floor	04/05/23	2w	17/05/23	9d
76	Development of Foundation Strategy Inc. Retaining Walls (Piling TBC)	04/05/23	3w	24/05/23	9d
77	Drainage Design	18/05/23	3w	08/06/23	9d
78	Super Structure (Load bearing partitions / floors / Strairs)	25/05/23	3w	15/06/23	9d
79	Civil & Structural NBS	16/06/23	4w	13/07/23	-11d
80	Issue Detail work packages / NBS	14/07/23		14/07/23	-11d
81	**M&E**	**11/05/23**	**9w**	**14/07/23**	**-11d**
82	**Electrical**	**11/05/23**	**9w**	**14/07/23**	**-11d**
83	Containment	11/05/23	2w	24/05/23	-11d
84	Small Power and Data (SP&D)	18/05/23	2w	01/06/23	-11d
85	Fire detection (CDP Design Intent)	18/05/23	2w	01/06/23	-11d
86	Lighting	25/05/23	2w	08/06/23	-11d
87	Access Control & Security (CDP Design Intent)	02/06/23	2w	15/06/23	-11d
88	Main Switchgear	09/06/23	2w	22/06/23	4d
89	Riser / Plantroom Layouts	09/06/23	2w	22/06/23	4d
90	BMS	16/06/23	2w	29/06/23	-16d
91	UPS (CDP Design Intent)	16/06/23	2w	29/06/23	-16d
92	PV (CDP Design Intent)	30/06/23	1w	06/07/23	-16d
93	External Generator / Transformer	30/06/23	1w	06/07/23	-16d
94	External Lighting & Vehicle Charging	07/07/23	1w	13/07/23	-16d
95	Electrical NBS	16/06/23	4w	13/07/23	-11d
96	Issue Detail work packages / NBS	14/07/23		14/07/23	-11d
97	**Mechanical**	**11/05/23**	**9w**	**14/07/23**	**-11d**
98	Ventillation / Cooling	11/05/23	3w	01/06/23	-1d
99	Louvres	25/05/23	2w	08/06/23	-4w 1d
100	Domestic Water (Inc. Water Tank)	09/06/23	2w	22/06/23	-6d
101	GSHP / ASHP	23/06/23	3w	13/07/23	-11d
102	Mechanical NBS	16/06/23	4w	13/07/23	-11d
103	Issue Detail work packages / NBS	14/07/23		14/07/23	-11d
104	**Clean Room Specialist**	**11/05/23**	**9w**	**14/07/23**	**-6d**
105	Update GA Design	11/05/23	2w	24/05/23	
106	Ventillation / Cooling	11/05/23	3w	01/06/23	9d
107	Containment	18/05/23	2w	01/06/23	-6d
108	Small Power and Data (SP&D)	25/05/23	2w	08/06/23	-6d
109	Fire detection	25/05/23	2w	08/06/23	-6d
110	Lighting	02/06/23	2w	15/06/23	-6d
111	Access Control & Security	09/06/23	2w	22/06/23	-6d
112	Domestic Water	16/06/23	2w	29/06/23	-1d
113	BMS	23/06/23	2w	06/07/23	-11d
114	Partitions	23/06/23	2w	06/07/23	-6d
115	Doors / Access Hatches	30/06/23	2w	13/07/23	-6d
116	Clean Room Specialist NBS	16/06/23	4w	13/07/23	-6d
117	Issue Detail work packages / NBS	14/07/23		14/07/23	-6d
118	**Landscape Architect**	**11/05/23**	**10w**	**21/07/23**	**-11d**
119	Issue Hard and Soft Landscaping Proposals	11/05/23	4w	08/06/23	-11d
120	Cordinate Landscape Design	07/07/23	2w	20/07/23	-11d
121	Landscape Architect NBS	09/06/23	4w	06/07/23	-11d
122	Issue Detail work packages / NBS	21/07/23		21/07/23	-11d
123	**FBC Report**	**30/06/23**	**3w**	**21/07/23**	**-11d**
124	FBC Report Preparation	30/06/23	3w	20/07/23	-11d
125	FBC Report Submission	21/07/23		21/07/23	-11d

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NHS Greater Glasgow and Clyde

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Radionuclide – Stage 3 Re-Design – 2022
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Line	Name	Start	Duration	Finish	Finish variance
126	**Design Reviews**	11/05/23	14w 3d	22/08/23	-11d
127	FBC Report Review Period	21/07/23	2w	03/08/23	-11d
128	FBC Report Sign Off	04/08/23		04/08/23	-11d
129	Technical Design Review Period	21/07/23	2w	03/08/23	-11d
130	Technical Design Review Sign Off	04/08/23		04/08/23	-11d
131	FBC HAI SCRIBE	11/05/23		11/05/23	-11d
132	FBC AEDET	21/07/23	1d	21/07/23	-11d
133	**FBC NDAP**	24/05/23	12w 4d	22/08/23	-11d
134	NDAP Notification	24/05/23		24/05/23	
135	NDAP Submission	21/07/23		21/07/23	-11d
136	NDAP Review & Workshop	21/07/23	2w 3d	08/08/23	-11d
137	NDAP Report Issued	09/08/23		09/08/23	-11d
138	Recommendations Addressed	09/08/23	2w	22/08/23	-11d
139	**FBC Commercial**	21/07/23	12w	13/10/23	-11d
140	BOQ Preparation	21/07/23	2w	03/08/23	-11d
141	Package Preparation	28/07/23	2w	10/08/23	-11d
142	Market Testing	11/08/23	4w	08/09/23	-11d
143	Target Price Development	04/09/23	4w	29/09/23	-11d
144	Target Price Review & Acceptance	02/10/23	2w	13/10/23	-11d
145	**Submit Target Price for Inclusion in FBC**	13/10/23		13/10/23	-11d
146	Stage 3 Planned Contract Completion	13/10/23		13/10/23	-11d
147	Terminal Float	16/10/23	1d	16/10/23	-11d
148	Stage 3 Contract Completion	16/10/23		16/10/23	-11d
149	**Design Assure**	19/09/23	16w	22/01/24	-11d
150	Compile & Issue All Relevant Information	19/09/23	4w	16/10/23	-11d
151	Assure Review Meeting - Dates TBC	31/10/23		11/12/23	-11d
152	NHS Design Assure Period	17/10/23	12w	22/01/24	-11d
153	**NHS GGC Governance**	23/01/24	4w	20/02/24	-11d
154	NHS GGC Governance Process Period	23/01/24	4w	19/02/24	-11d
155	Anticipated Approval Date	20/02/24		20/02/24	-11d
156	Anticipated Instruction to Proceed to Construction	20/02/24		20/02/24	-11d
157	**Construction - Indicative Durations**	30/10/23	83w 1d	14/07/25	-11d
158	Contract Mobilisation	20/02/24	1w	26/02/24	-11d
159	**Utility Applications - Approval Periods TBC**	27/02/24	19w	12/07/24	-11d
160	Applications Preparation	27/02/24	5w	03/04/24	-11d
161	Water Review & Acceptance Period	04/04/24	14w	12/07/24	-11d
162	Power Review & Acceptance Period	04/04/24	14w	12/07/24	-11d
163	Comms Review & Acceptance Period	04/04/24	14w	12/07/24	-11d
164	**Statutory & Regulatory Approvals**	27/02/24	36w	11/11/24	-11d
165	**Planning**	27/02/24	36w	11/11/24	-11d
166	Discharge of Prior to Occupation Planning Conditions	27/02/24	36w	11/11/24	-11d
167	**Construction**	30/10/23	75w 1d	15/05/25	-11d
168	**Site Mobilisation Activities**	27/02/24	5w 2d	05/04/24	-11d
	Indicative Mobilisation Period	27/02/24	5w 2d	05/04/2024	-11d
170	Site Mobilisation	27/02/24	5w	03/04/24	-11d
171	Erect Temporary Fencing / Site Security Perimeter Fencing	27/02/24	1d	27/02/24	-11d
172	Install Cabins & Welfare Facilities inc. Ground Preparation & Temp Power / Services	27/02/24	2w	11/03/24	-11d
173	Locate / Identify Known Existing Site Utilities / Services	05/03/2024	2d	06/03/2024	-11d
174	Erect Plywood Hoarding & Decorate (As Required)	07/03/24	4w	05/04/24	-11d
	On-Site Surveys / Validations	05/03/24	1w	11/03/2024	-11d
176	Survey Existing Roadways / Paths & Neighbouring Buildings (Dilapidation Survey)	05/03/24	1w	11/03/2024	-11d
177	Construction Stage Duration	12/03/24	58w	15/05/25	-11d
178	Latest Date for NHS to Commence Procurement	30/10/23		30/10/23	
179	Isolator Procurment (Assumed GGC TBC)	30/10/23	7w	15/12/23	
180	Isolater Lead in Time	18/12/23	52w	17/01/25	
181	Isolator Delivery (GGC)	20/01/25		20/01/25	
182	Connect Isolators	20/01/25	4w	14/02/25	
183	Completion of the Works	15/05/25		15/05/25	-11d
184	**NHS GG&C MHRA Commissioning**	16/05/25	8w	14/07/25	-11d
185	Specialist Commissioning	16/05/25	8w	11/07/25	-11d
186	MHRA Certification Sign Off	14/07/25		14/07/25	-11d

Project

Summary Bar · Contract · Contractor Activity · Key Date · Architectural · Statutory Approvals · Design Team Activity · Employer Activity · Civil/Structural Engineer · Services Engineer · Specialist Contractor · Specialist Consultant · Cost Consultant

Meetings · Design Assure Review & Approval Period · Applications Approval Period · Survey · Construction · Fab/Procure

Drawn by: CM	Programme No. HFS-NHSGGC-RND-ST3D	Revision No. 1	Programme Status:For Comment	Notes:

Project Ref: C:\Users\Cameron.McIntosh\OneDrive - GRAHAM\Documents\NHS GGC\NHS Gartnavel\Radionuclide\Programme\FBC - Stage 3\Rev 1\NHS GGC - Radionuclide - Stage 3 Re-Design - 2022 Rev 1.pp

Printed: 27/10/2022

8.6 Appendix F - Stakeholder Engagement Plan

Stakeholder Engagement Plan

NHS GG&C– Radionuclide – OBC Stage 2 Rev P03

GRAHAM

Whole Team	
Estates	
3rd Party	
KEY DATE	

Programme Rev:	**S2001 P03**
Outline Proposals:	**25/11/19 – 31/01/20**

Meeting	Date		General	Architecture	MEP	3rd Party
User Group Meeting 1	**05/12/19**	**OBC - Outline Proposals**	• Introductions • Overview of Process • Briefing Gap Analysis	• Feedback of Bid Proposals	• Intro to WELL Standard	
Break Out	**w/c 09/12/19**		[To establish site infrastructure and capacity, allowing MEP design to define services strategy]		**Estates** • Introductions • Review of Site Services	
Break Out	**w/c 09/12/19**		[To establish expected energy targets from HFS, and how this should be demonstrated, including NDAP deliverables]			**HFS** • Modelling Requirements / Criteria • Energy Targets
User Group Meeting 2	**12/12/19**		[To review 1:500 in prep for sign off and begin to explore and test the 1:200. Also looking at developing the URS to establish brief for cleanroom design]	• 1:500 Review for Sign Off • 1:200 Progress • RPA Requirements • **Agree departmental flows** • **Agree Initial SoA**	• Equipment Review • Plant Requirements • URS Review	
KEY DATE	**16th Dec 19**		**1:500 Plan for Sign Off**			
User Group Meeting 3	**17/12/19**		[To review 1:200 progress, and cleanroom briefing updates]	• 1:200 Progress Review • Interior Design Review • **Agree Final SoA**	• **Agree Specialist Equipment** • URS Update	• NDAP Early Engagement

RESCHEDULED: Break Out	~~**w/c 06/01/19**~~		**Rescheduled to 17/01** [To review the developing URS]		**Lynn Morrison** • URS Review	
User Group Meeting 4	**08/01/19**	**OBC – Outline Proposals**	[To test developing strategies in relation to the developed 1:200, and begin room by room specification development]	• 1:200 Progress • Acoustic Review • Fire Review • ADB Review • RPA Review	• Review Outline M&E Strategy • **Finalise URS**	
KEY DATE	**10th Jan 19**		**Finalise Briefing**			
NEW: User Group Meeting 4 (Cont)	**08/01/19**		[To test developing strategies in relation to the developed 1:200, and begin room by room specification development]	• ADB Completion		
RESCHEDULED: User Group Meeting 5	~~**16/01/19**~~		**Rescheduled to 22/01** [To review overall design for final comment]	• **1:200 Final Review** • **ADB Completion**	• **Final Review of M&E Strategy**	
User Group Meeting 5	**22/01/19**		**Rescheduled from w/c 17/01** [To review overall design for final comment]	• **1:200 Final Review** • **ADB Completion**	• **Final Review of M&E Strategy**	
Break Out	**w/c 17/01/19**		**Rescheduled from w/c 06/01** [To review the developing URS]		**Lynn Morrison** • URS Review	
KEY DATE	**20th Jan 19**		**1:200 Design Freeze**			

8.7 **Appendix G - Community Benefits Tracker**

FS2 - NHS GGC Radionuclide Dispensary

Benefit Ref	Community Benefit Project Plan							Monitoring & Reporting
	Employment and Skills areas	Minimum Requirement	GRAHAM offer	Measurement	Type of Opportunities	Organisations who we will Engage with	Timescales	Comments
Specified benefits have clear definitions and key performance indicators								
Section 1: Employment								
1.1	**Jobs Created (direct) -** All relevant opportunities created as a result of NHS GGC Programme of work projects, will be promoted throughout the local area targeting New Entrants	**1nr**	**1nr**	One individual employed for a min. 4 weeks at 30 hours per week or more represents one outcome.	Will be in one of these areas: General Construction Operatives, trade persons, site support staff, cleaning operative and security personnel	Jobs & Business Glasgow, Department of Working Pensions, Glasgow Guarantee & Skills Development Scotland	Construction Phase	Supply chain partners appointed will be monitored continuously by our Community Benefit Advisor, and will be required to provide evidence e.g offer of employment letter stating job is expected to last a minimum of 4weeks
1.2	**Jobs Created (indirect) -** All relevant opportunities created as a result of NHS GGC Programme of work projects, will be promoted throughout the local area targeting New Entrants	**0**	**1nr**	One individual employed for a min. 4 weeks at 30 hours per week or more represents one outcome.	Will be in one of these areas: General Construction Operatives, trade persons, site support staff, cleaning operative and security personnel	Jobs & Business Glasgow, Department of Working Pensions, Glasgow Guarantee & Skills Development Scotland	Construction Phase	Supply chain partners appointed will be monitored continuously by our Community Benefit Advisor, and will be required to provide evidence e.g offer of employment letter stating job is expected to last a minimum of 4weeks
1.3	**Graduate - Persons -** Employment opportunities for graduates and post-graduates, employed as a direct result of the project. Graduates must have graduated in the last 2 years with a post/degree award or be unemployed or underemployed post-graduation.	**0**	**0**					
1.4	**Apprentice Starts - Persons -** Recruitment of Traditional Apprentices & Technical Apprentices to the NHS GGC projects. All apprenticeship opportunities created on the project will be directly or in directed employed by our supply chain partners. An apprenticeship outcome is defined as an individual pursuing a formal apprenticeship framework incorporating either NVQ level 2, 3 or above.	**1nr**	**1nr**	One apprentice start recorded/reported represents one outcome	Will be in one of these area: Joinery, bricklaying, painting & decorating, plumbing, electrical, Engineering, Construction Management, Quantity Surveying	Skills Development Scotland, CITB, West of Scotland Colleges & Developing Young Workforce (Glasgow)	Construction Phase	Supply chain partners appointed will be monitored continuously by our Community Benefit Advisor, and will be required to provide evidence e.g SBATC Apprentice registration form
1.4	**Existing Apprentices - Persons** (on the project at any level)	**2nr**	**2nr**	One existing apprentice recorded/reported represents one outcome	Monitor and record	Supply Chain	Construction Phase	Supply chain partners appointed will be monitored continuous by our Community Benefit Advisor, and will be required to provide evidence e.g SBATC Apprentice registration form
1.4	**Apprentice Completions - Persons**	**0**	**0**					
Section 2: Skills & Training								
2.1	**Work Placement (16 plus years) - Persons -** Placement duration will be a minimum of 1 week and maximum of 4 weeks per individual. Placements will be offered to school pupils.	**3nr**	**3nr**	One Individual represents one outcome	Will be in one of these areas: Joinery, bricklaying, painting & decorating, plumbing, electrical, Engineering, Construction Management, Quantity Surveying	Developing Young Workforce Glasgow, Skills Development Scotland, CITB	Construction Phase	GRAHAM along with supply chain partners will develop a work experience programme targeting schools pupils. Placement will be offered to 16+ years olds.
2.1	**Work Placement (14-16 years) - Persons -** Placement duration will be a minimum of 1 week and maximum of 4 weeks per individual. Placements will be offered to school pupils.	**1nr**	**1nr**	One Individual represents one outcome	Will be in one of these areas: Joinery, bricklaying, painting & decorating, plumbing, electrical, Engineering, Construction Management, Quantity Surveying	Developing Young Workforce Glasgow, Skills Development Scotland, CITB	Construction Phase	GRAHAM along with supply chain partners will develop a work experience programme targeting schools pupils. Placement will be offered to 14-16 years olds.
2.2	**Site Visits - Schools (No. Individuals attended vistis)**	**10nr**	**10nr**	One Individual represents one outcome	Site tours, careers talks, health & safety awareness sessions, construction demonstrations/practical sessions, teacher insight days	Developing Young Workforce Glasgow	Construction Phase	GRAHAM will promote site visits through Developing Young Workforce (Glasgow), visits will include H&S inductions, introduction to the project, careers available within the industry and site tour
2.3	**Site Vistis - Further Education (No. Individuals attended visit)**	**8nr**	**8nr**	One Individual represents one outcome	Site tours, careers talks, health & safety awareness sessions, construction demonstrations/practical sessions	Promote to all West of Scotland Colleges	Construction Phase	GRAHAM will promote site visits to all colleges in the west of Scotland, visits will include H&S inductions, introduction to the project, careers available within the industry and site tour
2.4	**S/NVQ Starts for Subcontractors - Persons** This target describes S/NVQ starts at levels 2,3,4 or 5 for individuals working in the project suppy chain.	**2nr**	**2nr**	One Individual represents one outcome	Will be in one of these areas: Construction Supervision, Construction Site Management, Construction Senior Management, Occupational Works Supervision, General Construction	CITB Approved training providers	Construction Phase	Supply chain partners appointed will be monitored continuously by our Community Benefit Advisor, and will be required to provide evidence e.g S/NVQ registration form
2.4	**S/NVQ Completions for subcontractors - Persons** This target describes S/NVQ completions at levels 2,3,4 or 5 for individuals working in the project supply chain.	**2nr**	**2nr**	One Individual represents one outcome	Will be in one of these areas: Construction Supervision, Construction Site Management, Construction Senior Management, Occupational Works Supervision, General Construction	CITB Approved training providers	Construction Phase	Supply chain partners appointed will be monitored continuously by our Community Benefit Advisor, and will be required to provide evidence e.g S/NVQ completion certificate
2.5	**Construction Curriculum Support Activities - Individual Engagement -** will be offered to schools, colleges, universities and employability organisations in the local area.	**2nr**	**2nr**	One event/intervention represents one outcome	Support offered will range from site visits, career events, visits to school, mentoring of young people, and health & safety talks	Developing Young Workforce Glasgow, Skills Development Scotland, CITB	Construction Phase	GRAHAM has over 30 Construction and STEM Ambassadors within the region who actively engage with primary and secondary schools throughout Scotland. Ambassadors will highlight careers within the Industry and promote the NHS Lothian projects
2.6	**Expert Advice - Provide Training support to 3rd sector/local organisations or charities**	**0**	**0**					
Section 3: Health Benefit Outcomes								
3.1	**Supportive policies**	0						GRAHAM benefits from our own internal Wellbeing Team, led by our Human Resources Director, Michael Smyth. Michael and his team are responsible for ensuring GRAHAM meet, over and above, statutory requirements in supporting our staff to achieve a good work life balance. The Wellbeing Team lead health and wellbeing campaigns, offer

FS2 - NHS GGC Radionuclide Dispensary

Benefit Ref	Community Benefit Project Plan							Monitoring & Reporting
	Employment and Skills areas	Minimum Requirement	GRAHAM offer	Measurement	Type of Opportunities	Organisations who we will Engage with	Timescales	Comments
3.2	**Demonstrate and Promote Work life Balance practices**	0						work life balance. The Wellbeing Team lead health and wellbeing campaigns, offer individual support on work and personal matters and manage a wealth of information through our company intranet Wellbeing Site, which is updated daily.
3.3	**Demonstrate support for learning and development of all staff within your organisation**	0						GRAHAM provide hundreds of thousands of hours worth of training a year to our staff, supply chain and through community benefit commitments. We have a team of nine Training Officers led by Learning & Development Manager Helen Vint. Helen's Team will track and record all training hours on the Dispensary Project.
3.4	**Promote the benefits of healthy eating, etc**	0						Campaigns led by our Wellbeing Team.
3.5	**Provide managers and supervisors with training**	0						All our Managers are supported to progress in their Career. Our Learning & Development Manager, Helen Vint and her Team, will manage the programme of training and report to NHSGGC on hours of training offered.
3.6	**Mentoring – support one organisation in our supply chain**	0						Supply Chain development is offered through our Supply Chain Development Programme, managed by our Compliance Manager, Suzanne Stevenson. Suzanne works as part of the Commercial Team to identify mentoring opportunities within our supply chain. She then proposes a programme of development and secures by in from our the relevant Commercial Manager, Procurement Manager and operational Managers. Not only does this support the local economy and allow businesses to grow, it also improved our supply chain, allowing up to offer our Client's even better value for money.
3.7	**Promote community health, safety and wellbeing**	0						See 3.1
3.8	**Raise awareness of Scottish Minimum Wage**	0						Minimum requirement as part of our supply chain approval process.
3.9	**Raise awareness / registration of Healthy Workings Lives award**	0						GRAHAM is registered with Health Working lives. We have been awarded a Bronze award and are working towards Silver at the moment.
Section 4: Environmental								
4.1	**Recycled Waste (% of Project Value)**	0						An Environmental Management Plan and Waste Plan will be developed for the Dispensary Project by our Environmental Manager, Scott Bryson. Scott will report on targets and ensure we meet these by working with our supply chain, offering training and monitoring activities on site.
4.2	**Reduced Waste to Landfill (% of re-use inert material)**	0						
4.3	**Habitat Enhancement**	0						
4.4	**Carbon Reduction**	0						
Section 5: SME (within a 30 mile radius of the project site) & 3rd Sector Involvement								
5.1	**Works Awarded by Value**	0	0					
5.2	**Work Awarded by Tendering Opportunities to SMEs (%)**	0	0					
5.3	**Supplier Development e.g. Number of seminars**	0	0					
5.4	**Meet the Buyers Days e.g. Number of seminars.**	0	0					
5.5	**Training Plans for Subcontractors - number of**	2nr	2nr	One company training plan represents one outcome	Support will be offered by CITB to develop training plans for supply chain partners	CITB	Construction Phase	GRAHAM work closely with CITB Advisors on all projects to help develop supply chain partners. Our community benefit advisor, will organise advisory days, onsite, to promote funding opportunities, training available and development of training plans
	Supervisor Training for Subcontractors - persons	3nr	3nr	One individual represents one outcome	Will be in one of these areas: Construction Supervision, Construction Site Management, Construction Senior Management, Occupational Works Supervision	CITB Approved training providers	Construction Phase	GRAHAM work closely with CITB Advisors on all projects to help develop supply chain partners. Our community benefit advisor, will organise advisory days, onsite, to promote funding opportunities, training available and development of training plans

FS2 - NHS GGC Radionuclide Dispensary

Benefit Ref	Community Benefit Project Plan							Monitoring & Reporting
	Employment and Skills areas	Minimum Requirement	GRAHAM offer	Measurement	Type of Opportunities	Organisations who we will Engage with	Timescales	Comments
5.5	**Leadership and Management Training for Subcontractors - per**	1nr	1nr	One individual represents one outcome	Introduction to Managing People 1 & 2	CITB Approved training providers	Construction Phase	GRAHAM work closely with CITB Advisors on all projects to help develop supply chain partners. Our community benefit advisor, will organise advisory days, onsite, to promote funding opportunities, training available and development of training plans
	Advanced Health and Safety Training for Subcontractors - pers	3nr	3nr	One individual represents one outcome	Will be in one of these areas: SSSTS, SMSTS, SEATS,TWCTC, CSCS,	CITB Approved training providers	Construction Phase	GRAHAM work closely with CITB Advisors on all projects to help develop supply chain partners. Our community benefit advisor, will organise advisory days, onsite, to promote funding opportunities, training available and development of training plans
5.6	**Number of sub-contract opportunities advertised on Public Contracts Scotland**	0	0					
Section 6: Community Benefits e.g. Number of Events, staff volunteering, charity support								
6.1	**Community Benefits e.g. Number of events ,Staff Volunteering, Charity Support**	0	1nr	One community benefit day/event equals one outcome	Fund raising, volunteering, physical improvement works	To be agreed with Client	Construction phase	We aim not only to reduce the impact our operations have on local communities but also to make a positive lasting contribution to the communities we work. This can be carrying out agreed works or involving staff in volunteering days. On the project we would propose to support NHS GCC charity of choice.
All KPI Evidence will be retained and saved by GRAHAM and will be available for inspection upon request. The status of the KPI's will be reported within monthly progress reports.								