NHS Grampian

The Baird Family Hospital

and

The ANCHOR Centre

Foresterhill Health Campus, Aberdeen

Full Business Case

January 2020

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ABBREVIATIONS

1. Executive Summary

1. Executive Summary

1.1 Introduction

The Scottish Government (SG) provided Initial Agreement (IA) approval on 30 September 2015, Outline Business Case (OBC) approval on 22 March 2018 (refer to Appendix A) and on that date invited NHS Grampian (NHSG) to submit a Full Business Case (FBC) for a single capital Project which includes two distinct elements:

- The Baird Family Hospital
- The ANCHOR Centre

These new facilities will be developed on the Foresterhill Health Campus in Aberdeen.

This FBC is the third phase in the business planning process for the Project. Its purpose is to:

- confirm the Project Scope
- outline the main commericial and contractual arrangements of the recommended offer
- set out the full financial implications for the Project, including the Project's overall funding and affordability arrangements
- confirmation that the management arrangements are in place to ensure the Project's successful implementation.

1.2 Investment

1.2.1 The Baird Family Hospital

The development of The Baird Family Hospital (the Baird) will realise key priorities for NHSG. NHSG has recognised the importance of maternity services in particular during the past few years, leading to the creation of the Maternity Strategy and its associated recommendations.

The new hospital will provide maternity, gynaecology, breast screening and breast symptomatic services. It will also include a neonatal unit, centre for reproductive medicine, an operating theatre suite, Community Maternity Unit (CMU) and research and teaching facilities.

The new hospital will be called The Baird Family Hospital in recognition of the contribution made to health by the Baird family over many years in Aberdeen and elsewhere in Scotland. Over time, it is expected that the new hospital will be referred to simply as “The Baird” by the public, patients and staff.

The Baird will deliver on the following principles:

- facility to appropriately care for different patient groups
- provide opportunity for redesign
- plan for local, regional and national service delivery
- support women, patients and families e.g. Patient Hotel
- fit for purpose and appropriate service co-location e.g. Paediatric Surgery, Neonatal, ITU and MRI

The Baird will also support the following Operating Model:

- new service models e.g. Maternity Triage, Transitional Care
- ambulatory care as the norm
- 100% surgical pre-assessment
- 85% admission on day of surgery
- enhanced Recovery
- appropriate reduction in length of stay
- increased patient choice e.g. water births
- increased recruitment to clinical trials

1.2.2 The ANCHOR Centre

The ANCHOR Centre is the next significant phase in the development of services for haematology and oncology patients, creating much needed day and out-patient treatment and support accommodation space. The new centre will be co-located with the Radiotherapy Centre and, once

commissioned, both will operate as a single ambulatory ANCHOR Centre for the patients of Grampian and the North of Scotland (NoS).

The new centre will provide out-patient and day-patient investigation and treatment services for patients with cancer and for patients with blood and bone marrow disorders, including non-cancerous conditions as well as cancers. The centre will also include an aseptic pharmacy and research and teaching facilities.

This new facility will be called The ANCHOR Centre. ANCHOR (Aberdeen and North Centre for Haematology, Oncology and Radiotherapy) is a well-respected and highly regarded 'brand', established in the NoS for two decades.

The ANCHOR will deliver the following service delivery environment:

- comfortable, non-threatening communal areas
- maintains dignity and privacy
- facilitates clinical trials, research and teaching
- specific provision for teenagers and young adults
- safe, efficient and productive working environment

The new facility will also support the development of working practices:

- oncology and haematology services work seamlessly to provide enhanced, streamlined patient care
- increased nurse-led clinics
- seek to improve scheduling to optimise clinical resources and improve the patient pathway

1.3 Design Assurance

The purpose of the NHSScotland Design Assessment Process (NDAP) is to promote design quality and the service outcomes realised through this. Following regular engagement, on 29 November 2019, an NDAP FBC submission to Architecture Design Scotland (AD+S) and Health Facilities

Scotland (HFS) was made. HFS have confirmed that they want to look at the NDAP submission in parallel with the forthcoming HFS design review planned for February 2020.

In response to the recent design reviews at the new Children's Hospital in Edinburgh and the new Queen Elizabeth Hospital in Glasgow, HFS and Health Protection Scotland (HPS) are developing a new Key Stage Authorisation Review process. This Project will be subject to an external design review during February 2020 in advance of construction commencement.

Design review by appropriate technical officers, external experts and clinical stakeholders has been an integral component of the development of this Project's facilities. An internal design assurance process is in place and has included recent workshops to revisit design sign off for water and drainage, electrical infrastructure, ventilation, fire and medical gases.

1.4 Revisiting The Strategic Case

The Strategic Case set out in the OBC has been revisited and remains valid. The Project is expected to provide clinical and design quality benefits which are directly relevant to the stated objectives.

The full list of policies listed in the OBC remain relevant for both facilities.

Two further workstreams in relation to services in The Baird Family Hospital have been developed since the OBC was approved.

- The Best Start: A Five-Year Forward Plan for Maternity and Neonatal Services 2017
- NHSG local documents related to the proposed redesign of women and children's services at Dr Gray's Hospital:
    - A Phased Approach to the Re-Establishment of Obstetric Services at Dr Gray's Hospital November 2018

- NHS Grampian: Women and Children's Services in Dr Gray's Hospital. A draft plan for safe and sustainable services, promoting choice and optimal local service provision (the Phase Two plan) June 2019

The Strategic Case includes more details on these workstreams, including a revision of the Baird model to accommodate and support future service change.

In conclusion, work being carried out with regards to redesign of Moray services and the impact of the Best Start strategy do not impact on the approved direction of travel for the Project.

The oncology and haematology services, to be accommodated in The ANCHOR Centre, have been reviewed to ensure the Project brief remains consistent with local, regional and national policy. There have been no significant changes to the relevant policies since OBC approval and the clinical services continue to work within the predicted incidence and prevalence indicators.

1.5 Revisiting The Economic Case

The appraisal of the costs, risks and benefits associated with the site options identified in the Economic Case set out in the OBC has been revisited and remains robust.

Operating and equipping costs, appraised risks and benefits have not materially changed in the period between OBC and preparation of the FBC, however, following market returns, the build costs for the preferred options have increased. The increase is as a consequence of design complexity and market conditions. In revisiting the original appraisal, it is assumed that the build costs in each of the options would have been impacted by this cost increase.

The outcome of the revised appraisal is set out in Table ES1 and ES2 below; this analysis demonstrates the relative value for money of the preferred sites and that the build cost changes since the preparation of the OBC do not materially change the outcome of the Economic Appraisal.

Table ES1 (FBC): Evaluation of Options - The ANCHOR Centre

	Option 1	**Option 2**	**Option 3**	**Option 4**
(Out of 100)	The ANCHOR Centre adjacent to the existing Radiotherapy Centre	The ANCHOR Centre between Radiotherapy and Matthew Hay Building	The ANCHOR Centre adjacent to the Radiotherapy Centre	The Baird Family Hospital integrated with The ANCHOR Centre
Economic Appraisal	56	42	53	44
Risk Appraisal	100	85	100	77
Total Score	**156**	**127**	**153**	**121**
Overall Ranking	**1**	**3**	**2**	**4**
Score OBC	158	129	155	123
Rank OBC	1	3	2	4

Table ES2 (FBC): Evaluation of Options - The Baird Family Hospital

	Option 1	Option 2	Option 3	Option 4
(Out of 100)	The Baird Family Hospital on Foresterhill HC site	The Baird Family Hospital adjacent to Children's Hospital	The Baird Family Hospital adjacent to future development	The Baird Family Hospital integrated with The ANCHOR Centre
Economic Appraisal	81	72	61	67
Risk Appraisal	100	81	67	100
Total Score	**181**	**153**	**128**	**167**
Overall Ranking	**1**	**3**	**4**	**2**
Score OBC	181	153	128	167
Rank OBC	1	3	4	2

The ANCHOR Centre is sited adjacent to the existing Radiotherapy Centre at the east end of Aberdeen Royal Infirmary (ARI). A site plan is shown in Figure C1. More details are available in the main FBC, section 4.3.3. The Gross Internal Floor Area (GIFA) for the development is 5,500 m^2.

The Baird Family Hospital is located towards the west of the Royal Aberdeen Children's Hospital (RACH). This option is consistent with the Foresterhill Development Framework agreed with Aberdeen City Council in 2008. The new facility will be internally linked to ARI and RACH. A site plan is shown in Figure C1, refer to main FBC section 4.3.3. The GIFA for the development is 25,950 m^2.

1.6 The Commercial Case

The Project is a health project with an investment cost in excess of £220 million. It is to be funded by means of a SG capital budget allocation and procured under the NHSScotland Frameworks Scotland 2 (FS2) arrangement.

The contractual arrangements for each stage of the Project Development have used the FS2 Frameworks Agreement New Engineering Contract 3 (NEC3) Option C contract. The construction stage contract has been developed and modified, with appropriate professional advice, to reflect its scale, complexities and risk. The Project uses a Project Bank Account. Key contractual risks have been allocated to the party best able to manage it.

Following a competitive process, GRAHAM Construction were appointed as the Principal Supply Chain Partner (PSCP) in November 2016. The PSCP Target Price for construction following an extensive tender process has been jointly developed on an 'Open Book' basis and was submitted in December 2019. This followed an extensive period of additional review, as tender returns had indicated circa 41% increase in build costs from that previously forecast and reported.

As part of this process, NHSG jointly commissioned with HFS the Royal Institution of Chartered Surveyors (RICS) to undertake an independent external review to objectively identify the reasons for the variance in project costs, given that there had been no material changes to the scope or design of the Project.

The key findings of the RICS review were:

- *It is entirely reasonable for NHS Grampian to have expected to be able to place reliance upon the Joint cost Advisor (JCA) and the PSCP to work collaboratively to present an accurate cost plan.*

- *A significant number of the total variances reported arose from inaccuracies in the cost plan, arising from benchmarking that did not fully take account of factors prevailing at the project and in the market and from a failure to track appropriately the impact of costs arising from design development and authorised changes.*
- *Limitation on the number of bidding contractors for certain packages of work, especially MEP, is likely to have restricted competition and ability to achieve ultimate best value.*
- *Both anecdotal and hard evidence to support the notion that market forces at play in Grampian, in Scotland generally, and in relation to the type and scale of the Project are such as to render the Project less attractive to potential bidders.*

In line with the recommendations of the external reviewer, additional work was commissioned from AECOM by NHSG to specifically look at the Mechanical, Electrical and Plumbing (MEP) procurement. The AECOM MEP specialist team confirmed, based on the AECOM library of projects and taking into account the specifics of the Baird and ANCHOR Project in 2019, that the MEP tender rate is within an acceptable range.

During the review period, four of the tender packages have been retendered with no material betterment in price. Retendering the whole project is an option, however it will take in the region of nine months to complete and expose the Project to additional risks, including loss of supply chain and inflationary cost pressures.

Based on the outcome of the external reviews and recent market engagement the proposed course of action is to proceed with the current Target Price submitted. This will result in an increase in the Project forecast from £163.7 million to £223.6 million.

NHSG will continue to work with the JCA and PSCP to deliver any further cost efficiencies that might be available including the use of the payment

mechanism, i.e. the PSCP is paid Defined Cost plus Fee Percentage (i.e. actual cost of labour, plant, materials and sub-contract work plus a fixed percentage for overhead and profit) but only up to the ceiling price of the Target Price. Efficiencies are also incentivised under the contract with savings that are generated against Target Price, up to 5% below the Target Price, shared on a 50/50 basis between client and contractor.

Table ES3 below outlines the key programme dates for the construction phase of the Project assuming FBC approval in February 2020.

Table ES3 (FBC): Project Programme

Construction	
Stage 4 appointment of PSCP	February 2020
Stage 4 appointment of PSCs	February 2020
Construction Commencement	May 2020
Construction Completion - ANCHOR	May 2022
Bring into Operation - ANCHOR	July 2022
Construction Completion – Baird	November 2022
Bring into Operation - Baird	March 2023
AMH Demolition	May 2023
Contract Completion	May 2023

1.7 The Financial Case

The Financial Case reflects the full financial implications of the Project.

The specific approval as part of this business case relates to the following investment in Table ES4.

Table ES4 (FBC): Summary of Initial Capital Investment for Approval

	Baird	ANCHOR	Total	Total
	£000s	£000s	£000s	£000s
Construction Related Costs	166,246	40,377	206,623	146,716
Furniture and Equipment	15,253	1,747	17,000	17,000
Total Initial Investment	**181,499**	**42,124**	**223,623**	**163,716**
Sources of Funding				
SG Additional Capital Funding	181,499	42,124	223,623	163,716
Total Sources of Funding	**181,499**	**42,124**	**223,623**	**163,716**

Table ES5 outlines the total investment required to deliver the new facilities. This includes enabling projects which freed up the preferred sites, project development costs, construction costs and furniture and equipment.

Table ES5 (FBC): Summary of Initial Capital Investment

	Baird	ANCHOR	FBC Total	OBC Total
	£000s	£000s	£000s	£000s
Enabling Projects	8,702	4,645	13,347	13,464
Construction Related Costs	166,246	40,377	206,623	146,716
Furniture and Equipment	15,253	1,747	17,000	17,000
Project Development Costs	6,442	1,535	7,977	6,748
Commissioning Costs	168	42	210	210
Total Initial Investment	**196,811**	**48,346**	**245,157**	**184,138**
Sources of Funding				
SG Additional Capital Funding	181,499	42,124	223,623	163,716
Hub Contract	7,838	0	7,838	7,531
NHSG Capital Funding	900	4,680	5,880	5,828
NHSG Revenue Funding	6,574	1,542	7,816	7,063
Total Sources of Funding	**196,811**	**48,346**	**245,157**	**184,138**

The Enabling Projects and Works have been delivered using combination of existing NHSG capital and revenue allocation and additional capital allocation from the SG to Fund.

Construction related costs have increased by £59.9 million (41%) from the budget estimate contained in the OBC (December 2017). The estimated build costs associated with construction of the facilities were produced in

consultation with the PSCP, by the JCA based on the emerging design and prevailing market conditions at that time.

The scope of the project has not changed materially since the OBC was prepared, with only £1.4 million of construction changes explicitly instructed by NHSG through the contract mechanism. The additional reasons identified for the variance are:

- cost planning allowances and assumptions at OBC did not suffiently reflect the complexity of the Project (£15.2 million)
- coordination of the the design development process was inadequate in production of Cost Plan, including reliance on benchmarking data not fully aligned to emerging designs. (£14.7 million)
- market conditions and inflation both across the construction sector generally and in relation to the specific type and scale of the Project mean that tender returns were higher than anticipated (£28.5 million)

The programme delay has elongated the duration that the NHSG Project Team are required, resulting in an increase in Project Development Costs.

New facilities will attract additional recurring running costs, it will also provide an opportunity to deliver services differently and implement better ways of working. Some of these service changes will deliver efficiencies however it is anticipated that some cost pressures will arise. A substantial programme of service redesign is being undertaken to manage the transition. The additional costs relate to:

- depreciation – in relation to the new buildings and equipment
- clinical related running costs – of the services that will transfer to the new facilities a small number of clinical related running costs as a direct consequence of the new facilities have been identified and included within the business case
- non-clinical service costs – new equipment and technologies that will be installed in the new facilities will attract additional running costs

- building related running costs – as a consequence of the larger footprint and more modern and complex facilities running costs are anticipated to increase

These costs summarised in the table below will step up from the period of commissioning in 2022 and financial plans of NHSG.

Table ES6 (FBC): Summary of Additional Recurring Revenue Implications - First Full Year of Operation (2023/24)

	Baird	**ANCHOR**	**Total**
	£000s	**£000s**	**£000s**
Recurring Revenue Costs			
Additional Depreciation	4,276	978	**5,254**
Additional Clinical Service Costs	839	168	**1,007**
Additional Non-Clinical Service Costs	340	85	**425**
Additional Building Related Running Costs	2,299	714	**3,013**
Total Recurring Revenue Costs	**7,754**	**1,945**	**9,699**
Sources of Funding			
Third Party (UoA)	157	0	157
NHSG Revenue Funding (Other Scheme Costs)	3,321	967	4,288
Total Identified Sources of Funding	**3,478**	**967**	**4,445**
Revenue Funding (Depreciation)*	4,276	978	5,254
Total Core and Non Core funding available	**7,754**	**1,945**	**9,699**

* NHSG have requested that SG provide additional support for the costs associated with depreciation.

In the OBC a construction cost of the emerging design to £146.7 million was reported and funding from the SG agreed. The construction cost is now forecast to be £206.6 million and additional funding of £59.9 million from SG requires to be agreed.

NHSG is committed to the Project and subject to the provision of additional SG funding in relation to the construction costs, depreciation and equipment, all revenue and capital implications of the Project will be reflected in the financial plans of the Board.

1.8 The Management Case

Management arrangements are in place to ensure the Project's successful implementation.

Effective project management and governance arrangements have been in place throughout the Project and are documented within the Project Execution Plan (PEP), which is updated regularly. These arrangements support effective control of change and Project management and maintain continuity of approach within the Project.

The Project resources are currently being reviewed to make sure they are appropriate to address the complexities of the construction phase.

A robust risk management process has been put in place and continues to be actively managed through the whole programme to reduce the likelihood of unmanaged risk affecting any aspect of the Project.

A significant service redesign agenda has been identified and is being managed by the Executive Redesign Group, which meets quarterly. Additionally, three operational management-led Service Redesign Groups oversee the development and implementation of the agreed Service Redesign Plans.

Benefit Registers and Benefit Realisation Plans have also been developed and agreed with the appropriate Operational Management Teams.

The four key elements of a successful commissioning plan are in development with resources identified and key stakeholders engaged:

- Building Information Management Level 2 (BIM)
- Soft Landings Programme
- Technical Commissioning
- Functional Commissioning

The commissioning of each facility will be led and co-ordinated by the Functional Commissioning Manager and Project Team in close collaboration with the appropriate Operational Management Teams.

The Project is subject to regular monitoring and evaluation through its governance structure.

1.9 Conclusions

This FBC confirms that:

- the Project scope and preferred options set out in the OBC remains valid
- ongoing management arrangements have been identified to ensure the Project's successful implementation
- NHSG has undertaken a process with expert advice to confirm the reasons for the increase in build cost and that the Target Price and associated contractual arrangements are broadly representative of the cost of the Project in the current market
- confirmation of further SG funding is required for the Project to proceed. NHSG will continue to work with the JCA and PSCP to deliver any further cost efficiencies that might be available

These new facilities will be key enablers to allow a significant redesign of NHSG clinical services, improving not only the quality of care patients receive, with many able to be cared for on an out-patient or day-case basis, but also delivering efficiency benefits from the improved flow of patients throughout the buildings and the wider hospital environment in NHSG.

2. The Strategic Case

2. The Strategic Case

2.1 Background and Structure of The Strategic Case

The Full Business Case (FBC) will adopt the same narrative structure as included in the Outline Business Case (OBC); namely an Aberdeen and North Centre for Haematology, Oncology and Radiotherapy (ANCHOR) Centre section and a Baird Family Hospital section to fully reflect the distinct elements of the Project.

The Project Team have reflected on and followed the Scottish Capital Investment Manual (SCIM) guidance available to guide the authorship of this FBC. To this end, the FBC will demonstrate the work and rigour applied to make the case that there have been no significant strategic influences or changes that alter the preferred solution identified at OBC stage.

Each section directly addresses the questions posed in the SCIM FBC guidance:

- Have any stakeholders, or their needs/expectations, altered?
- Have any policies, procedures or other factors external to the Project changed which have had (or are likely to have) a material impact on the Project?
- Have previous assumptions on current/existing asset or service arrangements changed eg activity levels, performance standards etc?
- Is the need for change, or associated investment objectives, different from those confirmed within the OBC?
- Has the scope of the Project changed, such as service change proposals, design objectives, engineering or other technical matters?
- Have the expected benefits of the investment, risks or costs to the Project materially changed?

There have been no changes to the clinical services that will be included in The Baird Family Hospital and The ANCHOR Centre respectively.

Preparation for the construction stage of the Project saw the relocation of clinical services accommodated in the three buildings that were on the Baird and ANCHOR development sites (the Breast Screening Centre (BSC), the Eye Out-Patient Department and the Foresterhill Health Centre (FHC)). The demolition of these buildings and the associated ground works were completed as part of a six month programme of enabling works completed in July 2019. Both sites are now ready for construction commencement, following approval of this FBC.

Having followed the SCIM guidance in revisiting the OBC case, the Project Team will demonstrate in this strategic section that there are no significant strategic changes or issues that impact on the agreed strategic position as stated in the OBC.

The Strategic Case

The ANCHOR Centre

2.2 Strategic Background – The ANCHOR Centre

2.2.1 Review of Strategic Background

In the Initial Agreement (IA) and OBC, the strategic background to the Project was outlined, identifying the strategic issues that have led to the agreed need for change. The OBC also demonstrated in some detail the stakeholder involvement and support for the Project, all of which will continue for the life of the Project.

The ANCHOR Centre will provide a new facility on the Foresterhill Health Campus to support day and out-patient services for haematology and oncology patients. It will also accommodate a pharmacy suite (including aseptic pharmacy), research and teaching facilities and incorporate the existing Radiotherapy Centre into a single ANCHOR Centre.

The purpose of the Strategic Case in this FBC is to evidence if there have been significant strategic developments or challenges that impact on the strategy set out in the approved OBC.

This section of the FBC is therefore a summarised account of the current strategic position and seeks to provide reassurance that there are no local, regional or national strategy developments which significantly alter the course of this Project.

In reviewing the broad headlines covered in the OBC, the Project Team have also considered the following questions, in line with the FBC guidance, whilst reviewing the position of the Project at this stage. The Strategic Case will provide responses to these questions:

- Have any stakeholders, or their needs/expectations altered?
- Have any policies, procedures or other factors external to the Project changed which have had (or are likely to have) a material impact on the Project?
- Have previous assumptions on current/existing asset or service arrangements changed e.g. activity levels, performance standards etc

- Is the need for change, or associated investment objectives, different from those confirmed within the OBC?
- Has the scope of the Project changed; such as service change proposals, design objectives, engineering or other technical matters?
- Have the expected benefits of the investment, risks or costs to the Project materially changed?

The Strategic Case at OBC stage presented the need to:

- create a dedicated centre for day and out-patient care, allowing withdrawal from non-compliant accommodation and alignment with the other ambulatory services provided in the existing Radiotherapy Centre
- create an environment that allows care to be delivered safely with privacy and dignity
- co-location of day treatment and aseptic pharmacy to improve the care pathway for patients and optimise staffing and team working
- create an improved teaching, learning and research environment
- enhance joint working with partners (e.g. Third Sector) and improve signposting to support people living in the community with these long term conditions
- improve provision for teenagers and young adults

The OBC articulated the many patient and staff benefits that will be afforded with the provision of this new facility.

The Project Team and service colleagues have reviewed the Project strategy and brief and reflected on the FBC questions as part of the required review of the OBC. The outcome of this review is evidenced in the subsequent sections of this Strategic Case. It confirms that there are no significant changes to business needs, service needs or Project scope which affect the investment decisions made at OBC stage.

2.2.2 Review of Stakeholder Engagement and Communication

FBC question - have any stakeholders, or their needs/expectations altered?

The OBC rehearsed in detail the stakeholder groups who will be involved in, and affected by, the Project. The scope of service provision has not changed therefore the profile of stakeholder engagement has not altered.

The Project Team continue to work with the same North of Scotland (NoS) partners and internal and external stakeholders as indicated in the OBC and engage actively with patients, patient support groups and staff in the development of the Project, all of whom will benefit positively from this new facility.

This regular and ongoing engagement, including direct input to building design, has given the Project Team the confidence that the Project will deliver a facility to support and provide for the needs of patients, families and staff.

This engagement remains a high priority for the Project and the communication appendices provided in the OBC have been updated and included in this FBC. These documents detail the ongoing communication strategies being following by the Project and demonstrate the time commitment being given to these important activities (Appendices B, C, E and F).

The cohort of stakeholders involved at OBC stage remain partners with NHS Grampian (NHSG) at this FBC stage, and for the lifetime of the Project. The considerable amount of planning undertaken at the start of the Project provided an excellent opportunity to understand stakeholder needs and encapsulate them in the Project ethos and emerging design. NHSG therefore remain confident that there are no changes to the needs or expectations of stakeholders which impact on the Project.

The sustained importance given by the Project Team to communication with stakeholders is hopefully evident by the information provided in the communication appendices to this FBC. These engagement activities have allowed the Project Team, working with service providers, to have the confidence to assert that the needs and/or views of stakeholders have not changed.

2.2.3 Review of Policy and Strategic Content

FBC question – have any policies, procedures or other factors external to the project changed which have had (or are likely to have) a material impact on the project?

The strategic priorities for the Project have not changed since OBC stage.

As was the case at the OBC stage, NHSScotland's (NHSS) Strategic Investment Priorities are:

- person centred
- safe
- effective quality of care
- health of population
- value and sustainability

As stated at OBC stage, the proposal to build The ANCHOR Centre is wholly in tune with the key strategic priorities set out in relevant local, regional and national policies.

The policies listed in the OBC remain relevant along with some updated publications:

- Beating Cancer: Ambition and Action Scottish Government Cancer Strategy Update (2018) and updated referral guidelines.
- Scottish Cancer Patient Experience Survey 2018
- Cancer Incidence and Prevalence in Scotland (to December 2017)

- Cancer in Scotland April 2019
- NHSG are currently consulting on a Draft Grampian Cancer Integrated Action Plan 2019-2021 which has been produced in response to the Grampian Cancer Strategy 2018 and is underpinned by a range of individual sector and organisation plans across NHSG.

Review of these strategies show that the strategic objectives of The ANCHOR Centre continue to be in line with those discussed in the OBC. Incidence rates remain stable whilst prevalence rates are increasing.

The North of Scotland Cancer Network has been replaced by the North Cancer Alliance (NCA), whose role includes ensuring partnership work and sustainability issues are acknowledged, recognised and communicated to services. This allows collaborative work to be factored into the planning of The ANCHOR Centre.

The Project Team continues to ensure that all ANCHOR Centre objectives are in line with any emerging NoS policies and strategies. This is achieved through a variety of fora including ongoing engagement with colleagues from neighbouring Health Boards, including recent visits to Orkney, Shetland, Tayside and Highland.

2.3 Review of Case for Change

FBC question – have previous assumptions on current/existing asset or service arrangements changed e.g. activity levels, performance standards etc

The case for change was made in detail at IA and OBC stages and remains valid.

2.3.1 Current Arrangements

The IA and OBC detailed the current arrangements for the tertiary oncology and haematology services being delivered on the Foresterhill Health Campus.

Details were included in the OBC about the various locations on the Foresterhill Health Campus from where these services are currently provided. These locations have not changed and clinical care continues to be provided from various departments in Aberdeen Royal Infirmary (ARI).

No significant infrastructure investment has been carried out since the OBC in the various departments providing these services; the situation remains that the accommodation which supports these services is generally not fit for purpose and does not provide adequate opportunities for the service to redesign in order to meet emerging demand and care pathways.

The most significant service redesign change since OBC is a change in location where haematology patients receive their chemotherapy day treatments. The clinical team, led by the Operational Management Team, instituted redesign as of summer 2019 whereby all patients (oncology and haematology) receive their chemotherapy day treatments in a single location in ARI.

This innovation benefits both patients and staff, within the limits of the existing accommodation, and has allowed for the redesigned service to be established in advance of moving to The ANCHOR Centre.

This redesign has created the opportunity for the nursing team to start to fully embed the new joint working model, ahead of this being standard practice in The ANCHOR Centre. The benefits this will bring to patient care will arise from a skilled nursing workforce with the ability to care for all aspects of oncology and haematology care, as opposed to single speciality provision as has previously been the case. The aspiration is that this will afford additional

career opportunities and interests to staff, aiding recruitment and retention for NHSG in this important field.

The OBC referred to the significant activity analysis work that was carried out in 2015, assisted by Buchan + Associates, independent healthcare planners. The Project Team have reviewed current activity figures and compared them to those included in the OBC. These figures are in line with those reported at OBC stage and are consistent with Information Services Division (ISD) predictions regarding anticipated cancer incidence.

The Project Team remain confident that The ANCHOR Centre accommodation meets the needs identified in the service modelling and scenario planning discussed in the OBC.

2.3.2 Review of the Need for Change

FBC question – is the need for change, or associated investment objectives, different from those confirmed within the OBC?

Reference was made in the OBC to the service improvement and redesign work being carried out by clinical and Operational Management Teams in preparation for occupation of The ANCHOR Centre, working in a more efficient way to support patients and their families. This work continues apace, led by service teams and supported by the Project Team. Further details are included in Appendix M.

Table S1 outlines the Need for Change which is unchanged since the OBC.

Table S1: Need for Change

Cause of the need for change:	Effect of the cause on NHSG:	Why action now:
Poor accommodation. Unable to provide appropriate privacy and dignity	Current configuration of out and day-patient accommodation is functionally unsuitable, cramped and provides inadequate privacy and dignity for patients and families.	Patient privacy and dignity is not always able to be adequately maintained due to cramped accommodation.
Patient and staff safety compromised	The health and safety needs of patients, visitors and staff are compromised due to poor accommodation.	Cramped accommodation increases the risk of accidents and Healthcare Associated Infection (HAI) risks.
Service arrangements not patient centred	The aspiration to provide desirable complementary therapies to patients in addition to mainstream clinical treatments is limited due to lack of accommodation to support these services. The ability to support Third Sector organisations is also limited due to lack of space.	Need to provide an improved treatment experience for patients and to support patients to live their lives with appropriate support in the community.
Inadequate provision for teenagers and	Teenagers and young adults as a specific patient group are not well catered	Provision for the specific needs of teenagers and young adults must be

young adults	for in the existing clinical accommodation.	improved.
Dispersed service locations	Out-patient and day-patient services are provided in a fragmented way across different locations in ARI. This means the patient's physical journey to and from areas can be complicated and time-consuming.	Service fragmentation compromises optimal working and prevents the delivery of smooth and efficient patient pathways through the care journey.
Inappropriate patient pathways	The lack of suitable ambulatory accommodation means some patients receive care inappropriately in in-patient facilities.	Patients attending for out-patient care will receive care in an appropriate setting, allowing the ward to concentrate on acute in-patient care.
Ineffective service arrangements	The achievement of national cancer waiting times is challenging due to lack of adequate facilities to allow for the required amount of timely treatment and care, including the provision of specialist nurse clinics.	The current accommodation is inadequate and prevents the delivery of well scheduled care delivered by a multi-professional team.
Staffing model not optimal	There are limitations on staff and service efficiency due to care being provided from distinct and separate locations in ARI. This affects opportunities	Fragmented teams prevent the optimal and flexible use of the specialist team.

	for flexible working and appropriate sharing of clinical and non-clinical spaces.	
Safe preparation of drug treatments compromised	Aseptic pharmacy provision is essential to the ANCHOR services. The interim Aseptic Pharmacy is in compliant accommodation but remains distant from the oncology and haematology services the unit supports.	Need to provide a safe production environment close to the point of care to ensure safe treatment and prompt care delivery.
Clinical research opportunities curtailed	Recruitment of patients to clinical trials is a priority for the service but is limited due to lack of clinical accommodation to facilitate research and allow discussions with patients when they attend for out-patient appointments or treatments.	Need to build on the research profile to help improve cancer treatment nationally and internationally and to improve recruitment and retention locally.
Recruitment difficult	Recruitment to services in Aberdeen to ensure sustainability can be problematic due to a number of factors including geography, academic profile and service profile. Poor	Recruitment can be difficult and could be improved with good facilities, good teaching and research spaces and good patient outcomes. The University of Aberdeen

	facilities and accommodation can also affect the delivery of sustainable services.	(UoA) are progressing academic appointments and research programmes which will raise the profile of teaching and research in the North-East, in addition to the service redesign and improvement work being led by NHSG.
Teaching compromised	The service currently has consulting and treatment spaces which are too small to allow for consultant room-based teaching. This in turn impacts on the portfolio of learning opportunities which can be provided.	High quality teaching is essential for the sustainability of the tertiary centre in the north and the role of a teaching hospital. An appropriate teaching and learning environment is key to the achievement of this aim.
Poor functionality of accommodation and backlog maintenance burden.	Services are being provided from accommodation which does not meet the needs of patients.	Facility performance, functional suitability and associated risks will continue to deteriorate, resulting in sub-optimal services.
Future service demand.	The ANCHOR Centre must continue to provide secondary and tertiary services for the NoS, taking account of the predicted increases in incidence and prevalence and of changes in treatment type and	Current facilities are already inadequate to cope with existing demand against a backdrop of an increasing future demand for oncology and haematology services.

	treatment location.	

As documented in the OBC, NHSG remains committed to sustainably achieving the national Detect Cancer Early (DCE) and Referral to Treatment Time (RTT) targets, however NHSG continues to encounter challenges in achieving both the 31 and 62 day cancer waiting times standards across all tumour groups (Figures S1 and S2). The case remains that this is still primarily due to insufficient staffing resource.

A number of streams of work are being progressed to create more resilient and flexible services which support the achievement of the RTT targets.

Figure S1: Performance - 31 Day Cancer Waiting Time (CWT) Target

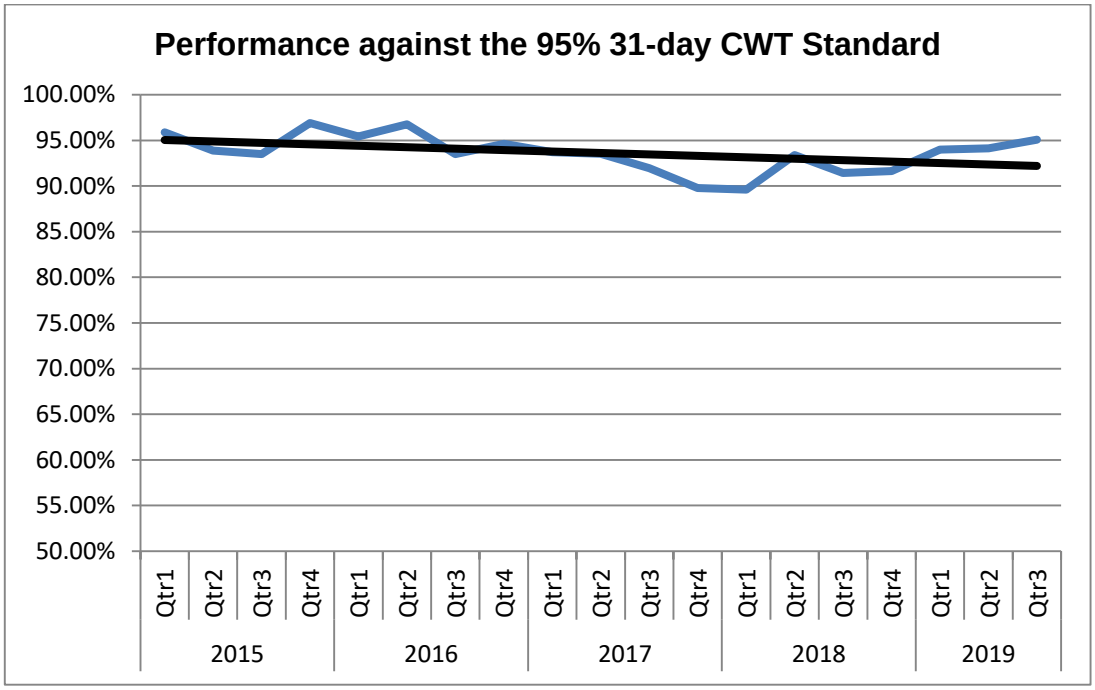
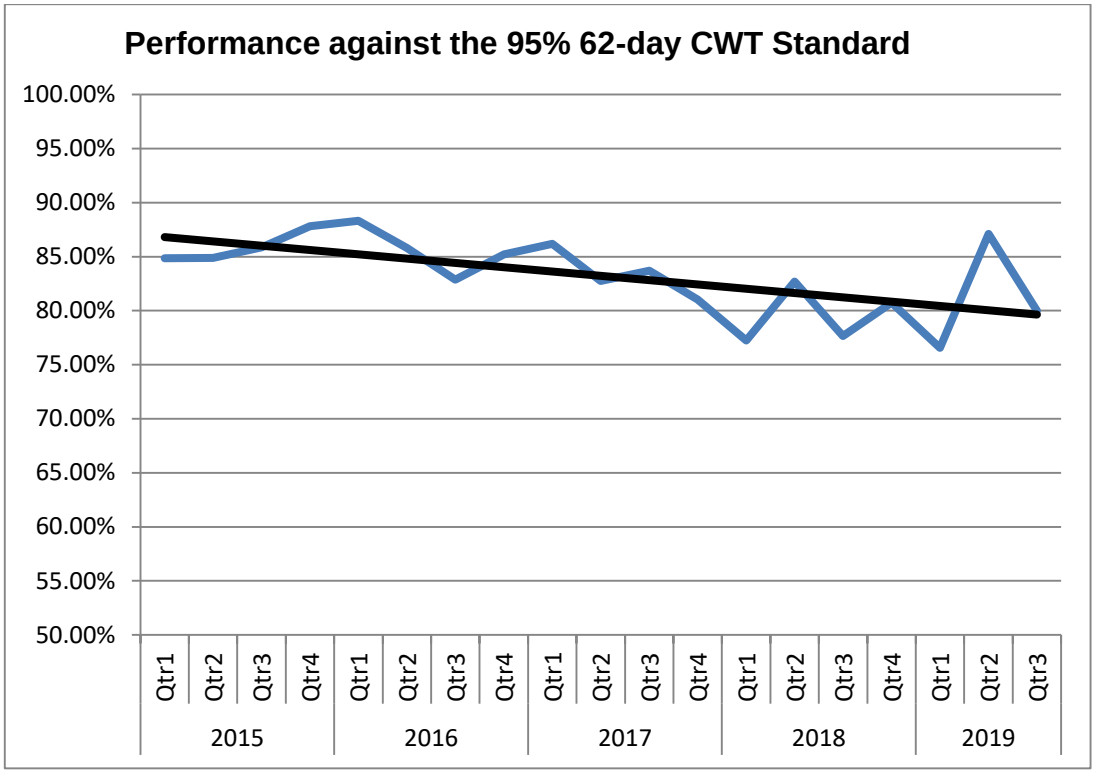


Figure S2: Performance - 62 Day Cancer Waiting Time (CWT) Target



2.3.3 Review of the Current Accommodation

The state of the current accommodation supporting The ANCHOR Centre specialities was detailed in the OBC. This position has not changed, other than the delivery of chemotherapy for haematology patients in the same location as oncology patients. Programme delay will result in patients being cared for in sub-optimal accommodation for longer than planned. This increases the likelihood that backlog maintenance monies will need to be incurred in accommodation that will be vacated when The ANCHOR Centre is commissioned.

2.3.4 Predicting Growth

Predicting likely growth in service demand over the next 10 -15 years is an inexact science and remains as detailed at OBC. The ISD recent publication Cancer Incidence and Prevalence in Scotland (to December 2017) does not change the 11% incidence prediction every five years as stated in the ISD Cancer Incidence Projections for Scotland 2013 – 2027, but does state an increase in prevalence.

This increase in prevalence is applicable across NHSS and is not therefore just a local increase for NHSG. One example of increased prevalence impact on the local service is that some patients are attending for increased numbers of return appointments than has been the case in the past; this is due to changes in clinical treatment regimes.

The Project and Operational Management Teams remain confident that the accommodation provided in The ANCHOR Centre will be able to support this increased prevalence. A series of discussions with senior clinical colleagues, led by The ANCHOR Centre Clinical Lead, have been held to revisit the modelling assumptions made at the start of the Project. These sessions were successful in reassuring clinical teams that the accommodation provided for in this new facility will be suitable for future increases and changes in ways of working.

The provision of flexible spaces, as well as the ability to accommodate different ways of working in the future (e.g. extended working days/weeks), will provide the resources to meet increased demand.

The Operational Management Team continue to explore alternative locations for delivery of treatment more locally e.g. community hospital or oral therapies taken by patients at home.

2.4 Review of the Investment Objectives and Benefits

FBC question – has the scope of the Project changed; such as service change proposals, design objectives, engineering or other technical matters?

Have the expected benefits of the investment, risks or costs to the Project materially changed?

Changes to the cost profile of the Project are explained in detail in the Financial and Commercial sections.

2.4.1 Investment Objectives

The investment objectives were rehearsed in detail in the OBC and, as summarised below in Table S2, have not changed.

Table S2: Investment Objectives Summary

Effect of the need for change on the organisation:	What has to be achieved to deliver the necessary change (Investment Objectives)
Existing accommodation arrangements affect safe and timely access to treatment e.g. day treatment procedures and out-patient appointments, particularly for haematology patients.	Timely access to care, investigation and treatment
Inefficient service performance, due to accommodation constraints e.g. lack of out-patient consulting rooms, lack of adequately sized day treatment areas, inefficiencies in workforce utilisation due to cramped conditions and services being delivered separately.	Improved effectiveness and efficiency
Service configuration unable to meet key aspirations e.g. improved service provision for teenagers and young adults, deliver privacy and dignity required, availability of providing take home medication in same location.	Person centred care

2.4.2 Benefits Realisation

The OBC recognised the importance of the Project identifying the potential benefits to be gained from this investment. The Benefit Register and Benefit Realisation Plan have been updated at this FBC stage and are attached as Appendices H and J.

2.5 Review of the Key Service Risks, Constraints and Dependencies

Managing risk is a dynamic process; the Risk Register is reviewed regularly and includes key service risks, constraints and dependencies.

A summary of the Service Redesign Plan (Appendix M) refers to the work being led by the Operational Management Team and supported by the Project Team.

The service redesign work will continue to be progressed and implemented over the construction phase of the Project, so that many of the workstreams will be partially or fully implemented prior to occupation of The ANCHOR Centre to support achievement of the investment objectives and the benefits outlined in the Benefit Register, Appendix H.

2.6 Review of The Strategic Case

The OBC was approved by the Scottish Government Health and Social Care Directorate (SGHSCD) on 22 March 2018 (Appendix A).

The Project Team, in collaboration with operational management and clinical colleagues, have reviewed the details included in the OBC in order to ensure that there are no significant policy or business need changes which would alter the scope of the Project.

As a consequence of this review, no material changes have occurred since OBC approval.

The Strategic Case and preferred solution presented, therefore, remain in line with NHSG, regional and national policy and strategy. As a result the Strategic Case as outlined in the OBC should continue to be pursued.

2.7 Conclusion – The ANCHOR Centre

NHSG continues to recognise the increasing complexity of diagnosis and treatment of oncology and haematology illness.

The development of The ANCHOR Centre, in the creation of a single ambulatory facility for patients of Grampian and NoS, will support the realisation of the investment objectives and benefits outlined in this FBC.

As a consequence of this review, there are no significant changes to business need, service need or project scope which affect the investment decisions made at OBC stage.

The Strategic Case

The Baird Family Hospital

2.8 Strategic Background - The Baird Family Hospital

2.8.1 Review of Strategic Background

In the IA and OBC, the strategic background to the Project was outlined, identifying the strategic issues that have led to the agreed need for change. The OBC also demonstrated in some detail the stakeholder involvement and support for the Project, all of which will continue for the life of the Project.

The Baird Family Hospital will provide a new facility on the Foresterhill Health Campus to support maternity, gynaecology, breast screening and breast symptomatic services. It will also include a Neonatal Unit (NNU), accommodation for reproductive services, an operating theatre suite, a Community Maternity Unit (CMU) and research and teaching facilities.

The purpose of the Strategic Case in this FBC is to evidence if there have been significant strategic developments or challenges that impact on the strategy set out in the approved OBC.

This section of the FBC is therefore a summarised account of the current strategic position and seeks to provide reassurance that there are no local, regional or national strategy developments which significantly alter the course of this Project.

In reviewing the broad headlines covered in the OBC, the Project Team have also considered and addressed the following questions, in line with the FBC guidance, whilst reviewing the position of the Project at this stage. The Strategic Case will provide responses to these questions:

- Have any stakeholders, or their needs/expectations altered?
- Have any policies, procedure or other factors external to the Project changed which have had (or are likely to have) a material impact on the Project?
- Have previous assumptions on current/existing asset or service arrangements changed e.g. activity levels, performance standards etc

- Is the need for change, or associated investment objectives, different from those confirmed within the OBC?
- Has the scope of the Project changed; such as service change proposals, design objectives, engineering or other technical matters?
- Have the expected benefits of the investment, risks or costs to the Project materially changed?

The OBC articulated the many patient and staff benefits that will be afforded with the provision of this new facility. It remains the case that the Baird will allow NHSG to deliver a facility which will meet the following needs:

- creation of accommodation designed to suit the needs of the Baird patient groups
- allow NHSG to move services from non-compliant accommodation to a fit-for-purpose facility
- allow all patients to be cared for safely in spaces that maximise privacy and dignity
- physical co-location with ARI and the Royal Aberdeen Children's Hospital (RACH) to ensure safe movement of patients, also creating enhanced opportunities for optimising use of staff resources
- create improved teaching, learning and research environment
- enhance joint working with partners (e.g. Third Sector) and improve signposting to support women, patients and their families

The Project Team, in collaboration with clinical and operational management colleagues, have reviewed the Project strategy and brief and reflected on the FBC questions as part of the required review of the OBC. The outcome of this review is evidenced in the subsequent sections of this Strategic Case; it confirms that there are no significant changes to business needs, service needs or Project scope which affect the investment decisions made at OBC stage.

2.8.2 Review of Stakeholder Engagement and Communication

FBC question - have any stakeholders, or their needs/expectations altered?

The OBC rehearsed in detail the stakeholder groups who will be involved in, and affected by, the Project.

It remains the case that NHSG continues to provide secondary and tertiary level provision to the various patient groups who will be accommodated in the Baird. The scope of service provision has not changed, therefore the profile of stakeholder engagement has not altered.

The Project continue to work with the same NoS partners as well as internal and external stakeholders as indicated in the OBC.

The Project Team continue to engage actively with patients, patient support groups and staff in the development of the Project, all of whom will benefit positively from this new facility.

This regular and ongoing engagement, including direct input to building design, has given the Project Team the confidence that the Project will deliver a facility to support and provide for the needs of patients, families and staff.

This engagement remains a high priority for the Project and the communication appendices provided in the OBC have been updated and included in this FBC. These documents detail the ongoing communication strategies being following by the Project and demonstrate the time commitment being given to these important activities (Appendices B, D, E and F).

The cohort of stakeholders involved at OBC stage remain partners with NHSG at this FBC stage, and for the lifetime of the Project. The

considerable amount of planning undertaken at the start of the Project provided an excellent opportunity to understand stakeholder needs and encapsulate them in the Project ethos and emerging design. NHSG therefore remain confident that there are no changes to the needs or expectations of stakeholders which impact on the Project.

The sustained importance given by the Project Team to communication with stakeholders is hopefully evident by the information provided in the communication appendices to this FBC. These engagement activities have allowed the Project Team, working with service providers, to have the confidence to assert that the needs and/or views of stakeholders have not changed.

2.8.3 Review of Policy and Strategic Context

FBC question - have any policies, procedures or other factors external to the Project changed which have had (or are likely to have) a material impact on the Project?

The strategic priorities for the Project have not changed since OBC stage.

In addition, some key strategies referred to in the OBC have progressed with regards to service redesign and implementation; the Project Team, in collaboration with clinical and operational management colleagues, have reviewed these key pieces of work and consider them to be consistent and complementary to the aims of the Project.

As was the case at OBC stage, NHSS Strategic Investment Priorities are:

- person centred
- safe
- effective quality of care
- health of population
- value and sustainability

As stated at OBC stage, the proposal to build The Baird Family Hospital is wholly in tune with the key strategic priorities set out in relevant local, regional and national policies and is consistent with the ethos of the NHSS Strategic Investment Priorities.

The full list of policies listed in the OBC remain relevant, therefore there is no intention to repeat these details in the FBC. This FBC will therefore rehearse only two workstreams where there have been developments since the OBC was approved.

- The Best Start: A Five-Year Forward Plan for Maternity and Neonatal Services 2017
- NHSG local documents related to the proposed redesign of women and children's services at Dr Gray's Hospital:
    - A Phased Approach to the Re-Establishment of Obstetric Services at Dr Gray's Hospital November 2018
    - NHS Grampian: Women and Children's Services in Dr Gray's Hospital. A draft plan for safe and sustainable services, promoting choice and optimal local service provision (the Phase Two plan) June 2019

These are two significant workstreams which were looked at in some detail to confirm if the existing brief required amendment.

The Best Start document was referred to in the OBC but was at a very early stage of implementation; the work being carried out in NHSG regarding women and children's services in Moray is more recent and also needs to be considered.

The narrative to be provided in this FBC will demonstrate that these pieces of work, and the service redesign and principles to be achieved, are wholly consistent with the strategic direction being followed by the Baird Project and consistent with the Project brief approved at OBC stage.

The Best Start: A Five-Year Forward Plan for Maternity and Neonatal Services 2017

The Scottish Government (SG) commissioned this strategy, culminating in a report published in January 2017. The future vision of Scottish maternity and neonatal services was outlined:

- all mothers and babies are offered a truly family-centred, safe and compassionate approach to their care, recognising their own unique circumstances and preferences
- fathers, partners and other family members are actively encouraged and supported to become an integral part of all aspects of maternal and newborn care
- women experience real continuity of care and carer, across the whole maternity journey, with vulnerable families being offered any additional tailored support they may require
- services are redesigned using the best available evidence to ensure optimal outcomes and sustainability and to maximise the opportunity to support normal birth processes, whilst avoiding unnecessary interventions
- multi-professional team working is the norm within an open and honest team culture with everyone's contribution being equally valued
- development of community hubs
- clear pathways and models for transitional care
- seven day neonatal community services
- three neonatal Intensive Therapy Units (ITUs) in Scotland by 2022

Since the publication of the OBC, NHSG continues to work on the local implementation, as appropriate, of the 76 recommendations included in this national report. The Baird Project brief is in tune with these recommendations.

One of the key aspirations of the Grampian Best Start Programme is to develop Continuity of Carer Teams for midwifery care. This will see a move away from traditional midwifery roles to one where women will receive antenatal, intrapartum and postnatal care from the same midwife. This

approach has been clinically proven to have enormous benefits for women and babies, as well as improving the working environment and job satisfaction for midwifery staff.

In NHSG, the first two teams to work in this new model have been established and have been in place since December 2019. This work will lead the way to inform the next stages of the Best Start project as this new team model is rolled out across NHSG.

A significant recommendation concerned the number of neonatal Intensive Therapy Units (ITUs) to be provided across Scotland. To date, no national decision has been made yet on this recommendation. However, there is pilot work being carried out in three health board areas (Ayrshire and Arran, Highland and Forth Valley) which will inform this decision. The work in these pilot areas commenced in 2019.

In light of this strategy and the awaited decision on the future provision of neonatal ITU care in Scotland, NHSG commissioned Buchan + Associates to carry out a review and analysis of the Baird neonatal modelling. The intention of this review was to detail all potential scenarios in order to evidence the design of the Baird neonatal unit has incorporated the required space and flexibility to be part of a national ITU service.

Conversely, the review also required to demonstrate that the design of the neonatal unit will be suitable, should the Baird not be one of the three designated ITU providers, to deliver less intensive levels of neonatal care.

A comprehensive report was written as a result of this independent review (Appendix R). The review included looking at the following elements:

- context of planning for the Baird since the Project's inception in 2015
- exploration of two potential scenarios for the future Baird provision:
    1. Baird being designated as one of the three national ITUs
    2. Baird being designated as a local unit providing up to Level 2 care

- review of the Baird modelling which included looking at clinical practice and trends, especially for very pre-term babies
- application of 2017 updated data to the modelling carried out in 2015
- analysis of potential scenarios regarding any future change of neonatal service provision in NoS
- specific reference to the aspirations of the Best Start programme

The conclusion of this piece of work is that the neonatal modelling remains valid and the Baird NNU design will be suitable to allow the Baird to provide neonatal ITU level care, as one of the three neonatal ITUs in Scotland, if this is agreed as part of the ongoing national discussions. The decision on the final location of the three ITUs in Scotland is awaited.

More details on the work being carried out in NHSG to implement the Best Start recommendations are included in the Need for Change section of this FBC. The NHSG Best Start local recommendations are included as Appendix HH.

The service redesign agenda being currently implemented by NHSG with regard to Transitional Care will also place the service in the best possible position to meet the ambitions of the Best Start programme and create a successful Transitional Care Unit and Transitional Care model in the Baird. Details of this ongoing service redesign work, being led by the clinical team, are included in Appendix N.

The implementation of Best Start, along with the associated ongoing service redesign, has maternity and neonatal services at the heart. The aims and aspirations of Best Start will support the shift to community based models of care, further strengthening the recent investment by NHSG in community maternity services. This model reflects the approach taken in NHSG where planning for the Baird has always been carried out in the context of improving maternity services across Grampian, consistent with the NHSG Maternity Strategy.

2.8.4 Redesign of Moray Women and Children's Services

Since the OBC, there have been two significant documents developed at a local level which reflect ongoing work related to the redesign of women and children's services in the Moray area of NHSG:

- A Phased Approach to the Re-Establishment of Obstetric Services at Dr Gray's Hospital (the Phase One plan) November 2018. This plan focused on immediate stabilisation and service continuity.
- NHS Grampian: Women and Children's Services in Dr Gray's Hospital. A draft plan for safe and sustainable services, promoting choice and optimal local service provision (the Phase Two plan) June 2019

NHSG is committed to ensuring a safe, sustainable and comprehensive maternity service at Dr Gray's Hospital (DGH) in Elgin. The maternity service has been provided on a consultant-led basis for many years, and the strategic aspiration is to retain this.

However, women and children's services in the Moray area, focussed in DGH, have faced considerable workforce challenges in recent years. This culminated in 2018 in the decision being made to adopt interim service delivery provision.

The biggest challenge at this time was the inability to provide the required level of medical staff to continue with the routine and well-established service. In 2018, the numbers of medical staff at both senior and trainee grades were such that an overnight in-patient paediatric service was not able to be maintained. The inability to provide a 24/7 paediatric service, for neonates, has a significant impact on the maternity service model that can be safely sustained.

The interim service that was initially put in place between March and July 2018 involved a stepping up and down of the service, dependent on the staffing available. From July 2018, the non in-patient service has been provided on an ambulatory basis and a midwifery-led intrapartum service is

now in place. A considerable amount of out-patient activity remains provided in the local area, minimising the amount of women who require to travel to Aberdeen as part of their maternity care.

This course of action was supported by the Chief Medical Officer, the Chief Nursing Officer and the Royal College of Midwives as the only safe service provision that could be provided due to the staffing crisis at that time; this remains to be the case. A public consultation exercise was carried out to ensure good local communication around the temporary and ongoing changes to service.

To date, NHSG continues to engage regularly and fully with the local community, staff and the Keep MUM (Keep the Maternity Unit for Moray) campaign, in particular, to ensure that local stakeholders are involved in decision making and are kept informed.

Plans were submitted to the Cabinet Secretary for Health and Sport in the latter part of 2018 which demonstrated the NHSG plan to stabilise the service and optimise the choices for women and families to continue to receive care at DGH. This “Phase One” plan was published in November 2018.

The “Phase Two” plan was subsequently created to demonstrate how a sustainable service could be achieved in the medium to longer-term.

The Phase Two plan remains draft and is subject to further discussion with SG colleagues regarding agreed future models of care and sustainable workforce configuration. These discussions are active and ongoing.

At the time of writing this FBC, NHSG has invested in senior management resource to lead the redesign work required to ensure a safe and sustainable service in the Moray area. A recently created Women’s Services Planning Group (led by the Divisional General Manager for the service and including senior clinicians as well as the Transformation Lead for Moray) is now in

place and this group will be the focus of ongoing discussions regarding service sustainability and redesign. Future solutions will involve looking at increased NoS working, including the aspiration to create a NoS network for maternity care.

This has been a considerable service challenge faced by NHSG and has attracted understandable public and press interest. However, this interim service change does not give rise to concern about the planning that has been undertaken for the Baird, nor the ability of the Baird, once operational, to be able to adequately support a configured maternity service model across Grampian.

The principles being applied as part of this Moray redesign are in line with the aspirations of the NHSG Maternity Strategy, which the Baird modelling has also followed; increased community provision, supported by Best Start, specialist services where required, multi-disciplinary working and increased choice for women and families.

The Project undertook modelling analysis in 2015, led by independent healthcare planners, that looked in detail at various scenario possibilities. Part of this work included considering partial or significant change to future delivery of maternity services in Moray. This work underpins the confidence held by Project and service teams that there is adequate flexibility and provision of accommodation in the Baird to be able to support increased numbers of Moray women giving birth in Aberdeen, should this be the agreed future service model.

The policies referred to above are important drivers for the clinical services that will be accommodated in the Baird. Due to the considered modelling undertaken in the early stage of the Baird, supported by independent healthcare planner resource, these policies are supportive of the direction of travel of the Project and do not derail from the strategic ambitions of the clinical service or the Project.

2.9 Review of Case for Change

FBC question - have previous assumptions on current/existing asset or service arrangements changed e.g. activity levels, performance standards etc?

The case for change was made in detail at OBC stage and remains valid.

The OBC referred to the significant activity analysis work that was carried out in 2015, assisted by Buchan + Associates, as independent healthcare planners. In order to seek assurance that actual and predicted activity levels have not altered significantly since the inception of the Project, the Project Team have reviewed key data with updated Health Intelligence figures.

The team also continue to engage with colleagues from neighbouring Health Boards, including recent visits to Orkney, Shetland, Tayside and Highland. These visits, in addition to attending regular regional clinical fora, continue to provide assurance that the facility will cater for the NoS population.

2.9.1 Current arrangements

The OBC provided details on each clinical service including the scope of the service, key activity numbers and accommodation details. It remains the case that NHSG provides secondary and tertiary services from the Foresterhill Health Campus, supplemented by service provision at DGH in Elgin, as well as community provision.

Details were included in the OBC about the various locations on the Foresterhill Health Campus from where these services are provided. On the whole, these locations have not changed, and clinical care continues to be provided from Aberdeen Maternity Hospital (AMH) and various departments in ARI.

No building investment has been carried out since the OBC on the various departments providing these services; the situation remains that the

accommodation which supports these services is generally not fit for purpose and does not provide opportunities for departments to redesign.

This FBC section will summarise each clinical service, indicating if there have been any changes to the service that might alter the case for change. This review has included looking at key activity figures as well as finding the case that there are no new performance standards to be applied now that were not in place at the time of the OBC.

Maternity Services;

The locus of specialist maternity care delivery remains at AMH.

The figures referred to in the OBC have been reviewed for this FBC:

- OBC – 4,500 births in AMH
- FBC – 4,921 births in AMH (to December 2019)

The birth figures for all aspects of the NHSG maternity service (predominantly for January to December 2019) are:

- AMH - 4,921
- DGH - 289
- Peterhead CMU - 126
- Inverurie CMU - 136 (opened as a new unit in February 2019)
- total number of births in NHSG for this period was 5,472

The increase in the number of women giving birth in AMH during 2018/19 can be explained by the impact of the interim maternity service delivery model that is in place in the Moray area. The current service provision, based in DGH, of a midwifery-led intrapartum care model has led to an increase in women travelling to Aberdeen to have their baby due to clinical need. The majority of pregnancy care remains delivered at a local level in Moray.

These interim changes to the Moray service were made in August 2018. For the full year following this change, there were 587 additional births in AMH due to women from Moray travelling to Aberdeen to have their baby.

During this same time period and in addition to this service impact on the Labour Ward in AMH, 25 women from Moray were intrapartum transfers and 140 women were transferred to the AMH Triage Unit.

This increase in the number of births in AMH is currently being met; however this has created some staffing and infrastructure issues which are currently under discussion, led by the Operational Management Team.

The future of the maternity service in Moray will be subject to considerable workforce redesign and investment and factors such as the increasing uptake of the Inverurie CMU will also be of importance.

As part of the modelling work undertaken as part of the Project in 2015, various scenarios were considered to determine the maternity accommodation to be provided in the Baird. These scenarios included any potential changes to the configuration of the Moray service, therefore confidence remains that the Baird accommodation to be provided remains fit for future need.

The rest of the maternity service provision remains as per the OBC with some exciting pieces of recent service redesign developments, to highlight just two examples:

- the creation of a single early pregnancy service in AMH. Previously, this service was provided from AMH as well as by the Gynaecology Service located in ARI. This service redesign success has created a more streamlined access route for women and allows the clinical teams to undertake workforce and service development in this area pre-Baird.

- a maternity Triage service has been in place in AMH since February 2019. This includes a 24/7 telephone advice service and a fully-staffed Triage Unit

Further developments have taken place in the community; developments which take the service closer to the achievement of the Maternity Strategy.

Peterhead CMU was refurbished in early 2018, providing enhanced birthing facilities and the accommodation for antenatal services to also be provided in the locality. For the period January to December 2019, there were 126 births in the unit. The medium-term aim remains to continue to develop the service to support up to 250 births per annum.

The new Inverurie CMU opened in February 2019, providing local maternity services to this central part of Aberdeenshire for the first time. For the period February 2019 to December 2019, there were 136 births in the unit. The long-term aspiration is for the Inverurie CMU to support up to 500 births per annum, however the medium-term aim is to reach 250 births.

The full range of maternity services are not yet being provided from the Inverurie facility but these are gradually being implemented. For example, the obstetric outreach service is still under development and the fetal medicine clinic is not yet established.

The service are undertaking a significant amount of work to develop birthing information for women which will assist in the appropriate promotion of CMUs for eligible women. The CMUs provide a range of services which include consultant outreach clinics, scanning facilities and Day Assessment Unit provision as well as labour and birth care. This is all congruent with the Best Start strategy and recommendations.

Neonatology Services:

It was reported in the OBC that there are around 900 admissions to the unit each year. The figures have been reviewed for the FBC and remain consistent with those detailed in the OBC.

There have been no changes to the service scope or brief since OBC.

However, one aspect of service redesign is under development in the service where the team are keen to progress Transitional Care in advance of the Baird. To that end, investment has been made in the parentcraft rooms in the existing unit and the team plan to pilot a dedicated Transitional Care Unit in one of the maternity wards before the move to the Baird. This work will continue to be developed by the team over the coming years and forms part of the service redesign agenda, as detailed in Appendix N.

Gynaecology Services:

Service provision for the gynaecology service remains broadly as detailed in the OBC. Activity figures have also been reviewed, and compared to the OBC, and remain consistent with those approved at OBC stage. Recent activity figures are starting to reflect the positive impact of service redesign; namely the move of hysteroscopy procedures from a theatre setting to an ambulatory setting.

The gynaecology team are very active in pursuing the Baird service redesign agenda and are already making excellent progress in achieving some of their stated goals pre-Baird e.g. the movement of procedures previously undertaken in theatres that could be provided for in an ambulatory setting – the team are successfully now carrying out hysteroscopies in an out-patient setting and plan, during 2020, to roll this out to other procedures. Details are included in the service redesign appendix (Appendix N).

Since the OBC, the two component parts of the gynaecology out-patient service have now merged into one location. The bringing together of the

Women's Day Clinic and Clinic B in 2018 into a new combined clinic has brought patient and staff benefits and is allowing the team to progress elements of Service Redesign Plans in advance of the move to the Baird.

Aberdeen Centre for Reproductive Medicine (ACRM):
This service continues to be provided in a partnership between NHSG and the UoA in the AMH location as described in the OBC.

On review of recent activity figures, these remain consistent with those reported in the OBC.

There have been no changes to the scope of the service since OBC.

Breast Services:
The breast service in NHSG remains in two component parts: the breast screening service and the breast symptomatic service.

The breast screening service is now located in temporary accommodation in ARI, until the move to the Baird, but the service scope remains unchanged, as is the case with the symptomatic service.

Activity figures have been reviewed for the symptomatic service and these remain largely consistent with what was reported in the OBC.

The Operational Management Team are currently analysing breast screening figures with regards to scanning and an upwards trajectory in numbers. Health Intelligence have reported the following numbers:

- 2017/18 – 5,000 scans
- 2018/19 – 5,600 scans
- 2019 (to June 2019) – 3,250 (projected full year 6,500)

At the time of writing the FBC, the work to analyse and understand these figures is still ongoing, including determining if this is a long-term trend and whether this is a local or national phenomenon.

The Baird Project Team will liaise closely with service colleagues in this piece of work. However, the Project Team remain confident that the accommodation provided for the breast screening service in the Baird will remain fit for purpose for the future and that any increase in activity can be accommodated by different ways of working and flexibility of accommodation.

2.9.2 Review of the Need for Change

FBC question - is the need for change, or associated investment objectives, different from those confirmed within the OBC?

Reference was made in the OBC to the service redesign work being implemented in NHSG, preparing services for occupation of the Baird and working in a more efficient way to support patients and their families. This work continues apace, led by service teams and supported by the Project Team. Further details are included in Appendix N.

Table S3 outlines the Need for Change which is unchanged since the OBC.

Table S3: Need for Change

Cause of the need for change	Effect of the cause on NHSG	Why action now
Future service demand.	Existing capacity unable to cope with future projections and type of demand.	NHSG will be unable to sustain services unless a new facility is provided to support required service redesign.
Current service arrangements unsuitable.	Clinical services unable to provide integrated and redesigned care due to	Unsustainable to continue with current service configuration, services

	physical facilities and locations.	unable to make improvements to patient care.
Accommodation poor and does not meet modern standards.	Backlog maintenance requirements are significant and often in the high-risk category.	Situation will worsen due to lack of investment in buildings, facilities unable to be brought up to required standards.
Dispersed locations mean inefficient and unsafe patient journeys.	Patients unable to access all required services in the one location, risks to patients in emergency transfer cases having to access support in separate buildings.	Unable to improve this without creating integrated and co-joined facilities.
Configuration unable to meet demands of women, patients and families.	Facilities do not support person-centred care.	NHSG unable to fulfil obligation to provide modern clinical services that meet the expectations of women, patients and their families.
Accommodation does not best support achievement of performance and quality targets.	Configuration not adequate to support targets such as pre-assessment, admission on day of surgery, maternity triage etc.	Accommodation unable to be redesigned to suit current needs of women, patients and families.

A great deal of detail was included in the OBC, broken down by clinical speciality, outlining the service specific requirements for change. It is not proposed to repeat these details here in the FBC, but to provide a summary update.

Maternity Services:

NHSG remains committed to redesigning maternity services, as per the Maternity Strategic Review of 2012 and the subsequent Maternity Strategy 2010-2015.

The key policy driver remains the implementation of the Best Start programme. The aims and aspirations of Best Start are wide-ranging and cover both maternity and neonatal services. Key recommendations include the establishment and expansion of transitional care, antenatal education and supporting the shift to community based models of care, further strengthening the investment in community maternity services.

The Best Start workstream will involve a significant change in the future role of midwives, as well as a re-profiling of caseloads. NHSG has invested in establishing a programme team to lead the local implementation of the Best Start principles. This team, with an identified Executive Lead and including midwifery, medical and neonatal nursing staff, was put in place earlier in 2019 and are pursuing an active programme of staff communication and consultation on the proposed change of service configuration. This work will also be supported by the new Consultant Midwife who has recently been appointed.

Detailed work on the future workforce profile will continue in 2020.

The main priority for the team was to establish the first continuity team in a community setting before the end of 2019; this was achieved in December 2019. This new team structure will be evaluated and then rolled out to other areas of NHSG.

Of benefit to the implementation of Best Start is that Robert Gordon University (RGU), the local university training midwifery students, has been training students in the Best Start principles for the past two years. This will

create a future workforce for NHSG who are committed to and understand the ambitions of this national programme.

Another key focus for this workstream will be the drive to increase the day assessment activity that will be provided from the CMUs; this will ensure the most appropriate utilisation of the new and refurbished accommodation that NHSG have invested in, as well as the primary aim of increasing choice for women in their local areas. The successful achievement of this will fit well with the Baird redesign agenda and the appropriate local provision of service.

The incremental and then full implementation of the Best Start recommendations will change the profile of service delivery across NHSG. The impact of this on the Baird accommodation and configuration has been assessed by the clinical team and the belief is that planning for the groups of women who will use the ward and out-patient provision will remain as planned and detailed in the OBC. The plan for staffing the Baird CMU will remain as anticipated with community staff rotating into the service to ensure continuity of carer.

It is therefore the case that the implementation of the Best Start recommendations will support the strategic direction as detailed in the Maternity Strategy and upon which the Baird planning has been based.

The details of the recommendations being implemented locally in NHSG to embed Best Start is included in Appendix HH.

The other significant local service development, as referred to in the Review of Policy and Strategic Context section, is the work being carried out around women and children's services provision in DGH, Moray.

A Phased Approach to the Re-Establishment of Obstetric Services in Dr Gray's Hospital November 2018

NHS Grampian: Women and Children's Services in Dr Gray's Hospital. A draft plan for safe and sustainable services, promoting choice and optimal local service provision (the Phase 2 plan) June 2019

The strategic context of this work has already been covered. The high level features of this redesign include:

- for paediatric services, the implementation of a 24 hour Short-Stay Paediatric Assessment Unit at DGH
- for women's services, the sustainable implementation of an Obstetric Unit at DGH with continued development and emphasis on midwife-led care and expansion of the consultant workforce
- plans to increase the number of women receiving intrapartum care in DGH
- recommencing the elective caesarean section service in DGH
- maximising antenatal care service in DGH
- increased working with NHS Highland to provide services as locally as possible
- investment in consultant obstetrician staffing
- service and workforce plan to cover a two-four year period
- establishment of a hospital-wide composite workforce to ensure future sustainability and reduce the dependency on doctors in training
- establishment of a General Practitioner (GP) training programme
- continue to deliver all out-patient services locally as normal
- some Moray women now going to Inverurie CMU due to geography

As explained in the OBC, the service and data modelling work undertaken by the Baird Project Team clinicians, service managers and Health Intelligence, supported by Buchan + Associates, has always included a risk factor for change in service provision at a local level (e.g. DGH) and/or a change in service provision in an adjacent Health Board. The Project Team are therefore still comfortable that, if there are imminent or future service changes to the maternity configuration in NHSG that the Baird

accommodation to be provided has the flexibility to be able to accommodate these factors.

The CMU developments in Aberdeenshire have already been referred to and remain a key part of maternity modelling for NHSG. The activity anticipated to go through the Baird is based on Grampian wide modelling, including maximising the use of the CMUs. This will continue to be reviewed until the Baird is commissioned.

The future configuration of maternity services in Grampian remains as detailed in the OBC:

- two consultant units – one in Aberdeen and one in Elgin (noting recent service changes in Moray)
- three CMUs – one in Aberdeen, one in Inverurie and one in Peterhead
- a home birth service across Grampian
- integrated community maternity teams across Grampian
- scanning and screening services and community based consultant clinics

Neonatal Services:

The information provided in the OBC regarding neonatal services remains accurate.

The main significant strategic piece of work under development since the OBC is the implementation of the Best Start national project. The recommendations from this report, published in January 2017, proposes radical change to neonatal intensive care provision in Scotland. To date, pilots have been established in other Health Board areas to gather information to inform the national decision as to the location of the three neonatal ITUs. This decision is awaited.

The Project Team, along with clinical and operational management colleagues, have considered the recommendations from this report and have

ensured that the Baird neonatal design is flexible to accommodate any future changes in service delivery.

At a local level, the service are invested in developing Transitional Care as a model in the existing AMH. More details on this service redesign are included in Appendix N.
With regard to the redesign work being carried out in DGH for women and children's services, the details of this are included in the Maternity Services section aforementioned.

Gynaecology Services:
The planned gynaecology service configuration has not altered since the OBC and the team remain actively committed and involved in service redesign in advance of the Baird being commissioned.

Of benefit to the service since the OBC has been the relocation of the out-patient services (previously located in the Women's Day Clinic and Clinic B) into one out-patient space in ARI. The OBC referred to the fact that approximately 28% of gynaecology surgical activity can and should be day-case/ambulatory delivered. A previous limitation on being able to achieve this had been the lack of ambulatory appropriate facilities to allow this important shift in care from a mainly in-patient service focus. The relocation and amalgamation in 2018 of the out-patient services has gone some way to improve the current position and allowed for advancement of the service redesign agenda. More details are included in Appendix N.

Breast Services:
The main change to breast services since the OBC has been the demolition of the BSC (on the Baird site) and the relocation of the service to temporary accommodation in ARI, pending their ultimate move to the Baird.

A Breast Service Redesign Group has been meeting since 2016. As detailed earlier in this FBC, the service are currently reviewing screening activity

figures. There are no current concerns that this will be an issue for accommodation in the Baird; the service will continue to explore new ways of working as required e.g. extended working hours.

All other service details and planning principles included in the OBC remain unchanged.

Aberdeen Centre for Reproductive Medicine:

The ACRM clinical service continues to be provided jointly by NHSG and the UoA. The formal integration of these two teams took place in January 2016 and work continues to capitalise on this integration in terms of maximising staff time and expertise to benefit patient care and improve access to this specialist service provision.

The service redesign work ongoing is detailed in Appendix N.

Research and Teaching:

There has been no change to the provision of research and teaching services since the OBC.

2.9.3 Review of the Current Accommodation

The state of the current accommodation supporting the Baird specialities was detailed in the OBC. This position has not changed, other than the relocation and amalgamation of gynaecology out-patient services to temporary accommodation.

Programme delay will result in patients being cared for in sub-optimal accommodation for longer than planned. This increases the likelihood that backlog maintenance monies will need to be incurred in accommodation that will be vacated when The Baird Family Hospital is commissioned.

2.10 Review of the Investment Objectives and Benefits

2.10.1 Investment Objectives

FBC question - has the scope of the Project changed; such as service change proposals, design objectives, engineering or other technical matters?

Have the expected benefits of the investment, risks or costs to the Project materially changed?

Details of changes to the cost profile are included in the Financial and Commercial sections.

The investment objectives, summarised below in Table S4, were rehearsed in the OBC and remain unchanged at FBC.

Table S4: Investment Objectives

Effect of the need for change on the organisation	What has to be achieved to deliver the necessary change (Investment Objectives)
Existing accommodation arrangements affect safe and timely access to treatment e.g. neonatal access to RACH/Magnetic Resonance Imaging (MRI), maternity access to ITU/Imaging.	Timely access to care, investigation and treatment
Inefficient service performance, due to accommodation constraints e.g. inappropriate hospital admissions, increased length of stay, inability to provide one-stop services, inefficiencies in workforce utilisation due to disparate service locations.	Improved effectiveness and efficiency

Service configuration unable to meet key aspirations e.g. desire for ambulatory care as the norm, deliver privacy and dignity required, increased choice re place of birth etc.	Person centred care

2.10.2 Benefits Realisation

The OBC recognised the importance of the Project identifying the potential benefits to be gained from this investment.

The Benefit Register and Benefit Realisation Plan have been updated at this FBC stage and are attached in Appendices I and K.

2.11 Review of the Key Service Risks, Constraints and Dependencies

Managing risk is a dynamic process, with the risk register reviewed and updated regularly.

A summary of the Service Redesign Plans (Appendix N) refers to the work being led by the Operational Management Teams and supported by the Project Team.

This service redesign work will continue to be progressed over the construction phase of the Project. This work will support the achievement of the investment objectives.

It remains the case that a corporate risk for NHSG is the recruitment and retention of suitably qualified and experienced staff. It also remains the case that the development of The Baird Family Hospital as a new facility will hopefully aid recruitment and retention strategies.

2.12 Review of The Strategic Case

For this FBC stage, the Project Team have reviewed the approved OBC in order to provide assurance that the strategic landscape has not significantly altered the Project brief or ambitions. This review has included looking at policies and ensuring there are no business need changes which alter the scope of the Project.

It is the view of NHSG that, whilst acknowledging the importance of the Best Start recommendations and the service redesign work underway in Moray, there are no changes from the OBC position of the magnitude that would impact on the strategic direction of travel for the Project.

The Strategic Case and preferred solution presented, therefore, remain in line with NHSG, regional and national policy and strategy. As a result, the Strategic Case as outlined in the OBC should continue to be pursued at this FBC stage of the Project.

2.13 Conclusion – The Baird Family Hospital

The development of The Baird Family Hospital will realise key priorities for NHSG. NHSG has recognised the importance of maternity services, in particular, during the past few years, leading to the creation of the Maternity Strategy and its associated recommendations.

The Baird development will re-provide clinical services currently delivered in AMH, a building which is accepted to be no longer fit for purpose. The Project will also provide the opportunity to incorporate breast and gynaecology, thereby allowing for enhanced service cohesion by bringing related specialities into one facility.

By reviewing the OBC and reflecting on the FBC SCIM questions, the Project Team have sought to provide assurance that the Project remains true to the ambitions as detailed in the OBC. The preceding narrative has shown that, despite work being carried out at a local level with regards to redesign of

Moray services and the impact of the Best Start strategy, these do not impact on the approved direction of travel for the Project.

3. The Economic Case

3. The Economic Case

3.1 Introduction

The Economic Case at Outline Business Case (OBC) confirmed the Preferred Way Forward outlined within the Initial Agreement (IA) and examined the relative value for money of the short-listed options. The case focused on a site option appraisal, it did not examine service delivery strategies as these have already been developed and agreed, with this Project being a consequence of their implementation.

The purpose of the Economic Case at Full Business Case (FBC) stage is to demonstrate that the preferred options identified at OBC stage remain valid. It will do this by responding to the following question:

- Does the Preferred Option offer better value for money than the other available options?

This is required to demonstrate that the case for change and procurement remains robust.

The preferred options for each facility identified at the OBC stage are:

- The Aberdeen North Centre for Haematology, Oncology and Radiotherapy (ANCHOR) Centre to be sited adjacent to the existing Radiotherapy Centre
- The Baird Family Hospital to be sited on the Foresterhill Health Centre (FHC) site

The appraisal of the costs, risks and benefits associated with the site options identified has been revisited. Operating and equipping costs, risks and benefits have not materially changed however, following market returns, the build costs for the preferred options have materially increased. The increase is 41% across the Project and this is as a consequence of design complexity and market conditions and, as such, the original appraisal has been reviewed. This appraisal confirmed the options being pursued represent better value for money than other options and remain valid.

3.2 The Preferred Options

The facilities are being delivered under a single procurement Project but will support a discrete range of service needs from two separate facilities.

- The ANCHOR Centre to be sited adjacent to the existing Radiotherapy Centre:
  - This site is located at the south of the east end of Aberdeen Royal Infirmary (ARI) adjacent to the Radiotherapy Centre and close to the site which was occupied by the Eye Out-Patient Department (EOPD). The first stage, the Radiotherapy Centre, was completed in 2013. The investment proposed in this FBC will fulfil the second stage, to provide out-patient, day-patient and academic/research facilities, together with a range of support facilities, including aseptic pharmacy
  - The estimated Gross Internal Floor Area (GIFA) for the development is 5,500 m^2. A Schedule of Accommodation (SoA) is included in Appendix V

- The Baird Family Hospital to be sited on the FHC site:
  - Located towards the west of the Royal Aberdeen Children's Hospital (RACH) on the site previously occupied by the FHC and the Breast Screening Centre (BSC). This option is consistent with the Foresterhill Development Framework agreed with Aberdeen City Council (ACC) in 2008. The new facility will be internally linked to ARI and RACH
  - The estimated GIFA for the development is 25,900 m^2. A SoA is included in Appendix W

3.3 Approach to Revisiting the Assumptions in the OBC

The Economic Case within this FBC undertook a detailed analysis of the costs, benefits and risks of a short-list of options illustrating how NHS Grampian (NHSG) had selected the preferred options to be taken forward. It demonstrated the relative value for money of the chosen options in delivering the required outcomes and services.

Separate Economic Cases were produced for each facility and appraised the costs, risks and benefits associated with the site options identified.

This appraisal of the costs, risks and benefits associated with the site options identified has been revisited. Operating and equipping costs, appraised risks and benefits have not materially changed, however the build costs for the preferred options have increased. The increase is 41% across the Project and this is as a consequence of design complexity and market conditions and, as such, the original appraisal has been reviewed. In the option appraisal, it has been assumed that the build costs in each of the options would have been impacted by this cost increase.

The sensitivity analysis in the OBC considered an increase in build costs of 20%; this has been re-visited to reflect a 41% increase (ANCHOR 33% and Baird 43%). This process has demonstrated that the increase in build costs does not impact on the option appraisal rankings.

3.3.1 Identification of a Short-List of Implementation Options

The process to identify the preferred way forward was documented in the IA and OBC and is in Appendix O.

Early in the Project, prior to undertaking the option appraisal analysis, preliminary technical feasibility studies and design work was undertaken to develop a short-list of options. These were refined from a long-list for locating the proposed facilities within the Foresterhill Health Campus. This took into account the required clinical and service adjacencies, patient, staff and goods logistics and the need to comply with the Foresterhill Development Framework. This work included taking into account the potential long term need to accommodate future development projects such as the replacement of the existing Phase 2 facilities on the Foresterhill Health Campus. The short-list of options that emerged from this work are summarised in Tables E1 and E2 as follows:

Table E1: Short-List of Options - The ANCHOR Centre

Option	Description
1	The ANCHOR Centre adjacent to the existing Radiotherapy Centre*
2	The ANCHOR Centre between Radiotherapy and Matthew Hay
3	The ANCHOR Centre adjacent to Radiotherapy Centre *
4	The Baird Family Hospital and The ANCHOR Centre joined on site of existing Eye Out-Patient Department/adjacent to Matthew Hay and Radiotherapy
5	Do Minimum – Backlog Maintenance and Imaging

* These two options are broadly the same, however there is a marginal difference in the costs associated with the combined Project option, these have therefore been kept separate in this evaluation.

Table E2: Short-List of Options - The Baird Family Hospital

Option	Description
1	The Baird Family Hospital on Foresterhill Health Centre site
2	The Baird Family Hospital adjacent to Royal Aberdeen Children's Hospital
3	The Baird Family Hospital adjacent to future development
4	The Baird Family Hospital integrated with The ANCHOR Centre
5	Do Minimum – Backlog Maintenance and Imaging

Indicative drawings showing the massing of the main buildings envisaged in each of the above options are shown in Appendix Q.

3.3.2 Identification and Quantification of Monetary Costs and Benefits of Options

The monetary implications used in the OBC appraisal were based on the draft elemental cost plan and emerging revenue implications for the preferred options. These have been refreshed to reflect the Target Price Cost and the build costs have materially changed as a consequence of design complexity and market conditions as demonstrated in Table E3.

Table E3: Cost Summary – Preferred Options

	OBC	FBC	Difference
	£000s	£000s	£000s
The ANCHOR Centre			
Initial Cost Implications – Construction	31,288	39,738	8,450
Additional Recurring Revenue Implications	1,133	1,133	0
The Baird Family Hospital			
Initial Cost Implications – Construction	119,210	163,132	43,922
Additional Recurring Revenue Implications	4,178	4,178	0

3.3.3 Non-Monetary Costs and Benefits

It is not possible to monetise all costs and benefits associated with the various site options for this Project, but the following broad headings relate to the investment objectives and are reflected in the Benefit Registers:

- effective and safe service delivery
- accessibility
- compatible with Foresterhill Development Framework
- flexibility/future proofing
- best use of resources
- disruption

These were identified and appraised at the site option workshop involving a range of stakeholders including clinicians, service managers and public members from the local community and the Scottish Health Council (SHC) on 8 December 2014. This appraisal was revisited at OBC and by the Project Team in preparation of this FBC and no changes have been identified. Tables E4 and E5 below set out the Scoring and Ranking Non-Monetary Benefit Criteria against Options for each facility.

Table E4: Scoring and Ranking Non-Monetary Benefit Criteria against Options – The ANCHOR Centre

Benefit Criteria	Weighting (%)	Weighted Score				
		Option 1	Option 2	Option 3	Option 4	Option 5
Effective and Safe Service Delivery	23.75	184	160	184	148	48
Accessibility	18.75	145	127	145	127	84
Compatible with Foresterhill Development Framework	13.75	117	83	110	83	34
Flexibility/Future Proofing	13.75	96	89	96	89	28
Best Use of Resources	20.00	155	105	140	125	50
Disruption	10.00	73	58	75	65	30
Total Weighted Score		**770**	**621**	**751**	**637**	**274**
Score out of 100		**100**	**88**	**95**	**89**	**36**
Rank		1	4	2	3	5

Applying the benefits criteria ranking demonstrates that Option 1, build The ANCHOR Centre adjacent to the existing Radiotherapy Centre, has the highest weighted score making it the preferred option using the non-monetary benefits score.

Table E5: Scoring and Ranking Non-Monetary Benefit Criteria against Options – The Baird Family Hospital

Benefit Criteria	Weighting (%)	Weighted Score				
		Option 1	Option 2	Option 3	Option 4	Option 5
Effective and Safe Service Delivery	23.75	196	166	154	143	48
Accessibility	18.75	145	136	103	131	94
Compatible with Foresterhill Development Framework	13.75	117	79	72	72	48
Flexibility/ Future Proofing	13.75	103	96	65	86	28
Best Use of Resources	20.00	155	130	105	130	50
Disruption	10.00	68	65	63	63	35
Total Weighted Score		784	673	563	624	302
Score out of 100		100	86	72	80	39
Rank		1	2	4	3	5

Applying the benefits criteria ranking demonstrates that Option 1, build The Baird Family Hospital on the FHC site, has the highest weighted score making it the preferred option using the non-monetary benefits score.

3.3.4 Non-Financial Risk Appraisal

The majority of risks associated with the short-listed options have been measured and quantified in monetary terms and included in the calculated Net Present Cost (NPC) of each option. Hence, the costs used in the economic appraisal have been risk adjusted to reflect the main business, operational and project implementation risks including:

- planning, design and construction risks
- commissioning risks
- operational risks
- service risks
- business risks

Recognising that not all risks can be quantified in monetary terms, the non-financial risks associated with the short-listed options were identified and appraised at the workshop on 8 December 2014 and were revisited during the preparation of the FBC. Those identified were:

- buildability
- operational problems - car park management, buses etc
- planning
- impact on radiology configuration
- transfer times - internal pre-Phase 2
- transfer times - internal post-Phase 2
- reprovide EOPD
- road layouts and accessibility for urgent access
- safety – personal safety

This analysis, together with the most current Risk Register, were considered in the preparation of this business case and the only changes identified were in relation to the Enabling Project which has now been delivered and are considered non material.

The results from the appraisal of non-financial risks are summarised in Tables E6 and E7 and demonstrates that the do minimum scores highest with Option 1 scoring lowest.

Table E6: Non-Financial Risk Appraisal - The ANCHOR Centre

	Risk Score (Impact x Probability)														
Risk	**Option 1**			**Option 2**			**Option 3**			**Option 4**			**Option 5**		
	Impact	**Prob**	**Score**	**Impact**	**Prob**	**Score**	**Impact**	**Prob**	**Score**	**Impact**	**Prob**	**Score**	**Impact**	**Prob**	**Score**
Buildability	2	2	4	2	1	2	2	2	4	6	7	42	8	8	64
Operational problems - car park management, buses etc.	7	8	56	8	8	64	7	8	56	8	8	64	8	8	64
Planning	8	4	32	8	7	56	8	4	32	8	7	56	2	2	4
Impact on radiology configuration	5	5	25	5	5	25	5	5	25	5	5	25	1	1	1
Transfer times - internal pre-Phase 2	9	5	45	9	9	81	9	5	45	9	9	81	9	9	81
Transfer times - internal post-Phase 2	9	9	81	9	8	72	9	9	81	9	8	72	9	9	81
Reprovide EOPD	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Road layouts and accessibility for urgent access	7	5	35	7	6	42	7	5	35	7	6	42	7	8	56
Safety - personal safety	8	5	40	8	4	32	8	5	40	8	4	32	8	9	72
Total Risk Score			319			375			319			415			424
Score out of 100			100			85			100			77			75
Rank			1			3			1			4			5

Table E7: Non-Financial Risk Appraisal - The Baird Family Hospital

	Risk Score (Impact x Probability)														
Risk	**Option 1**			**Option 2**			**Option 3**			**Option 4**			**Option 5**		
	Impact	**Prob**	**Score**	**Impact**	**Prob**	**Score**	**Impact**	**Prob**	**Score**	**Impact**	**Prob**	**Score**	**Impact**	**Prob**	**Score**
Buildability	2	2	4	2	1	2	10	9	90	2	2	4	8	8	64
Operational problems - car park management, buses etc.	7	5	35	8	8	64	10	4	40	7	5	35	8	8	64
Patient choice - women choose Baird rather than community (CMU)	7	3	21	7	3	21	7	3	21	7	3	21	7	7	49
Planning	8	4	32	8	7	56	8	9	72	8	4	32	2	2	4
Impact on radiology configuration	4	5	20	4	5	20	4	5	20	4	5	20	1	1	1
Transfer times - internal pre-Phase 2	9	5	45	9	9	81	9	9	81	9	5	45	9	9	81
Transfer times - internal post-Phase 2	9	9	81	9	8	72	9	3	27	9	9	81	9	9	81
Replacement of FHC 2018	1	1	1	1	0	0	1	0	0	1	1	1	1	1	1
Road layouts and accessibility for urgent access	7	5	35	7	6	42	7	10	70	7	5	35	7	8	56
Safety - personal safety for Baird	8	5	40	8	4	32	8	6	48	8	5	40	8	9	72
Total Risk Score			314			390			469			314			473
Score (out of 100)			100			81			67			100			66
Rank			1			3			4			1			5

3.3.5 Net Present Cost of Options

3.3.5.1 Calculation of Net Present Cost (NPC)

The financial evaluation, calculating NPC, of each option is set in the context of the guidance provided in the Scottish Capital Investment Manual (SCIM). It incorporates a full analysis of the revenue and capital costs for each option.

A Generic Economic Model (GEM) has been applied to the monetary costs and benefits of the options to derive the comparative cost implications of each of the options in the form of Equivalent Annual Costs (EAC) and NPC.

The appraisal process, updated for revised costs at this stage, identifies the relevant costs and financial risks and benefits over the Project development and for the first 25 years of the asset lives associated with each of the short-listed options.

Phasing of construction cashflows is consistent with the current Project programme.

Tables E8 and E9 provide a summary of the updated cost implications together with NPC for each of the short-listed options for both facilities. Further details of the capital costs can be found in Appendix P. The detailed output of the analysis can be found in the GEM Analysis, Appendix T.

In accordance with guidance, capital charges, inflation and Value Added Tax (VAT) are excluded from the calculations. Capital and revenue costs are added together to calculate an NPC for total expenditure.

Table E8: Summary Cost Implications Short-List Options - The ANCHOR Centre

	Option 1	**Option 2**	**Option 3**	**Option 4**	**Option 5**
	£000s	**£000s**	**£000s**	**£000s**	**£000s**
FBC					
Initial Cost Implications (Revised FBC)	39,738	43,650	40,573	41,962	7,057
Additional Recurring Revenue Implications	1,133	1,176	1,176	1,176	236
Net Present Cost (NPC)	**47,942**	**51,636**	**49,202**	**50,301**	**9,489**
Rank	**2**	**5**	**3**	**4**	**1**
OBC					
Net Present Cost (NPC)	40,817	43,635	41,833	42,647	8,403
Rank	2	5	3	4	1

Table E9: Summary Cost Implications Short-List Options - The Baird Family Hospital

	Option 1	Option 2	Option 3	Option 4	Option 5
	£000s	£000s	£000s	£000s	£000s
FBC					
Initial Cost Implications (Revised FBC)	163,131	160,685	159,052	161,706	41,858
Additional Recurring Revenue Implications	4,178	4,178	4,178	4,178	758
Net Present Cost (NPC)	**180,126**	**174,420**	**173,100**	**175,246**	**56,485**
Rank	**5**	**3**	**2**	**4**	**1**
OBC					
Net Present Cost (NPC)	142,732	135,523	134,625	136,084	44,313
Rank	5	3	2	4	1

3.3.5.2 Assessing Uncertainty

Sensitivity analysis is fundamental to option appraisal since it is used to test the robustness of the ranking of options and the selection of a preferred option. It examines the vulnerability of options to changes in underlying assumptions and future uncertainties. For this Project, in the OBC, Scenario Analysis had been used, examining the impact of changing scores, weights and NPCs through a number of scenarios. It demonstrated that there is little sensitivity arising from flexing these costs or scenarios.

Given that the changes between OBC and FBC, with the exception of build costs, are minor in nature, a comprehensive reworking of the sensitivity analysis has not been undertaken for the FBC. The impact of the revised build costs are reflected throughout this case.

3.4 The Appraisal of Options

This Economic Case has revisited the Preferred Options outlined within the OBC. It has been demonstrated that changes since the preparation of the OBC do not materially change the outcome.

The outcome of the appraisal is summarised in Tables E10 and E11 with preferred options:

- The ANCHOR Centre to be sited adjacent to the existing Radiotherapy Centre (Option 1)
- The Baird Family Hospital to be sited on the FHC site (Option 1)

The options for do-minimum e.g. undertake backlog maintenance were considered in detail for both facilities, however they have been discounted as not being viable on the basis of the following reasons:

The ANCHOR Centre

- it has only been included as a benchmark against which to measure the other options
- it will not deliver the investment objectives for this Project e.g.:
    - improved access to treatment
    - patient centred care
    - improved efficiency and effectiveness
- it will not provide the second stage of improved facilities for cancer care (the Radiotherapy Centre being the first stage which was completed in 2013)
- it scores last in terms of the qualitative benefits, which is a reflection of the fact that the present arrangements do not support current and future service requirements

The Baird Family Hospital

- it has only been included as a benchmark against which to measure the other options
- it will not deliver the investment objectives for this Project i.e.
    - timely access to care, investigation and treatment
    - improved effectiveness and efficiency
    - person centred care

- it scores last in terms of the qualitative benefits, which is a reflection of the fact that the present arrangements do not support current and future service requirements

Table E10: Evaluation of Options - The ANCHOR Centre

	Option 1	**Option 2**	**Option 3**	**Option 4**
(Out of 100)	The ANCHOR Centre adjacent to the existing Radiotherapy Centre	The ANCHOR Centre between Radiotherapy and Matthew Hay Building	The ANCHOR Centre adjacent to the Radiotherapy Centre	The Baird Family Hospital integrated with The ANCHOR Centre
Economic Appraisal	56	42	53	44
Risk Appraisal	100	85	100	77
Total Score	**156**	**127**	**153**	**121**
Overall Ranking	**1**	**3**	**2**	**4**
Score OBC	158	129	155	123
Rank OBC	1	3	2	4

*Do-minimum option exclude see 3.4

Table E11: Evaluation of Options - The Baird Family Hospital

	Option 1	**Option 2**	**Option 3**	**Option 4**
(Out of 100)	The Baird Family Hospital on Foresterhill HC site	The Baird Family Hospital adjacent to Children's Hospital	The Baird Family Hospital adjacent to future development	The Baird Family Hospital integrated with The ANCHOR Centre
Economic Appraisal	81	72	61	67
Risk Appraisal	100	81	67	100
Total Score	**181**	**153**	**128**	**167**
Overall Ranking	**1**	**3**	**4**	**2**
Score OBC	181	153	128	167
Rank OBC	1	3	4	2

*Do-minimum option exclude see 3.4

3.5 Conclusion and Confirming the Preferred Options

Value for money in the Economic Case considers the optimum solution in terms of comparing qualitative benefits to costs. This analysis has been performed on an economic NPC basis in line with Her Majesty Treasury (HMT) guidance and the results are shown in Tables E12 and E13.

Table E12: NPC per Non-Monetary Benefit Score – The ANCHOR Centre

	Option 1	Option 2	Option 3	Option 4
Net Present Cost (NPC) (£000s)	47,942	51,636	49,202	50,301
Non-Financial Weighted Benefit Score	770	621	751	637
NPC per Weighted Benefit Score	62	83	66	79
Score (Out of 100)	**56**	**42**	**53**	**44**
Rank FBC	**1**	**4**	**2**	**3**
Rank OBC	1	4	2	3

*Do-minimum option exclude see 3.4

This analysis identifies Option 1 as the preferred option that has been economically appraised to represent value for money.

Table E13: NPC per Non-Monetary Benefit Score – The Baird Family Hospital

	Option 1	Option 2	Option 3	Option 4
Net Present Cost (NPC) (£000s)	180,126	174,420	173,100	175,246
Non-Financial Weighted Benefit Score	784	673	563	624
NPC per Weighted Benefit Score	230	259	308	281
Score (Out of 100)	**81**	**72**	**61**	**67**
Rank FBC	**1**	**2**	**4**	**3**
Rank OBC	1	3	4	2

*Do-minimum option exclude see 3.4

The economic appraisal set out in this case affirms that Option 1 for both facilities is to be the preferred option to be taken forward.

4. The Commercial Case

4. The Commercial Case

4.1 Overview

This section outlines the commercial arrangements and implications for the Project.

This is done by responding to the following points:

- the procurement strategy and appropriate procurement route for the Project
- the scope and content of the proposed commercial arrangement
- risk allocation and apportionment between public and private sector
- the payment structure and how this will be made over the lifetime of the Project
- the contractual arrangements for the Project

4.2 Procurement Strategy

4.2.1 Procurement Route

The Project is a health project with an investment cost in excess of £220m. It is to be funded by means of a capital budget allocation and procured under the NHSScotland Frameworks Scotland 2 (FS2) arrangement.

The Project was initially believed suitable for a revenue-funded Non Profit Distributing (NPD) procurement where financing would be provided by a private sector development partner. The Initial Agreement (IA), approved in September 2015, was therefore developed on the basis of the Project being delivered using the NPD procurement model.

With the changes to accounting treatment under the European Systems of Accounts 2010 (ESA2010), The Scottish Government (SG) was not able to proceed with funding the Project under the NPD route and determined that they would make capital funding available to deliver the Project. The SG confirmed funding for a capital project in a letter from Paul Gray, Director General, Scottish Government Health and Social Care Directorate (SGHSCD), in May 2016.

Following the change in funding arrangements, the Board identified the capital procurement options available. The Board set procurement objectives in relation to quality, cost and time. From an initial appraisal, the following options were short-listed and appraised against the procurement objectives:

- Traditional Lump Sum Contracts – New Engineering Contract 3 (NEC3) Option B (priced, bills of quantities, re-measurement contract)
- Design and Construct NEC3 Option C (Target Cost contract with activity schedule)
- Frameworks Agreement NEC3 Option C (Health Facilities Scotland FS2) (Target Cost contract with activity schedule)

The resulting appraisal of options was completed with support and advice from Health Facilities Scotland (HFS) on the process.

As a consequence of the appraisal, the short-listed option 3 i.e. NEC3 Option C using FS2 was adopted in relation to the appointment of the Principal Supply Chain Partner (PSCP) for the Project.

The Project will operate a Project Bank Account (PBA). The SG has asked all public sector construction projects in excess of £4m to operate a PBA, with effect from October 2016. A PBA is a ring-fenced bank account from which prompt payments are made directly and simultaneously to a lead contractor and members of the supply chain. PBAs improve subcontractors' cashflow and ring-fence it from upstream insolvency.

A bespoke Trust Deed has been developed and entered into by NHS Grampian (NHSG) and the PSCP to facilitate this arrangement. In addition, robust financial governance and contractual arrangements are in place to ensure the safeguarding of funds and the optimal and efficient delivery of the benefits associated with this arrangement.

Effective engagement in relation to PBA arrangements with the supply chain during their appointment has been a key objective of the Procurement

Strategy of the Project. The PBA will be operational during Stage 4 of the Project. The PBA payment process was tested during Stage 3 by making payments to the PSCP.

Current and potential sub-contractors have been advised the PBA forms part of this Project.

In addition to the appointment of the PSCP, the NHSScotland (NHSS) Consultant Frameworks were also utilised for the appointment of: Construction Design Management (CDM) Advisor, Joint Cost Advisor (JCA), Project Manager and Healthcare Planner.

The Reference Design for the facilities previously developed under the NPD procurement continued to be used under the FS2 procurement, however it was not mandated to be used by the PSCPs within their design submissions.

This FBC details the arrangements for those elements of the Project to be procured through the FS2 process. The initial enabling works required to make the preferred sites available i.e. provision of a replacement Foresterhill Health Centre (FHC), temporary relocation of the Breast Screening Service and the permanent move of the Eye Out-patient Department (EOPD) were completed during 2018 and had their own separate procurement and governance arrangements.

4.2.2 European Union Rules and Regulations

Under FS2, there is no need to advertise in the Official Journal of the European Union (OJEU). The five PSCPs on the Framework have been selected via an OJEU tender process for capital investment construction schemes across Scotland up to 2019. Appointment of a PSCP is made following a mini-competition process, as described in 4.2.3 below.

The same form of process applies to the NHSS Professional Services Contract (PSCs) Frameworks for CDM Advisor, JCA, Project Manager and Healthcare Planner.

4.2.3 FS2 Procurement Process (Mini Competition)

The FS2 mini competition process for appointment involved issuing a High Level Information Pack (HLIP) to the framework participants. The pack described what facilities and services were to be provided and the specific form of contract to be used. It also set out what the procurement process would look like for programme and deliverables, and the detailed evaluation and selection criteria. The PSCP was selected on the basis of a quality and commercial evaluation.

The HLIP for the appointment of the PSCP followed a standard template, but the Board agreed to enhance the process to incorporate the Reference Design previously developed as part of the NPD process (as noted in 4.2.1 above), and also to evaluate more thoroughly the ability of each of the PSCPs to develop a design that would meet the design aspirations of the Board and stakeholders. A copy of the HLIP was included as an appendix in the OBC.

The mini-competition involved a two stage process:

- Stage 1

  The Stage 1 process included the requirement for a quality/technical submission in response to the HLIP and interviews with the proposed PSCP teams.

  Additionally, the PSCPs were tested by being asked to provide a commentary on the strengths and weaknesses of the Reference Design, which elements they believed could be taken forward and improved upon and which elements they believed could be discarded and re-developed.

All submissions were scored and evaluated by a panel of evaluators including representation of NHSS organisations, HFS and appointed advisors.

- Stage 2

  At Stage 2, the PSCPs were tested by being asked to respond to 12 separate questions on their design proposals starting at 1:1250 scale, working down to 1:500 scale and covering different aspects of the building design.

  The evaluation was conducted by a large multi-professional team including non-scoring expert advisors, specifically a Healthcare Planner from Buchan + Associates, the Development Manager from the NHSG Property and Asset Management Team and an HFS officer who attended as an observer.

  The commercial submission for the pre-construction costs was scored and combined with the FS2 construction stage commercial score for each PSCP to provide an overall commercial score for each PSCP.

  The quality and commercial scores were combined with a quality:cost ratio of 70:30 to provide an overall score.

  The outcome resulted in GRAHAM Construction's appointment as PSCP in November 2016.

4.2.4 Cost and Programme at FBC

The Project Outline Business Case (OBC) was approved in March 2018 as a £163.7 million capital funded Project. During the autumn of 2018, a six month programme of enabling works was instructed and the sub-contractor tendering process commenced. This followed a detailed cost assessment by the JCA and PSCP, which continued to indicate that the Project was on

budget. Some cost pressures were identified by the JCA in the following months with a Project forecast of £167.6 million reported in March 2019.

Following a major review and analysis of the sub-contractor tender returns by the JCA and the PSCP, a revised Project forecast in the region of £223 million was confirmed. This was a significant variance with the previously agreed cost plan of £163 million.

As a consequence, NHSG jointly commissioned with HFS and the Royal Institution of Chartered Surveyors (RICS) to undertake an external review. The purpose was to objectively identify the reasons for the variance in Project costs given that there had been no material changes instructed to the scope or design of the Project.

The key findings of the RICS review were:

- *It is entirely reasonable for NHSG to have expected to be able to place reliance upon the JCA and the PSCP to work collaboratively to present an accurate cost plan*
- *A significant number of the total variances reported arose from inaccuracies in the cost plan, arising from benchmarking that did not fully take account of factors prevailing at the Project, in the market and from a failure to track appropriately the impact of costs arising from design development and authorised changes*
- *Limitation on the number of bidding contractors for certain packages of work, especially MEP, is likely to have restricted competition and ability to achieve ultimate best value*
- *Both anecdotal and hard evidence to support the notion that market forces at play in Grampian, in Scotland generally, and in relation to the type and scale of the Project are such as to render the Project less attractive to potential bidders*

In line with the recommendations of the external reviewer, additional review work was commissioned by NHSG to specifically look at the Mechanical,

Electrical and Plumbing (MEP) tendering process. This was undertaken by AECOM.

The review looked at the procurement strategy and each tendered MEP package and concluded that, based on the AECOM library of projects and taking into account the specifics of the Project, the budget cost prepared in 2017 appears to have been below the achievable benchmark. Using the same library of projects, the 2019 tender rate is reported to be within an acceptable range.

Additionally, during the review period, four main building work packages have been retendered by the PSCP. This exercise did not result in any material change to the previously tendered prices.

The current programme assumes FBC approval and instruction in February 2020, construction commencing in May 2020 with completion in May 2023, a slippage of 16 months from that anticipated at OBC approval.

Further slippage will expose the Project to additional risks including loss of supply chain and inflationary pressures; the estimated cost of delay is £0.7 million per month. Prolonged delay may result in the need for a full retender of all the packages, with no certainty regarding the potential cost implications.

Retendering of the whole Project is an option that has been considered; this would take in the region of nine months to complete and may not result in cost betterment. During the recent retendering of the four building work packages, the market response was limited and there was no material reduction in the cost. The external reviewer is of the opinion that the lengthy retendering process may result in a higher Project cost; this view is shared by the JCA in their Target Price report.

On balance, it is recognised that the increase in costs presents a challenge. These new facilities will, however, be key enablers to allow a significant

redesign of NHSG clinical services. This will lead to improvements in the quality of care patients receive, with increased opportunities to be cared for on an out-patient or day-case basis and will also deliver efficiency benefits from the improved flow of patients through their journey of care.

Taking all factors into consideration, the view of the Project Board is to proceed with the current Project cost at £223.6 million, with work to continue alongside our JCA and PSCP partners to deliver any further cost efficiencies.

4.2.4.1 Project Programme

The programme for delivery of the Project has changed since OBC approval. The OBC anticipated that the completion date for The ANCHOR Centre and The Baird Family Hospital would be December 2021.

During Stage 3 and consistent with previous projects, to de-risk the construction phase of the Project and to help mitigate programme delay, a programme of enabling works, prior to FBC approval, were delivered by the PSCP, as a Compensation Event (CE). This six month programme of works was completed in July 2019 and included e.g. demolitions, water attenuation, road realignment and a series of service diversion works.

During development of the FBC, the complexity associated with developing and agreeing a Target Price has led to further programme delay of circa 16 months. Table C1 sets out the current programme for the construction phase of the Project.

Table C1: Project Programme

Stage	Milestone	Date	Status
Stage 4 - Construction and Commissioning			
Stage 4 appointment of PSCP		February 2020	
Stage 4 appointment of PSCs		February 2020	
Construction Commencement		May 2020	
Construction Completion - ANCHOR		May 2022	
Construction Completion - Baird		November 2022	
Bring into Operation - ANCHOR		July 2022	
Bring into Operation – Baird		March 2023	
Aberdeen Maternity Hospital (AMH) Demolition		May 2023	
Contract Completion		May 2023	

4.2.5 External Advisors

A number of appointments under the NHSS Consultants Framework are in place. The appointments were based on responses to a HLIP and interviews were evaluated by a multi-professional panel from NHSG supported by HFS. The appointed consultants are outlined in Table C2.

Table C2: External Advisors

Framework	Appointment	Date
Healthcare Planner	Buchan + Associates	October 2014
Cost Advisor	TBC	TBC
CDM Advisor	AECOM	April 2017
Project Manager	Currie & Brown	April 2017

The Board has decided to go to NHSS Consultant Framework mini competition to recruit a Cost Advisor to deliver Stage 4 of the Project. An HLIP was issued during early January 2020 with an appointment planned for February 2020, in advance of Stage 4 commencement.

4.3 Scope and Content of Proposed Commercial Arrangements

The purpose of this section is to specify the scope and content of the proposed works/services included within the proposed commercial arrangements.

4.3.1 Scope of Works/Services

The PSCP Scope of Services are as defined in the standard FS2 Framework Agreement and, in summary, relates to providing all aspects of the design and construction of the facilities as set out in the HLIP issued at appointment of the PSCP in November 2016.

All Facilities Management (FM) services, maintenance and lifecycle (including soft FM such as domestic, catering, portering and external grounds maintenance) will be provided by the Board.

Responsibility for procurement of equipment is as follows:

- Group 1 items of equipment, which are generally large items of permanently installed plant or equipment, will be supplied and installed by the PSCP and maintained and replaced by the Board
- Group 2 items of equipment, which require to be fixed to the building structure, will be supplied by the Board, installed by the PSCP and maintained by the Board
- Group 3 - 4 items of equipment are supplied, installed, maintained and replaced by the Board

4.3.2 Project Information

The following Table C3 provides a checklist of Project information requirements at this stage of the Project's development.

Table C3: Project Information

Design Information Requirements	Confirmation that information is available (Yes, No, n/a)
Site Feasibility Studies or Masterplan (≥ 1:1000)	Yes. Supplementary Planning Guidance to Local Development Plan.
Analysis of site option(s) (≥ 1:500, plus 3Ds)	Yes. The site options were rehearsed in the approved IA. A copy of the Site Option Appraisal Report is included as Appendix O and discussed in the Economic Case.
List of relevant design guidance to be followed – NHSS Technical Standards, Health Building Notes (HBN), Health Technical Memorandums (HTM), Health Facilities Notes (HFN), including a schedule of any key derogations	Yes. Referenced within Board Construction Requirements (BCR), Stage 4 Contract Works Information including an agreed schedule of technical derogations.
Evidence that Activity Data Base (ADB) use is fully utilised	Yes. Used Codebook as a project delivery tool, used ADB codes where appropriate, for production of Room Data Sheets (RDS) and equipment lists.
Geometric models. Proprietary 3D Building Information Modelling (BIM)	Yes. Using BIM Level 2. The Employer Information Requirements (EIR) and BIM Execution Plan are in place. Refer to section 4.3.6.

Design Information Requirements	Confirmation that information is available (Yes, No, n/a)
Requirements with 2D pdfs cut from the models to the above noted levels of definition/scales	
Design Statement, with any updates in benchmarks highlighted	Yes. Design Statements agreed at IA. Reviewed as part of FBC NHSScotland Design Assessment Process (NDAP) process.
Evidence of completion of self-assessment on design in line with the procedures set out in the Design Statement	Yes. Assessment using Achieving Excellence Design Evaluation Toolkit (AEDET) reviews. Baseline, Target, OBC and FBC assessments completed. Design Statement reviewed as part of FBC NDAP process.
Completed AEDET review at current stage of design development	Yes. Refer to section 4.3.7.
Evidence of Local Authority Planning consultation on their approach to site development and alignment with Local Development Plan	Yes. The Aberdeen City Local Delivery Plan (LDP) 2017 identifies the Foresterhill Health Campus site for “Existing Community Sites and Facilities (CF1)”. In 2008, Aberdeen City Council (ACC) approved the Foresterhill Development Framework on behalf of the site’s joint owners, namely NHSG (as per The Scottish Ministers) and the University of Aberdeen (UoA), and this was further updated to reflect new planning policy in 2012.

Design Information Requirements	Confirmation that information is available (Yes, No, n/a)
	The Foresterhill Development Framework is recognised as supplementary planning guidance to the LDP. Planning in Principle was obtained for The Baird and ANCHOR Project in October 2016. Approval of the matters specified was received from the Planning Department on 30 November 2018. Approval to the up-dated Royal Aberdeen Children's Hospital (RACH) Car Park non material variation was received on 14 February 2019. The landscaping materials condition purification letter was received on 3 April 2019. The external materials proposals were submitted to the Planning Department on 17 December 2019 for purification of this planning condition. The UoA as joint site owners are pleased to confirm their support for the Baird and ANCHOR facilities on the Foresterhill Health Campus site.
Risk Register detailing benefits and risks analysis	Yes. Refer to section 4.6.4 and 6.5 and Appendix L.
Photographs of site showing broader context	Yes. Refer to Appendix AA.
Building Research Establishment Environmental Assessment Method	Yes. BREEAM assessments for both facilities completed and targets agreed in dialogue with HFS. Refer to section 4.3.8.

Design Information Requirements	Confirmation that information is available (Yes, No, n/a)
(BREEAM) healthcare pre-assessment	
Evidence that relevant Disability Discrimination Act (DDA), dementia, health promotion and equality commitments are incorporated	Yes. Outlined in BCR.
Developed brief	Yes. Outlined in BCR including clinical and non-clinical briefs.
Outline of eHealth brief for Project	Yes. Refer to Appendix DD.
Outline design study should be co-ordinated and include relevant multi-disciplinary input, including but not limited to: architecture, building services, structural, fire, landscape design concepts; including diagrams and sketches demonstrating the key proposals to assess alignment with brief	Yes. FBC designs to Royal Institute of British Architects (RIBA) Stage 4, reviewed by Project Team and its advisors and assessed as part of NDAP. Refer to 4.3.5.

4.3.3 Design Quality Objectives

From inception, it has been agreed that due to the scale and nature of investment, The Baird Family Hospital and The ANCHOR Centre Project will be delivered as a single Project with sectional completion dates.

The option appraisal analysis has demonstrated that the preferred options are:

The ANCHOR Centre (Option 1)

The ANCHOR Centre to be located at the south of the east end of Aberdeen Royal Infirmary (ARI) adjacent to the Radiotherapy Centre and close to the site previously occupied by the EOPD. The first stage, the Radiotherapy Centre, was completed in 2013 and the investment proposed in this FBC will fulfil the second stage to provide out-patient, day-patient and academic/research facilities, together with a range of support facilities, including aseptic pharmacy accommodation. The proposed site plan is shown in Figure C1.

Figure C1: The Proposed Site Plan – The ANCHOR Centre and The Baird Family Hospital

The Gross Internal Floor Area (GIFA) for the development is 5,500m^2. A Schedule of Accommodation (SoA) is included in Appendix V.

The ANCHOR Centre will bring together all ambulatory services, including day investigation, treatment and out-patient services for oncology and haematology. The new centre will be physically co-located with and connected to the Radiotherapy Centre. Together, in future, the single facility will provide a focus for all ambulatory care for oncology, haematology and radiotherapy services in the north working with other teams in Highland, Tayside, Orkney and Shetland to provide care either in the centre or as part of the virtual service network covering the North of Scotland (NoS).

The Baird Family Hospital (Option 1)

The development of The Baird Family Hospital will replace the existing AMH, including the Aberdeen Centre for Reproductive Medicine (ACRM) and Neonatal Unit (NNU). The Baird will also include a range of other services for women including gynaecology, breast screening and breast symptomatic services.

The Baird Family Hospital will be located towards the west of RACH on the site previously occupied by the FHC and the Breast Screening Centre (BSC). This option is consistent with the Foresterhill Development Framework agreed with ACC in 2008. The new facility will be internally linked to ARI and RACH. The proposed site plan is shown in Figure C1.

The GIFA for the development is 25,950 m^2. A SoA is included in Appendix W.

The Baird Family Hospital will bring together in one place a range of secondary and tertiary services for NoS. This will facilitate more integrated working e.g. obstetrics and gynaecology as well as breast symptomatic services and breast screening services.

Additionally, the new facility will prompt the development of new ways of working facilitated by the provision of appropriate accommodation, providing the opportunity for a move towards ambulatory care as the norm, with in-patient care being reserved for patients with clinical requirements which demand an extended stay in hospital.

This substantial redesign agenda will result in a significant increase in out-patient and day-patient care and treatment made possible by e.g. surgical pre-assessment, day of surgery admission, appropriate ambulatory care accommodation and the creation of flexible spaces to optimise space utilisation.

Additionally, the new facility will create the opportunity to strengthen the role of the Baird as the tertiary centre in the north for a variety of services including obstetrics, gynaecology, neonatology, breast and reproductive medicine.

4.3.4 Gross Internal Floor Area (GIFA)

Table C4 outlines the key changes in GIFA between OBC and FBC. There has been a small increase in the overall GIFA for both buildings. In Baird there is a 0.2% increase of 57m^2. This is made up of a 103m^2 reduction in functional area, a 154.6m^2 reduction in interdepartmental communication and an increase in plant space of 314.5m^2.

In The ANCHOR Centre there is a 0.2% increase of 11m^2. This is made up of a 193.3m^2 reduction in clinical area, an increase in plant space and an increase of 323.6m^2 in interdepartmental communication necessary to allow the building footprint to avoid essential underground services.

Table C4: GIFA Changes between IA, OBC and FBC

Building	IA GIFA m^2	OBC GIFA m^2	+/- m^2 IA to OBC	FBC GIFA m^2	+/- m^2 OBC to FBC	Reasons for movement between OBC and FBC
Baird	21,555	25,893	+4,338	25,950	+57	As explained in narrative
ANCHOR	5,501	5,489	-3	5,500	+11	

4.3.5 NHSScotland Design Assessment Process (NDAP)

The purpose of NDAP is to promote design quality and the service outcomes realised through this. It does this by mapping design standards to the key investment deliverables, including SG objectives and expectations for public investment, then demonstrating their delivery via self, and independent, assessments.

The Project Team have had regular dialogue with Architecture Design Scotland (A+DS) and HFS since the IA stage of the Project. During this early stage of the Project, A+DS colleagues facilitated the development of a Design Statement for each facility. This information has formed part of the design brief since the outset of the Project.

During the FBC stage of the Project, the Project Team has continued to work closely with A+DS, HFS, GRAHAM Construction and their supply chain to participate in the design assessment process as outlined in the Scottish Capital Investment Manual (SCIM) Guidance.

Due to the complex nature of the Project and with two significant developments on the major acute Foresterhill Health Campus, the Project Team agreed with A+DS how the FBC NDAP would be conducted. This included, following receipt of the OBC 'supported NDAP report', an early assessment of the activities to be processed during Stage 3 and in advance of the FBC NDAP assessment. A number of meetings and workshops have

been held during Stage 3; this resulted in the submission of an NDAP submission to AD+S and HFS on 29 November 2019.

HFS have confirmed that they want to look at the NDAP submission in parallel with the forthcoming HFS design review planned for February 2020. When a supported NDAP report is available, it will be included as Appendix G.

4.3.5.1 NHSS Design Assurance Review

During the latter stages of the FBC design process, HFS have led design reviews of the new Children's Hospital in Edinburgh and the new Queen Elizabeth Hospital in Glasgow. Both developments have highlighted design and commissioning issues that have required remedial action. As a consequence, HFS and Health Protection Scotland (HPS) are developing a new Key Stage Authorisation Review process which will focus initially on complex health infrastructure projects (new build and major refurbishment).

While this new review process is being developed and rolled out, NHSG and HFS/HPS officers have been in dialogue regarding an external design review of the Project, prior to progressing to the construction phase.

During recent weeks, NHSG have developed an internal design assurance process, completed for the Project with the potential for use in other NHSG projects. This has included a series of workshops to undertake a further review of the six key areas identified by the recent reviews elsewhere in Scotland. They include water and drainage, electrical infrastructure, ventilation, fire and medical gases.

In addition, HFS are in the process of appointing an external partner to conduct an external design review of the Project during February 2020, in advance of construction commencement.

4.3.6 Building Information Modelling Requirements

BIM describes the process of designing and constructing a building collaboratively using one coherent system of digital models and linked non graphical data, as opposed to separate sets of drawings and documents. These models and data also incorporate information which will be carried over and used in the operational phase.

NHSS is supporting the adoption of Level 2 BIM maturity following the SG mandate in support of the recommendations of the "Review of Scottish Public Sector Procurement in Construction" which endorsed that "BIM will be introduced in central government with a view to encouraging adoption across the public sector. The objective states that, where appropriate, projects across the public sector adopt BIM level 2 by April 2017."

The NHSS BIM strategy is intended to ensure the creation of a digitised information management process which all Boards and teams working on NHSS programmes should follow to maintain consistency and facilitate collaborative working, which will in turn reduce waste and non-conformances.

The Project is using BIM as a key design tool during the design and construction phases of the Project. This resource will also be kept dynamic by NHSG Estates colleagues during the operational phase of the Project.

An NHSG BIM Strategy and EIR were developed in collaboration with the NHSS BIM Working Group being led by HFS and supported by the consultancy WSP (Professional Services and Engineering Consultancy). The Strategy is based on achievement of BIM Level 2. During Stage 3, NHSG and the PSCP have continued to work with HFS colleagues and their

appointed professional consultancy, AECOM, to refine the EIR for the Project.

This has informed the development of a BIM Execution Plan, developed over recent months with GRAHAM Construction for use throughout the design and construction phases of the Project. The BIM Execution Plan was developed to meet NHSG requirements, including arrangements for providing project specific data and information for populating the relevant NHSG Asset Management Systems. By gaining a good understanding of the outputs required by the NHSG FM and Estates teams, this will allow the Project team to continue to work towards development of a BIM model and produce data that is able to be managed in a structured format that interfaces with the NHSG Asset Management software in a way that reduces the resource input required at the end of the Project.

One of the main benefits of BIM will be that the Board has true "as built" records along with the Project specific asset tagging that will assist the operation/maintenance and replacement of components. The BIM model will also be made available to NHSG for functional modelling.

4.3.7 Achieving Excellence Design Evaluations Toolkit (AEDET)

In accordance with SCIM guidance and the investment objectives, AEDET (HFS Refresh December 2014) will be used throughout the development of the Project to help NHSG manage the design from initial proposals through to detailed design and will continue to do so through to Project Evaluation. In addition, the preferred options will be reviewed as part of the NDAP process; refer to section 4.3.5.

The AEDET toolkit has three key dimensions (functionality, build quality and impact) and outlines 10 assessment criteria. Each of the 10 areas are assessed using a series of questions which are scored on a scale of one - six. The standard required should result in all 10 dimensions of the AEDET toolkit scoring between four and six.

Baseline AEDET workshops for the current facilities were completed in March 2015; these were led by Susan Grant, Principal Architect, HFS. The summary scores outlined in Tables C5 and C6 below demonstrate that the existing facilities score poorly at between 1.0 and 3.5 in all 10 categories.

AEDET Target workshops for each facility were completed in December 2015. During 2016, HFS updated the AEDET templates which now automatically produce a target score for each dimension. The AEDETs for both developments have been updated to the 2016 version which now includes revised target scores. Subsequent AEDET workshops have assessed the emerging design at key stages throughout the Project against the agreed target scores. The target scores are summarised in Tables C5 and C6.

On 14 December 2017, AEDET workshops were held to review the OBC stage designs against the agreed target scores. These workshops involved clinicians, Project Team, the Board's Technical Advisors, GRAHAM Construction and their design team and were led by Susan Grant, Principal Architect, HFS. During each AEDET assessment, an effort was made to achieve a consistent approach in terms of who was involved in the AEDET process. A core of people have been involved in all three AEDETs to date for each development. The FBC AEDET scores along with the earlier assessment scores are included in Tables C5 and C6.

The next AEDET assessments will be undertaken soon after the buildings are operational.

Table C5: The ANCHOR Centre AEDET Scores

The ANCHOR Centre AEDETs	Baseline Mar 2015 (existing accommodation)	Target Dec 2015	OBC Dec 2017	FBC Nov 2018
► Use	1.1	4.6	4.8	5.4
► Access	2.3	4.3	4.7	5.1
► Space	1.7	4.4	5.7	5.3
► Performance	3.5	4.5	1.6	4.3
► Engineering	1.5	3.8	0.7	4.0
► Construction	0.0	4.0	0.3	4.0
► Character and Innovation	1.7	4.4	4.8	5.7
► Form and Materials	2.4	4.4	3.3	5.3
► Staff and Patient Environment	1.5	4.5	4.9	5.8
► Urban and Social Integration	0.0	5.0	5.0	6.0

Table C6: The Baird Family Hospital AEDET Scores

The Baird Family Hospital AEDETs	Baseline Mar 2015 (existing accommodation)	Target Dec 2015	OBC Dec 2017	FBC Nov 2018
► Use	1.0	4.6	5.1	5.8
► Access	1.5	4.5	4.7	5.5
► Space	1.0	4.2	4.8	5.4
► Performance	1.5	4.8	0.2	4.7
► Engineering	1.3	3.4	0.4	4.7
► Construction	0.0	4.0	0.3	4.0

► Character and Innovation	1.0	4.4	4.9	5.6
► Form and Materials	1.4	4.4	4.6	5.4
► Staff and Patient Environment	1.1	4.6	4.7	5.4
► Urban and Social Integration	2.3	4.5	4.6	6.0

4.3.8 Sustainability

Sustainable developments are a major requirement for NHSS and NHSG. The BCR outlines the technical brief for this Project and has been developed with colleagues from NHSG, Technical Advisors, colleagues from HFS, and more recently, GRAHAM Construction and their design team to try to ensure clarity regarding what these facilities should achieve in sustainability terms.

One measure to be used is BREEAM. BREEAM sets the standard for best practice in sustainable building design, construction and operation and has become one of the most comprehensive and widely recognised measures of a building's environmental performance.

Consistent with NHSS, NHSG has an aspiration that, where possible, all new buildings achieve a BREEAM Excellent rating. In that regard, an independent BREEAM assessor has been appointed to work with the Project Team with the aim of achieving BREEAM Excellence with a degree of pragmatism.

Target scores for each building were developed at a BREEAM Workshop held in May 2017 with NHSG, the PSCP and the design team and shared with HFS colleagues for comment. Follow up workshops have been held during Stages 2 and 3 of the Project. The current targets being pursued for each building are as follows:

- The ANCHOR Centre - Target score is 72.44%. The current Design Stage score is 71.76% (this reflects the credits that have been confirmed)
- The Baird Family Hospital - Target score and the Design Stage score is 73.19%, as all targeted credits have been achieved

The PSCP and their design team have developed the design from Stage 2 (RIBA Stage 2) OBC, through Stage 3 (RIBA Stage 4) FBC, dynamic thermal modelling has been undertaken to re-evaluate and demonstrate compliance with Section 6 of the Scottish Non-Domestic Building Technical Handbook 2015, Energy Performance Certificate (EPC) ratings defined in the BCR and BREEAM ENE01 credits targeted.

The following energy reports have been compiled demonstrating compliance;
Baird - N106H-MML-ZZ-ZZ-RP-M-10002 Energy Assessment Rev P03
ANCHOR - N101H-MML-ZZ-ZZ-RP-M-10002 Energy Assessment Rev P06

Passive design considerations at OBC stage have been developed through FBC design and implemented, various simulations have been carried out to determine the most suitable energy strategy to achieve compliance with Section 6 2015 and to achieve a minimum EPC rating of D (Baird) and C (ANCHOR) as per the BCR.

The measures below enable The Baird Family Hospital and The ANCHOR Centre development to achieve the CO_2 reduction required, as well as the EPC rating:

- improved fabric efficiency across the development, exceeding the Section 6 Notional Building
- solar-control glazing to reduce solar gains
- solar shading to reduce the peak solar gain through the year
- centralised mechanical ventilation with low Specific Fan Power and highly efficient heat recovery
- district biomass Combined Heat and Power (CHP) plant providing annual space heating and Domestic Hot Water demand

- highly efficient cooling system, where cooling is required
- high-efficiency lighting systems
- lighting metering and lighting control that allows for daylight dimming, absence/presence detection and monitored for faults
- power factor correction of at least 0.95
- roof mounted Photovoltaic Panel (PV) array of 570.5 m2 (350 modules = 114.5kWp) (Baird)
- roof mounted Photovoltaic Panel (PV) array of 107.6m2 (66 modules = 21.6kWp) (ANCHOR)

The above set of measures achieves:

- compliance with Section 6 2015
- BCR requirement of 6 credits under BREEAM ENE01
- improved EPC rating of B (Baird) and A (ANCHOR)

Baird CO_2 Emissions Results (Extract)

Model*	TER – Notional Building ($kgCO_2/m^2$)	BER – Actual Building ($kgCO_2/m^2$)	Compliance with Standard 6.1 of Technical Handbook Non-Domestic
Proposed Design	36.8	28.4	PASS

Source: IES Virtual Environment model – TER/BER values

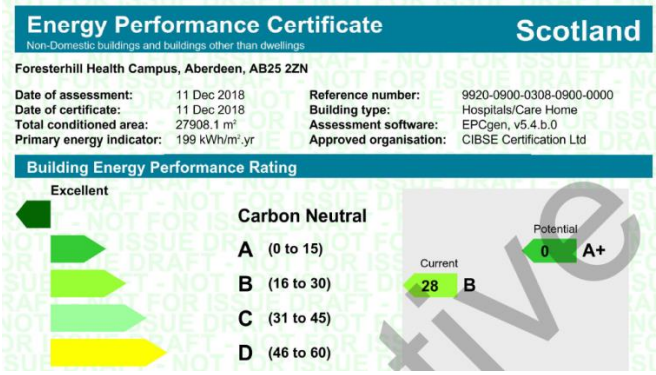
ANCHOR CO_2 Emissions Results (Extract)

Model*	TER – Notional Building ($kgCO_2/m^2$)	BER – Actual Building ($kgCO_2/m^2$)	Compliance with Standard 6.1 of Technical Handbook Non-Domestic
Option 1 Simulation Version A (Mech Vent)	12.7	11.0	PASS

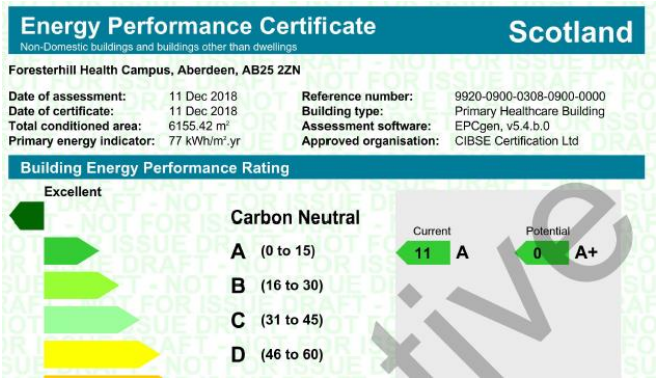
**: See section 4.3 for Options specifications*

Source: P:\Edinburgh\SNI\Projects\377965 Baird & Anchor EDINBURGH\9.0 Modelling\Anchor\Reports\Energy Assessment\181211 - Anchor Centre - Energy Assessment Rev P06 – 11-0

Baird Draft EPC (Extract)



ANCHOR Draft EPC (Extract)



The energy performance results above are intended for regulatory purposes.

An “in-use” preliminary operational energy simulation has been conducted using assumptions on internal gains, occupancy and general conditions.

To further refine this simulation NHSG have undertaken an extensive exercise engaging with clinical stakeholders and procurement/equipment manufacturers to define:

- Occupancy Profiles extended hours and annual calendar
- Equipment Energy Consumption (Full & Standby) including durations

This information has been compiled into a TM54 model input template.

NHSG are in dialogue with the Dynamic Thermal Modelling software manufacturer (IES) to conduct the simulation and comparison model.

There are wider sustainability platforms for this investment, notably the potential to deliver community benefits through education, training and Small and Medium Enterprises (SMEs) and wider associated benefits for the construction and operational phases of the Project. A Community Benefits Plan has been developed and agreed with the PSCP, refer to Appendix Z and to section 6.4.1.1 in the Management Case.

4.4 Risk Allocation

4.4.1 Key Principles

The key principle is that risk has been allocated to the party best able to manage it, with the objective to optimally allocate risk.

This will be achieved commercially during the construction stage by the identification of employer risks in the PSCP contract and by the allocation of the costed risks between the employer and the contractor.

A costed Risk Register, set out in Appendix S, has been prepared and maintained collaboratively with GRAHAM Construction and appointed consultants associated with this Project. This sets out the owner and manager for each risk.

The risk allocation shown in Table C7 shows the potential allocation of risk between the parties. This is shown as percentage allocation.

4.4.2 Risk Allocation Table

Table C7: Risk Allocation Table

Risk Category	Allocation of risk		
	Public	Private	Shared
Client/business risks (title, ground conditions, where not disclosed)	100%	0%	
Design	0%	100%	

Risk Category	Allocation of risk		
	Public	Private	Shared
Development and construction (note dark ground contamination remain with public)	50%	50%	✓
Transition and implementation (commissioning, migration, Board responsibility)	100%	0%	
Availability and performance	100%	0%	
Operating	100%	0%	
Revenue	100%	0%	
Termination	50%	50%	✓
Technology and obsolescence	50%	50%	✓
Control	100%	0%	
Financing	95%	5%	✓
Change in law	100%	0%	
Other Project risks	50%	50%	✓

Note that while financing risk is with the public sector, there is a pain share/gain share mechanism which is an integral part of FS2 to incentivise the PSCP to keep the target price within agreed limits.

4.5 Payment Structure

Under FS2, Professional Services Consultants (PSC) and PSCPs are appointed under an NEC3 Option C Target Price contract which has been specifically structured to provide a more predictable cash flow for the NHS client. The Target Price is based on a submitted Activity Schedule. The Client pays actual cost only up to the Target Price ceiling. Any cost beyond this is borne by the PSC or PSCP.

The PSC and PSCP pre-construction stage payments are on the basis of fixed framework hourly rates paid up for time worked to the maximum of the Target Price.

The PSCP Target Price for construction is jointly developed on an 'Open Book' basis. The PSCP is paid Defined Cost plus Fee Percentage (i.e. actual cost of labour, plant, materials and sub-contract work plus a fixed percentage for overhead and profit) but only up to the ceiling price of the Target Price. If savings are generated against the Target Price then these are shared on a 50/50 basis up to 5% below the Target Price. For PSC and PSCP pre-construction stage contracts, all amounts below the Target Price are retained by the NHS Client.

There is provision in the contract so that the NHS Client may reinvest these savings back into the Project. If the amount of savings exceeds 5% of the Target Price at completion, gain share is only calculated on the 5% saving e.g. 2.5% maximum gain share to the PSCP. The remaining saving reverts to the NHS Client. If the cost exceeds the Target Price without compensation events (variations), then the PSCP absorbs any overspend. This could typically infer an inaccurate Target Price or inefficient working by the PSCP (e.g. having to correct defective work or inefficient management of resources) or an underestimation by the PSCP of their risks in the contract.

The Board will pay for the construction of the facilities by way of regular payments as the construction work proceeds.

4.5.1 Risk Contingency Management

The general risk management process and high level allocation is noted in Table C8. A full Project Risk Register has been developed and the risk contingency will be managed under the CE process noted below. This involves the Project Team raising early warnings of potential risks that are addressed at risk reduction meetings.

4.5.2 Contract Variations

As noted, the Project is procured under the FS2 NEC3 form of contract which manages contract variations by means of compensation events. The major benefit of this process is that variations are dealt with as soon as they become apparent and are costed and agreed as they arise.

The CE process enables any variations or employer's risk items which transpire to be reflected in an adjustment to the Target Price and/or an adjustment to the programme reflecting the impact of the variation.

4.5.3 Disputed Payments

The FS2 NEC3 form of contract has processes to manage disputed payments. PSCP applications for payment may have disallowed costs which are monitored by the JCA at each monthly assessment to ensure that only payments due and fully accounted for are passed.

4.5.4 Payment Indexation

Payment indexation is managed centrally on FS2 and hourly staff rates for both PSCs and PSCPs are adjusted and notified annually across the Framework by HFS. Construction inflation is managed by reference to Building Cost Information Services (BCIS) published cost indices. The construction inflation risk is held by the PSCP for the first two years of the programme. The risk is then passed to the NHS Client for the balance of the programme beyond two years.

4.5.5 Utilities and Service Connection Charges

As the Project is publically funded, utilities and service connection charges are paid by NHSG as part of the contract.

4.5.6 Performance Incentives

FS2 has a pain/gain incentivisation model as detailed earlier in section 4.5, Payment Structure.

4.6 Contractual Arrangements

This section outlines the contractual arrangements for the procurement, including the use of a particular contract, the key contractual issues for the commercial deal and any personnel implications.

4.6.1 Type of Contract

The Contract will be based on the FS2 NEC3 Contract, Option C, Target Price with Activity Schedule. The PSCP and consultants have all been appointed to the Project on a NEC3 Contract Option C Target Price.

4.6.2 Key Contractual Issues

The Scheme Contract will include The Baird Family Hospital and The ANCHOR Centre in a single contract. To take account of these two facilities with distinct completion and handover timescales followed by demolition activities, the contract will include for specified sectional completion dates. A number of Project amendments to specific clauses have been developed in dialogue with HFS and GRAHAM Construction to reflect sectional completion and the nature of the contract scope. Legal advice from the Central Legal Office (CLO) and Pinsent Mason has been provided and insurance advice from Willis, commissioned by NHSG.

The Project specific clauses relate to:

- defects liability
- gain share
- retention
- PBA
- limitation of liability
- insurance
- inflation

The Project will operate a PBA during the Stage 4 (construction) contract phase, refer to section 4.2.1.

4.6.3 Personnel Implications

There are no employees who are wholly or substantially employed on services that will be transferred to the private sector under the proposals for this Project, and therefore the Transfer of Undertakings (Protection of Employment) Regulations 1981 (TUPE) will not apply.

4.6.4 Key Commercial Risks

The Risk Register is included as Appendix L. It outlines the current risks being managed by the Project Team. The Register is dynamic and is updated regularly by the joint Project Team.

There are a number of key risks currently being actively managed by NHSG, the PSCP and wider Project Team. These risks are assessed as high, medium and low risk and the possible financial impact of the risks outlined in the Risk Register have been included in the costed Risk Register included as Appendix S. Risk provision has been included in the cost plan presented in this FBC. A number of these key risks are described in Table C8 below, they relate mainly to cost, programme and to potential or actual site abnormals.

Table C8: Key Commercial Risks

Risk	Mitigation	RAG
Failure to discharge statutory planning conditions.	Approval of matters specified received in November 2018. Purification of all but one issue prior to construction commencement in place. External materials proposals submitted for purification in December 2019.	
High groundwater table gives problems on both sites for basements.	Current design proposals take into account the high groundwater levels across the site.	
Ground conditions, bearing pressure and contamination.	Risk mitigated following a six month programme of enabling works. Known ground condition issues included in Target	

Requirement for expensive ground gas protection and removal/capping of contaminated ground.	Price.	
Dark ground – surveys and investigations – access difficulties and risks inherent in areas which are not surveyed i.e. areas of existing buildings unable to be surveyed.	Survey work undertaken following demolition on main sites reflected in Target Price. Unknown issues could be revealed during the construction and AMH demolition works.	
Drainage impact assessment results in on/off site drainage capacity works (foul drainage) – over and above scope – resulting in delays and additional work.	Initial Drainage Impact Assessment (DIA) carried out, further DIA work to be implemented. Pre development enquiry has been submitted and still awaiting the Scottish Water response.	
Asbestos may be more extensive than highlighted in the management surveys.	Asbestos surveys have been carried out where possible. The residual risk is in relation to the existing maternity hospital where it is not possible to carry out the survey until the building has been vacated. Desktop study of available info together with meeting with NHSG Asbestos Officer. Sufficient cost and programme allowances to be made.	
Requirement to meet Scottish Health Technical	NHSG has identified funding in the 2017/18 capital plan to fund the creation of a second Vacuum Insulated Evaporator	

Memorandum (SHTM) 02-01 medical gas compliance for Campus and not just the two new facilities.	(VIE) on site connected to the oxygen ring main providing campus wide resilience in compliance with the SHTM. Work to install this VIE has now commenced and is scheduled to be completed in April 2020 in advance of construction commencement.	
Fire strategy not defined/agreed. Fire strategy remains open to testing throughout the design stage and derogations may be challenged.	Fire strategy has been developed and reviewed by all parties including Grampian Fire and Rescue, ACC, NHSG and HFS. Comments from Building Control are currently being addressed.	
Healthcare Associated Infection (HAI) Risks associated with construction on live site	Stage 4 HAI Scribes completed. Implement agreed actions, with regular review to ensure effectiveness.	
Civil Aviation Authority (CAA) requirement to lower lampposts on Westburn Road to ensure safe trajectory for landing and taking off for helicopters.	The scope has been agreed with the helicopter operators and discussions are ongoing with the Roads Department to allow the design to be finalised. Implement change prior to construction commencement.	

5. The Financial Case

5. The Financial Case

5.1 Introduction

The Financial Case considers the overall affordability of the preferred options both in the context of the Board's financial plans, Scottish Government (SG) additional funding and in comparison to the short-listed options. The preferred options are:

- The Baird Family Hospital Option 1
- The ANCHOR Centre Option 1

The case does this by:

- setting out the financial model for the Project
- reviewing the revenue and capital implications of the Project
- setting out a statement on overall affordability
- confirming stakeholder support

In summary, the investment required to deliver the Project is set out in Table F1 and the revenue implications in the first full year of operation are set out in Table F3.

NHS Grampian (NHSG) is committed to the Project and has incorporated the necessary funding increases for capital and revenue consequences in its financial plans for the coming years.

The SG are to confirm that capital funding above that identified upon approval of the Outline Business Case (OBC) will be provided. The University of Aberdeen (UoA) have indicated they will contribute to the building related running costs and equipping for the elements they occupy.

Further details of the capital and revenue elements of the Project and sources of funding are provided in the following sections.

The specific approval as part of this business case relates to the following:

Table F1: Summary of Initial Capital Investment for Approval

	Baird	ANCHOR	FBC Total	OBC Total
	£000s	£000s	£000s	£000s
Construction Related Costs	166,246	40,377	206,623	146,716
Furniture and Equipment	15,253	1,747	17,000	17,000
Total Initial Investment	**181,499**	**42,124**	**223,623**	**163,716**
Sources of Funding				
SG Additional Capital Funding	181,499	42,124	223,623	163,716
Total Sources of Funding	**181,499**	**42,124**	**223,623**	**163,716**

Table F2 sets out the total investment required to deliver the new facilities. This includes enabling projects which freed up the preferred sites, project development costs, construction costs and furniture and equipment.

Table F2: Summary of Initial Capital Investment

	Baird	ANCHOR	FBC Total	OBC Total
	£000s	£000s	£000s	£000s
Enabling Projects	8,702	4,645	13,347	13,464
Construction Related Costs	166,246	40,377	206,623	146,716
Furniture and Equipment	15,253	1,747	17,000	17,000
Project Development Costs	6,442	1,535	7,977	6,748
Commissioning Costs	168	42	210	210
Total Initial Investment	**196,811**	**48,346**	**245,157**	**184,138**
Sources of Funding				
SG Additional Capital Funding	181,961	41,662	223,623	163,716
Hub Contract	7,838	0	7,838	7,531
NHSG Capital Funding	900	4,680	5,880	5,828
NHSG Revenue Funding	6,574	1,542	7,816	7,063
Total Sources of Funding	**196,811**	**48,346**	**245,157**	**184,138**

The movement since OBC is because of an increase in Construction Related and Project Development costs as set out in 5.3.1.1 and 5.3.2.1.

Table F3: Summary of Revenue Implications - First Full Year of Operation (2023/24)

	Baird	ANCHOR	Total	Total
	£000s	£000s	£000s	£000s
Recurring Revenue Costs				
Additional Depreciation	4,276	978	**5,254**	4,289
Additional Clinical Service Costs	839	168	**1,007**	948
Additional Non-Clinical Service Costs	340	85	**425**	425
Additional Building Related Running Costs	2,299	714	**3,013**	2,974
Total Recurring Revenue Costs	**7,754**	**1,945**	**9,699**	**8,636**
Sources of Funding				
Third Party (UoA)	157	0	157	165
NHSG Revenue Funding (Other Scheme Costs)	3,321	967	4,288	4,182
Total Identified Sources of Funding	**3,478**	**967**	**4,445**	**4,347**
Revenue Funding (Depreciation)*	4,276	978	5,254	4,289
Total Core and Non Core funding available	**7,754**	**1,945**	**9,699**	**8,636**

*NHSG have requested that SG provide additional support for the costs associated with depreciation.

The movement since OBC reflects refinement in the required operational requirements of the new facilities, inflation and the impact of the increased construction cost on depreciation.

5.2 Revisiting the Financial Case

The OBC was approved by the Scottish Government Health and Social Care Directorate (SGHSCD) on 22 March 2018 and no specific conditions were outlined in the approval letter in relation to the Financial Case.

5.3 Financial Model: Costs and Associated Funding for the Project

The following sections set out how the key financial implications of the Project have been identified and the assumptions influencing them.

The relevant cost variations in relation to the short-listed options that formed part of the appraisal in the Economic Case for this Project were considered in the OBC. Given the appraisal focussed on site solutions rather than service solutions these were limited and are considered immaterial when presenting this Full Business Case (FBC) Financial Case.

5.3.1 Capital Investment

5.3.1.1 Construction Costs

The estimated build costs associated with construction of The Baird Family Hospital and The ANCHOR Centre have been produced by the Joint Cost Advisor (JCA) for the Project based on the developing design and the Target Price submitted by the contractor following a comprehensive tendering process.

Table F4 sets out the anticipated construction costs for the new facilities and a more detailed cost plan is contained in Appendix X.

The assumptions in preparing these costs are as follows:

- construction start date: Q2 2020
- construction end date: Q2 2022 (ANCHOR); Q4 2022 (Baird)
- construction inflation on the sub-contractor works packages is calculated from the point of tender return or the date at which the offer was open to. This was calculated using the Building Cost Information Services (BCIS) Building Cost Index taken to the midpoint of construction
- design team fees are based on the tender submission by the main contractor, updated for additional costs incurred as part of design development and inflation

- main contractor preliminaries, overhead and profit are based on tender submission updated to reflect revised programme and inflation.
- quantified construction risk is based on those risks identified in the costed risk register and in the market returns for sub-contractor work packages
- both new facilities will be built on land already owned by NHSG

Table F4: Construction Costs

	Baird	ANCHOR	FBC Total	OBC Total
	£000s	£000s	£000s	£000s
Construction Related Costs				
Enabling Works	4,084	1,922	6,006	4,491
Building Costs	100,982	23,448	124,430	85,909
Prelims, Fees, On-Costs	18,602	4,631	23,233	18,948
Inflation	10,833	2,531	13,364	8,150
Risk	6,309	1,668	7,977	6,748
VAT	25,436	6,177	31,613	22,469
Total Construction Costs	**166,246**	**40,377**	**206,623**	**146,715**
Sources of Funding				
SG Additional Capital Funding	166,246	40,377	206,623	146,715
Total Sources of Funding	**166,246**	**40,377**	**206,623**	**146,715**

Construction Costs – Movement from OBC

Construction related costs have increased by £59.9 million (40.8%) from the budget estimate contained in the OBC (December 2017). The estimated build costs associated with construction of the facilities were produced by the JCA based on the emerging design and prevailing market conditions at that time.

Regular Cost Plan updates are reported by the JCA. Following receipt of the tender returns, it became clear that the anticipated cost

of delivering the facilities was in excess on that provided in the OBC Cost Plan.

An Independent Review was commissioned to investigate and objectively identify the reasons for the variance against cost plan and to analyse and validate the Project cost. Its findings are set out in the Commercial Case Section 4.2.4.

The JCA undertook a detailed analysis of tender returns against the cost plan. Table F5 summarises the Cost Plan variance reasons identified with further details set out in Appendix X.

Table F5: Construction Costs - Cost Plan Variances

	Increase in Construction Costs	
	£millions	**%**
NHSG Instructed Changes	1.4	2%
Cost Planning Assumptions	15.2	25%
Poor Coordination Cost Plan Not Reflecting Design	14.7	25%
Market	28.5	48%
Total Increase	**59.9**	

The scope of the Project has not changed materially since the OBC was prepared. £1.4 million of construction changes to address additional technical and refined operational requirements were explicitly instructed by NHSG through the contract mechanism. Examples include: changes to external fire cladding, acoustic improvements and theatre integration requirements.

The cost planning allowances and assumptions at OBC did not sufficiently reflect the complexity of the Project. This includes cost planning rates inadequate for the Project, value engineering assumptions not realised and

risk provision inadequate for the risks identified in relation to construction. (£15.2 million)

Coordination of the design development process was inadequate in production of the Cost Plan, including reliance on benchmarking data not fully aligned to emerging designs. Items of design development not reflected in the cost plans identified in review of tender returns across packages including internal partitions, concrete frame, ceilings, external walls, Mechanical, Electrical and Plumbing (MEP) and piling. (£14.7 million)

Market conditions and inflation both across the construction sector generally and in relation to the specific type and scale of the Project meant that tender returns were higher than anticipated. In addition, there was less competitive interest from the market than anticipated. Contractual consequences of higher than anticipated market returns are also reflected in this heading. (£28.5 million)

5.3.1.2 Enabling Projects – Service Relocations (Site Clearance)

Enabling works to free up the sites of the planned builds included the relocation of the Eye Out-Patient Department (EOPD), the Breast Screening Centre (BSC) (temporary) and the Foresterhill Health Centre (FHC). These projects were subject to separate procurement and business case approval routes and works and are complete.

The works replacing the existing EOPD and BSC which formed part of Phase 1/Yellow Zone Aberdeen Royal Infirmary (ARI) backlog maintenance project.

The replacement of FHC was delivered as a revenue funded hub Design, Build, Finance and Maintain (DBFM) Project.

The assets vacated and demolished were impaired by NHSG in 2016/17 (£3.2 million). These costs are detailed in section 5.3.3.2.

The costs associated with these enabling projects are set out in Table F6 and are inclusive of indexation and risk for those works.

Table F6: Summary Enabling Projects

	Baird	ANCHOR	FBC Total	OBC Total
	£000s	£000s	£000s	£000s
Service Relocations				
Breast Screening Centre	354	0	354	354
Eye Outpatient Department	0	4,125	4,125	4,229
Foresterhill Health Centre	8,243	0	8,243	8,253
VAT	105	520	625	628
Total Initial Investment	**8,702**	**4,645**	**13,347**	**13,464**
Sources of Funding				
Hub Contract	7,838	0	7,838	7,531
NHSG Capital Funding	864	4,645	5,509	5,933
Total Sources of Funding	**8,702**	**4,645**	**13,347**	**13,464**

5.3.1.3 New and Replacement Equipment

Whilst there should be a significant level of clinical equipment transfer to the new buildings, there will also be a requirement for investment in new and replacement equipment. Equipment lists have been developed based on the Room Data Sheets (RDS) for the Project and will continue to be refined over the course of the Project, with the final cost unlikely to be known until 2023.

An indicative capital cost associated with additional Group 2, 3 and 4 equipment based on these equipment lists has been prepared and analysed, allowing for existing equipment identified for transfer. This cost is £17 million. This level of investment would not be affordable within the Board's annual capital funding allocation and additional funding from SG was confirmed at OBC. Table F7 sets out the

requirement in relation to equipment with Appendix II providing further detail.

The Board recognises that the indicative cost requires to be reviewed and managed. This will be achieved by finalising the comprehensive equipment list based on the Project's RDS and examination of equipment suitable for transfer.

Table F7: Summary Equipment Cost Implications

	Baird	ANCHOR	FBC Total	OBC Total
	£000s	£000s	£000s	£000s
Equipment Costs				
Furniture	2,182	513	2,695	2,609
IT	1,440	569	2,009	2,005
Medical Equipment	9,078	375	9,453	9,553
VAT	2,552	291	2,843	2,833
Total Initial Investment	**15,253**	**1,748**	**17,000**	**17,000**
Sources of Funding				
SG Additional Capital Funding	15,253	1,748	17,000	17,000
Total Sources of Funding	**15,253**	**1,748**	**17,000**	**17,000**

5.3.2 Non-Recurring Revenue Costs

5.3.2.1 Project Development Costs

A Project Team and associated Professional Advisors have been appointed to support the delivery of the Project over its life. The Cost Advisor (CA) and Project Manager during construction form part of the fees reflected in the Construction Cost. Table F8 sets out the Project Development Costs.

Table F8: Project Development Costs

	FBC Total	OBC Total
	£000s	£000s
Project Development Costs		
Project Team	6,354	4,992
Project Advisors	1,218	1,341
Other Project Costs	405	415
Total Project Development Costs	**7,977**	**6,748**
Sources of Funding		
NHSG Revenue Funding	7,977	6,748
Total Sources of Funding	**7,977**	**6,748**

The programme delay has elongated the duration that the NHSG Project Team are required, resulting in an increase in Project Development Costs.

5.3.2.2 Commissioning Costs

Additional non-recurring costs are anticipated in 2022/23 in respect of commissioning of the buildings and transfer of services from existing premises. An estimated £386,000 will be required to meet the cost of decanting, pre-cleaning, deployment of equipment (including IT), security during the commissioning phase and project evaluation, as set out in Table F9. These requirements and estimates will continue to be developed and refined in the years leading up to the handover.

Table F9: Project Commissioning Costs

	Total
	£000s
Commissioning Costs	
Removal (including flooring protection)	156
Security	90
Post Project Evaluation	30
Domestic and Portering	60
IT Support	30
De-commissioning (Aberdeen Maternity Hospital)	20
Total Commissioning Costs	**386**
Sources of Funding	
NHSG Revenue Funding	210
SG Additional Capital Funding	176
Total Sources of Funding	**386**

5.3.3 Recurring Revenue Costs

The Project will deliver new buildings which will attract additional running costs and also provide an opportunity to deliver services differently and implement better ways of working. Some of these service changes will deliver efficiencies, however it is anticipated that some cost pressures may arise and the Board is planning for and managing these.

Areas of potential service cost pressures that will require to be managed by the organisation in preparation for the delivery of this Project have been identified and categorised as (i) consequence of the new buildings, (ii) current service pressures and (iii) growth. Only those costs that are as a direct consequence of the new buildings are included below.

Table F10 sets out the revenue cost estimates and assume that services are in place and available for use in 2022 and 2023, with 2023/24 being the first full year of operation.

Table F10: Summary of Recurring Revenue Implications - First Full Year of Operation (2023/24)

	Baird	ANCHOR	Total		Total
	£000s	£000s	£000s		£000s
Recurring Revenue Costs					
Additional Depreciation	4,276	978	**5,254**		4,289
Additional Clinical Service Costs	839	168	**1,007**		948
Additional Non-Clinical Service Costs	340	85	**425**		425
Additional Building Related Running Costs	2,299	714	**3,013**		2,974
Total Recurring Revenue Costs	**7,754**	**1,945**	**9,699**		**8,636**
Sources of Funding					
Third Party (UoA)	157	0	157		165
NHSG Revenue Funding (Other Scheme Costs)	3,321	967	4,288		4,182
Total Identified Sources of Funding	**3,478**	**967**	**4,445**		**4,347**
Revenue Funding (Depreciation)*	4,276	978	5,254		4,289
Total Core and Non Core funding available	**7,754**	**1,945**	**9,699**		**8,636**

*NHSG have requested that SG provide additional support for the costs associated with depreciation.

5.3.3.1 Depreciation

The current hospital premises and the land on which it sits are owned by NHSG on behalf of the Scottish Ministers. As a consequence, NHSG carries depreciation in respect of these premises and there are therefore savings on depreciation to be applied.

The NHSScotland (NHSS) Capital Accounting Manual has been followed throughout in creating these calculations. The computations for assets are based on the following lives:

- new build – 45 years
- upgrade – 20 years
- equipment – 10 years

The new build elements are assumed to be depreciated over an average expected life of 45 years and equipment over an expected life of 10 years. Annual depreciation is set out in Table F11 below, and sets out a net additional depreciation of £5,254,000.

Table F11: Total Depreciation - First Full Year of Operation (2023/24)

	Baird	ANCHOR	FBC Total	OBC Total
	£000s	£000s	£000s	£000s
Depreciation				
Equipment	1,554	145	1,699	1,699
Building	3,694	897	4,591	3,626
Total Net Depreciation	**5,248**	**1,042**	**6,290**	**5,325**
Sources of Funding				
NHSG (Current Budget Provision) Depreciation	972	64	1,036	1,036
SG Revenue Funding (Depreciation)	4,276	978	5,254	4,289
Total Sources of Funding	**5,248**	**1,042**	**6,290**	**5,325**

5.3.3.2 Impairment Costs

As touched on in section 5.3.1.2, the assets which are being vacated as part of the Project have a value associated with their remaining economic life. When there is certainty that the assets will be vacated, the asset value is impaired on the Board's balance sheet attracting an impairment cost. NHSG in 2016/17 reduced the book value of FHC, BSC and EOPD by applying an impairment cost of £3.2 million and in 2017/18 reflected a further £6.87 million reduction

in relation to Aberdeen Maternity Hospital (AMH). The funding of these costs is met by the provision of additional Annual Managed Expenditure (AME) allocation from the SG which assists the Board in mitigating any real impact on its resources.

5.3.3.3 Building Related Running Costs

As is the case with most new build projects that replace existing buildings, it is anticipated that there will be a net increase in property related running costs. The reason for this is in relation to the modern space standards that new buildings are required to meet. The resulting increased floor area inevitably leads to increased costs for business rates, heating, lighting, cleaning, building maintenance etc.

The difference between the size of the current accommodation and the new accommodation has arisen mainly as a result of achieving modern space standards. The Schedules of Accommodation (SoAs) were developed in line with the Scottish Health Planning Notes (SHPN) and in dialogue with clinical colleagues, Health Intelligence and our Healthcare Planners, Buchan + Associates.

During the briefing process, the Project Team worked with healthcare planning colleagues to look at need over the coming years, including changes in demography and demand in line with our regional and North of Scotland (NoS) remit.

The team looked at maximising accommodation sharing opportunities and created, where possible, generic accommodation that can alter its function over time as need changes. The team also completed a range of scenario planning exercises with clinicians, Health Intelligence and healthcare planners to agree the best solution based on likely future demand.

There will be an agreement between the UoA and NHSG reflecting the UoA's commitment to the development and the associated costs. The UoA will be fully responsible for its own share of building related running costs in accordance with an agreed Heads of Terms.

These costs represent the net additional component of building related running costs after allowing for the offset of existing funding and third party contributions (i.e. UoA) and have been provided for in the financial plans of the Board.

During the period between OBC and FBC, further detailed costing of building running costs based on the emerging design has been undertaken and the net costs are summarised below in Table F12.

Bottom up costing of Domestic and Property Maintenance requirements based on available information have been undertaken, identifying both internal and third party resources. The next stage will be to develop and implement detailed workforce plans and procure providers of maintenance services in the lead up to the commissioning of the new buildings.

Commissioning aftercare services is a recognised means of managing the smooth operation of the new facilities by the appointment of third parties. Proposals have been discussed and agreed in principle with Contractors and its supply chain. As required, contractual arrangements will be entered into as the facilities are commissioned.

Table F12: Additional Building Related Running Cost - First Full Year of Operation (2023/24)

	Baird	ANCHOR	Total	Total
	£000s	£000s	£000s	£000s
Building Related Running Costs				
Rates	1,392	303	**1,695**	**1,700**
Water Rates	65	14	**79**	**82**
Electricity	392	83	**475**	**530**
Heating	505	107	**612**	**414**
Domestics	2,161	203	**2,364**	**2,326**
Property Maintenance	1,082	221	**1,303**	**1,170**
Aftercare	24	6	**30**	**0**
Total Annual Costs	**5,621**	**937**	**6,558**	**6,222**
Sources of Funding				
NHSG (Current Budget Provision)	3,164	223	**3,387**	**3,248**
NHSG (Other Scheme Costs)	2,299	714	**3,013**	**2,809**
Third Party (UoA)	157	0	**157**	**165**
Total Sources of Funding	**5,621**	**931**	**6,558**	**6,222**

5.3.3.4 Clinical Service Costs

The Project will facilitate service redesign and a significant part of the Project is to focus on the readiness of NHSG to optimise the benefits arising from the new facilities. The areas where incremental revenue implications have been identified are detailed in Table F13.

Table F13: Additional Clinical Service Costs - First Full Year of Operation (2023/24)

	Baird	ANCHOR	Total	Total
	£000s	£000s	£000s	£000s
Clinical Service Costs				
100% Single Rooms (Nursing and Midwifery)	430	0	**430**	**407**
Additional Emergency Theatre Sessions	120	0	**120**	**114**
Provision of anaesthetics - ACRM	28	0	**28**	**27**
Transitional Care	261	0	**261**	**236**
Aseptic Pharmacy Resilience	0	138	**138**	**135**
Pharmacy Dual Site	0	30	**30**	**29**
Total Annual Costs	**839**	**168**	**1,007**	**948**
Sources of Funding				
NHSG (Other Scheme Costs)	839	168	**1,007**	**948**
Total Sources of Funding	**839**	**168**	**1,007**	**948**

5.3.3.5 Non-Clinical Service Costs

The Project will deliver facilities that will be designed and operated differently. The areas where incremental revenue implications have been identified are set out in Table F14.

Table F14: Non-Clinical Service Costs - First Full Year of Operation (2023/24)

	Baird	ANCHOR	Total	Total
	£000s	£000s	£000s	£000s
Equipment - Maintenance and Equipment	340	85	425	425
Total Annual Costs	**340**	**85**	**425**	**425**
Sources of Funding				
NHSG (Other Scheme Costs)	340	85	425	425
Total Sources of Funding	**340**	**85**	**425**	**425**

These costs, together with the annual depreciation charge and running costs, are reflected in the Board's financial plans.

5.3.4 Value Added Tax (VAT)

Anticipated VAT has been included within the costs presented. The following are the key assumptions:

- Construction Costs: a rate of 18.1% has been applied. This is net of the recoverable sums (9.29%) for this scheme agreed with Her Majesty's Revenue and Customs (HMRC)
- Enabling Projects: EOPD and BSC - a rate of 12% has been applied. This is net of the recoverable sums (39.89%) for this scheme agreed with HMRC
- Enabling Projects: FHC - VAT on the build cost is excluded as this is assumed to be recoverable by the Special Purpose Vehicle (Project Co) for this project
- Equipment Costs: a rate of 20% has been applied
- Project Development Costs: where applicable, VAT is assumed to be recoverable
- Recurring Revenue Costs: where applicable, VAT is assumed non recoverable

5.3.5 Financial Risk

A Project Risk Register is maintained and regularly updated by the Project. Those risks that are currently open and are financial in nature have been quantified using recognised risk management techniques.

Table F15 sets out the risk provisions for the Project. The target price for the contractors included a risk allowance of £4.5 million (2.7%). Additionally, the Board contractually retains a number of construction and project risks; these have a value of £3.5 million (2.1%). A further client risk allowance is provided within the equipment provision.

Construction related risk at OBC was £6.7 million (5.7%). This allowance was not split between contractor and client. Contractual allocation to the party best able to manage it took place subsequent to the OBC. The risk allowance at OBC also includes provision to cover realisation of risks during the FBC stage: this includes programme and design changes. Cost planning during the FBC stage of the Project recognised a 2% contractor and 2% client allowance as appropriate for the construction stage of the Project. The increase in risk allowances is reflective of the market's assessment of the risk profile of the Project.

Table F15: Risk Allowances

	Baird	ANCHOR	FBC Total	OBC Total
	£000s	£000s	£000s	£000s
Main Contractor	2,012	503	2,515	
Sub-Contractor Package	1,517	470	1,987	
Client	2,780	695	3,475	
Total Construction Related Risk	**6,309**	**1,668**	**7,977**	**6,748**
Equipment Risk	1,281	146	1,427	1,427
Total Risk	**7,590**	**1,814**	**9,404**	**8,175**
Sources of Funding				
SG Additional Capital Funding	7,590	1,814	9,404	8,175
Total Sources of Funding	**7,590**	**1,814**	**9,404**	**8,175**

It is anticipated that the majority of these risks will exist during the duration of the construction and commissioning stage of the Project and will continue to be managed and mitigated to reduced levels through the life of the construction.

If a contractor's risk is realised, the cost will be borne by the contractor. If a client's risk is realised, the client risk provisions will be utilised.

The financial risks carrying the greatest impact are those that relate to the further uncertainty of macro economic market conditions, residual unknown

site conditions, further design change and programme delay, refer to the costed Risk Plan Appendix S. These could impact on the Project being able to deliver within the affordability caps. Appendix S sets out these risks in detail. The risks will be managed and monitored during the construction period to identify and resolve issues as early as possible if they transpire.

5.3.6 Costs Not Included

The developments set out in this Business Case are wide ranging and, in preparing the Financial Case, only those which attract a net cost burden and arise as a direct consequence of the new buildings have been reflected.

Those clinical and non-clinical costs that relate to current service pressures or predicted growth in demand have not been reflected. However, they are recognised by the Board and will be considered and managed through existing budgeting and financial management arrangements augmented by a service redesign governance structure as detailed elsewhere in this Business Case.

5.3.7 External Financial Contributions to the Project

A public fundraising campaign in underway in order to provide enhancements to the Project that would not normally be paid for from NHS budgets.

During its life, the Project has worked closely with Friends of ANCHOR, the ARCHIE Foundation, NHSG Endowments and The University of Aberdeen Development Trust to develop co-ordinated plans for a major fundraising campaign to support ‘Making the Difference’ in relation to the facilities. A multiagency fundraising group has been established to oversee the fundraising effort and to determine how the funding will be spent.

NHSG also have ongoing relationships with the Stillbirth and Neonatal Death Society (Sands) and the Teenage Cancer Trust (TCT) in relation to this Project.

Funding is likely to take the form of non-standard decoration, art works, soft furnishing, enhanced equipping, additional landscaping etc.

No other external partner financial contributions are anticipated.

5.4 Statement of Overall Affordability

5.4.1 Provision in Financial Plans

NHSG is committed to the Project, and subject to the provision of additional SG funding in relation to the construction costs, depreciation and equipment, all revenue and capital implications of the Project will be reflected in the Financial Plans of the Board.

The UoA have indicated they will contribute to the building related running costs, as set out in Appendix U.

Construction and Equipping Costs

The construction related and equipping costs of the Project are expected to be financed using additional SG capital funding.

Equipping costs continue to be forecast at £17 million.

In the OBC a construction cost of the emerging design to £146.7 million was reported and funding from the SG agreed. The construction cost is now forecast to be £206.6 million and additional funding of £59.9 million from SG requires to be agreed. This will bring the total additional SG capital funding requirement to £223.6 million.

Other Project Costs

Non-recurring capital and revenue costs and funding arrangements during the life of the Project are set out in Table 16.

Table F16: Other Project Development Costs

	Baird	ANCHOR	Total
	£000s	**£000s**	**£000s**
Project Development Costs	6,442	1,535	7,977
Commissioning Costs	168	42	210
Total Initial Investment	**6,610**	**1,577**	**8,187**
Sources of Funding			
NHSG Revenue Funding	6,610	1,577	8,187
Total Sources of Funding	**6,610**	**1,577**	**8,187**

Enabling Projects

The FHC required to be relocated under the preferred option. The capital construction cost of this was £7.8 million. This was procured as part of a hub bundle with Inverurie Health and Care Hub. The SG approved the funding for this relocation from The Baird Family Hospital and The ANCHOR Centre original funding allocation. Equipping was funded from the NHSG Capital Funding allocation.

The preferred options also required the sites of the EOPD and the BSC to be cleared. The cost of relocating these services (£5.1 million) was funded from the NHSG Capital Funding allocation.

Recurring Revenue Costs

Additional recurring revenue costs will occur following the handover of the new facilities and are anticipated to be £9.7 million in the first full year of operation (2023/24). £5.2 million relates to additional depreciation and NHSG have requested that SG provide additional support for these costs. The balance (£4.5 million) is recognised by the Board and will be considered and managed through existing budgeting and financial management arrangements.

Cashflow Phasing

The phase of costs associated with the delivery of the Project have been profiled to align with the current Programme for the Project. It reflects the

acceleration of £7.9 million for the demolition of vacated buildings and enabling works into 2018/19. This delivered the benefits of: (i) de-risking the Project programme and (ii) removing the risk and costs associated with vacant properties situated on the Foresterhill Health Campus.

Tables F17 and F18 consolidate the capital and revenue cash flows and funding requirements to support the Project during development and the first full year of operation.

Table F17: Costs – Cashflow

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	Total
	£000s	£000s	£000s	£000s	£000s	£000s	£000s	£000s	£000s	£000s
Enabling Projects	40	7,728	4,690	846	43					13,347
Construction Related Costs		1,897	1,454	8,595	4,759	42,000	128,065	19,053	800	206,623
Equipping		0	0	0	0	0	7,000	10,000		17,000
Total Capital Costs	**40**	**9,625**	**6,144**	**9,441**	**4,802**	**42,000**	**135,065**	**29,053**	**800**	**236,970**
Project Development Costs	1,550	782	848	957	964	840	846	744	285	8,026
Commissioning Costs - Revenue								210		210
Impairments		3,200	6,870							10,070
Additional Depreciation								1,008	5,254	
Clinical Service Costs								182	1,007	
Non-Clinical Service Costs								85	425	
Building Related Running Costs								668	3,013	
Total Revenue Costs	**1,550**	**3,982**	**7,718**	**957**	**964**	**840**	**846**	**2,897**	**9,984**	
Total Costs	**1,590**	**13,607**	**13,862**	**10,398**	**5,766**	**42,840**	**135,911**	**31,950**	**10,784**	

Table F18: Funding – Cashflow

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2022/23	Total
	£000s	**£000s**	**£000s**	**£000s**	**£000s**	**£000s**	**£000s**	**£000s**	**£000s**	**£000s**
SG Additional Capital Funding	0	1,897	1,454	8,595	4,759	42,000	135,065	29,053	800	223,623
Hub Contract	40	7,631	303	22						7,838
NHSG Capital Funding	0	97	4,387	824	43					5,351
NHSG Revenue Funding (Project)	1,550	782	848	957	964	840	846	954	285	7,741
NHSG Impairment		3,200	6,870							
SG Depreciation								1,008	5,254	
NHSG Revenue Funding (Other Scheme Costs)								921	4,288	
Third Party (UoA)								13	157	
Total Sources of Funding	**1,590**	**13,607**	**13,862**	**10,398**	**5,766**	**42,840**	**135,911**	**31,950**	**10,784**	

5.4.2 Sensitivity of Affordability

In assessing the affordability of the Project, consideration has been given to the impact of a 10% increase in costs in the following areas, as outlined in Table F19.

Table F19: Sensitivity Analysis

Area	Impact £millions	Management
Capital Expenditure – Build	20.70	Stage 2 design developed and anticipated deliverable within cost cap of the Project set out. These are subject to regular review and it is expected that the Principal Supply Chain Partner and associated supply chain will apply innovation to ensure delivery within that cap.
Capital Expenditure – Equipment	1.70	Structured processes of identifying and programming need and managing delivery is in place.
Recurring Revenue Costs	0.78	Regular review including a detailed programme of service redesign forms part of budget planning process.

5.4.3 Value for Money

The Target Price (Tender Bid) offer submitted by GRAHAM Construction following market testing and substantial scrutiny is in excess of the Cost Plan allowances. Approximately 50% of the variance relates to the Project and design complexities not being fully reflected within the OBC Cost Plan, with the balance relating to the market changes and appetite to engage with the Project.

The construction costs included within the business case have been scrutinised by the external JCA as part of their due diligence towards their validation of the cost representing value for money at this stage.

Given the unanticipated construction cost increase (41%), NHSG jointly commissioned (with Health Facilities Scotland (HFS)) the Royal Institution of Chartered Surveyors (RICS) to engage a Project Review Professional (PRP) to undertake an external review to objectively identify the reasons for the variance and to analyse and validate the project cost. AECOM were subsequently commissioned to undertake an independent review of the MEP packages.

The JCA and External Reviews have not definitively concluded that the Target Price represents Value for Money and each have indicated a level of cost reduction they might expect in the current market.

During the review period, four of the tender packages have been retendered with no material betterment in price.

The alternative to proceeding with the current Target Price offer is a prolonged period of retendering which may not deliver cost betterment due to tender inflation and the appetite of the market to further engage with the Project.

The proposed contractual arrangements, NEC Option C with a pain/gain share clause, means that NHSG will only pay actual costs incurred in delivering the facilities and the PSCP is incentivised to make efficiencies throughout the duration of the construction phase.

As a consequence of these reviews, NHSG has concluded that the current forecast represents the best price that can currently be achieved for delivering these new facilities. Final commercial arrangements with the PSCP will require to be agreed and the construction related cost is presented as a not to be exceeded cap.

5.4.3.1 Joint Cost Advisor Review

Currie & Brown, the JCA have:

- provided RIBA Design Stage 3 and Stage 4 Cost Plan Updates
- participated in the appointment of preferred Principal Supply Chain Members (PSCM) (stream 1)
- prepared the building works packages pricing documents for issue by GRAHAM Construction to their supply chain for pricing
- reviewed returned packages inclusive of MEP, in detail, with queries raised during the process in relation to clarifications, package adjustments, abnormally high rates and arithmetical errors. Alongside these exercises the package returns were reconciled with the updated design to ensure consistency
- scrutinised and challenged the resultant draft Target Prices submitted by GRAHAM Construction
- reviewed tender returns for re-tendered packages
- produced reports for NHSG reviewing the Target Price received from GRAHAM Construction, the purpose of which is to inform NHSG of the outcome of the tendering exercise, the variance from budget, and the total Project costs

The final report issued was reflective of a Target Price submission received from GRAHAM Construction on 6 December 2019. The Executive Summary of the Target Price report is included as Appendix CC. The report confirms that all work packages have been agreed with the exception of MEP. Currie & Brown do not agree the proposed MEP package cost in relation to preliminaries, direct fee and design risk (£4.5 million ex VAT); however they do acknowledge that the cost of delay and the risk of poor market returns perhaps outweigh the benefits of retendering the MEP package.

The Target Price report also highlights that final commercial arrangements need to be concluded in relation to performance bonds, risk and inflation prior to entering into a formal contract.

5.4.3.2 External Review

The PRP concluded, on the areas he reviewed, that increases in the majority of package costs may not (save in respect of MEP, Internal Partitions and Concrete Frame) be considered beyond what the Client should expect as value for money. At the time of reporting, there were four elements of cost areas where the PRP was not confident that the package cost represented value for money: MEP, Preliminaries, Internal Partitions and Ceilings and it was recommended further work be undertaken. The PRP was not persuaded that the Tender Bid, overall, represents best value, which is what the Client sought through the Works Information in the Contract. That said, however, it appears clear that there is not the greatest appetite in the local construction market for involvement in the Project.

Subsequent to the PRP report, retendered returns were received for Internal Partitions, Concrete Frame and Ceilings and the PSCP amended their offer in relation to preliminaries. In addition, AECOM undertook a review of MEP benchmarks and costs, from the data provided by Currie & Brown, N.G. Bailey and GRAHAM Construction, in order to provide a high level view of Procurement, Tender Prices and benchmarking costs for hospital projects.

The AECOM review included an examination of MEP cost/m2 and concluded the OBC MEP Cost Plan was below an achievable benchmark, whilst the 2019 Tender Bid is within an acceptable range. They also noted that the preliminaries included appeared to be high and required to be investigated further.

Fuller details of the findings of these reviews are set out in the Commercial Case 4.2.4.

5.4.4 Agreed Accountancy Treatment

The new buildings and the equipment procured will be accounted for by NHSG as a non-current (fixed) asset.

The annual charge to the Statement of Comprehensive Net Expenditure (SOCNE) will consist of all building related running costs, clinical and non-clinical costs and depreciation. Depreciation is calculated on a straight line basis.

The assets which are being vacated as part of the Project have been/will be impaired on the Board's balance sheet attracting an impairment cost.

5.4.5 Closing the Affordability Gap

5.4.5.1 Construction Costs

In the OBC a construction cost of the emerging design to £146.7 million was reported and funding from the SG agreed. It is now identified within NHSG's Financial Plan. The construction cost is now forecast to be £206.6 million and additional funding of £59.9 million from SG requires to be agreed.

5.4.5.2 Equipment Costs

In common with other major infrastructure projects, additional funding from the SG of £17 million was agreed at OBC and is now identified within NHSG's Financial Plan.

5.4.5.3 Recurring Revenue Costs

Recognising that the potential revenue consequences of major new facilities are substantial, a comprehensive service redesign structure has been put in place by NHSG. Part of the remit of this structure is

to manage and mitigate cost pressures that may arise. To assist, cost pressures have been broken down into three classifications:

- Project – consequence of the new building
- current – current service pressure
- growth – anticipated increase in service demand/delivery

Only those identified as Project related (£9.7 million) are reflected in the FBC.

The additional recurring revenue costs of £9.7 million will be covered partly by anticipated revenue support funding (depreciation) from the SGHSCD (£5.3 million), third party contributions (£157,000) with additional cost pressures to be managed and identified within NHSG's Financial Plan to cover the balance (£4.3 million).

5.5 Written Agreement of Stakeholder Support

Discussions are underway with the UoA regarding the development of an agreement, including a Heads of Terms, to reflect the space they will occupy in The Baird Family Hospital.

Draft schedules outlining the space they will occupy have been developed and indicative likely running costs provided.

A letter of In Principle Agreement has been shared with UoA officers. This forms Appendix U.

6. The Management Case

6. The Management Case

6.1 Overview

The purpose of the Management Case is to demonstrate that NHS Grampian (NHSG) is ready and capable of successfully delivering The Baird and ANCHOR Project.

6.2 Project Management Arrangements

6.2.1 Reporting Structure and Governance Arrangements

The Project was initially part of a wider £409 million Health Sector revenue funded infrastructure projects programme to be delivered as Non Profit Distributing (NPD) or hub projects announced by the Cabinet Secretary for Finance and Sustainable Growth as part of the Draft 2015/16 Budget laid before Parliament in November 2014.

In March 2016, the Project was changed from a revenue funded NPD Project to a traditional capital funded Project by Scottish Government (SG) due to the potential delay and uncertainty resulting from the Eurostat clarifications relating to the European Systems of Accounts 2010 (ESA2010) accounting treatment of public sector infrastructure projects.

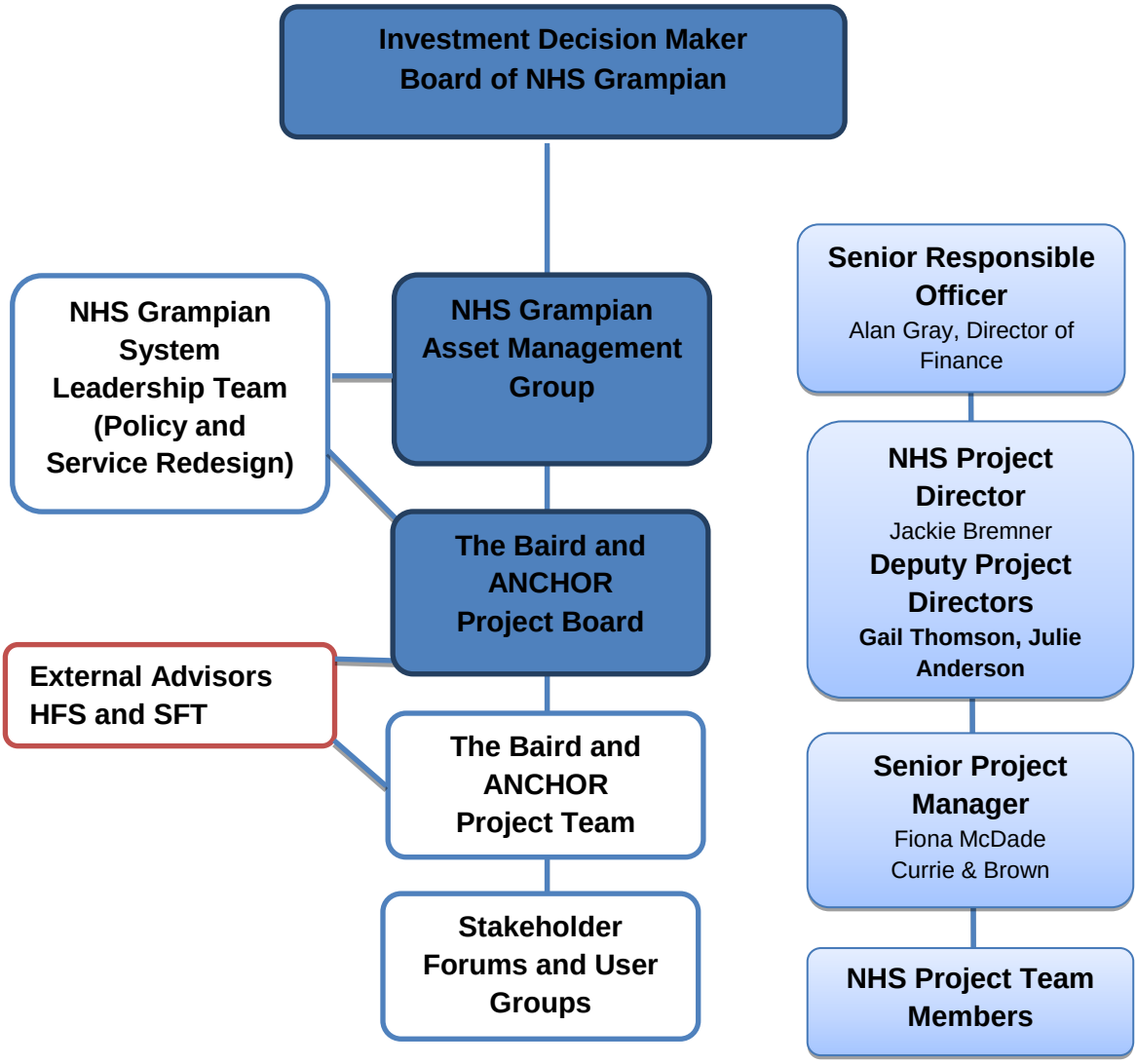
The Initial Agreement (IA) was approved by the Scottish Government Health and Social Care Directorate (SGHSCD) dated 31 September 2015. The Outline Business Case (OBC) was approved by SGHSCD on 22 March 2018 as a capital funded project. The letter invited the Board of NHSG to progress the Project to Full Business Case (FBC), see Appendix A.

The governance of the Project is consistent with the Scottish Capital Investment Manual (SCIM). The Project programme outlines plans for submission and approval of the FBC prior to construction commencement. The Project governance arrangements described in this section seek to ensure that the SGHSCD, Capital Investment Group (CIG), Health Facilities Scotland (HFS), Scottish Futures Trust (SFT) as well as the Board of NHSG,

are appropriately involved in the Project as it progresses through appropriate key gateways to completion, operation and evaluation.

In compliance with SCIM, this Project will deploy a programme and project management approach within the management structure as shown in Figure M1.

Figure M1: Structure and Governance Arrangements



The investment decision maker is the Board of NHSG. The reporting and governance arrangements outlined in Figure M1 indicate the groups who will be involved in providing assurance to the Board as part of the governance process for the Project. They include:

The NHSG Asset Management Group (AMG)

The remit of the AMG is:

1. To ensure system-wide co-ordination and decision making of all proposed asset investment/disinvestment decisions for NHSG, ensuring consistency with policy and the strategic direction of NHSG.

2. The AMG works in conjunction with the NHS Board System Leadership Team to ensure consistency of approach, consistent with policy and affordability.

The Project Board

The Project Board is accountable through the AMG to the Board of NHSG.

Purpose

The main purpose of the Project Board is to support and supervise the successful delivery of this major capital Project to be delivered during 2022/23.

Remit

1. To agree the scope of the Project, including the clinical service strategy and the benefits to be realised by the development, with appropriate stakeholder involvement.

2. To ensure that the resources required to deliver the Project are available and committed.

3. To drive the Project through IA, OBC and FBC approval within NHSG and, thereafter, the CIG at SGHSCD.

4. To supervise the Frameworks Scotland 2 (FS2) New Engineering Contract (NEC)3 procurement process and appointment of the Principal

Supply Chain Partner (PSCP), Joint Cost Advisor (JCA) and Construction Design Management (CDM) Advisor.

5. To assure the Project remains within the framework of the overall Project strategy, scope, budget and programme.

6. To approve changes to the scope of the Project including e.g. time, cost and quality, within agreed authority.

7. To review the Risk Management Plan, ensuring all risks are identified, that appropriate mitigation strategies are actively applied, managed and escalated as necessary, providing assurance to the Board of NHSG that all risks are being effectively managed.

8. To ensure that staff, partners and service users are fully engaged in designing operating policies that inform the detailed design and overall procedures that will apply, which in turn will inform the Works Information (WI) i.e. ensuring that the facilities are service-led rather than building-led.

9. To ensure that the Communication Plan enables appropriate involvement of, and communication with, all stakeholders, internal and external, throughout the Project from conception to operation and evaluation.

10. To commission and participate in appropriate external reviews including e.g. Office of Government Commerce (OGC) Gateway Reviews, Architecture and Design Scotland (A+DS) and NHSScotland Design Assessment Process (NDAP).

11. To ensure the Project remains within the affordability parameters set out by SG and NHSG.

12. To work with the PSCP to ensure that the completed facilities are delivered on programme, within budget and are compliant with the WI and Board Construction Requirements (BCR).

13. To supervise the functional commissioning and bring into operation of the facilities post-handover and thereafter completion of the post-project evaluation.

The NHS Project Team

The remit of the NHS Project Team is:

1. To co-ordinate the production of the Employers Works Information (EWI) documents for the Project.

2. To co-ordinate the production of all technical and financial schedules from an NHS perspective.

3. To lead the PSCP and advisor procurement process.

4. To participate in e.g. Gateway Reviews and NDAP, helping to ensure project delivery readiness at each key project gateway.

5. To lead and co-ordinate the production of the IA, the OBC and the FBC.

6. To work with the PSCP to ensure that the Project is delivered to cost, quality and programme.

7. To agree appropriate derogations.

8. To supervise the development of third party Occupation Agreement/s, as appropriate, with building users.

9. To ensure communication with all internal and external stakeholders and appropriate user involvement in relation to e.g. workforce planning, functional commissioning and relocation.

10. To ensure the development of all appropriate policies and procedures (clinical and Facilities Management (FM)) to ensure the smooth operation of the building once operational.

11. To commission specific redesign work associated with the redesign of services relocating to the new facilities.

12. To plan for the post-project evaluation.

13. To lead the specification, procurement and commissioning of all Group 2, 3 and 4 equipment.

14. To lead the specification of all Group 1 equipment consistent with the WI.

15. To ensure compliance with EWI requirements.

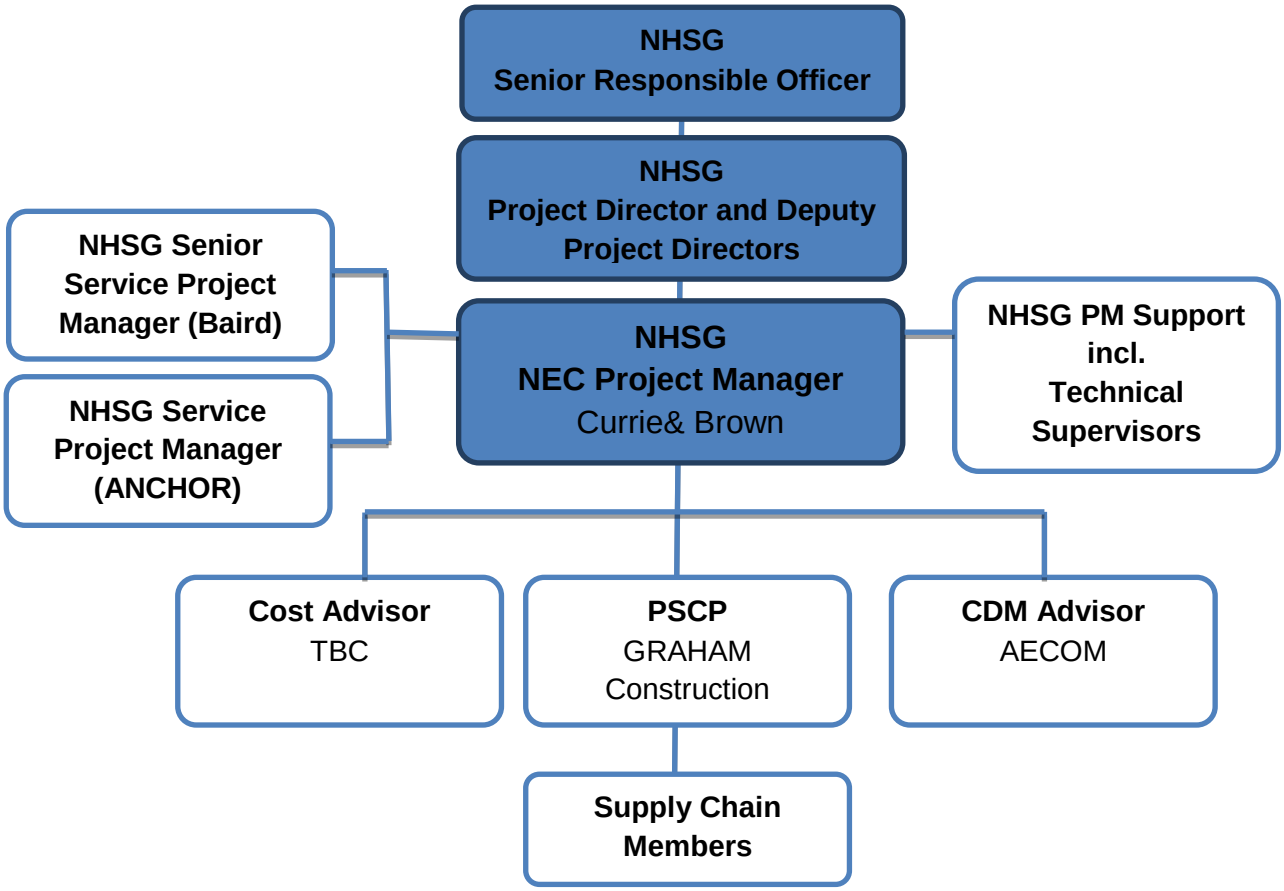
16. To ensure completion of the Soft Landings Programme in advance of handover.

17. To lead development and implementation of the Functional Commissioning Programme, including service relocation, staff orientation and training etc.

The Project Team Structure is outlined in Figure M2.

6.2.2 Project Structure and Roles and Responsibilities

Figure M2: Project Team Structure



Roles and Responsibilities

Putting the right team together for this complex major capital Project is key to the successful delivery of the Project. One of the recommendations resulting from the Review of Scottish Public Sector Procurement in Construction (May 2014) was the production of guidance on Baseline Skillsets for construction projects of different sizes and complexity, refer to Tables M1-4. This guidance has been used to assess the complexity level of the Project and to assess the experience and suitability of the lead officers, specifically the Senior Responsible Officer (SRO), Project Director (PD) and Senior Project Manager (SPM).

An active Project Execution Plan (PEP) is in place and has been approved by the Project Board. The PEP is updated regularly and formally reviewed on a quarterly basis, with each formal update shared with the Project Board.

Table M1: Project Complexity Level Matrix

Project Complexity Criteria	Level 1	Level 2	Level 3	Level 4
Value	Up to OJEU threshold	Less than £10 million	Less than £15 million	£150m
Number of Organisations	1	1-2	1-2	Any
Number of User Consultees	1-5	1-5	1-12	13+
Number of Tier 1 Contractors	1	1-2	1-2	Any
Number of Design Teams	1	1-2	1-2	Any
Degree of Technical Complexity and/or Operational Risk	Low	Low or Medium	Low or Medium	Low Medium or High

Table M1 indicates that, using the Scottish Public Sector Procurement in Construction (May 2014) guidance, the Project is assessed to be a Level 4 Project in terms of complexity. Using the 'Baseline Skillset Matrix' from the guidance referenced above, the following three Tables (M2, M3 and M4) demonstrate the experience level of the three lead officers, in line with the guidance for a Level 4 project.

The SRO for the Project is, with effect from October 2019, Alan Gray, Director of Finance for NHSG. He is the person within NHSG with the authority to provide leadership and clear accountability for the Project's success. He has ultimate responsibility at Board Executive level for delivery of the Project's benefits and the appropriate allocation of resource to ensure its success. As SRO, he has led a number of major health infrastructure projects as SRO in NHSG over the last 10 years.

Table M2: Senior Responsible Officer (SRO) – Skills Matrix

Senior Responsible Officer: Alan Gray		
Main Responsibilities:	The business sponsor who has ultimate responsibility at Board/Executive level for delivery of the Project's benefits and the appropriate allocation of resources to ensure its success.	
Experience and suitability for the role:	**Skillset Expected**	**Skillset of Individual**
Development Management	Experienced	Experienced
Governance	Expert	Expert
Commercial Acumen	Expert	Expert
Project Management	Experienced	Experienced
Stakeholder Management	Experienced	Experienced
Procurement	Previous	Experienced

Management	Involvement	
Construction Management	Experienced	Experienced
Resource Commitment	25-75%	20%

The PD for the Project is Jackie Bremner. She is responsible for the ongoing day to day management and decision making on behalf of the SRO to ensure that the desired Project objectives are delivered. She is also responsible for the development, maintenance, progress and reporting of the Business Case to the SRO. The PD has undertaken a similar role on a number of Framework, capital and hub revenue funded health projects in NHSG and NHS Highland over the last 21 years.

The PD is supported in the delivery of her duties for this major capital Project by a Project Team, refer to Appendix QQ. In addition, two senior colleagues, the Finance Manager and Senior Service Project Manager have been given additional responsibilities in the role of Deputy Project Directors. This change in Project structure is designed to strengthen senior leadership for this complex Project.

Following the recent learning from other major infrastructure projects, NHSG is currently revisiting the Project Team structure in dialogue with SGHSCD to enhance the effective delivery of these important facilities and achievement of the Project objectives.

Table M3: Project Director (PD) – Skills Matrix

Project Director: Jackie Bremner	
Main Responsibilities:	Responsible for the ongoing day-to-day management and decision making on behalf of the SRO to ensure that the desired Project objectives are delivered. They are also responsible for the development, progress and

	reporting of the Business Case to the SRO.	
Experience and suitability for the role:	**Skillset Expected**	**Skillset of Individual**
Development Management	Experienced	Expert
Governance	Expert	Expert
Commercial Acumen	Expert	Expert
Project Management	Experienced	Expert
Stakeholder Management	Experienced	Expert
Procurement Management	Previous Involvement	Experienced
Construction Management	Experienced	Expert
Resource Commitment	25-75%	40%

The SPM for the Project is Fiona McDade, Currie & Brown. She is responsible for leading, managing and co-ordinating the integrated Project Team on a day to day basis. The SPM has undertaken a similar role on a number of Framework, capital and hub revenue funded health projects in Scotland over the last 13 years.

Table M4: Senior Project Manager (SPM) – Skills Matrix

Senior Project Manager: Currie & Brown (Lead - Fiona McDade)		
Main Responsibilities:	Responsible for leading, managing and co-ordinating the integrated Project Team on a day to day basis.	
Experience and suitability for the role:	**Skillset Expected**	**Skillset of Individual**
Development Management	Expert	Expert
Governance	Previous	Experienced

	Involvement	
Commercial Acumen	Expert	Expert
Project Management	Expert	Expert
Stakeholder Management	Expert	Expert
Procurement Management	Experienced	Experienced
Contract Management	Experienced	Expert
Resource Commitment	100%	90%

This Project is a major capital project involving two separate buildings and a series of demolitions on a live acute hospital campus. The Project is complex and involves a large number of services, stakeholders and a significant service redesign agenda to be delivered to coincide with delivery of the new facilities. A complex project requires a Project Board to oversee the project's successful delivery. The role and remit of The Baird and ANCHOR Project Board is outlined in section 6.2.1. The Project Board meets monthly and is chaired by the SRO. The PD produces a monthly Director's Report for review by the Project Board. Membership of the Project Board is outlined below in Table M5. The table also outlines the role and main responsibilities of each member of the Project Board in relation to the Project and their previous experience of similar project roles.

Table M5: Project Board Membership

Project Board Membership	
Name **Designation**	**Experience of similar Project Roles**
Organisation's project leadership representatives	**Representing the organisation's project delivery interests**
Alan Gray Director of Finance,	Alan is a member of the Institute of Chartered Accountants of Scotland and member of The

Senior Responsible Officer	Institute of Chartered Accountants for Scotland (ICAS) Public Sector Panel. Additionally, he is Chair of NHSG, AMG. Alan was SRO on the first Design, Build, Finance and Maintain (DBFM) project under hub model in Scotland (The Aberdeen Health and Community Care Village) and was SRO on the first joint project with two organisations under the hub model in Scotland (Forres, Woodside and Tain). Alan has been SRO for a range of hub DBFM Health Centre Projects over the last five – ten years. Alan is the former Chair of the North of Scotland Territory Partnering Board, former member of the hub National Programme Board and former shareholder representative on the Board of Hub North Scotland Limited.
Jackie Bremner Project Director	Jackie has worked in the NHS for 40 years, initially as a registered nurse. During the last 21 years she has worked on infrastructure projects in the role of Project Development Manager and PD/Project Manager for a number of Frameworks Scotland (FS) 1 projects. More recently, Jackie was PD on the first hub DBFM project in Scotland (The Aberdeen Health and Community Care Village) and then the first bundle hub DBFM project involving three developments in two Board areas (Forres, Woodside and Tain Health Centres project).

	Prior to that, Jackie was Project Development Manager for the new Royal Aberdeen Children's Hospital (RACH) project from concept to operation. Jackie is an accredited (NEC)3 Project Manager. Jackie has been PD for The Baird and ANCHOR Project since November 2014.
Fiona McDade Senior Project Manager (NEC3), Currie & Brown	Fiona is a chartered Project Manager and achieved NEC3 Project Manager accreditation in 2016. Fiona has almost 30 years in the construction industry with the last 13 years being predominately within the healthcare sector. Through this period, Fiona has gained expertise in the delivery of projects within a live acute site while maintaining business continuity. Fiona's experience includes the successful delivery of a wide range of new-build and refurbishment projects under FS1 and 2. This includes multiple projects for NHS Lanarkshire at Wishaw, Hairmyres and Monklands Hospitals. The largest and most complex of these is the refurbishment of seven operating theatres at Monklands and the construction of a new ten bed Intensive Care Unit. Fiona has previously worked for NHSG as Technical Advisor on the Hub DBFM scheme for Foresterhill and Inverurie Health Centres. Fiona has provided project management

	support to the PD for The Baird and ANCHOR Project since December 2016 and was appointed as the SPM in May 2017. Fiona is a Divisional Director (Project Management) within Currie & Brown.
Organisation's business and finance representatives	**Representing the organisation's business and finance interests**
Garry Kidd Deputy Director of Finance	Garry is a member of the Chartered Institute of Management Accountants (CIMA) and has held a range of financial roles in an NHS career spanning some 36 years. Garry, in his current role, has a wide range of responsibility including delivery of all regulatory financial accounting services, management of NHSG's Endowment Fund charity and the financial management of NHSG's capital and infrastructure programme. In previous roles, Garry has directly project managed the delivery of specific infrastructure developments such as Chalmers Community Hospital and the Maud Resource Centre. He has developed extensive experience, over the last 20 years, as a team member in the development and presentation of a business case and then supporting the financial and commercial aspects to deliver a range of capital and revenue funded infrastructure projects across Grampian.
Organisation's senior service/operational	**Representing the organisation's service/operational management interests**

management representatives	
Fiona Francey Chief Officer, Acute Sector	Fiona has worked within the NHS for the past 33 years, originally as a registered nurse (adults, paediatrics, community district nursing and Senior Charge Nurse at Woodend Hospital). She has worked for the last 23 years in management positions spanning Dr Gray's Hospital, Moray Community Services, Local Health Care Co-operative in Kincardine, Local Community Health Partnership, South Aberdeenshire, Primary Care Services and, for the last seven years, various General Management positions within the Acute Sector. Fiona's current role includes the joint management of all acute sector services alongside the Medical Director, Acute and the Director of Nursing and Midwifery, Acute.
Sue Swift Divisional General Manager – Women and Children's	Sue has been involved in setting up a paediatric intensive care unit in St George's in Tooting and redesigning existing paediatric services. Additionally, Sue was involved in the development of additional wards in Treliske Hospital, Truro. She has also been involved in the decommissioning of two hospitals in London.
Paul Allen Director of eHealth and Facilities	Paul has worked in NHSG for 35 years in ICT/eHealth, Facilities and Estates. Across these specialist areas he has contributed to a wide range of new construction developments on the Foresterhill Health Campus.

	Paul worked very closely with the RACH and the Matthew Hay Building project teams prior to The Baird and ANCHOR Project. These projects were very successful, not just in design construction but also service redesign.
Organisation's senior workforce management representatives	**Representing the organisation's workforce management interests**
Claire Strachan Human Resources Manager	Claire is a member of the Chartered Institute of Personnel and Development (CIPD) and has worked in the Human Resources (HR) Department at NHSG for over four years. In her HR role she has been involved in numerous complex and challenging redesigns and establishing close working relationships with staff and trade unions.
Rachael Little Employee Director	Rachael represents the organisation's workforce management interests. As Employee Director, she contributes to the Project Board in terms of staff involvement in line with the Staff Governance Standards. Rachael acts as a communication conduit between the staff to be involved whilst remaining in an oversight position between the Project and the staff side organisations to aid delivery of the communication strategy. Rachael's previous involvement in the development of e.g. the Aberdeen Community Health and Care Village has provided a framework for her involvement in The Baird and ANCHOR Project.
Organisation's senior clinical management	**Representing the organisation's clinical interests**

representatives	
Nick Fluck Medical Director	As the Board Medical Director, Nick has a specific role in accountability for NHSG Clinical and Performance Governance. Nick has been employed by NHSG for over 18 years and has held a number of leadership and management roles as well as his clinical work in Nephrology. In these capacities he has been involved with many service developments and clinical redesign projects.
Jenny McNicol Acute Director of Nursing and Midwifery	Jenny has over 35 years working in the NHS, predominantly within Midwifery. She was the Chief Midwife in NHSG prior to taking up her current post. Jenny has had experience in service redesign, particularly with maternity services.
Tara Fairley Divisional Clinical Director – Women and Children	Tara is a Consultant Obstetrician and Divisional Clinical Director for Women's and Children's services. Despite having no prior experience of a building project of this size, she does have extensive experience of service planning and re-design, including nationally, where she sits on the Implementation Programme Board for 'The Best Start'. This Board has responsibility for delivering Scotland wide whole system service change for maternity and neonatal services. In addition, she has experience of leading smaller development projects such as the refurbishment of the theatre recovery area and construction of a modular theatre, for the existing maternity hospital.

Hugh Bishop Divisional Clinical Director – Clinical Support Services	Hugh has joined the Project Board following his recent appointment to the role of Divisional Clinical Director with responsibility for a number of clinical services within the scope of The Baird and ANCHOR Project, including e.g. Haematology, Oncology, Pharmacy, Laboratories and Radiology.
The University of Aberdeen (UoA) Senior Representative	**Representing the UoA's interests**
Maggie Cruickshank Professor, University of Aberdeen (UoA)	Maggie is a Professor at the Department of Obstetrics and Gynaecology and therefore has a keen interest particularly in relation to The Baird Family Hospital. Maggie represents the UoA on the Project Board; she has a keen interest in developing improved teaching and research in the north east. Additionally, NHSG jointly own the Campus with the University and the UoA will lease space in The Baird Family Hospital. Maggie has no previous experience of major infrastructure projects.
The SG representatives	**Representing the SG and NHSScotland interests**
Alan Morrison Capital Planning and Policy Manager, Scottish Government, Health and Social Care Directorate (SGHSCD)	Alan is a member of the Chartered Institute of Public Finance and Accountancy (CIPFA) body and is the chair of the SG's NHS CIG which reviews all NHS capital investment business cases.
Jacqueline Kilcoyne Capital Projects Manager, Health Facilities Scotland (HFS)	Jacqueline is Framework Manager for FS2. In her role as Capital Projects Manager within HFS, Jacqueline provides advice/support to NHS Boards in the delivery of capital projects.

	Jacqueline is a Chartered Building Surveyor with 26 years' experience within the construction industry, focusing on health projects for the last 16 years.
Martin Blencowe Procurement Review Director, Scottish Futures Trust (SFT)	Martin has previously been a statutory director of Heery International Ltd, the construction project management consultancy business. In that role he was responsible for the management of over £1 billion of projects in Scotland in both the public and private sectors. He has used all forms of construction contracts and has particular experience in acting as an NEC3 Project Manager. For the past six years, Martin has worked for SFT. As a hub Support Director, he has assisted many public sector procuring authorities to get best value from using the hub procurement programme, and has been the author of a number of hub guidance notes. More recently, he has been responsible for creating implementation measures and new guidance for 29 recommendations of the SG's Construction Procurement Review. He is focused on risk management, value management and the constant balance of design with brief, and cost with budget.
The Project Team representatives	**Provide reassurance to the Project Board on progress in line with brief, quality, programme and cost.**
Mike Greaves Clinical Lead,	Mike was a Consultant Haematologist at NHSG and until October 2017 represented the

The ANCHOR Centre	UoA on the Board of NHSG. Mike has contributed to project groups for UoA major new builds including the Suttie Centre, the Health Sciences Building and the Rowett Building. Additionally, Mike was a Board Trustee during construction of the Aberdeen Sports Village, phases 1 and 2.
Mike Munro Clinical Lead, The Baird Family Hospital	Mike is a Consultant Neonatologist at NHSG and was Clinical Lead for neonatal services at Aberdeen Maternity Hospital (AMH) for three years before becoming Clinical Lead for The Baird Family Hospital. Mike has no previous experience of major infrastructure projects.
Gail Thomson Senior Service Project Manager/Deputy Project Director	Gail has been part of The Baird and ANCHOR Project since February 2015 and was previously the Unit Operational Manager for the clinical services which will relocate to The Baird Family Hospital. She has over 20 years operational management experience in NHSG and previous roles have included leading on clinical and non-clinical service redesign. Gail was also part of the Project Team who planned and delivered the RACH project which opened in 2004. Gail is an accredited NEC3 Project Manager.
Julie Anderson Finance Manager/Deputy Project Director	Julie is the Finance Manager supporting the Project. A qualified accountant with wide ranging public sector experience, she joined NHSG in April 2015. Her primary role is to support the delivery of The Baird and

	ANCHOR Project including a substantial redesign agenda whilst also supporting a range of other NHSG infrastructure projects. Julie is an accredited NEC3 Project Manager.
Organisation's external Consultant Cost Advisor	**Representing the organisation's commercial and cost management interests**
Cost Advisor TBC (in attendance)	

Independent Client Advisors

In addition to the key officers outlined above, a number of client advisors have been procured to provide support to the Project Team to ensure the successful completion of all Project activities, to specification, on time and to cost. The advisors are listed in Table M6. With the exception of the HFS Equipping Services, the advisors were procured via the Public Contract Scotland quick quote portal from the FS2/FS3 Framework.

NHSG has entered into a Service Level Agreement (SLA) with the HFS Equipping Service, consistent with earlier projects to support the specification, procurement and deployment of most Group 2, 3 and 4 equipment and the specification of Group 1 medical equipment.

Table M6: Independent Client Advisors

Independent Client Advisors	
Senior Project Manager	Currie & Brown Fiona McDade and Gary Meechan
Cost Advisor	TBC
CDM Advisor	AECOM Bryan Williams and Louise Muir
Healthcare Planner	Buchan + Associates Iain Buchan and Sally Riddoch

Equipment Advisor	HFS Equipping Service Steven Hendrie

6.2.3 Project Recruitment Needs

The Board of NHSG has invested significant financial and organisational resources in ensuring that it has sufficient capacity and capability to be able to effectively deliver and manage infrastructure projects across the organisation.

The project management structure was prepared from local experience, taking advice from other similar projects in Scotland and with the guidance of the SG, HFS and SFT (refer to Figure M2). The cost of the Project Team over the life of the Project, including directly appointed Project staff, together with external advisers has been provided for within the Project Budget.
All Project posts have been successfully recruited to and post-holders are in place relevant to the current Project stage. Recruitment to posts required for Stage 4 is now underway and planned to coincide with the commencement of the construction phase in 2020. These include an Equipment Manager to support the Commissioning Manager and two Clerks of Work to support the two existing Technical Supervisors for the Project.

6.2.4 External Reviews

The Project will be subject to a number of external reviews including OGC Gateway Reviews which look at Project delivery readiness at specific stages throughout the Project (refer to Table M7). A Gateway Review 2 was undertaken in May 2017. A Gateway Review 3 is scheduled to be undertaken week commencing 17 February 2020. Another Gateway Review will be scheduled for 2022/23 during the latter stages of construction to assess readiness for bring into operation.

In addition, the Project is also subject to NDAP, led by A+DS in collaboration with HFS, at OBC and FBC stages of the Project, refer to section 4.3.5. The FBC NDAP review was completed over a series of meetings and

correspondence during the period February 2017 and October 2019. The NDAP materials were submitted to HFS in November 2019. A copy of the 'supported' FBC stage NDAP report will be included as Appendix G when available.

Table M7: Gateway Reviews

Gateway Reviews	Programme
Gateway 2 – Delivery Strategy	May 2017
Gateway 3 – Investment Decision	February 2020
Gateway 4 – Readiness for Service	2022/23
Gateway 5 – Operations Review and Benefits Realisation	2024/25

6.2.5 Project Plan and Key Milestones

Table M8 below describes a number of key Project milestones. A copy of the more detailed Stage 4 Project Programme is included as Appendix Y. The Project programme has been developed and agreed in dialogue with the PSCP, NHSG and the NEC3 Project Manager.

Table M8: Key Milestones

Key Milestones – The Baird Family Hospital and The ANCHOR Centre	Date	Completed
IA Approval	September 2015	Complete
Planning in Principle Approval (PiP)	October 2016	Complete
PSCP Appointment	November 2016	Complete
OBC Approval	March 2018	Complete
Approval of the Matters Specified in the PiP	November 2018	Complete
Enabling Works commencement	November 2018	Complete
Enabling Works Completion	July 2019	Complete
FBC Approval	February 2020	
Start construction	May 2020	

ANCHOR Centre construction complete	May 2022	
ANCHOR Centre bring into operation	July 2022	
Baird Construction complete	November 2022	
Baird bring into operation	March 2023	
AMH demolition complete	May 2023	
Completion Date	May 2023	

Summary of Project Plan

Table M9 outlines some of the key activities to be considered in relation to delivery of The Baird and ANCHOR Project, notably constraints towards completing these key activities, and an overview of planned mitigation measures. This complements the Project Programme in Appendix Y which provides a schedule of when activities will occur, Project and programme interdependencies and key milestones over the life of the Project.

A Stage 4 Project Programme is included as Appendix Y. Additionally, information about formal external reviews aimed at reviewing progress including e.g. Gateway Reviews is outlined in section 6.2.4.

Table M9: Key Activities

Activity	Resource Plan	Constraints
Resource Recruitment	Recruitment of both the NHSG Project Team and supporting professional advisors has been successfully completed.	Resources will be reviewed on a regular basis by the PD to make sure that all Project activities are successfully delivered. Project resource is a standing item on the Joint Core Group which meets monthly.
Design Approvals	Planning in Principle (PiP) was obtained in	Movement to the next stage of the Project requires each

	October 2016. In November 2018 the Matters Specified relating to the PiP were approved, with a number of issues to be purified at key stages over the life of the Project. In addition, A+DS and HFS will complete the FBC NDAP in advance of submission of the FBC.	issue to be purified to be approved. Failure to purify each issue could result in programme delay and any material or design change could have an impact on cost. A 'supported' NDAP report will be necessary to ensure an FBC approval by the SGHSCD.
Site Purchase	The sites of the new Baird Family Hospital and The ANCHOR Centre are both on the Foresterhill Health Campus, already in the ownership of NHSG on behalf of the Scottish Ministers.	The Campus is jointly owned with the UoA. The locations of the two new facilities have been agreed with the University. The University is represented on the Project Board and the Health Campus Forum which meets every six weeks to discuss joint issues relevant to the Project and the wider Campus.
Site Constraints	The recently completed six month programme of enabling works has	The cost plan includes provision for additional demolition survey work that cannot yet be undertaken.

	reduced the risk of ground work constraints. A programme of site investigation surveys has been completed and has informed the design and cost of both developments. A small number of surveys are still to be completed during the construction phase; they relate mainly to demolition of the existing AMH towards the end of the contract.	Additionally, provision has been included in the costed risk register for further survey work and site constraints that may not yet be fully understood.
Enabling Demolition Works	A six month programme of enabling works has been completed to prepare the site for construction. This included e.g. service diversion and ground works, road realignment, water attenuation and the demolition of Foresterhill Health Centre, the Breast Screening Centre and	The construction and demolition programme and cost plan have made provision for the demolition of AMH in 2023. Risks that cannot be accurately assessed at the moment have been included in the costed risk plan.

	the Eye Out-Patient Department. AMH will be demolished in 2023 once the services have relocated to the new Baird Family Hospital.	
Construction Phase	NHSG has considerable experience of working collaboratively with external contractors in the safe, timeous and efficient delivery of major construction projects, with RACH, Aberdeen Dental Hospital and Institute of Dentistry and the Matthew Hay Building being but three examples of major developments on the Campus.	Construction activities will have to take account of both the risk of Healthcare Associated Infection (HAI), the operational constraints of construction on a live hospital campus and the possibility of adjacent construction projects. This will include the delivery of a key worker flat development to be delivered by Grampian Housing Association on the adjacent Westburn Road site. Construction commenced in December 2019 and is due to be completed in April 2021. The Aberdeen Elective Care Centre will be constructed on the north of the Campus, possibly over a similar timescale to The Baird and ANCHOR Project.

Equipment Procurement	The Functional Commissioning Manager and an Equipment Manager will lead all functional commissioning activities and plan in detail the equipment specification and procurement for both facilities. In addition, the HFS Equipping Service has been commissioned by NHSG to support the process of equipment specification, procurement and the commissioning of all new equipment and appropriate transfers of existing furnishings and equipment.	The FBC includes a budget cost for new equipment based on the completed Room Data Sheet for each room in the new developments. An assumption has been made regarding the level of transferring equipment as this analysis will not be complete until closer to relocation of services in 2022/23. An audit of existing equipment is however underway and has informed assumptions regarding the purchase of new equipment.
Commissioning and Handover	NHSG will work with the PSCP during the construction period to ensure the successful delivery of a detailed Soft Landings Programme for each facility which will	A Soft Landings Champion and Soft Landings Co-ordinator have been identified to facilitate the successful delivery of the Soft Landings Programme over the life of the Project. Specialists, Hulley & Kirkwood (H&K) have been

	ensure readiness for the technical commissioning, led by the PSCP, and functional commissioning led by NHSG. The Project Team contains a number of members with considerable experience of technical and functional commissioning of acute facilities.	recruited by the PSCP to support all technical commissioning activities. This will help to ensure a structured approach to bringing the buildings into use. In addition, the Functional Commissioning Manager and the, soon to be appointed, Equipment Manager are planning for the functional commissioning of both buildings.
Operational Change/ Redesign	A substantial service redesign agenda has been identified and is being implemented to seek to ensure achievement of the Project benefits outlined in the Benefit Registers. Appropriate governance and delivery mechanisms have now been put in place to enable the strategic investment priorities and the	The new Baird and ANCHOR facilities are being developed in order to meet the operational change requirements identified in the Strategic Case of the IA, OBC and now FBC. If these operational changes and service redesign objectives are not realised, the Project will not meet its investment objectives and optimum clinical care requirements will be left unfulfilled. An active service redesign

	service benefits outlined in the FBC to be realised.	agenda continues to be progressed and is now partially implemented, led by senior operational managers with the support of the Project Team.

6.3 Change Management Arrangements

6.3.1 Service Redesign Plans

The clinical strategies for the services to be delivered from the new facilities were developed during 2015 with the support of Health Planners, Buchan + Associates. Development of these clinical strategies involved around 200 clinicians, operational staff and public representatives in over 60 workshops. This work resulted in the production of detailed clinical briefs for the Project, robust Schedules of Accommodation (SoA) and, in discussion with clinicians and Operational Management Teams, a substantial service redesign agenda. This agenda will be delivered between now and 2022/23 to enable the strategic investment priorities and the service benefits outlined in the FBC to be realised.

A significant service redesign agenda has been outlined and is being managed by the Executive Redesign Group, which meets quarterly and is led by Fiona Francey, Chief Officer, Acute Sector. Additionally, three operational management-led Service Redesign Groups are led by:

- Sue Swift, Divisional General Manager, Women and Children's Services (Baird)
- Shelagh Bonner-Shand, Unit Operational Manager, Clinical Support Services (ANCHOR)
- Gavin Payne, Deputy General Manager, Facilities and Estates (FM)

These groups meet regularly and will oversee the development and implementation of the agreed redesign plan over the next three years. The structure for this redesign workstream in outlined in Figure M3.

From a Project Team perspective, this work is being led and co-ordinated, in dialogue with the operational management leads by:

- Gail Thomson, Senior Service Project Manager (Baird)/Deputy Project Director
- Louise-Anne Budge, Service Project Manager (ANCHOR)

These Project Team members are the interface between the Project Team and the Operational Management Teams. Both Gail and Louise have considerable experience of service management in a health setting.

The service redesign agenda has been divided into three main categories:

- consequence of the new buildings
- current service pressures
- predicted growth in demand

Some of these service changes will deliver efficiencies, however it is anticipated that some cost pressures may arise and these will have to be planned for and managed. Only the cost pressures from those initiatives that are as a direct consequence of the new facilities are included in the FBC. The other redesign initiatives have been remitted to the Baird and ANCHOR Executive Redesign Group and three Redesign Groups to manage in conjunction with their Operational Management Teams as part of normal business.

The Service Redesign Summary Report for each facility are included as Appendices M and N.

The Service Redesign Plans are at an advanced stage across the Baird and ANCHOR services with some key redesign activities now completed and implemented prior to relocation of services in 2022/23. The overarching service redesign structure has been in place since early 2016 and has been informed by the service planning that took place during 2015 with over 60 workshops held with clinical colleagues and patients as key stakeholders.

The respective Operational Management Teams are leading on the service redesign agenda, supported by the Project Team, thereby ensuring service commitment to the challenges of appropriate redesign, wherever possible, in the existing accommodation prior to the new buildings becoming operational in 2022/23.

Some examples of service redesign work, many at an advanced stage due to progress made since OBC, include:

ANCHOR:

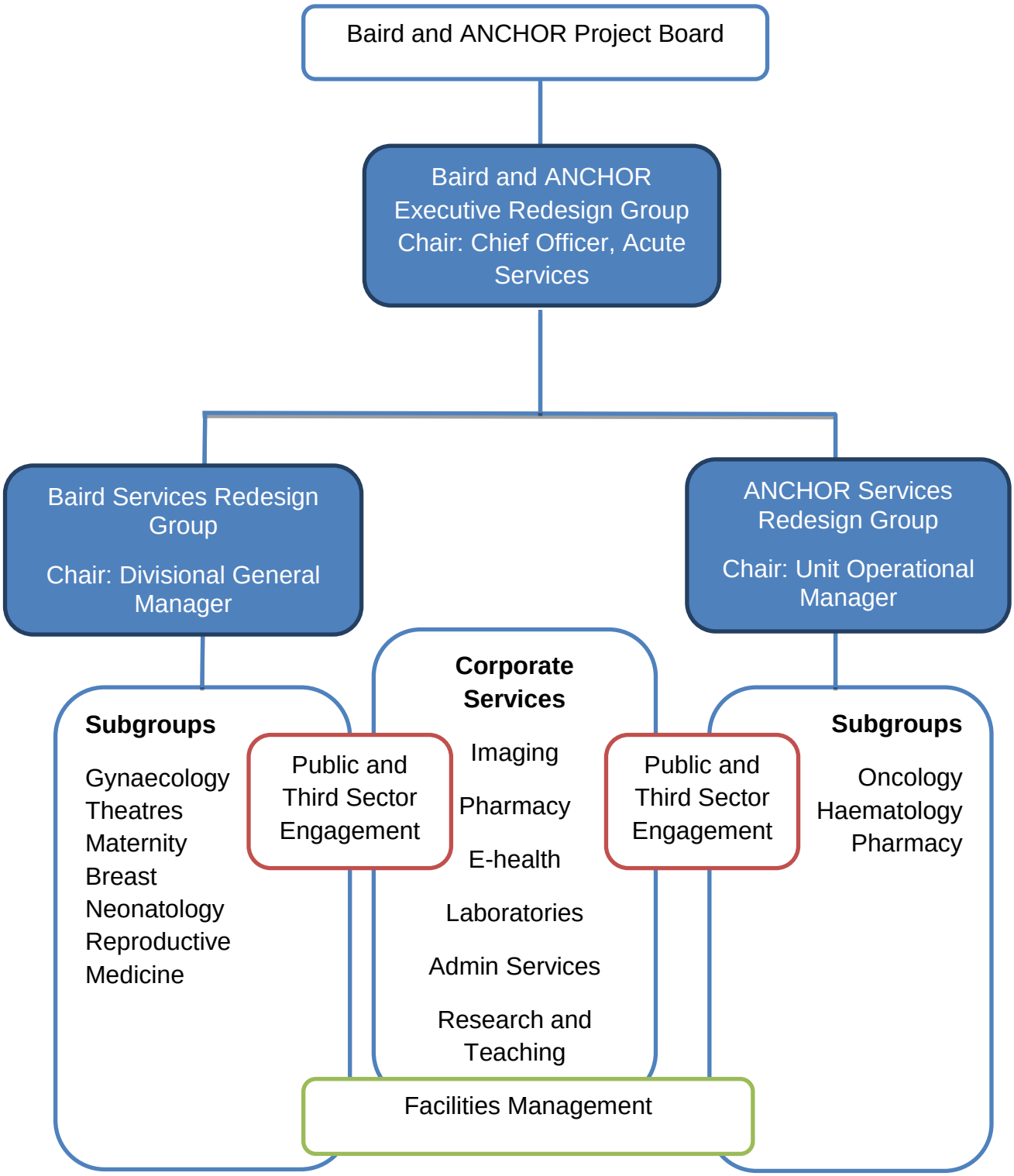
- For some time now, all out-patient and day-patient chemotherapy treatments have been delivered in a single location for both Oncology and Haematology patients. This is working well, has led to streamlining of services and has allowed the clinical teams to work now in the way The ANCHOR Centre model will operate in the future
- Changes have been made to nurse recruitment in that new staff are appointed to ANCHOR service posts as opposed to separate Oncology and Haematology posts. This will help to create an integrated team for the future
- Investment is being made in the advanced nursing team to develop this team to Masters level. This will ensure cross cover across scheduled and unscheduled care
- Teenagers and young adults are now receiving specialist staff support with the recruitment of Teenage Cancer Trust funded posts for this particular age group

Baird:

- Establishment of Transitional Care working in the existing AMH. Significant investment has been made to embed the Family Integrated Care model, including the desire to create an interim Transitional Care Unit in AMH prior to the Baird opening

- Successful implementation of the gynaecology hysteroscopy service in an ambulatory setting. Plan to extend this to the ablation service commencing in January 2020
- Daily emergency gynaecology clinics continue to be held, reducing emergency admissions to the service and improving the patient experience
- One integrated gynaecology out-patient service is now in place, allowing for co-location of staff and services and creating the environment for the clinical team to become fully integrated prior to the Baird opening. This co-location will also encourage further innovative service redesign
- Single early pregnancy service now well established in AMH
- Maternity Triage service in place in AMH and working well, providing 24/7 telephone advice as well as a staffed Triage Unit from February 2019
- Fully integrated Reproductive nursing team now in place, incorporating team members from both NHS Grampian and University of Aberdeen

Figure M3: Service Redesign Governance Structure



6.3.2 Facilities Change Plan

Non-clinical briefs were developed in parallel with the clinical brief work outlined above in section 6.3.1. Development of these briefs involved a

series of stakeholder workshops and resulted in the production of non-clinical briefs for all Soft FM services including domestic services, portering, receipt and dispatch, waste management and linen services. FM operational leads meet regularly to plan for the implementation of the service changes agreed in these briefs, in collaboration with the clinical service leads.

6.3.3 Stakeholder Engagement and Communications Plan

A considerable number of people will be affected by the Project and their engagement in supporting and shaping how services are delivered now and in the future is very important to NHSG and to the success of the Project. To support appropriate involvement, a Communication and Involvement Framework is in place and informs the Project approach to involvement and communication activities, refer to Appendix B.

In addition, two Project specific Communication and Involvement workstreams have been established. These workstreams are reviewed regularly by the Service Project Managers and the Public Involvement Officer. This work will continue over the life of the Project and does involve clinical staff, managers, public representatives, Third Sector groups and the Scottish Health Council (SHC).

A stakeholder analysis has been undertaken for both the Baird and ANCHOR facilities and they are included as Appendices C and D. The stakeholder analysis is updated annually to make sure it is kept dynamic over the life of the Project. They have informed the development of Project specific action plans outlining communication and involvement activities to ensure appropriate stakeholder involvement. Each action plan covers the forthcoming six month period and they are regularly reviewed and updated by the Public Involvement Officer and Service Project Managers. An example of a recent action plan has been included as Appendix E. The action plans include details of the target audience, method of communication, timescale, etc.

A brief report which seeks to summarise the communication and involvement activities to December 2019 is included as Appendix F.

6.3.4 Training and Development Plans

Delivery of the benefits outlined in the Benefit Registers included as Appendices H and I are dependent of the successful implementation of the Service Redesign Plans outlined in the Service Redesign Summary Reports in Appendices M and N.

The successful delivery of these plans is dependent on the delivery of the new facilities consistent with the design briefs and clinical briefs, but also the implementation of Training and Development Plans to support the successful implementation of these Service Redesign Plans. The Training and Development Plan includes an outline of:

- service change that is likely to include 'organisational change'
- how staff will be prepared and trained so that they are ready to work in different ways consistent with the overall redesign plans

The service redesign groups have been working through the workforce requirements for each facility in line with future care models as outlined in the Service Redesign Summary Reports, refer to Appendices M and N.

The Training and Development Plan has been developed to support delivery of the redesign plans and to ensure the safe commissioning and operation of the new facilities in line with the emerging Soft Landings Plan.

Where possible and appropriate, workforce change and training is already underway, for example, job shadowing and agreement regarding new management structures to support delivery of redesigned services.

The Training and Development Plan is enclosed, refer to Appendix GG.

6.4 Benefit Realisation Plan

6.4.1 Benefit Registers

The rationale for any investment needs to be reflected in the realisation of demonstrable benefits, as this will provide the evidence base that the proposal is worthwhile and that a successful outcome is achievable. The benefits to be achieved are discussed in the Strategic Case and have resulted in the creation of Benefit Registers and Benefit Realisation Plans for the Project.

The registers of benefits to be realised as a consequence of this proposal are outlined in two Benefit Registers and are enclosed as Appendices H and I. The Benefit Registers outline the strategic investment priorities outlined in sections 2.4.1 and 2.10.1 and other key benefits that will be assessed over the life of the Project and as part of the Project evaluation:

- improved patient and staff experience
- backlog maintenance opportunity savings
- performance benefits
- environmental benefits
- improved joint working with voluntary sector partners
- local community benefits

A baseline value and target value for each benefit has been identified. A number of benefits require the creation of baseline information, this is mainly in relation to qualitative patient and staff surveys undertaken in 2018/19 to inform the Benefit Registers. This work is now complete and two example survey questionnaires and survey reports are included, refer to Appendices JJ, KK, LL and MM.

Additionally, a Red, Amber, Green (RAG) score highlighting the relative importance of each benefit is indicated using the scale outlined below in Table M10.

Table M10: RAG Scale – Relative Importance

Scale/RAG	Relative Importance
1	Fairly insignificant
2	
3	Moderately important
4	
5	Vital

Each Benefit Register was put together following conversations with a wide variety of stakeholders at a series of meetings over a number of months. The benefits were identified as part of the significant stakeholder engagement work undertaken at the outset of the Project.

The Benefit Registers include the range of benefits to be realised by these developments. Each benefit includes a target that will be used to indicate the measure of success during the Post Project Evaluation (PPE).

When the benefits were developed, some were expressed in a quantitative manner and others are qualitative in nature.

For the quantitative benefits, the register indicates the baseline (current position) at the start of the Project including the source (e.g. Information Services Division (ISD) data) and this will be compared with the same data source in 2024/25 when the PPE is completed.

For benefits that are qualitative in nature, a series of surveys and focus groups have been undertaken to outline the baseline for these benefits. The same survey tools will be used during the PPE to examine to what degree the improvements sought were achieved. A summary of the surveys undertaken are outlined in Table M11 below.

Table M11: Summary of Patient Surveys

Target Population	Survey Objective	Survey Type	Sample Size	Survey Tool	Report
Gynaecology patients (March – April 2018)	Patient experience views	Qualitative	24 responses	Questionnaire and focus groups	Yes.
Breast patients (March – April 2018)	Patient experience views	Qualitative	43 responses	Questionnaire and focus groups	Yes.
Maternity patients (July – August 2018)	Patient experience views	Qualitative	226 responses	Questionnaire	Yes.
Maternity partners (July – August 2018)	Partner experience views	Qualitative	52 responses	Questionnaire	Yes.
Transitional Care users (December 2018 – February 2019)	User experience views	Qualitative	20 responses	Questionnaire and patient interviews	Yes.
Islands Accommodation users (January 2019 – February 2019)	User experience views	Qualitative	47 responses	Questionnaire	Yes.
ANCHOR treatment patients	Patient experience views	Qualitative	71 responses	Questionnaire	Yes.
ANCHOR out-patient patients	Patient experience views	Qualitative	111 responses	Questionnaire	Yes.
Teenagers and young adults	Patient experience views	Qualitative	7 participants	Focus group	Yes.

6.4.1.1 Local Community Benefits

There are wider sustainability opportunities associated with this Project. These include the potential to deliver community benefits through education, training and recruitment opportunities associated with the new builds, targeting work packages offered to Small or Medium size Enterprises (SMEs) and wider associated benefits for the construction and operational phases of the Project. The Project Team has developed a Community Benefit Project Plan for the Project working with SFT and NHSG public health colleagues, reflecting the guidance outlined in the SFT Community Benefits Toolkit for Construction. The Community Benefit Project Plan for the

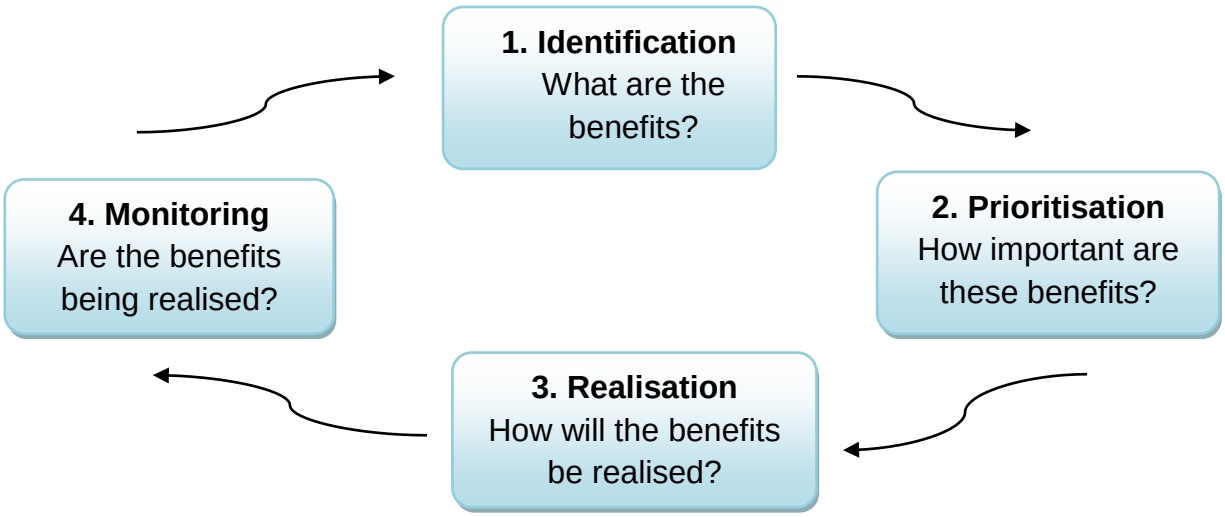
Project was included in the High Level Information Pack (HLIP) as part of the recruitment of the PSCP, GRAHAM Construction. The Project Team have been working with the PSCP to further develop and begin to implement the Community Benefit Project Plan, albeit most of the Community Benefits will be realised during the construction phase. A copy of the Community Benefit Project Plan and progress with its implementation is included as Appendix Z.

6.4.2 Benefit Realisation Plans

Building on the Benefit Registers discussed in section 6.4.1, Benefit Realisation Plans for both developments have been produced and are included as Appendices J and K.

The benefits realisation process is a planned and systematic process consisting of four defined stages outlined in Figure M4. The implementation of these plans is reviewed regularly by the NHSG Executive Redesign Group and its sub-groups.

Figure M4: Benefit Realisation Process



The Benefit Realisation Plans outline:

- which Investment Objective the benefit addresses
- who will receive the benefit
- who is responsible for delivering the benefit
- describe any dependencies that could affect delivery of the benefit
- any support needed from other agencies to realise the benefit
- a target date by which it is hoped the benefit is achieved

Benefits monitoring will be ongoing over the life of the Project through the planning, procurement and implementation phases. Progress will be reported to the Project Board at regular intervals and will culminate in the Project Evaluation Report to be produced in 2024/25, refer to section 6.7.2 Project Evaluation.

6.5 Risk

Effective management of project risks is essential for the successful delivery of any infrastructure project. A robust risk management process has been put in place and will be actively managed through the whole programme to reduce the likelihood of unmanaged risk affecting any aspect of the Project. Risk is managed within the Project Team and is led by the PD and managed by the SPM.

6.5.1 Updated Risk Register

In developing the Risk Register, the initial activities of the Project Team focussed on establishing a range of Project risks reflecting both the scope of the Project as well as those risks inherent in any infrastructure project.

Primary risks have been identified across a range of categories, including:

- construction risks
- technical commissioning risks
- operational (including equipping and functional commissioning) risks
- service change and redesign risks
- procurement and commercial risks

- project and programme management risks

These risks were further allocated across a range of categories depending on where these risks would apply within the overall structure of the Project. These include:

- the phase of the Project to which they apply
- those that would have a major impact on the cost of the Project
- the ownership of the risks including those which can be transferred to the PSCP

A joint risk quantification exercise, facilitated by the JCA, was undertaken in June 2019 involving representatives from NHSG, GRAHAM Construction and members of their supply chain during which the Risk Register was reviewed, updated and costed.

Recognising it is unlikely that all risk items will occur, the Monte Carlo risk modelling technique has been used in identifying the current risk allowance. This technique presents both the range as well as the expected value of the collective impact of various risks.

The Risk Register is maintained as a dynamic document and is updated at key milestones, or as the need arises, and is maintained by the SPM in collaboration with the wider Project Team, PSCP and JCA.

A copy of the most up-to-date Risk Register is included as Appendix L.

6.5.2 Risk Control Plan

Risk management is an integral part of the Project reporting, approval and governance arrangements. The following are key examples:

- the Project Board reviews risk regularly and its membership includes a range of senior clinical and management representatives together with representatives from SG and SFT

- the Project Plan includes OGC led Gateway Reviews. These are conducted at key stages of a Project and provide a constructive assessment of readiness to progress. This also provides a means of identifying issues, including risks that need to be resolved prior to the work progressing
- NHSG has a Risk Management Policy and the management of risk within this Project aligns to that policy

6.5.2.1 Identification of Risk

The following stages of risk management are observed by the Project:

- identifying the risk
- assessing the risk
- documenting the risk
- managing and reporting the risk
- closing the risk

6.5.2.2 Assessment of Risks

Risk exposure is assessed through assigning probabilities to events. The likelihood of each of the risks occurring and the impact, should it occur, has been assessed using the following scale; Low, Medium, High and Very High, refer to Table M12.

Table M12: Assessment of Risk Scale

LIKELIHOOD	SEVERITY / IMPACT				
	Insignificant Score 1	Minor Score 2	Moderate Score 3	Major Score 4	Extreme Score 5
Almost Certain Score 5	MEDIUM 5	HIGH 10	HIGH 15	VERY HIGH 20	VERY HIGH 25
Likely Score 4	MEDIUM 4	MEDIUM 8	HIGH 12	HIGH 16	VERY HIGH 20
Possible Score 3	LOW 3	MEDIUM 6	MEDIUM 9	HIGH 12	HIGH 15
Unlikely Score 2	LOW 2	MEDIUM 4	MEDIUM 6	MEDIUM 8	HIGH 10
Rare Score 1	LOW 1	LOW 2	LOW 3	MEDIUM 4	MEDIUM 5

Each risk is assessed prior to identifying mitigation and with a further assessment of residual risk.

6.5.3 Governance Arrangements

A comprehensive Risk Register is maintained by the Project Team with risk owners identified and individuals allocated to manage each risk. The process for maintaining and managing the Risk Register is as follows:

- the SPM is responsible for ensuring that the Risk Register is up-to-date and that designated officers are managing specific risks
- where a risk is major i.e. has a scoring of 'high' or 'very high', an action plan for managing and monitoring is maintained by the individual allocated to manage that risk
- the Project Team reviews key risks on a monthly basis at the joint Core Group Meeting
- the Project Team uses the NEC3 contract early warning process to raise potential and emerging risks. Regular joint risk reduction meetings are held to review all early warnings and, where appropriate, they are included on the Risk Register
- risk specific risk reduction meetings are scheduled for significant risks, and action plans are agreed, implemented and reviewed

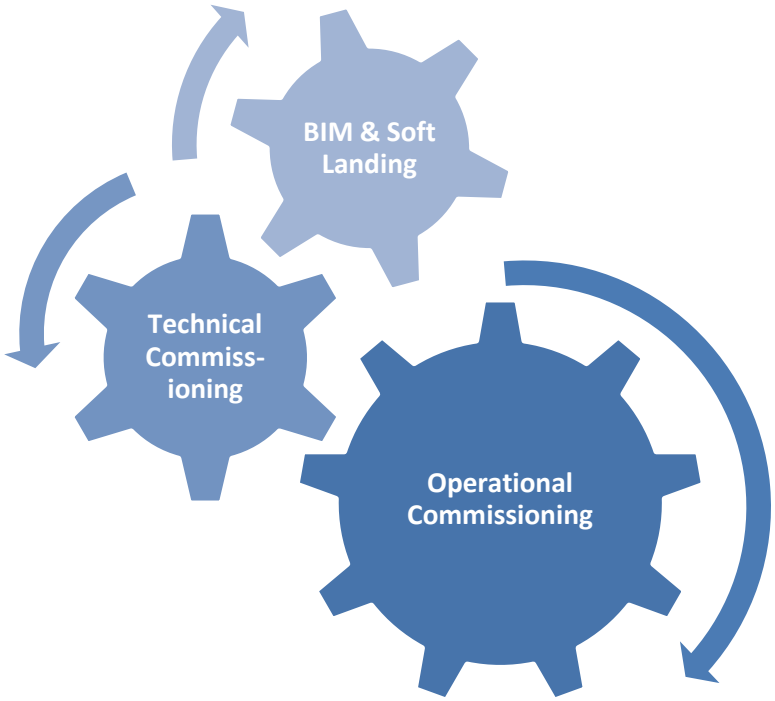
- the Risk Register and associated action plans are formally reviewed at a joint bi-monthly Risk Management meeting and specific high or very high risks are discussed and management plans agreed and reviewed at risk specific risk reduction meetings
- a change control mechanism is being developed to support the realisation of risks and the funding of any intervention from the risk allowance identified with the cost plan. Approval is subject to the exisitng Scheme of Delegation for the Project
- the PD is responsible for ensuring an adequate system of control is in place over the management of the risks
- the PD reports the status of the Risk Register at each Project Board meeting and provides an update on each major risk

If the Project Board identifies a risk where inadequate progress is being made in the management of the risk, they can request to review the action plan and instruct further work to mitigate the risk.

6.6 Commissioning

The importance of the commissioning process cannot be under-estimated, as failure to adequately consider this process is likely to cause increases to Project costs and failure to deliver agreed service benefits and Project outcomes. Figure M5 establishes how the commissioning process is organised and outlines the key tasks to be addressed.

Figure M5: Facilities Commissioning Diagram



The best practice principles of Building Information Modelling (BIM) and the Soft Landings Programme must be embedded at every stage to deliver a high quality, safe and efficient health facility. The four key elements of a successful commissioning plan include:

- BIM
- Soft Landings Programme
- Technical Commissioning
- Operational Commissioning

The Project strategy is based on achievement of BIM Level 2, this is described earlier in the FBC in section 4.3.6. In management terms, BIM is addressed at the monthly Soft Landings Programme meetings.

6.6.1 Soft Landings

The term 'Soft Landings' refers to a strategy adopted to ensure the transition from construction to occupation is 'bump-free' and that operational performance is optimised. Soft Landings guidance suggests that:

'This transition needs to be considered throughout the development of a project, not just at the point of handover. The Soft Landing Strategy and Plan should be outlined in the early stages of a project. This Soft Landings Plan should be developed jointly and include agreement to provide the information required for e.g. commissioning, training, FM and include requirements for BIM.'

A joint Soft Landings Workshop was held in May 2017 to better understand the key aims and objectives of the Buildings Services Research and Information Association (BSRIA) Government Soft Landing Programme. This workshop was led by an external consultant. At the workshop it was agreed that the Project Team should take a pragmatic approach to the Soft Landings Programme by incorporating those elements that will add value.

Establishing a project specific approach to Soft Landings was a key theme for a Project Development Day in August 2017. A workshop took place where each of the five Soft Landings Stages was discussed in order to identify the specific elements that would apply to the Project together with the actions necessary to implement them. NHSG has added a sixth dimension for functional commissioning.

The Soft Landings Programme is discussed and reviewed on a regular basis at a monthly Soft Landings meeting.

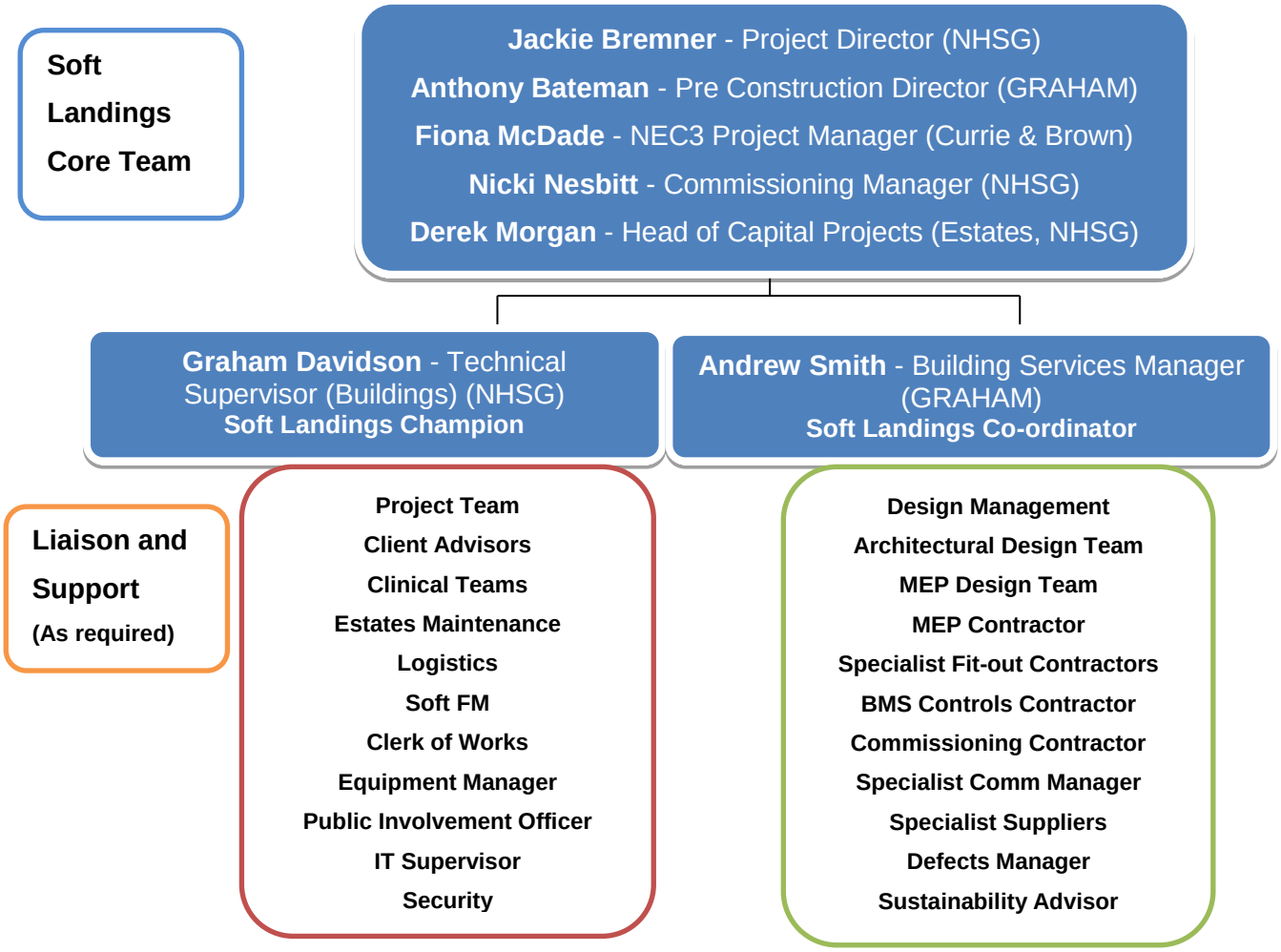
NHSG has a designated Soft Landings Champion and the PSCP has a designated Soft Landings Co-ordinator. These officers co-ordinate and facilitate the delivery of this important programme of work which will continue through to handover and during the immediate post-handover period. NHSG is working with the PSCP to ensure the successful delivery of a detailed Soft Landings Programme for each facility which will ensure readiness for functional commissioning, led by NHSG.

The Soft Landings Team regularly review plans for all commissioning activities and also review and update the Lessons Learned Register. The paragraphs below provide more information about both the technical and functional (operational) commissioning plans.

During 2019, HFS developed Soft Landings Guidance specifically focussed on NHSScotland. The Project Team agreed to move towards the implementation of this guidance instead of the BSRIA guidance adopted in the earlier stages of the Project.

The structure of the Soft Landings Team is outlined in Figure M6.

Figure M6: Soft Landings Team Structure



6.6.2 Technical Commissioning

Detailed technical commissioning is critical to the successful commissioning of any building. Planning for this important project phase cannot start too early. Work to develop a detailed technical commissioning plan is well underway and a series of workstreams are being progressed.

The PSCP appointed engineering consultants H&K to lead the technical commissioning process; they have considerable experience of leading commissioning for complex hospital developments across Scotland. This process started in late 2018 with a series of technical commissioning workshops. These have informed the development of a Commissioning Management Strategy which focuses on sign-off of systems including testing, setting to work, pre-commissioning, commissioning, demonstrations, Operation and Maintenance (O&M) Manuals, as build drawings, to the final handover of the mechanical and electrical works.

6.6.2.1 The Commissioning Management Strategy was developed in conjunction with the NHSG technical supervisors, estates colleagues and the H&K specialist commissioning manager. The commissioning manual will become the interface schedule and quality check sheet file for the installation of the services and will evolve into the overall commissioning manual (commissioning validation folder) for the complete Project. The manual will also be developed to suit the outputs targeted through the Building Research Establishment Environmental Assessment Methodology (BREEAM) and Soft Landings process.

This manual will be reviewed on-site at the weekly commissioning meetings and commissioning information will be photocopied and added to the commissioning manual as it is completed. This then enables all the specialists and design consultants. To interrogate the current status of the commissioning information available for each system at any stage throughout the Project. The manual includes the following:

- quality, safety and environmental plans
- programming for delivery of information, on and off-site construction
- procurement, production and approval of samples, mock-ups, trial site assemblies etc
- the control of work through supervision and inspection
- monitoring of construction progress
- management of commissioning
- management and recording of final inspections
- development of O&M manuals
- planning and programming, also the recording of instruction and training of end users in the operation and maintenance of the building installations
- confirmation of the understanding of specified post contract responsibilities associated with the fine tuning, system proving and Soft Landings support
- test sheets for each of the services in accordance with the Scottish Health Technical Memorandum (SHTM) Guidance, Chartered Institution of Building Services Engineers (CIBSE) and BSRIA commissioning codes

6.6.2.2 Accurate programme management and co-ordination is fundamental, ensuring the Project will be completed, fully commissioned and ready for use, on or before the programmed completion dates.

The Commissioning Programme has been developed progressively from the Project outset during Stages 2 and 3 and is integrated with the main construction programmes. Planning and implementation of the Commissioning Strategy and Programme will continue through the main construction phase, Stage 4.

The Commissioning Programme takes the individual plant, equipment and system logical sequences and integrates them from

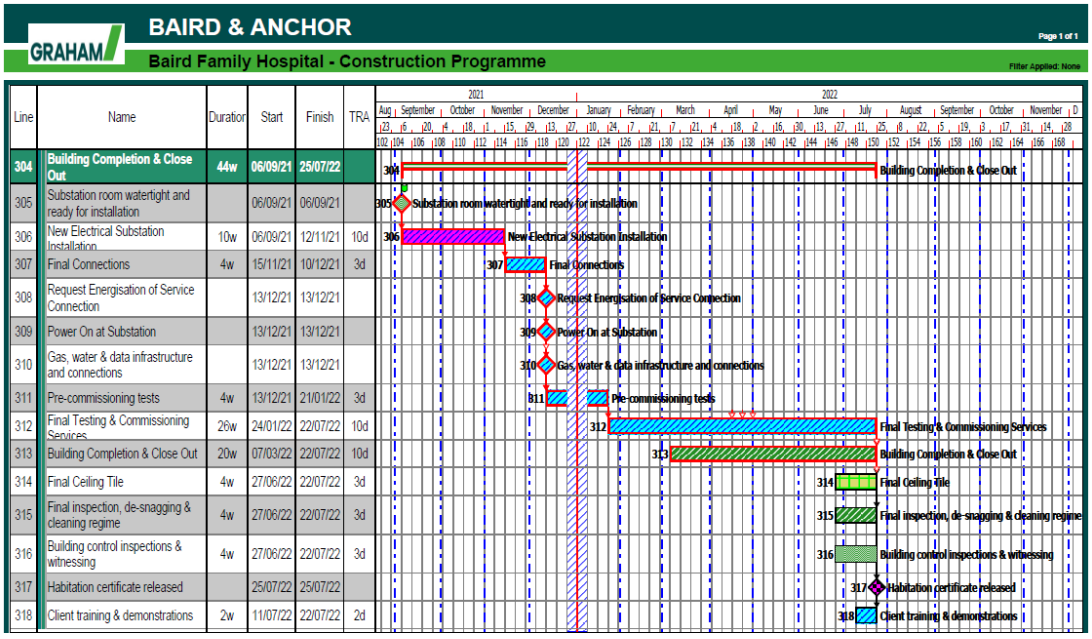
individual programmes into one co-ordinated Commissioning Programme which will reasonably meet the overall delivery requirements/programme for the Project.

The Works Programme has been expanded with commissioning detail as defined in the following programmes:

- BFH-NHSGAS-GRA-PR-W-S4 ANCHOR dated 31/10/19
- BFH-NHSGAS-GRA-PR-W-S4 Baird dated 31/10/19

Technical Commissioning Programmes for both Baird and ANCHOR have been developed in draft, refer to Appendix PP. They will be developed further during Stage 4.

Table M13: Summary extract from Baird Construction Programme



Line	Name	Duration	Start	Finish	TRA
304	Building Completion & Close Out	44w	06/09/21	25/07/22	
305	Substation room watertight and ready for installation		06/09/21	06/09/21	
306	New Electrical Substation Installation	10w	06/09/21	12/11/21	10d
307	Final Connections	4w	15/11/21	10/12/21	3d
308	Request Energisation of Service Connection		13/12/21	13/12/21	
309	Power On at Substation		13/12/21	13/12/21	
310	Gas, water & data infrastructure and connections		13/12/21	13/12/21	
311	Pre-commissioning tests	4w	13/12/21	21/01/22	3d
312	Final Testing & Commissioning Services	26w	24/01/22	22/07/22	10d
313	Building Completion & Close Out	20w	07/03/22	22/07/22	10d
314	Final Ceiling Tile	4w	27/06/22	22/07/22	3d
315	Final inspection, de-snagging & cleaning regime	4w	27/06/22	22/07/22	3d
316	Building control inspections & witnessing	4w	27/06/22	22/07/22	3d
317	Habitation certificate released		25/07/22	25/07/22	
318	Client training & demonstrations	2w	11/07/22	22/07/22	2d

The programme outlined in Table M13 will be further agreed with all stakeholders early in Stage 4 and will be planned/developed breaking down the following elements;

- Mechanical and Electrical (M&E) Commissioning Master Programme
- Mechanical Commissioning Programme
- Electrical Commissioning Programme

- Specialist Equipment Commissioning Programme
- approval of construction drawings and technical submittals for the different engineering services of the building
- approval of the Project specific commissioning method statements, checklists and test sheets for the different engineering services of the building
- factory acceptance testing and witnessing
- weather protection of the building envelope
- building air tightness testing
- completion of building fabric elements that are critical for the start of commissioning activities
- electrical power activation for different elements of the Project e.g:
  - mechanical equipment
  - building management equipment
  - lifts
  - fire alarm equipment
- supply of key utilities such as water, electricity and networks
- pre-commissioning dates for different engineering services of the building, including installation verification and static tests
- commissioning dates for the different engineering services of the building, including setting to work, regulation, performance tests and integrated system proving
- demonstrations of the engineering services to third party organisations such as local building authority, fire officer etc.
- production and delivery of handover documentation
- production and delivery of training for building users and operators
- building handover
- initial occupancy support including fine tuning
- seasonal commissioning (if applicable)

6.6.3 Functional (Operational) Commissioning

Functional commissioning of the facilities will commence at handover of each facility to NHSG by the PSCP. Planning for functional commissioning is already underway and will continue in increasing levels of detail throughout the construction phase. The ANCHOR Centre will be handed over and commissioned in advance of The Baird Family Hospital as the two buildings will have quite different construction timetables due to scale and complexity. NHSG are keen to see the two facilities commissioned one at a time to ensure that adequate resources can be deployed to ensure the successful commissioning and bring into operation of both facilities.

The commissioning of each facility will be led and co-ordinated by the Functional Commissioning Manager and Project Team in close collaboration with the appropriate Operational Management Teams.

A copy of the emerging functional commissioning plans are included, refer to Appendix FF. The commissioning programmes will be further developed during the two year construction phase into detailed plans developed in dialogue with the Project Team, clinical teams and operational management colleagues.

These plans will ensure that all activities are planned, co-ordinated and delivered and that all functional commissioning teething issues are resolved prior to and/or post-occupation in discussion with Operational Management Teams and the PSCP, as appropriate. This work will include preparation of the vacated AMH, ready for demolition following the relocation of the AMH clinical services in 2023.

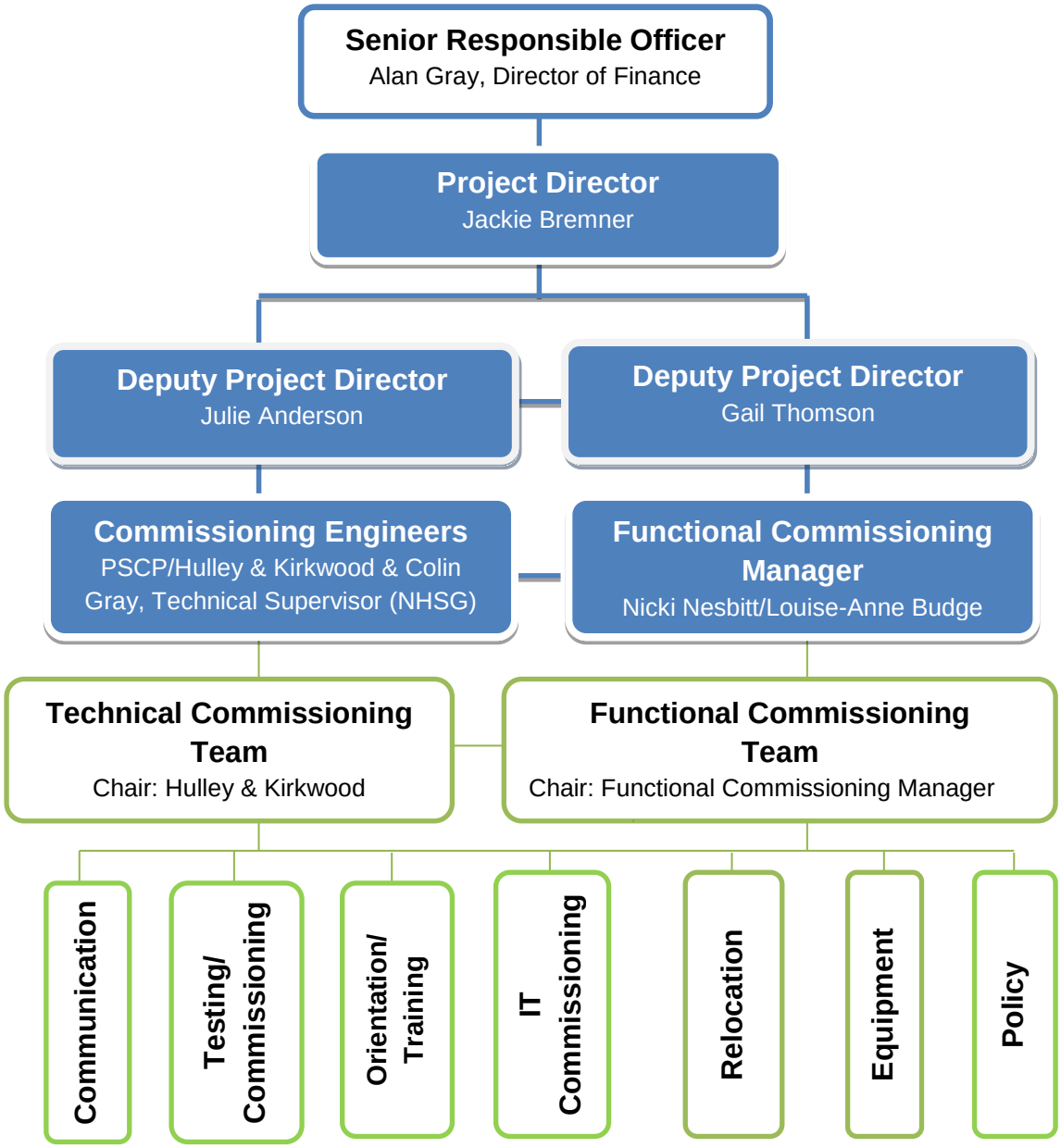
6.6.4 Reporting Structure Aligned to Main Project Structure

The functional commissioning of each facility will be led by the NHSG Project Team. This substantial task will be led by one of the Deputy Project Directors and the Functional Commissioning Manager and supported by other members of the team. During 2018, the Functional Commissioning

Manager was appointed to begin to plan for the commissioning of both facilities, consistent with the agreed construction programmes.

Figure M7 outlines the planned reporting structure for commissioning activities. The functional commissioning will be led day to day by the Functional Commissioning Manager; this key stream of work will include staff from operational management, FM services, estates, logistics and the HFS Equipping Service along with appropriate members of the Project Team. The technical commissioning will be led by specialist engineering consultants H&K, working with the PSCP, their sub-contractors, estates colleagues and the NHSG Technical Supervisors to successfully co-ordinate and complete all of the technical commissioning activities.

Figure M7: Commissioning Structure



The Functional Commissioning Manager and Equipment Manager, along with the HFS Equipping service, will work across the functional commissioning of both buildings.

6.6.5 The Functional Commissioning Manager will be responsible for:

- with operational colleagues, planning for revised operational procedures to reflect changes to ways of working associated with the new buildings and redesign agenda

- with operational colleagues, preparing staff to work differently to deliver new working procedures (including formal training, job shadowing etc)
- confirming with the HFS Equipment Service, Medical Equipment Management Services, the Equipment Manager and operational colleagues the new equipment to be specified and procured, the equipment to be transferred and ensure its successful implementation
- produce a comprehensive commissioning programme with clinical and logistics colleagues and to ensure its successful delivery
- to develop a detailed occupation plan with clinical colleagues to ensure the safe continuation of appropriate clinical services throughout the commissioning and relocation period
- work with the security team to ensure that the facilities are safe and secure after handover from the PSCP and that appropriate operational procedures are implemented
- agree a service reduction plan with operational teams to facilitate the smooth and safe relocation to the new facilities with as little disruption as possible to patients and staff
- to ensure a comprehensive plan to clean the buildings is in place and agreed with the domestic team and the Infection Prevention and Control Team
- to plan for, procure a removal company and supervise the removal of all equipment, furnishings and goods agreed to transfer
- to plan and organise with the Scottish Ambulance Service and clinical colleagues the safe relocation of all patients to the new facilities
- to ensure with the Public Involvement Officer and Service Project Managers that the public, staff, patients and visitors are briefed and clear about the relocation and occupation plan and what their role is in relation to it
- to arrange the production of all printed material required to facilitate the move e.g. patient information booklets, staff information booklets, phone book etc.
- to arrange and host open days for the public to see the facilities before they are in use

- to arrange orientation and training for all staff who will work in the buildings and issue of security enabled badges
- to produce a comprehensive IT and telecommunications plan to make sure that all phones and computers are operational in advance of staff and patient moves
- to co-ordinate the installation of any complex equipment post-handover e.g. imaging equipment, as agreed, with the PSCP
- to plan for the accommodation being vacated to be emptied ready for reuse or demolition, as appropriate.

6.6.6 The Technical Commissioning Team will be responsible for:

- develop the Technical Commissioning Programme
- carry out commissioning workshops to discuss the programme/any lessons learned from historical projects and to set milestones within the critical path that allow early warnings to be identified if activities start to slip
- develop an Inspection and Test Verification Matrix that demonstrates the approach to ensuring the commissioning is thorough and robust, and that our physical validation of commissioning activity and scrutiny of the certification is sound
- construct a technical commissioning tracker document. The Mechanical, Electrical and Plumbing (MEP) contractor will be directed to generate Commissioning and Validation Folders (CVF). These folders contain an agreed content for installation conformance and pre-commissioning
- create a Project specific witnessing methodology to ensure that the system in question is compliant, fit for purpose and the contractor is aware of the standards that the system must comply to. This is done at the outset and communicated to all of those involved in commissioning of all systems
- produce an MEP completion report that provides robust evidence that the building services are installed, commissioned and set to work at design duty in all instances, staff training is complete and the building is meeting its performance criteria. This document has all MEP systems included

and broken down into sub system and component level where practical. The document is referenced directly to the CVF discussed earlier and any outstanding site observations are also recorded

- co-ordinate in-depth demonstrations of the system in operation, its control methodology and the opportunity to fine tune the system through the Building Energy Management System (BEMS). Set points will be undertaken by the relevant sub-contractor and supervised by the PSCP and H&K specialist Commissioning Manager
- co-ordinate the production of Building User Guides and the delivery of all training/demonstrations; this will be agreed at the Soft Landings meetings
- develop a training plan in consultation with the Soft Landings core team. The training plan will cover all the phases of the commissioning process and will include:
  - confirmation of what systems, equipment and assemblies will be the focus of training
  - the specifications for the type, provider, location, duration and outcomes of the training sessions
  - estimated times and schedules for the training sessions
  - information to assist in day-to-day operations
  - instructions regarding operations during emergency situations
  - troubleshooting guidance
  - guidance on adjustment of operating parameters for systems and equipment

6.6.7 Resource Requirements

The PSCP has appointed H&K to support the planning and implementation of all technical commissioning activities. This work started during the design phase and will continue through the construction, commissioning and handover phases of the Project.

Additionally, a Whole Time Equivalent (WTE) Functional Commissioning Manager and a WTE Equipment Manager will plan and lead all functional commissioning activities supported by the wider Project Team, Operational

Management Teams and the HFS equipping team. They will lead on the functional commissioning of both buildings, co-ordinating finite resources to ensure the successful bring into operation of both facilities.

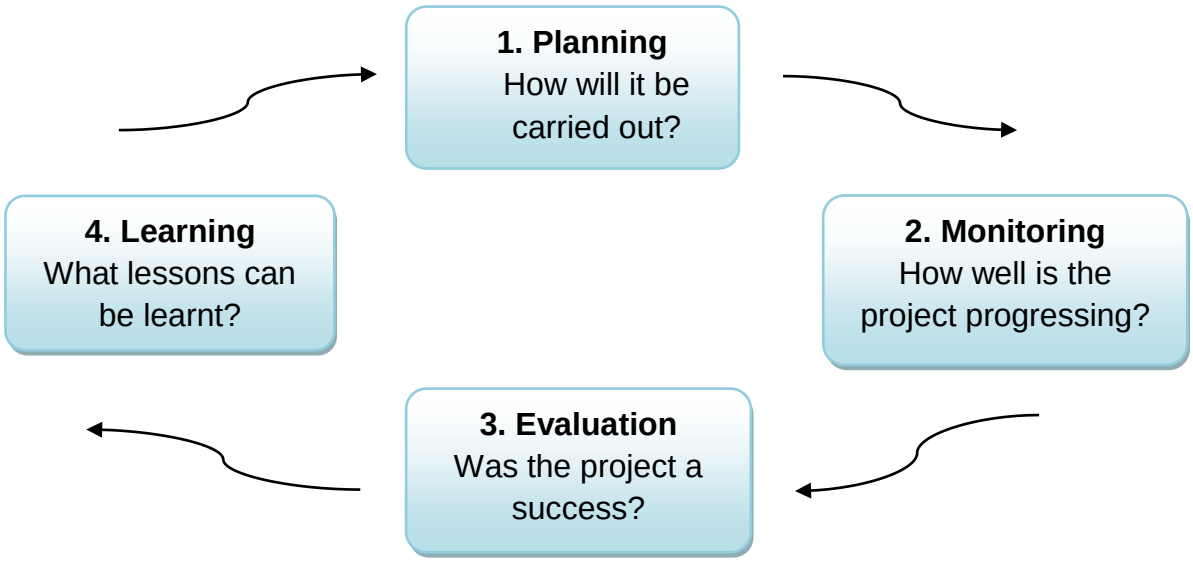
6.7 Project Evaluation

Project evaluation is a key element of any project. It must be well planned and executed. Evaluation of the Project will have two main strands:

- monitoring, which involves the systematic review of Project progress while it is proceeding during Stage 4 (construction phase)
- evaluation, which is the process of evaluating the realisation of the expected benefits from the Project as an indication of a successful outcome to the Project

When used in combination, these strands become an essential aid in realising, determining and sharing the success of any project, refer to Figure M8.

Figure M8: Project Monitoring and Benefits Evaluation Process



6.7.1 Person Dedicated to Leading This Process

A number of people will be involved in the monitoring and evaluation process. The Project monitoring will be led by the SPM who will ensure that all

monitoring reports are prepared and reviewed. These reports will be reviewed as part of the normal governance process at the Project Board, AMG and at CIG, as appropriate, over the life of the Project.

The PPE will be led by a designated NHSG officer, yet to be confirmed. The benefits evaluation process outlined in the updated SCIM guidance will require a different approach and may need to be led and managed in a different way than was the case for previous projects. During the construction phase, NHSG will review its approach to project evaluation.

6.7.2 Monitoring and Evaluation Stages

6.7.2.1 Project Monitoring (Stage 4 – Construction)

The project monitoring element will be undertaken over the life of the construction phase of the Project and will cover the technical aspects of the Project e.g. programme, cost, quality and health and safety.

An emerging Project Monitoring Plan is included as Appendix OO. The monitoring reports are based on the template example reports included in the SCIM guidance, they will include:

- Monitoring and Evaluation Plan
- Project Cost Monitoring Plan
- Operational Revenue Cost Monitoring
- Construction Cost Plan
- Programme Monitoring Plan

Key aims of monitoring:

- gaining a better understanding of whether the Project is running smoothly and to programme so that any corrective action can be taken in a timely manner
- enabling service plans/changes to progress at a correct pace to align with the Project programme

- better understanding of the risk contingency status (i.e. has some of it been used or not)
- better understanding of the impact of Project scope changes on costs and programme

6.7.2.2 Project Evaluation

The Service Benefit Evaluation will be undertaken once the Project has ended, staff and patients have settled and the redesign agenda has had time to be fully implemented, likely to be during 2024/25. It will cover the impact of the Project on service change and benefit realisation. The Project's Benefit Registers, Benefit Realisation Plans, Service Redesign Plans and Training and Development Plans will form a significant part of this assessment, refer to sections 6.3 Change Management Arrangements and 6.4 Benefit Realisation Plans.

In relation to the Service Benefit Evaluation, a new process for this will be developed within NHSG to support a consistent approach to the evaluation of this Project and all other capital developments in Grampian. It is likely that the Service Benefit Evaluation for these two significant buildings will take in the region of six – nine months to complete, to allow time for data collection, report writing, internal review and lessons learned. The Service Benefits Evaluation will be undertaken one - two years after the facilities are commissioned and will focus on the benefits outlined in the Benefit Registers included as Appendices H and I.

Key aims of evaluation are to:

- demonstrate that the Project was worthwhile by, for example, achieving its strategic investment objectives, realising its expected benefits, and carefully managing its associated risks
- promote organisational learning to improve current and future performance

- avoid repeating costly mistakes
- improve decision-making and resource allocation (e.g. by adopting more effective project management arrangements)
- recognise how the impact of good design can improve stakeholder satisfaction, service performance and the efficiency and effectiveness of the NHS Board's operations

The new SCIM guidance outlines in detail the approach to be taken in planning for the evaluation of projects going forward.

As this Project will not be evaluated until one – two years following occupation, likely to be in 2024/25. A fully developed Evaluation Plan has not been developed yet.

The key elements that will allow the Project to be usefully evaluated against the benefits outlined in the Benefit Registers are however outlined in Appendices H and I. Additionally, the qualitative benefits have been subject to a series of baseline stakeholder surveys, refer to Table M11 and example questionnaires and reports are included as Appendices JJ, KK, LL and MM.

Both the qualitative and quantitative benefits will be evaluated during the PPE in 2024/25.

A detailed Evaluation Plan will be developed during the construction phase in advance of handover.

6.7.3 Resource Requirements

The resource requirements of this new evaluation process will take some time to assess and cannot be done until NHSG has had time to digest the new guidance and agree how it wants to provide for these activities going forward for all infrastructure projects. NHSG is, however, aware of the importance of good evaluation and will put together a full plan including

information outlining how this will be resourced prior to handover of the Project. A provisional cost will be included in the Project cost assumptions in the FBC until agreement is reached within NHSG regarding how this and other evaluations will be approached in line with the updated SCIM guidance.