NHS Grampian

The Baird Family Hospital

and

The ANCHOR Centre

Foresterhill Health Campus, Aberdeen

Outline Business Case

March 2018

Contents

Q	Indicative Drawings of Site Options
R	Optimism Bias Templates
S	Costed Risk Plan
T	Generic Economic Model (GEM) Extracts
U	University of Aberdeen - Agreement in Principle Letter
V	The ANCHOR Centre Schedule of Accommodation
W	The Baird Family Hospital Schedule of Accommodation
X	PSCP Procurement Strategy
Y	Capital Cost Plan
Z	Project Programme
AA	Community Benefits Plan
BB	Capital Funding Procurement Options
CC	Letter from SGHSCD regarding NPD to Capital
DD	High Level Information Pack incl. Selection Criteria
EE	Site Plan in Context of Foresterhill Health Campus
FF	PIP Letter
GG	The Baird Family Hospital Training & Development Plan
HH	The ANCHOR Centre Training & Development Plan
II	Current & Future Baird Accommodation
JJ	Project Monitoring Plan
KK	Indicative Scope of Enabling Works
LL	Health Inequalities Impact Checklist
MM	Foresterhill Health Campus – 5 Year Development Plan

ABBREVIATIONS

Introduction to the Outline Business Case

The Outline Business Case (OBC) for The Baird and ANCHOR Project provides the information required to demonstrate to the Board and Capital Investment Group (CIG) that the Project is ready to proceed to the detailed design and Full Business Case (FBC) stage. It confirms that the Project represents value for money and that the procurement using the Frameworks Scotland 2 capital procurement model is likely to be efficient. It seeks to demonstrate that the Project will:

- meet the business need
- offer value for money
- be affordable and achieveable
- contribute to the Scottish Government's objectives

The OBC sets out the governance arrangements for the Project and the intended programme for procurement. There are six main sections of the OBC, as summarised below:

Executive Summary – provides a clear, concise summary of the key features of the OBC

The Strategic Case – establishes the rationale and objectives for intervention, confirms that the rationale is still valid, confirms that the preferred option will offer solution(s) to the identified problem(s) and satisfies the Project's specific and Government objectives

The Economic Case – documents the range of options that have been considered and provides information on the economic appraisal

The Commercial Case – documents the procurement strategy and risks. Outlines preparation and arrangements for the construction contract

The Financial Case – ascertains cost and funding options, requirements and implications

The Management Case – outlines the Project's management plan for succesful delivery, including identification of the delivery team and Project governance arrangements

1. Executive Summary

1. Executive Summary

1.1 Introduction

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

- The development of a new hospital which will provide maternity, gynaecology, breast screening and breast surgery 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 development of a new centre which 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 suite 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 North of Scotland for almost two decades

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

This OBC is the second phase in the business planning process for the Project. Its purpose is to:

- describe the option that optimises value for money and overall sustainability
- prepare the scheme for procurement

- put in place the necessary funding and management for the successful delivery of the Project

This document sets out the OBC for The Baird and ANCHOR Project and seeks to demonstrate that the Project will:

- meet the business need
- offer value for money
- be affordable and achievable
- contribute to Scottish Government's objectives

1.2 The Strategic Case

The Strategic Case has reviewed the rationale for intervention set out in the IA for The Baird and ANCHOR Project and considers that the rationale remains valid.

The Project meets the objectives which have been established and contributes to the achievement of the SG's objectives. The Project is also compliant with relevant national, regional and local clinical care and health strategies, in particular:

- A National Clinical Strategy For Scotland (2016)
- Grampian Clinical Strategy (2016 – 2021)
- North of Scotland Regional Clinical Strategy (2017)
- The NHS Grampian Property and Asset Management Plan (2017)
- Beating Cancer: Ambition and Action (2016)
- Beating Cancer: Ambition and Action in Grampian (2017)
- NHS Grampian Maternity Services Strategy 2010 – 2015 (refreshed in 2016)
- Neonatal Care in Scotland Framework (2013)
- Scottish Breast Screening Programme: Major Service Review (2014)
- The Best Start: A Five-year Forward Plan for Maternity and Neonatal Services 2017

The Project is expected to provide clinical and design quality benefits which are directly relevant to the stated objectives. Arrangements have been defined to support the monitoring and evaluation of these benefits.

It is therefore considered that there is a strong Strategic Case for proceeding with procurement of The Baird and ANCHOR Project.

1.3 The Economic Case

1.3.1 Appraisal Process

The Economic Case has revisited the Preferred Way Forward outlined within the IA and examined the relative value for money of the short-listed options. The Case focuses on a site option appraisal, it does not examine service delivery strategies as these have already been developed and agreed, with this Project being a consequence of their implementation.

The facilities are being delivered under a single procurement Project but will support discrete ranges of service needs in common with the Strategic Case. Separate Economic Cases have been produced for each facility.

These Cases demonstrate how NHSG has selected the preferred options to be taken forward to the next stages of planning, the Full Business Case (FBC) by appraising the economic implications, risks and benefits associated with the options identified. The options are summarised in Tables ES1 and ES2 below.

Table ES1: 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	58	44	55	46
Risk Appraisal	100	85	100	77
Total Score	**158**	**129**	**155**	**123**
Overall Ranking	1	3	2	4
IA Ranking	1	3	4	2

Table ES2: 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	73	61	67
Risk Appraisal	100	81	67	100
Total Score	**181**	**154**	**128**	**167**
Overall Ranking	1	3	4	2
IA Ranking	1	3	4	2

The analysis demonstrates the relative value for money of the preferred sites and changes since the preparation of the Initial Agreement do not materially change the outcome of the Economic Appraisal at this stage. i.e.:

- 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 currently occupied by the Eye Out-Patient Department (EOPD). The first stage, the Radiotherapy Centre, was completed in 2013 and the investment proposed in this OBC 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. A proposed site plan is shown in Figure C1, refer to main OBC section 4.3.3

    - The estimated Gross Internal Floor Area (GIFA) for the development is 5,498 m^2. A Schedule of Accommodation (SoA) is included in Appendix V
- The Baird Family Hospital to be sited on Foresterhill Health Centre site
    - Located towards the west of the Royal Aberdeen Children's Hospital (RACH) on the site currently occupied by the FHC and the Breast Screening Centre (BSC). 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 proposed site plan is shown in Figure C1, refer to main OBC section 4.3.3
    - The estimated GIFA for the development is 25,893 m^2. A SoA is included in Appendix W
- Project (discounting option 5 as non-viable)

1.4 The Commercial Case

The Board considers that the procurement strategy has been well thought out, reflects experience on other recent capital projects and that the procurement route chosen is appropriate to meet the Board's requirements and timescales. The scope and the content of the proposed commercial arrangements are based on the Frameworks Scotland 2 (FS2) capital procurement model developed by Health Facilities Scotland (HFS).

The Project will be delivered using the FS2 Frameworks Agreement NEC3 Option C contract. In addition, the Project will operate a Project Bank Account.

The Project was initially believed suitable for a revenue-funded Non Profit Distributing (NPD) procurement model where financing would be provided by the private sector development partner. The 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 European System of Accounts 2010 (ESA2010), the 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, in May 2016, attached as Appendix CC.

The key Project milestone dates are included in Table ES3.

Table ES3: Project Milestone Dates

Milestone	Date
Enabling Works Commencement	September 2018
Enabling Works Completion	March 2019
FBC Approval	April 2019
Construction Commencement	April 2019
ANCHOR Construction Completion	April 2021
ANCHOR Centre Bring into Service	June 2021
Baird Construction Completion	October 2021
Baird Bring into Service	November 2021
AMH Demolition	January 2022
Completion Date	January 2022

The programme for delivery of the Project has changed since the IA approval. The IA anticipated that the completion date for The ANCHOR Centre and The Baird Family Hospital would be December 2020.

During the intervening period, the delivery model has changed from a revenue funded to capital funded project. This change required a delivery

partner (Principal Supply Chain Partner (PSCP)) to be recruited using the mini competition for the FS2 capital procurement process. Following the PSCP appointment in November 2016, an affordable Royal Institute of British Architects (RIBA) Stage 2 design that met the clinical and non-clinical brief had to be developed for both facilities. This process identified a number of areas of complexity in the required building designs, which needed mitigation resulting from the complex adjacencies required to meet the clinical and non-clinical briefs. In addition, there were a number of ground condition issues that required detailed assessment and management. This required a period of cost reconciliation and redesign which resulted in programme delay. The current programme is outlined in table ES4.

Consistent with previous projects, to de-risk the construction phase of the Project and to help mitigate some of the recent programme delay, plans are being put in place to deliver a range of 'Enabling Works' prior to FBC approval which will improves the construction programme by 12 weeks. This programme of works is scheduled to take place during the period September 2018 – March 2019.

Key risks have been allocated to the party best able to manage it, with the objective being to optimally allocate risk.

A costed Risk Register has been prepared and is maintained collaboratively by NHSG, the PSCP (GRAHAM Construction) and the Joint Cost Adviser (Currie & Brown). The OBC cost plan reflects the recent version of the Risk Register included as Appendix L.

1.5 The Financial Case

The purpose of the Financial Case is to demonstrate the affordability of the preferred option, in the context of the Board's overall financial plans and in comparison with the other short-listed options.

The case defines the financial model used to establish the anticipated capital and revenue cost, funding and accounting implications of the proposed facilities. As the short-listed options related to sites for the new facilities the impact is marginal.

Investment required to deliver in the new facilities includes enabling projects to free up the preferred sites, project development costs, construction costs and furniture and equipment. Delivery of the enabling projects is advanced and have been subject to separate business case approval with completion planned for early 2018. Funding will be by a combination of existing NHSG capital and revenue allocation and additional capital allocation from the SG. The initial investment is summarised in Table ES4.

Table ES4: Summary of Initial Capital Investment

	Baird	**ANCHOR**	**Total**
	£000s	**£000s**	**£000s**
Enabling Projects	8,702	4,762	13,464
Construction Related Costs	115,948	30,768	146,716
Furniture and Equipment	15,652	1,348	17,000
Project Development Costs	5,398	1,350	6,748
Commissioning Costs	168	42	210
Total Initial Investment	**145,868**	**38,270**	**184,138**
Sources of Funding			
SG Additional Capital Funding	131,600	32,116	163,716
Hub Contract	7,531	0	7,531
NHSG Capital Funding	1,066	4,762	5,828
NHSG Revenue Funding	5,671	1,392	7,063
Total Sources of Funding	**145,868**	**38,270**	**184,138**

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

Table ES5: Summary of Initial Capital Investment

	Baird	ANCHOR	Total
	£000s	£000s	£000s
Construction Related Costs	115,948	30,768	146,716
Furniture and Equipment	15,652	1,348	17,000
Total Initial Investment	**131,600**	**32,156**	**163,716**
Sources of Funding			
SG Additional Capital Funding	131,600	32,116	163,716
Total Sources of Funding	**131,600**	**32,116**	**163,716**

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 and also identify any financial implications, refer to section 6.3.1 and appendicies M and N for more information about the service redesign process. 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 2021 and will be provided for in the Local Delivery Plan (LDP).

Table ES6: Summary of Additional Recurring Revenue Implications - First Full Year of Operation (2022/23)

	Baird	**ANCHOR**	**Total**
	£000s	**£000s**	**£000s**
Recurring Revenue Costs			
Additional Depreciation	3,505	784	**4,289**
Additional Clinical Service Costs	784	164	**948**
Additional Non-Clinical Service Costs	340	85	**425**
Additional Building Related Running Costs	2,295	679	**2,974**
Total Recurring Revenue Costs	**6,924**	**1,712**	**8,636**
Sources of Funding			
Third Party (UoA)	144	21	**165**
NHSG Revenue Funding (Other Scheme Costs)	3,275	907	**4,182**
Total Identified Sources of Funding	**3,419**	**928**	**4,347**
Revenue Funding (Depreciation)*	3,505	784	**4,289**

NHSG is committed to the Project and subject to the provision of additional Scottish Government funding in relation to the construction costs, equipment and depreciation has/will incorporated the necessary funding increases for capital and revenue consequences in its financial plans and LDP for the coming years as set out in Table ES7.

Table ES7: Cashflow

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Total
	£000s	£000s	£000s	£000s	£000s	£000s	£000s	£000s	£000s
Costs - Cashflow									
Enabling Projects	136	557	5,218	22	0	0	0	0	5,933
Enabling Works	0	0	0	6,000	0	0	0	0	6,000
Construction Related Costs	0	1,897	1,700	3,874	45,394	70,070	17,588	193	140,716
Furniture and Equipment	0	0	0	0	0	2,000	10,000	5,000	17,000
Total Capital Costs	**136**	**2,454**	**6,918**	**9,896**	**45,394**	**72,070**	**27,588**	**5,193**	**169,649**
Project Development Costs	1,550	782	850	994	946	877	749	0	6,748
Commissioning Costs - Revenue	0	0	0	0	0		210	0	210
Impairments		3,211	7,155						10,366
Additional Depreciation							0	4,289	
Clinical Service Costs							501	948	
Non-Clinical Service Costs							331	425	
Building Related Running Costs							1,596	2,974	
Total Revenue Costs	**1,550**	**3,993**	**8,005**	**994**	**946**	**877**	**3,387**	**8,636**	
Total Costs	**1,686**	**6,447**	**14,923**	**10,890**	**46,340**	**72,947**	**30,975**	**13,829**	
Funding - Cashflow									
SG Additional Capital Funding	0	1,897	1,700	9,874	45,394	72,070	27,588	5,193	163,716
NHSG Capital Funding	136	557	5,218	22	0	0	0	0	5,933
NHSG Revenue Funding (Project)	1,550	782	850	994	946	877	959	0	6,958
Depreciation/Impairment		3,211	7,155					4,289	
NHSG Revenue Funding (Other Scheme Costs)							2,339	4,182	
Third Party (UoA)							89	165	
Total Sources of Funding	**1,686**	**6,447**	**14,923**	**10,890**	**46,340**	**72,947**	**30,975**	**13,829**	

All revenue and capital implications of the Project are reflected in the Financial Plans of the Board and will be incorporated into the LDP submission in March 2018.

1.6 The Management Case

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

Service Redesign Plans and Training and Development Plans have been developed to support delivery of a detailed service change agenda to be implemented over the next five years to ensure delivery of the benefits to be achieved by the investment.

The building design and the service redesign agendas were developed together during the briefing process. Clinicians, managers, Health Intelligence, workforce, finance, public and health care planning colleagues worked together to design future services in line with strategy, policy, patient need, service demand and based on affordable future models of care. This work informed the clinical brief and SoA.

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

Arrangements have also been established for benefits realisation as part of the project evaluation for managing risk through to commissioning and bring into operation in 2021.

The Project will also be subject to a number of external reviews including the Office of Government Commerce (OGC) Gateway Reviews assessing project

readiness to progress through key stages of the procurement process to FBC approval, construction and evaluation.

It is considered that appropriate management and governance arrangements have been put in place to support the successful delivery of this Project.

1.7 Conclusions

This OBC demonstrates that:

- there is a strong Strategic Case for proceeding with The Baird and ANCHOR Project
- there is a sound Economic Case for proceeding with the preferred options
- there is a robust Commercial Case for proceeding to the FBC stage of The Baird and ANCHOR Project as a capital funded project using the FS2 procurement model
- the Financial Case is satisfied for proceeding to the FBC stage of The Baird and ANCHOR Project
- the Management Case is established to support the procurement of The Baird and ANCHOR Project using the FS2 model of contract

2. The Strategic Case

2. The Strategic Case

2.1 Background and Structure of the Strategic Case

The Baird and ANCHOR Project includes two quite distinct elements. To allow both elements to be fully explored, this Outline Business Case (OBC) will discuss the Strategic and Economic Cases for The ANCHOR Centre and The Baird Family Hospital separately and then the Commercial, Financial and Management Cases will be described as a single Project.

This Strategic Case therefore includes two separate strategic assessments, one for The ANCHOR Centre and one for The Baird Family Hospital. As per SCIM guidance, the main purpose of the Strategic Case at OBC stage is to confirm that the preferred strategy/solution identified at Initial Agreement (IA) stage has not changed. The following ANCHOR and Baird chapters will revisit the Strategic Case made in the IA and provide answers to the following questions:

- Have the current arrangements changed?
- Is the Case for change still valid?
- Is the choice of preferred strategic/service solution(s) still valid?

It is the view of NHS Grampian (NHSG) that there are no strategic changes of significance that impact on the recommendations made by the Project Team at IA stage and therefore the approved strategy to deliver the Baird and ANCHOR facilities remains valid.

The background to the Project to date is described in the next few paragraphs.

The Scottish Government provided IA approval (30 September 2015) and invited NHSG to submit an OBC for a single Project (refer to Appendix A) which includes two distinct elements, including:

- the development of a new hospital which will provide maternity, gynaecology, breast screening and breast surgery services. It will also include a Neonatal Unit (NNU), 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, and already evident in practice, it is expected that the new hospital will be referred to simply as “The Baird” by the public, patients and staff

- the development of a new centre which 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 suite 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 north for almost two decades

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

A series of key enabling works will be delivered by NHSG in advance of the Project to allow the proposed solution to be delivered. These enabling works will use different delivery routes, as described briefly below, and will be approved using other procurement routes and separate business cases.

The Foresterhill Health Centre (FHC) is in the process of being relocated to an adjacent site on the Foresterhill Health Campus and thereafter the existing building will be demolished. This project is being pursued as an enabling work to allow development of The Baird Family Hospital on the preferred site. OBC approval for this project was confirmed on 30 September 2015. Construction commenced on this project in December 2016 and construction completion is due in March 2018. This project is being delivered as part of a hubCo Design Build, Finance and Maintain (DBFM) revenue funded project (The Inverurie and Foresterhill Bundle Project).

The other enabling projects are the relocation of the Eye Out-Patient Department (EOPD) and the Breast Screening Centre (BSC) to refurbished ambulatory accommodation in Aberdeen Royal Infirmary (ARI) and thereafter demolition of the EOPD and the BSC. These projects are being progressed as NHSG capital projects using the Frameworks Scotland 2 procurement method. These developments were approved by the Board of NHSG in February 2016 with work to be completed by spring 2018. The relocation of the BSC is a temporary move as this service will, in due course, relocate to The Baird Family Hospital.

The following ANCHOR and Baird strategic chapters will revisit the Case made in the IA in detail to demonstrate that the proposed strategy remains valid.

The Strategic Case

The ANCHOR Centre

2.2 Strategic Background – The ANCHOR Centre

2.2.1 Strategic Background Proposal

Section 2 seeks to outline the strategic background to the Project, identifying the strategic issues that have led to a need for change. It also demonstrates stakeholder involvement and support for the Project. It seeks to do this by responding to the following questions:

- Who is affected by this proposal?
- How does this proposal respond to NHSScotland's strategic investment priorities?
- Which strategies does this proposal directly respond to, and how?
- What, if any, external factors are influencing this proposal?

Oncology and haematology services are currently delivered from six locations across the Foresterhill Health Campus from accommodation of varying standards. Like other centres in Scotland, these services are trying to manage increasing numbers of patient referrals year on year in out-patient and day-patient accommodation that is not fit for purpose.

NHSG has been actively seeking to improve cancer services over recent years in line with the priority areas highlighted in the most recent "National Cancer Strategy - Beating Cancer: Ambition and Action (2016)" alongside "Right Diagnosis, Right Treatment, Right Team, Right Place; The Cancer Plan for Children and Young People in Scotland (2016)". The emphasis over the last five years has been to focus on referral, diagnosis and treatment by addressing shortfalls in diagnostic treatment facilities. In 2012, oncology and haematology in-patient services relocated to the new Mathew Hay Building on the Foresterhill Health Campus and in 2013 the Radiotherapy Centre opened on the Foresterhill Health Campus. The Radiotherapy Centre was built in two phases with an explicit plan that it would, in due course, include a third phase. This third phase, The ANCHOR Centre, would seek to address the outstanding issue of suitable accommodation to support the delivery of out-patient and day-patient services.

This Business Case presents the Case for delivery of this final piece of the jigsaw which will address the need to:

- create a dedicated centre for day and out-patient care, allowing withdrawal from non-compliant accommodation, aligned 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

2.2.2 Who is Affected

NHSG provides secondary and tertiary oncology and haematology services for people of all ages across the North of Scotland and the Northern Isles as part of a virtual North of Scotland Cancer Network. It has been confirmed by the Scottish Health Council (SHC) that the provision of this new facility does not constitute a major service change. Adult services are provided from ARI, paediatric care is delivered from The Royal Aberdeen Children's Hospital (RACH) and a small number of people with rare cancers are referred to national cancer services elsewhere in Scotland.

A substantiable amount of work is being done with all Boards in the North of Scotland following the implementation of new regional planning arrangements in 2017. A North of Scotland Delivery Plan is being developed which includes the planning of services for the whole population of the North. This includes the services to be accommodated in The ANCHOR Centre.

A considerable number of people will be positively affected by this proposal 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 this Project. To support appropriate involvement, a Communication and Involvement Framework has been developed and agreed by the Project Board (refer to Appendix B).

A Stakeholder Analysis has been undertaken and is included as Appendix C. This has influenced the development of an action plan outlining communication and involvement activities to ensure stakeholder involvement. Each action plan covers a six month period and will be reviewed and updated regularly by the Public Involvement Officer and Service Project Managers over the life of the Project. A copy of the existing Action Plan is included as Appendix E.

Considerable communication and engagement activities have been carried out by the Project Team, supported by the project's dedicated Public Involvement Officer. These activities are referred to in the Management Case.

A brief report which seeks to summarise communication and involvement to date is included as Appendix F.

Recognition has been given to the importance of undertaking an Integrating Service Change and Impact Assessment in accordance of guidance within CEL 4 (2010) Informing, Engaging and Consulting People in developing Health & Social Care, Scottish Government. A Health Inequalities Impact Checklist has been completed and reflects the priorities highlighted by key stakeholders during the consultation and briefing process and is included as Appendix LL.

2.2.3 Links to NHSScotland's Strategic Priorities

NHSScotland's Strategic Investment Priorities are currently listed as:

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

These priorities are outlined in the NHSScotland Quality Strategy and the 2020 vision for Health and Social Care. The priorities for NHSG and the priorities outlined in the more recent national and local strategies "A National Clinical Strategy for Scotland (2016)" and the "NHSG Clinical Strategy 2016 –2021" continue to be in tune with these priorities. There are clear strategic themes which underpin the main areas of work to be addressed in order to meet the challenges in the future, arising from changes in population structure and a need for services, workforce and technology to improve treatment and care for patients.

These are:

- improving health and reducing health inequalities
- involving patients, carers, public, staff and partners
- delivering safe, effective and timely care in the right place
- developing the workforce and empowering staff
- getting the best from available resources

The Strategic Investment Priorities for The ANCHOR Centre are outlined in Table S1. The priorities outlined seek to demonstrate how the facility will contribute to the achievement of NHSScotland's strategic aims in terms of Quality Outcome Indicators (QOIs), State of Assets and Facilities Report Performance Indicators (SAFR) and HEAT Targets (Health Improvement, Efficiency, Access to Services and Treatment).

Table S1: The Strategic Investment Priorities

Person Centred			
General Definition		Ensures that resources are in place to support people powered health and care services and promotes personal responsibility and self-management for individual's health and wellbeing.	
1	QOIs	**Indicator**	**Potential Measure**
		Care delivered in spaces that maintain dignity and privacy at what is often a distressing time.	Compliance with current NHSScotland Technical Guidance.
			A patient survey where patients report that their dignity and privacy was maintained at all times.
		Improved provision for teenagers and young adults.	Facilities for teenagers and young adults are available.
			A patient survey where teenagers report that their specific needs while waiting for and receiving care were met.

Safe			
General Definition		Improves safety in the healthcare environment – building on the Scottish Patient Safety Programme in Acute Care, Primary Care, Maternity Services, Paediatrics and Mental Health Care.	
1	QOIs	**Indicator**	**Potential Measure**
		Appropriate spaces to deliver care safely.	Compliance with current NHSScotland Technical Guidance.
		Safe production and delivery of cancer	Appropriate aseptic

		treatments.	pharmacy accommodation, preparation and delivery spaces. Implementation of the Medicines Act of 1968, the Human Medicines Regulations of 2012 and compliance with MHRA Good Manufacturing Practice.
2	SAFR	Reduces Healthcare Associated Infection.	Percentage prevalence in acute hospitals.
		Reduces backlog maintenance.	Reduction in backlog maintenance burden.
		Improves the physical condition of the healthcare estate.	Proportion of estate categorised as either A or B for physical condition appraisal facet.
		Improves the quality of the healthcare estate.	Proportion of estate categorised as either A or B for quality condition appraisal facet.
		Reduces the age of the healthcare estate.	Percentage of estate less than 50 years old.

Effective Quality of Care	
General Definition	Improves the effective quality of care, particularly focused on increasing the role of primary care, integrating health and social care, improving the delivery of unscheduled and emergency care and improving the current approach to supporting and

		treating people who have multiple and chronic illnesses.	
1	Project Specific	**Indicator**	**Potential Measure**
		Co-location and co-ordination of services, improving the patient pathway.	A patient survey where patients report that their care was co-ordinated and the pathway of care smooth.
		Good teaching and learning, competent practitioners delivering optimal care.	Undergraduate and post-graduate students report a good learning experience through structured feedback.
		Improved access to additional services e.g. complementary treatments and signposting to local authority and Third Sector agencies who can support patients.	A patient survey where patients report that they had access to good care during their day treatment and out-patient care and that they were signposted to other relevant services provided by the local authority and Third Sector organisations.
2	HEAT	Supports achievement of the cancer treatment targets.	HEAT targets are consistently met.
3	SAFR	Improves the functional suitability of the healthcare estate.	Proportion of estate categorised as either A or B for physical condition appraisal facet.

Health of Population			
General Definition		Improves health of the population, particularly focused on the importance of early years, reducing health inequalities and preventative measures on alcohol, tobacco, dental health, physical activity and early detection of cancer.	
1	HEAT	**Indicator**	**Potential Measure**
		Supports early cancer detection.	Percentage of breast, colorectal and lung cancer cases (combined) diagnosed at stage 1 and stage not known.

Value and Sustainability			
General Definition		Supports implementation of the 2020 workforce vision through modernisation, leadership and management. Introduces investment in new innovations to increase quality of care and reduce costs. Increases efficiency and productivity through unified approaches, local solutions and decision making.	
1	QOIs	**Indicator**	**Potential Measure**
		Increased level of staff engagement.	Percentage of staff who say they would recommend their workplace.
		Supports optimisation of staffing and team working.	A staff survey showing how staff feel about the team they work in.
		Accommodation sized to cope with predicted rises in demand and to achieve waiting time targets.	Regular review of referral trends. Regular review of utilisation of accommodation.

		Improved recruitment in all relevant professions.	Regular review of number of vacancies and length of time taken to fill vacancies.
2	SAFR	Reduces the financial burden of backlog maintenance.	Quantify the cost avoidance associated with vacating accommodation not appropriate for clinical care.
		Improves design quality in support of increased quality of care and value for money.	AEDET score.
3	HEAT	Reduces carbon emissions and energy consumption.	Percentage reduction in C02 emissions and in energy consumption.

2.3 Links to other Policies and Strategies

The proposal to create The ANCHOR Centre is wholly in tune with the strategic priorities set out in the national, regional and local strategies listed below. This OBC will focus only on the specific policies the Project will directly respond to:

- Better Cancer Care, An Action Plan (2008)
- NHSScotland Quality Strategy (2010)
- Beating Cancer: Ambition and Action (2016)
- A National Clinical Strategy for Scotland (2016)
- Grampian Clinical Strategy 2016 - 2021
- The NHS Grampian Property and Asset Management Plan (2017)
- North of Scotland Regional Clinical Strategy 2017
- Beating Cancer: Ambition and Action in Grampian 2017
- Regional Delivery Plan (Draft) 2017

Better Cancer Care, An Action Plan (2008)

The National Cancer Strategy (Better Cancer Care, An Action Plan (October 2008)) outlines the main priorities for cancer care in Scotland. It looks at a spectrum of approaches which seek to improve the health of the population and services and outcomes for those with cancer and their families. The strategy covers:

- prevention
- early detection of cancer
- genetic and molecular testing for cancer
- referral and diagnosis
- treatment
- living with cancer

The strategic priorities for The ANCHOR Centre seek to contribute to improvements across all of these dimensions but particularly in relation to early detection, referral, diagnosis and treatment.

Additionally, the strategic priorities have sought to address some of the key areas for action highlighted in the new National Cancer Strategy, Beating Cancer: Ambition and Action, published in March 2016 e.g. transition between paediatrics and adult services and improved joint working with Third Sector partners.

NHSScotland Quality Strategy 2010

The Healthcare Quality Strategy for NHSScotland (May 2010) seeks to deliver high quality healthcare to the people of Scotland. The people of Scotland want a health service that has:

- caring and compassionate staff and services
- clear communication and explanation about conditions and treatment
- effective collaboration between clinicians, patients and others
- a clean safe care environment
- continuity of care
- clinical excellence

These ambitions are encompassed within the internationally recognised six dimensions of healthcare quality; person centred, safe, effective, efficient, equitable and timely. These dimensions have been used to help outline in this Business Case how The ANCHOR Centre Project's strategic priorities will contribute to the overall achievement of this quality strategy around five key headings (refer to section 2.2.3).

NHS Grampian Asset Management Plan (2017)

The NHS Grampian Asset Management Plan (2017-2027) aims to ensure that assets are used efficiently, coherently and strategically to support the future clinical and corporate needs of the Board, consistent with the forecast for service need. Development of The ANCHOR Centre is identified as a priority in the plan.

The oncology and haematology day-patient, out-patient and aseptic pharmacy services are currently located in overcrowded, non-compliant accommodation, presenting risks to the delivery of efficient, safe and timely care (refer to section 2.4.2).

North of Scotland Regional Clinical Strategy 2017

The first Regional Clinical Strategy for the North of Scotland was published in 2017 and covers a five year period. The regional strategy refers to the National Clinical Strategy for Scotland and demonstrates a clear commitment and alignment to this strategy. The vision in this document is to create and support healthier populations in the North of Scotland and to plan high quality services and hospital networks across the region.

Planning for The ANCHOR Centre aligns with the themes of this strategy and the Project has engaged widely with regional partners to ensure that the facility will contribute positively to the provision of clinical services for the North of Scotland.

These include:

- improved collaboration and joint working through the co-location of oncology, haematology and radiotherapy services
- establishment of efficient modes of electronic contact with patients to comply with delivery of care as close as possible to the patient's home
- improvements in quality and safety through provision of state-of-the art clinical facilities and improved pharmacy support
- maximisation of educational opportunities through the provision of dedicated and fully equipped teaching facilities for local and regional use
- support for holistic care through provision of dedicated areas to support Third Sector activities
- improvement in staff recruitment and retention through establishment of up-to-date and fully compliant working conditions and through this supporting the regional model of care

Beating Cancer: Ambition and Action in Grampian (2017)

The aim of this strategy is to provide a Grampian action plan in response to the national Beating Cancer: Ambition and Action strategy. One of the key issues, influences and drivers of the Grampian action plan is to “invest in modern out-patient facilities, such as The ANCHOR Centre, so that cancer services in Grampian can be provided in state of the art facilities”. The completion of The ANCHOR Centre will help to fully realise a variety of Grampian ambitions including:

- develop teenager and young adult facilities and enhanced clinical team working
- maximise utilisation of Clinical Nurse Specialist (CNS) team resource through redesign of services, clinics and follow-up
- availability of accommodation for more flexible working arrangements to meet patient and staff needs e.g. evening and weekend working

Regional Delivery Plan – Delivering Health and Social Care to the North of Scotland (Draft) September 2017

This draft strategy has been produced to detail the actions required to improve the health and social care of residents in the North of Scotland, focussing on those actions that can only be conducted at a regional level. The main principles included in the strategy include:

- equitable access to safe and effective, highest quality care and treatment
- reduce the need for hospital care and increase the resources available to provide care in the community
- North of Scotland…..is regarded as one of the best places to work in the UK
- tertiary services are stable and sustainable in the North of Scotland and provide good access to specialist care for the population of the region

The strategy refers to key investments that will be made in capital planning over the next five years and highlights The Baird Family Hospital and The ANCHOR Centre as one of these major investments.

The document makes reference to future plans for cancer centre provision in the North of Scotland and acknowledges the sustainability issues that face the current centres (in Inverness, Aberdeen and Dundee). In light of these issues, further integration will be pursued with the aim of "developing a 'one centre' approach with service delivery in three locations".

2.4 Case for Change

This section outlines the benefits to be gained from this investment proposal and covers:

- What are the current arrangements related to this proposal?
- What is the need for change?
- What is NHSG seeking to achieve from this proposal?
- What measurable objectives will be gained from addressing these needs?

- What risks could undermine these benefits?

2.4.1 Current Arrangements

Oncology and haematology services on the Foresterhill Health Campus are tertiary in nature. The services support ARI's role as the regional provider of a wide range of cancer and non-malignant haematology services to patients of all ages in the North of Scotland, including working with the North of Scotland Cancer Network (NOSCAN) to provide cancer services as part of a virtual network.

The current service provision includes:

- cancer services for all main cancer groups
- service provision to teenagers and young adults
- malignant and non-malignant haematology
- palliative care
- support services to provide whole person support e.g. psychology, spiritual care
- prosthesis services
- clinical teaching, training and research
- pharmacy

In addition to the services provided directly by the oncology and haematology teams, there are services offered by other specialities on the Foresterhill Health Campus including e.g. care for endocrine malignancies, genetics and paediatric services delivered from RACH.

A small number of patents with rare cancers are cared for by specialist services delivered on a national basis e.g. radical radiotherapy for children and neuro-endocrine tumours.

Adult oncology, haematology and radiotherapy services are currently delivered from several separate locations in ARI:

- out-patient services from Ward 307, Clinic D and Clinic E (17 consulting rooms)
    - Ward 307 – haematology (6 consulting rooms)
    - Ward 310 – oncology (4 consulting rooms)
    - Clinic D – oncology (7 consulting rooms - including psychology)
- day-patient services from Wards 310 and 307 (32 treatment chairs)
    - Ward 310 – oncology (20 chairs)
    - Ward 307 – haematology (12 chairs)
- in-patient services from Wards 112 and 114 in the Matthew Hay Building
- radiotherapy services from the Radiotherapy Centre

Table S2 shows the review of baseline treatment area utilisation which was conducted by interrogating the existing planning system in order to understand how current treatment area space is actually used. This proved highly challenging as the existing system is not fit for purpose, making manual data collection essential for planning purposes.

Table S2 - Summary of Ambulatory Day-patient Activity by Service

Baseline Day-patient Data		**2011**	**2012**	**2013**	**2014**	**2015**
Haematology (Ward 307)	Day-patients	2888	4254	5325	5420	6110
Haematology (Ward 310)	Day-patients	20	14	77	34	74
Sub-total		2908	4268	5402	5454	6184
Clinical Oncology	Day-patients				1828	1895
Medical Oncology	Day-patients				3045	3492
Sub-total					4873	5387
DP Total					**10327**	**11571**

Note: Oncology day-patient data prior to 2014 is included with the oncology in-patient data.

Table S3 identifies baseline (historical) out-patient activity by service, highlighting changes between 2011 and 2016.

It should be noted that staffing challenges temporarily restricted clinical activity over this period and that extrapolating pure out-patient data has been difficult.

In general terms, NHSG has a concentrated programme of work in place to address a number workforce and staffing challenges. For the ANCHOR specialities, most services are successful in the recruitment and retention of the required personnel. The Project will not add significantly to the workforce establishment and demands for the ANCHOR specialities. The respective Operational Management Teams are leading on the workforce challenges presented by current service pressures, with the aim of addressing these in advance of 2021.

It is anticipated that the Project will have a positive effect on the future workforce configuration and NHSG's ability to recruit e.g. the attractiveness of working in new purpose-built accommodation, the co-location of Baird and RACH offering the option for more streamlined and varied medical training programmes etc.

Table S3 - Summary of Ambulatory Out-patient Activity by Service

Baseline Out-Patient Data		2011	2012	2013	2014	2015
Oncology	New	1921	1953	1941	2036	2191
Oncology	Return	11554	12541	12738	12824	13898
Sub-total		13475	14494	14679	14860	16089
Haematology	New	836	917	952	806	924
Haematology	Return	8519	8901	8718	8457	9375
Sub-total		9355	9818	9670	9263	10299
OP Total		**22830**	**24312**	**24349**	**24123**	**26207**

Across adult oncology and haematology services, the high level activity figures are:

- 24,000 out-patient attendances per year
- 10,000 day-patient attendances per year
- 120 patients attending each day for out-patient or day-patient care
- 35 Systemic Anti-Cancer Therapy (SACT) cycles provided daily
- 20 additional interventions provided each day e.g. bone marrow biopsy, blood product transfusions
- 1,650 courses of radiotherapy, equating to 24,600 out-patient attendances per year

The Radiotherapy Centre opened in 2013 and is the primary provider of radiotherapy for patients from Grampian, Orkney and Shetland. The staging process combines the use of imaging modalities of Computed Tomography (CT), Magnetic Resonance Imaging (MRI) and Positron Emission Tomography (PET) to help define the treatment area. Specialised treatment planning software is used to optimise the treatment for each patient.

Within the Radiotherapy Centre, there are three state of the art Linear Accelerators and a High Dose Rate (HDR) Brachytherapy Unit which deliver daily treatments to over 100 patients. This equipment enables the service to deliver up to date treatment techniques e.g. Volumetric Modulated Arc

Radiotherapy, where the treatment machine rotates around the patient to deliver optimal dose to the tumour whilst minimising dose to normal tissue.

The haematology and oncology wards (Wards 112 and 114) have 23 and 29 in-patient beds respectively in addition to Monday to Friday beds. These in-patient facilities are located in the Matthew Hay Building on the Foresterhill Health Campus which opened in 2012.

NOSCAN is an important part of the current arrangements for oncology and haematology services. Secondary and tertiary oncology and haematology services for Grampian and the Northern Isles are delivered from the Foresterhill Health Campus. NHSG is part of NOSCAN working in collaboration with Highland, Orkney, Shetland, Tayside and Western Isles. The network facilitates understanding of regional issues, supports and progresses pieces of work on a regional basis and has an advisory role to NHS Boards and the Regional Planning Group. The Regional Cancer Advisory Forum (RCAF) also has a governance role in ensuring that the SACT and Quality Performance Indicators (QPI) governance frameworks are implemented across the North of Scotland.

The ANCHOR Project will contribute to the wider network through contributions to the execution of many of the principles and aspirations cited in the North of Scotland Regional Strategy 2017-2022.

2.4.2 Need for Change

NHSG has been working to improve care for patients with cancer and those with non-malignant haematological disorders for a number of years. The strategy for change being pursued is consistent with “Better Cancer Care; An Action Plan (2008)” and “Beating Cancer: Ambition and Action (2016)”. These documents highlight the national priorities for the delivery of cancer services, in particular the commitment to improve access is reiterated and emphasised in relation to the delivery of care as close to people’s homes as possible, as well as reducing waiting times. The Better Cancer Care Action

Plan took forward the cancer agenda in the context of services addressing the following key commitments:

- improving outcomes through early diagnosis, more timely treatment and improvements in treatment with advances in technology
- improving cancer prevention
- reducing inequalities in outcome
- supporting and treating the increasing number of patients living with cancer
- improving the overall quality of cancer care for patients

These key commitments have guided all of the service improvements achieved for these patient groups in the North of Scotland over recent years.

Working with patients and staff to update services is a key driver for the organisation and the need for change. This will be supported by the provision of this new facility and is a clear priority for the component clinical services which will occupy The ANCHOR Centre.

Table S4 seeks to summarise the need for change and why these changes are needed.

Table S4: 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 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. Our 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 young adults	Teenagers and young adults as a specific patient group are not well catered for in the existing clinical accommodation.	Provision for the specific needs of teenagers and young adults must be improved.
Dispersed service locations	Out-patient and day-patient services are provided in a fragmented way from 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	The lack of suitable	Patients attending for out-

patient pathways	ambulatory accommodation means some patients receive care inappropriately in in-patient facilities.	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 for flexible working and appropriate sharing of clinical and non-clinical spaces.	Fragmented teams prevent the optimal and flexible use of the specialist team.
Safe preparation of drug treatments compromised	Aseptic pharmacy provision is essential to the ANCHOR services but is currently provided from accommodation which is not compliant with current standards.	Need to provide a safe production environment close to the point of care to ensure safe treatment and prompt care delivery.
Clinical research	Recruitment of patients to clinical trials is a priority	Need to build on our research profile to help

opportunities curtailed	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.	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 facilities and accommodation can also affect the delivery of sustainable services.	Recruitment can be difficult and could be improved with good facilities, good teaching and research spaces and good patient outcomes.
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	Services are being provided from accommodation which	Facility performance and functional suitability and associated risks will

and backlog maintenance burden.	does not meet the needs of patients.	continue to deteriorate resulting in sub-optimal services.
Future service demand.	The ANCHOR Centre must continue to provide secondary and tertiary services for the North of Scotland, taking account of the predicted increases in incidence and prevalence and of changes in treatment type and treatment location.	Current facilities are already inadequate to cope with existing demand against a backdrop of an increasing future demand for oncology and haematology services.

NHSG is committed to sustainably achieving the national Detect Cancer Early (DCE) and referral to treatment time targets. NHSG is working to achieve these targets in advance of commissioning The ANCHOR Centre by breaking down the patient pathways where this has proved historically challenging and attempting to shorten each component of the pathway. In the interim, the pathways are micromanaged on an individual patient basis.

Figure S1 demonstrates that sporadic improvements have been made against the 31 day target but Figure 2 shows that the 62 day target is not yet being met by NHSG.

NHSG continues to encounter challenges in achieving both the 62 and 31 day cancer waiting times standards across all tumour groups. This is reflected in recent submissions as outlined below. This however is primarily due to insufficient staffing resource rather than physical space, with various streams of work being driven forward to help resolve this and help move the organisation towards a more resilient and flexible workforce in the future.

Figure S1: Performance - 31 Day Cancer Waiting Time Target

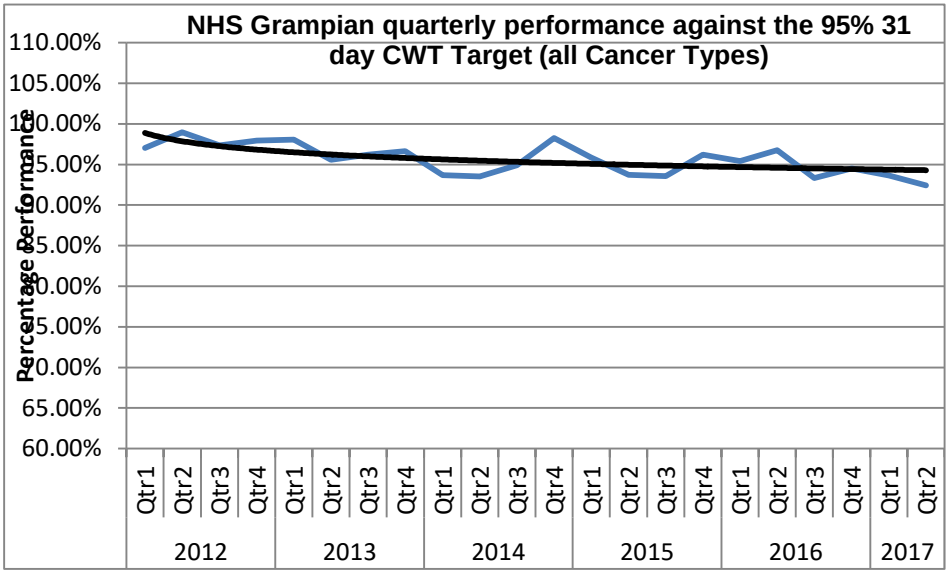
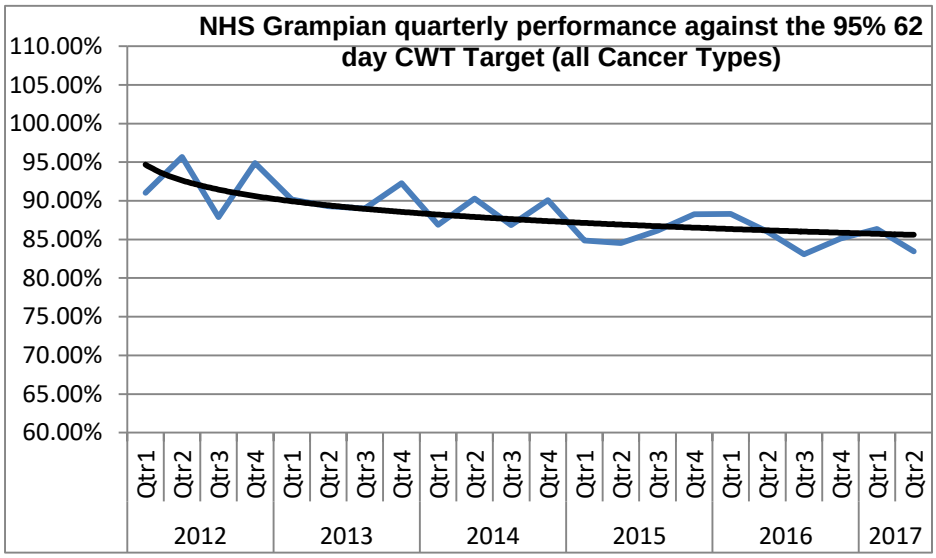


Figure S2: Performance - 62 Day Cancer Waiting Time Target



Over the last five years, NHSG has made significant infrastructure improvements to oncology and haematology services. This is part of an incremental plan to create fit for purpose facilities for the delivery of these tertiary services.

These services require specialist skills, equipment and service delivery accommodation to ensure that NHSG is able to achieve the improvements in early diagnosis, time to investigation and treatment and the overall quality of

care the people of Grampian and the North of Scotland should expect to receive.

These improvements include:

- The creation of modern fit for purpose in-patient facilities for oncology and haematology patients located in the Matthew Hay Building opened in 2012.

  These wards are located in the Matthew Hay Building on one of the floors above the Emergency Care Centre (Photo 1) where all patients requiring urgent care are seen and assessed on arrival to hospital either as a self-referral or a GP referral. This accounts for about 50% of admissions to these in-patient wards. The oncology and haematology wards are also located close to other medical specialty in-patient wards, meaning the oncology and haematology teams have good proximity to services and specialist clinicians who may need to be involved in the patient's multi-professional care management, whilst an in-patient.

  Photo 1 - Matthew Hay Building

- The Radiotherapy Centre (Photo 2) was built in two phases and was opened in 2013. It is the primary provider of radiotherapy for patients from Grampian, Orkney and Shetland.

The centre is staffed by a multi-disciplinary team of clinical oncologists, medical physicists, technologists and therapeutic radiographers providing a comprehensive care and supportive pathway from planning through to treatment delivery.

Often radiotherapy is used in conjunction with other therapies such as chemotherapy and surgery, therefore the relationship with these services is an integral part of the patient treatment pathway. The majority of patients are out-patients, whilst some may require specialised in-patient care.

Photo 2 – Radiotherapy Centre

The outstanding issues are:

- the need to improve day and out-patient services for both oncology and haematology patients, looking to improve the patient pathway
- improve timely access to assessment and treatment
- improve the environment of care for patients, their families and staff
- looking to the future to ensure that we have the correct facilities to provide services to a growing patient population based on the current predictions

There is also a need to improve the focus on teaching and research in collaboration with the University of Aberdeen (UoA) and Robert Gordon University (RGU). This would help to make sure that Aberdeen continues to provide the highest calibre of teaching and learning, as well as treatment and

care, in fit for purpose accommodation delivered by a highly motivated and competent multi-professional team.

As well as the new facility allowing for change in the delivery of clinical services, The ANCHOR Centre will also provide enhanced facilities for research and teaching purposes. NHSG sees the provision of such support as a key priority and works very closely with the UoA and RGU to support both under-graduate and post-graduate teaching, as well as a growing profile of research across all clinical services.

Accommodation will be provided in the new facility to support this provision of the highest calibre of teaching and learning as well as space to allow for increased recruitment to clinical trials to take place in the correct environment for patients.

The inclusion of such spaces in the Centre will also seek to increase collaboration between clinical and research teams, thereby embedding clinical trials activity into the everyday clinical scene.

The service modelling approach has been based on continued growth, as detailed by the Information Services Division (ISD) growth predictions up to 2027. Unpredicted growth before and after this period will be dealt with by extending the working day/week and by materially increasing the number of community based treatments offered, as appropriate. Which treatments can be safely delivered at home or in a community setting is under constant review by the clinical team and this will continue over the years to come as new treatment regimens become available.

NHSG already delivers significant elements of care in the community. Existing community provision was included in the planning assumptions for the accommodation in this Project. Clinical expertise was also gathered about future innovations and technology that would impact on the location of

care delivery in the future, to be balanced with unknown advances in medical treatments.

No specific additional community infrastructure requirements have been identified except for the increased ambulatory cancer treatments being delivered from existing facilities in Elgin.

Table S5: Future State Table

Key Service Activity	
• 24,000 out-patient attendances per year • 10,000 day-patient attendances per year • 120 patients attending each day for out-patient or day-patient care • 35 SACT (Systemic Anti-Cancer Therapy) cycles provided daily • 20 additional interventions provided each day e.g. bone marrow biopsy, blood product transfusions, pic line insertions etc • 1,650 course of radiotherapy, equating to 24,600 out-patient attendances per year	
Planning Principles	**Patient Benefits**
Provision of fit for purpose out-patient and day-patient facilities	Provides privacy and dignity for patients
Safe, timely and efficient preparation of drug treatments	Drug treatments produced in same building, minimising delay in start of day treatment
All appropriate procedures to be delivered in out-patient setting	Reduction of standard procedures being delivered in in-patient setting
Increase clinical research	Opportunities to engage in research to support service improvement.

2.4.3 Current Accommodation

Table S6 below shows that there are significant problems with the existing out-patient and day-patient accommodation for these services in terms of

physical condition, compliance with statutory standards, space utilisation and functional suitability. There is very little potential for developing either existing or new services within the current facilities due to the physical limitations of extending buildings on their present sites. Furthermore, the current design and functional suitability seriously compromises the provision of modern health and care services from these buildings.

Table S6: Current Accommodation

	Current condition and performance of the Estate based on NHSScotland National Standards				
	Existing areas sq.m	**Physical Condition**	**Statutory Standards**	**Space Utilisation**	**Functional Suitability**
Clinic D, Wards 307, 310, Aseptic Pharmacy Suite*	1410	Poor	Poor	Overcrowded	Unacceptable

* During 2017, NHSG created an interim Aseptic Pharmacy in ARI to replace the existing suite which was non-compliant and unable to operate until 2021 when the suite in The ANCHOR Centre will be commissioned. The Board of NHSG developed the interim suite to ensure continuity of safe services, acknowledging that in 2021 the role of the interim suite would be to provide N+1 resilience for the Campus and to provide flexibility to accommodate the ever changing nature of bespoke pharmaceutical treatments.

To illustrate the findings in the Table above, the following photographs and narrative are some examples of the unsuitability of current accommodation within ARI.

Photograph S3 and S4 – Ward 307 Waiting Areas

Photograph S5 – Clinic D Waiting Area

Photographs S3, 4 and 5 above show the existing waiting areas within Ward 307 (haematology) and Clinic D (oncology). Due to varying factors, patients can wait up to an hour to be seen in clinic and neither of these areas are particularly welcoming or comfortable for patients attending appointments. The number of seats and lack of space results in the current configuration of chairs, some of which are behind doors.

Photographs S6, S7 and S8 – Treatment Area, Ward 307

Photographs S6 – S8 above show the existing treatment area within Ward 307 (haematology). This area is cramped and fails to give patients adequate privacy and dignity when receiving day-patient treatments e.g. chemotherapy. The area has no capacity for patients to be accompanied during their treatment with treatment chairs being placed in any space available. Clinical staff have very limited space for medication treatment preparation, some of which needs to be done at the treatment chair, impacting on the space of adjacent patients. Some treatments can be for lengthy periods of time (up to 8 hours), patients can become acutely unwell during treatment and there is very limited accommodation to manage these situations.

Table S7 shows that the backlog maintenance expenditure requirement recorded for this accommodation is around £630,000 and that 49% of this backlog is assessed as being of significant or high risk.

Table S7: Backlog Maintenance

	Backlog Expenditure Requirement £000s by Risk Profile				
	Low	**Moderate**	**Significant**	**High**	**Total**
Clinic D	19	6	28	5	58
Haematology OPD/Day Ward 307	45	51	82	27	205
Oncology Day Ward 310	56	64	102	33	255
Aseptic Pharmacy	0	0	0	0	0
Eye Clinic OPD	21	60	35	0	116
Total	141	181	247	65	634
	22%	29%	39%	10%	100%

This backlog maintenance expenditure requirement is defined as the basic cost of works to bring the accommodation back to an acceptable condition. This definition is in accordance with the Health Facilities Scotland Guidance on backlog costing and as such it excludes Value Added Tax (VAT), contractor's preliminaries, temporary re-housing costs etc.

Experience of undertaking backlog works in existing hospitals has shown that the final outturn cost of such works can be significantly higher than the basic backlog cost, often resulting in a doubling of the basic cost. In this Case, that would result in expenditure of circa £1.3 million on eradicating the backlog in this accommodation.

It should also be borne in mind that this backlog maintenance expenditure requirement is associated with the structural and physical condition of the accommodation. Even if these monies were expended it would do little to address the space utilisation and functional suitability issues which currently exist in the spaces as they are described as poor, overcrowded and unacceptable (refer to Table S6).

In addition to the property appraisals described above, the accommodation within the scope of this OBC has been the subject of design evaluation exercises using the Achieving Excellence Design Evaluation Toolkit (AEDET).

This exercise evaluates a design by posing a series of clear, non-technical statements based on three key criteria: Functionality, Build Quality and Impact. This evaluation has enabled the Project's stakeholders to develop a clear understanding of the weaknesses of the existing accommodation in terms of design and to provide a baseline for re-provision (refer to section 4.3.8).

The baseline score together with a target score for the proposed new building was submitted to the Scottish Government Capital Investment Group (CIG) with the IA as part of the mandatory NHSScotland Design Assessment Process (NDAP).

It is clear from the property appraisals and the AEDET evaluations of the existing accommodation that, without investment in modern facilities, the essential changes required in service models to meet the challenges associated with delivering national and local policy simply will not happen. Furthermore, the retention and recruitment of appropriately skilled medical, nursing, allied health professionals and support staff is becoming increasingly more difficult as the facilities become progressively more inadequate. This lack of fit for purpose accommodation will exacerbate the ability to retain and recruit the necessary staff to provide services in the future.

An AEDET review of the design at OBC stage was carried out in December 2017. Table C5 in the Commercial Case outlines the AEDET scores for the existing accommodation (baseline), the target scores being sought and the scores for the emerging design at OBC stage to inform areas for further design development in advance of the FBC submission.

2.4.4 Predicting Growth

Predicting likely growth in service demand over the next 10 -15 years is an inexact science. Work carried out by Oduro S, Black R and Brewster D published in 2010 by Information Services Division (ISD)/NHSScotland ('Projections of Cancer Increase in Scotland to 2020') estimated an 8% increase in new cases every five years up to 2020. This is due principally to an ageing population and it follows, therefore, that the population being referred will be older with even more co-morbidities to be managed.

This estimate is in line with an independent review relating to England, based on registry data, by Moller H et al in Brit. J. Cancer, 2007, 96:1484-8. A 33% increase between 2001 and 2020 was predicted in this publication, equivalent to an 8.25% increase every five years.

However, a recently updated assessment from ISD (Cancer Incidence Projections for Scotland 2013 - 2027) released in August 2015 predicts a somewhat more challenging scenario of an increase in new cases of cancer (excluding non-melanoma skin cancer) of 33% between 2008-2012 and 2023 -2027 i.e. 11% every five years.

As expected in these reports, predictions for individual cancers vary greatly, but most cancers are predicted to increase. Furthermore, the most common are predicted to rise significantly in incidence including breast and prostate cancer, with a major impact on service requirements.

In addition, better and sometimes more complex treatments with improved survival and need for follow-up are important considerations in relation to cancer prevalence (as opposed to cancer incidence). Macmillan publishes estimates on their website. They state that "There are 2.5 million people living with cancer in the UK (2015), 400,000 extra in 5 years". This appears to be based loosely on Maddams J et al (Brit. J Cancer 2012, 107: 1195-1202) who modelled cancer prevalence rates for the UK with predictions to 2040. They state that cancer survivors currently increase by around 3% per

annum. They predict that across the UK there will be an increase of one million cancer survivors each decade between 2010 and 2040 and that by 2040 almost a quarter of those over 65 years old will be cancer survivors.

These predictions for cancer incidence and survival, including the updated data from ISD, have been considered in relation to the current plans for service provision in NHSG. The current predictions are outlined in Table S8.

When the original briefing was undertaken to inform the IA, the ISD Cancer Incidence Projections Scotland to 2020 predicted an 8% increase in incidence every five years. During the intervening period, ISD have updated their projections and the ISD Cancer Incidence Projections for Scotland 2013 –2027 now indicate a growth of 11% every five years.

Between approval of the IA and submission of the OBC, the Project Team along with a group of clinicians, Health Intelligence colleagues and Healthcare Planners, Buchan + Associates revisited the original assumptions and the resulting accommodation brief.

The team tested a number of scenarios, led by Professor Mike Greaves, Clinical Lead for The ANCHOR Centre, and concluded that the schedule of accommodation developed at IA stage was still relevant and that no amendments were required as a result of the changing guidance. The team are confident that the assumptions are sound, based on the information available to complete the assessment.

Table S8: Grampian Level Cancer Incidence Projections. Source: ISD/Cancer Registry

Cancer Type	Standardised Incidence Ratio 2010-2014 (95% CI)			Incidence Count - 5 year Time Period				Incidence Count Percentage (%) change between:	
				Actual	Projected				
				2008-12	2013-17	2018-22	2023-27	2008-12 and 2023-27	2013-17 and 2023-27
All Cancers	92.7	90.9	93.8	14,640	17,696	19,652	21,666	48%	22%
Cancer of the Bladder	109.2	99.5	119.6	1,021	1,022	1,112	1,210	19%	18%
Cancer of the Brain and CNS	86.5	74.8	99.6	210	250	269	281	34%	12%
Cancer of the Breast (female)	92.8	88.9	96.7	2,149	2,538	2,772	2,987	39%	18%
Cancer of the Cervix Uteri	83.3	70.4	98.0	136	196	225	253	86%	29%
Colorectal Cancer	91.8	87.7	96.0	2,014	2,353	2,670	2,995	49%	27%
Cancer of the Corpus Uteri	101.1	91.0	112.2	342	400	466	516	51%	29%
Cancer of the Head and Neck	86.6	79.6	94.0	490	708	792	871	78%	23%
Cancer of the Kidney	101.1	92.4	110.3	498	619	746	855	72%	38%
Leukaemias	101.4	91.0	112.8	339	321	310	313	- 8%	-2%
Cancer of the Trachea, Bronchus and Lung	76.2	73.0	79.6	1,953	2,812	3,013	3,222	65%	15%
Hodgkin's Disease	89.2	70.9	110.9	83	106	121	134	62%	27%
Non-Hodgkin's Lymphoma	100.8	92.6	109.6	531	577	628	677	27%	17%
Malignant Melanoma of the Skin	98.7	91.1	106.8	611	770	913	1,022	67%	33%
Cancer of the Oesophagus	101.8	92.8	111.4	447	467	494	528	18%	13%
Cancer of the Ovary	97.8	87.1	109.5	325	336	347	361	11%	7%
Cancer of the Pancreas	86.9	78.0	96.5	341	449	518	590	73%	31%
Cancer of the Prostate	106.1	101.2	111.2	1,611	1,761	1,970	2,174	35%	23%
Cancer of the Stomach	88.5	79.2	98.7	368	365	365	383	4%	5%
Cancer of the Testis	100.3	83.2	120.0	126	134	147	156	24%	17%
Other Cancers	-	-	-	1,622	2,077	2,369	2,768	71%	33%

In relation to non-malignant haematology, it has been difficult to find data to inform future demand predictions. Nokes T in 'Haematology Consultant Workforce: The Next 10 Years' (BSH/RCPath, 2008) refers to increasing workload across the specialty but quantifying this is difficult. Local experience indicates that the population of patients with disorders of haemoglobin is increasing markedly, as are referrals relating to thrombosis investigation and management, anticoagulation management and bleeding due to more aggressive use of anti-thrombotics.

In keeping with the 2020 vision of healthcare in Grampian and the North of Scotland, the Project has also considered what kind of cancer treatments might in future be able to be delivered locally in e.g. community hospital or oral therapies taken by patients at home. Treatment developments in this field of medicine are so dynamic that it is difficult to predict with any certainty. The Project has therefore assumed that the general trend in incidence and prevalence will be as outlined above.

In addition, in future some existing treatments will be offered as oral medications or as more pharmacologically stable preparations that could be increasingly delivered in settings closer to a patient's home. There are new treatments being approved all the time. These are commonly more complex and need to be administered in a specialist acute setting.

2.5 Investment Objectives and Benefits

2.5.1 Investment Objectives

This section identifies the investment objectives by considering what NHSG is seeking to achieve with the development of The ANCHOR Centre.

The new facility will bring significant benefits to patients, public and staff and will address many of the risks and shortcomings in current service provision.

The IA of this Project rehearsed the benefits which will be achieved with the provision of a new facility to support clinical services.

Table S9 below seeks to summarise the resulting investment objectives for this proposal, included in the IA in more detail.

Table S9: 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

The rationale for investment should be reflected in the potential benefits to be gained from that investment. This provides both the evidence base that a proposal is worthwhile and that it presents value for money.

2.5.2 Benefits Realisation

It is vital that all projects are able to identify the potential benefits to be gained from investment. By identifying demonstrable and positive benefits from the start of the Project, the Project Team will be able to monitor throughout the life of the Project if the perceived and agreed benefits materialise. The Benefit Registers created for both facilities will be important documents used to determine the success of this investment. Benefits realisation is explored in more detail in the Management Case.

The Benefits Register for The ANCHOR Centre is included as Appendix H and is discussed in the Management Case. This register includes the benefits already described as part of the Strategic Investment Priorities but builds on these by including other kinds of benefits including eg**:**

- local community benefits (refer to section 6.4.1.1)
- backlog maintenance opportunity savings
- environmental benefits
- improved joint working with voluntary sector partners

A baseline value and target value for each benefit has been identified with some baseline patient and staff survey work scheduled for 2018 to inform the Benefits Register.

The Benefits Realisation Plan for the facility is included in Appendix J.

This plan builds on the benefits identified in the Benefits Register and includes details of how these benefits will be achieved.

The plan confirms as to the Responsible Officers/Teams who will lead on the achievement and monitoring of these benefits, a key component for a successful Project Evaluation. This is covered further in section 6.7 in the Management Case.

2.6 Key Service Risks, Constraints and Dependencies

A comprehensive Risk Register for the Project is in place and is being actively managed by the joint Project Team. This is rehearsed in more detail in section 6.5 in the Management Case. A copy of the Risk Register is included as Appendix L.

This section seeks to highlight a number of key service risks, constraints and dependencies that need to be addressed to support the successful delivery of the investment objectives and the benefits outlined in the Benefits Register. In addition, a comprehensive Service Redesign Plan has been developed to mitigate a number of these risks in order to prepare clinical services for new ways of working in The ANCHOR Centre when commissioned in 2021.

Details of this plan are included in Appendix M and section 6.3 of the Management Case. The redesign agenda, and associated service risks, are being managed by the Operational Management Team for ANCHOR services, led by the Unit Operational Manager (UOM), and supported by the Project Team.

Table S10 seeks to highlight a number of key service risks, constraints and dependencies that need to be addressed over the life of the Project.

Table S10: Key Service Risks, Constraints and Dependencies

Risk/Constraint/ Dependency	Impact	Mitigation
Failure to achieve cancer waiting time targets.	Diagnosis and treatment is delayed, potentially impacting on patient outcome.	The Operational Management Team for ANCHOR services and the Board of NHSG are working towards the sustainable achievement of these as soon as practicable, despite the current sub-optimal

		infrastructure.
Predicated referral rates are over or under-estimated.	There is inadequate space to cope with rising demand.	The Schedule of Accommodation (SoA) for The ANCHOR Centre is based on ISD predictions and work completed with our Health Care Planners and Health Intelligence colleagues. Unpredicted growth in referrals will be managed by accelerating the roll out of community based treatments, where appropriate, and by extending the working day/week as revenue funding for additional staff becomes available.
Recruitment and retention is not improved.	Full staffing, resulting in a better working environment and more patients able to be seen.	A number of the strategic objectives could improve recruitment and retention e.g. an improved working and care environment and improved facilities for research and teaching. The UoA Head of School of Medicine is collaborating with NHSG to establish new senior

		academic posts to enhance basic and applied research capacity relevant to oncology. This will enhance the academic reputation of the unit nationally and internationally which will in turn impact positively on recruitment and retention.
Future treatment regimens not yet developed may require a different treatment environment.	Accommodation needs differ from that developed.	The SoA developed with our Health Care Planners has sought to create, where possible, generic and flexible spaces that can accommodate a change in function over time.
Service redesign does not optimise efficiency.	Efficiency is not optimised which could impact on staffing resource demands.	A comprehensive Service Redesign Plan has been developed with the operational team. This is being delivered under the supervision of a Project Service Redesign Group chaired by the Director of Acute Services, with senior service managers, clinical managers and finance managers.
Backlog maintenance cost benefit is not realised if vacated space is re-occupied by a clinical function.	Backlog cost is not reduced.	The accommodation in ARI being vacated is in space that is designated in future for non-clinical functions which should minimise future backlog maintenance costs. The EOPD, which currently

		occupies the site for The ANCHOR Centre, will be demolished, thereby eradicating a percentage of the predicted backlog maintenance costs.
Target design quality is not achieved.	Building not fit for purpose.	Comprehensive clinical and technical briefs and a Design Statement for the development have been developed with our Health Care Planners, Health Facilities Scotland, Architecture and Design Scotland and the AEDET and NDAP processes.
The proposal is not endorsed by key stakeholders.	The development does not have stakeholder support.	A Communication and Involvement Framework has been developed and approved by the Project Board. Stakeholders have influenced the scope and design of the Project, emerging design and service models and will continue to do so over the life of the Project and beyond.
The revenue costs of the Project are not sustainable for NHSG.	The ANCHOR Centre places an unplanned cost burden on revenue budgets.	The anticipated additional recurring revenue costs associated with the new facility have been identified as part of the Project development and service redesign activities. These costs are rehearsed in the Financial Case of this OBC.

The Board does not have the capacity or capability to deliver the Project.	The project is poorly specified and managed. The investment objectives are not clear and the Project does not deliver in terms of cost, quality or timescale.	The Board has agreed a £6.2m revenue budget to cover the costs associated with the Project for the period 2015 – 2022. An experienced Project Team has been assembled, including external advisors. The Project Team are working with all appropriate agencies to make sure that the Project priorities are delivered on time, on budget and to the agreed quality.

2.7 Revisiting the Strategic Case

The IA was approved by the SGHSCD in September 2015 (letter of approval included as Appendix A) and no specific conditions were outlined in the approval letter.

The Project Team have thoroughly reviewed the Strategic Case presented in the IA. This important process seeks to provide assurance at OBC stage that the strategic context and priorities which influence the Project remain appropriate, highlighting any key changes that may need to be addressed before the Project moves forward to the FBC stage.

Following this review process, no significant strategic or policy changes have occurred that require the Strategic Case as outlined in the IA to be amended. The only strategic document to note since IA approval is the publication of the updated ISD report on Cancer Incidence Projections for Scotland 2013-2027 (August 2015). This revision indicates a cancer incidence increase of 11% every five years to 2027 instead of the previously predicted increase of 8% every five years. The planning assumptions for the Project have been updated accordingly.

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

2.8 Conclusion – The ANCHOR Centre

The provision of oncology and haematology services has and continues to be subject to considerable change, resulting from the development of new treatment regimens and a continuing growth in the incidence and prevalence of cancer.

In recent years, NHSG has worked as part of NOSCAN to plan services across the north as part of a virtual service, enabling patients, where possible, to access services locally in their own Board area and in their own locality depending on the nature of the treatment.

Over the last five years, NHSG has sought to progress its plans to enhance cancer services to better meet the needs of the Grampian population and also the needs of patients from the North of Scotland.

The development of The ANCHOR Centre has been approached on an incremental basis with the creation of new in-patient accommodation in the Matthew Hay Building which opened in 2012 and the opening of the Radiotherapy Centre in 2013.

The ANCHOR Centre is therefore the next significant phase in the development of services for haematology and oncology, 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.

The Strategic Case

The Baird Family Hospital

2.9 Strategic Background - The Baird Family Hospital

2.9.1 Strategic Background Proposal

Section 2 seeks to outline the strategic background to the Project, identifying the strategic issues that have led to a need for change. It also demonstrates stakeholder involvement and support for the Project. It seeks to do this by responding to the following questions:

- Who is affected by the proposal?
- How does this proposal respond to NHSScotland's strategic investment priorities?
- What strategies does this proposal directly respond to and how?
- What, if any, external factors are influencing this proposal?

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

Currently, NHSG provides a comprehensive range of secondary and tertiary level services to women, babies and families from the Grampian region and also to the North of Scotland. These services are provided from the Foresterhill Health Campus, specifically in the Aberdeen Maternity Hospital (AMH), various out-patient departments and wards within ARI and the BSC.

The accommodation which supports these services is generally not fit for purpose and does not provide opportunities for departments to redesign to allow for future services to cater more appropriately for the needs of women, patients and their families as well as coping with increased demand and activity.

The provision of The Baird Family Hospital will allow NHSG to deliver appropriate accommodation to 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 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

It has been confirmed by the SHC that the provision of this new facility does not constitute major service change.

2.9.2 Who is Affected

NHSG provides secondary and tertiary level services to the patient groups who will be accommodated in The Baird e.g. maternity, neonatal, gynaecology, breast and reproductive medicine. The scope of service provision includes patients from Grampian as well as from other parts of the North of Scotland.

A substantial amount of work is being done with all Boards in the North of Scotland following the implementation of new regional planning arrangements in 2017. A North of Scotland Delivery Plan is being developed which includes the planning of services for the whole population of the North. This includes the services to be accommodated in the Baird Family Hospital.

A considerable number of people will be affected positively by this proposal 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 has been developed and agreed by the Project Board (Appendix B).

A Stakeholder Analysis has been undertaken and is included as Appendix D. This has influenced the development of an Involvement Action Plan outlining communication and involvement activities to ensure stakeholder involvement. Each action plan covers a six month period and will be reviewed and updated by the Public Involvement Officer and Service Project Managers over the life of the Project. A copy of the existing plan is included as Appendix E.

Appendix F summarises the involvement to date of these stakeholder groups and others in the Project. Considerable communication and engagement activities have been carried out by the Project, supported by the dedicated Public Involvement Officer who is part of the Project Team. These activities are referred to in the Management Case.

Recognition has been given to the importance of undertaking an Integrating Service Change and Impact Assessment in accordance of guidance within CEL 4 (2010) Informing, Engaging and Consulting People in developing Health & Social Care, Scottish Government. A Health Inequalities Impact Checklist has been completed and reflects the priorities highlighted by key stakeholders during the consultation and briefing process and is included as Appendix LL.

2.9.3 Links to NHSScotland's Strategic Priorities

NHSScotland's Strategic Investment Priorities are currently listed as:

- person centred
- safe
- effective quality of care

- health of population
- value and sustainability

These priorities are outlined in the NHSScotland Quality Strategy and the 2020 vision for Health and Social Care. The priorities for NHSG and the priorities outlined in the more recent national and local strategies, “A National Clinical Strategy for Scotland (2016)” and the “NHSG Clinical Strategy 2016 –2021” continue to be in tune. There are strategic themes that underpin the main areas of work which need to be addressed to meet challenges in the future, arising from changes in population structure and the need for services, workforce and technology to improve treatment and care for patients.

These are:

- improving health and reducing health inequalities
- involving patients, carers, public, staff and partners
- delivering safe, effective and timely care in the right place
- developing the workforce and empowering staff
- getting the best from available resources

The Strategic Investment Priorities for The Baird Family Hospital Project are outlined in Table S11 below. The priorities outlined seek to demonstrate how the Project will contribute to the achievement of the NHSScotland strategic aims in terms of Quality Outcome Indicators (QOIs), State of Assets and Facilities Report Performance Indicators (SAFR) and HEAT Targets (Health Improvement, Efficiency, Access to Services and Treatment).

Table S11: The Strategic Investment Priorities

Person Centred			
General Definition	Ensures that resources are in place to support people powered health and care services, and promotes personal responsibility and self-management for individual's health and wellbeing.		
1	QOIs	**Indicator**	**Potential Measure**
		Facility supports ambulatory care to be the norm where possible.	Pre-assessment rates across breast, gynaecology and maternity services (aim for 100%).
			Admission on day of surgery rates across breast and gynaecology services (aim for 85%).
		Patients are cared for in an environment which maintains privacy and dignity.	Provision of 100% single room in-patient accommodation.
			Patient survey regarding views on privacy and dignity, including enhanced options regarding choice of where to give birth.
		Minimise inappropriate hospital admissions.	Comparison of ambulatory in-patient activity in the existing service and in the new facility.

Safe			
General Definition		Improves safety in the healthcare environment, building on the Scottish Patient Safety Programme in Acute Care, Primary Care, Maternity Services, Paediatrics and Mental Health Care.	
1	QOIs	**Indicator**	**Potential Measure**
		Increases safety of people receiving care and support e.g. patient transfers to and from other hospital facilities.	Transfer times between hospital buildings.
		Improve provision of appropriate spaces to deliver care safely.	Compliance with current NHSScotland Technical Guidance.
2	SAFR	Reduced backlog maintenance.	Reduction in backlog maintenance costs.
		Facility to improve safety of environment for patients, visitors and staff.	Appropriate security systems in place in identified clinical areas.
		Quality of physical estate is improved.	Proportion of estate categorised as either A or B for quality condition appraisal facet.
		Reduces the age of the healthcare estate.	Percentage of estate less than 50 years old.
		Physical estate is improved.	Proportion of estate categorised as either A or B for physical condition appraisal facet.
3	HEAT	Reduced Healthcare Associated Infection rates e.g. Clostridium Difficile, MRSA/MSSA.	HAI rates across acute clinical areas.

Effective Quality of Care			
General Definition		Improves the effective Quality of Care, particularly focused on increasing the role of primary care, integrating health and social care, improving the delivery of unscheduled and emergency care and improving the current approach to supporting and treating people who have multiple and chronic illnesses.	
1	Project Specific	**Indicator**	**Potential Measure**
		Improve delivery of Stage 1 recovery services to women in the maternity service.	Measure maternity journey, including the need for, and location of, recovery services.
		Reduce inappropriate admissions to hospital.	Increased ambulatory care (day-patient and out-patient) activity.
		Increase in 23 hour surgery for breast and gynaecology patients.	Activity measures: 40% target for breast, 50% target for gynaecology.
		Co-location and co-ordination of services, thereby improving the patient journey.	Patient surveys where patients report their care was co-ordinated and the pathway of care was smooth.
		Reduced length of stay for breast and gynaecology patients.	Measurement of length of stay activity, demonstrating more effective service delivery and increased patient satisfaction.
		Increased participation in clinical trials.	Measurement of participation, aim for 10% across related

			clinical services.
2	HEAT	Enables eligible patients to commence IVF treatment within 12 months.	Measurement of 12 month waiting time target.
		Enables delivery and sustainment of relevant waiting time targets.	Measurement of these targets for elective services.
3	SAFR	Improves the functional suitability of the healthcare estate.	Proportion of estate categorised as either A or B for the functional suitability appraisal facet.

Health of Population			
General Definition	Improves health of the population particularly focused on the importance of early years, reducing health inequalities and preventative measures on alcohol, tobacco, dental health, physical activity and early detection of cancer.		
1	QOIs	**Indicator**	**Potential Measure**
		Support the emotional and psychological needs of women at distressing times e.g. early pregnancy loss, reproductive medicine patients, patients experiencing cancer diagnosis.	Patient surveys about enhanced appropriate separation of patient flows in the new facility.
		Maintain NHSG's position as the Board with the highest level of attendance at Breast Screening Service.	Measurement of uptake of breast screening service, comparison with national figures.
		Enables early access to antenatal services.	Activity figures relating to antenatal service.

Value and Sustainability			
General Definition	Supports implementation of the 2020 Workforce Vision through modernisation, leadership and management. Introduces investment in new innovations to increase quality of care and reduce costs. Increases efficiency and productivity through unified approaches, local solutions and decision making.		
1	QOIs	**Indicator**	**Potential Measure**
		Increases level of staff engagement.	Percentage of staff who say they would recommend their workplace as a good place to work.
		Supports optimisation of staffing and team working.	Staff survey showing staff views on the team they work in.
		Accommodation sized to cope with predicted rises and changes in service demands, helping to achieve waiting time targets.	Regular review of referral trends. Regular review of utilisation of accommodation, increased proportion of estate categorised as "Fully Used" for the space utilisation appraisal facet.
		Improved recruitment to all professions, including providing an appropriate learning environment to support staff development.	Regular review of number of vacancies, turnover rates and length of time taken to fill vacancies.
2	SAFR	Reduce the financial burden of backlog maintenance.	Quantify the cost avoidance associated

			with vacating accommodation not appropriate for clinical care.
		Improves design quality in support of increased quality of care and value for money.	AEDET score.
3	HEAT	Reduces carbon emissions and energy consumption.	Percentage reduction in CO2 emissions and in energy consumption.

2.10 Links to other Policies and Strategies

The proposal to build The Baird Family Hospital is wholly in tune with the key strategic priorities set out in relevant national, regional and local policies. This OBC will focus only on the specific policies the Project will directly respond to (in date order of publication).

NHS Grampian Service Strategies 2008 to present

The Acute Sector's vision and clinical strategy for ARI on the Foresterhill Health Campus was first captured within the Foresterhill Development Framework (2008) and more recently within the ARI Reconfiguration Reports (2010-2012). The Framework reflects the Acute Sector's vision to develop modern and sustainable facilities that support the provision of the 'right care' in the 'right place' by the 'right people', all of which will be delivered by The Baird Family Hospital.

The Framework refers specifically to the need to replace AMH.

NHS Grampian Maternity Strategy 2010-2015

This strategy identified the direction of travel for maternity services to contribute to reducing the differences in health between the richest and poorest people. The need to replace AMH was a key priority included in this

strategy. The Baird Family Hospital will also contribute significantly to other key aims of the strategy:

- providing a facility which will support healthier lifestyles and better well-being, as part of the overall maternity service across Grampian
- support and educate women to return to the position where normal births and breastfeeding are the expectation

The strategy was refreshed in 2016. The original maternity strategy reflected organisational thinking at the time and, whilst still relevant, the refreshed strategy has been themed, with suggested targets identified, to reflect the national review focus on choice, safety and quality. Additional themes include improving child health, to reflect the unique opportunity presented during pregnancy, and improvements to infrastructure.

NHSScotland Quality Strategy 2010

The Healthcare Quality Strategy for NHSScotland seeks to deliver high quality healthcare to the people of Scotland. Of the key aims stated in this strategy, The Baird Family Hospital will:

- continue to deliver care that is caring and compassionate for patients
- provide a facility which has been planned effectively between clinicians and patients and will operate on this basis
- provide a clean and safe care environment
- strive for clinical excellence

NHS Grampian Strategic Review of Maternity Services 2012

This review followed on from the Maternity Strategy and continued to stress the need to replace AMH, as well as developing CMUs. The Baird Family Hospital will realise the ambition of replacing AMH and will create the required physical connection to ARI and RACH, as well as achieving service aims such as:

- creating a facility where safe and person-centred care is provided
- ensuring consistency of health outcomes
- supporting care as close to home as possible

- supporting families to have a healthy pregnancy and normal birth in pleasant surroundings, free from unnecessary intervention whenever possible, but with high quality specialist support whenever needed
- contributing to a single Grampian wide sustainable service delivering consistent quality in multiple locations

Neonatal Care in Scotland: A Quality Framework 2013

This Framework defines the approach to the provision of high quality care for neonates and their families to which NHSScotland is committed. The Framework sets out standards to be achieved in all NNUs in Scotland to ensure that children get the best possible start in life and is underpinned by the ambitions of the NHSScotland Healthcare Quality Strategy. The Baird Family Hospital Project will aim to realise these standards in the new NNU.

Scottish Breast Screening Programme: Major Service Review 2014

This national review was commissioned to ensure that the breast screening service provided is of the highest quality and is delivered in the most efficient manner. The Baird Family Hospital will realise the key recommendation included in the review report that breast screening and breast symptomatic services should be co-located.

NHS Grampian Child Health 2020 Strategic Framework for Children and Young People's Health 2014

This strategy was published in March 2014 and outlined the need to recognise that childhood presents an opportunity to embed good health, including the need for investment in health before and during pregnancy. The maternity services and NNU in The Baird Family Hospital will be planned to achieve the aims of putting children and their families at the heart of what we do, as well as providing safe and sustainable services.

NHS Grampian Refreshed Maternity Strategy 2016

This strategy refresh is based on a review of the NHS Grampian Maternity Strategy 2010-2015 and is part of a process to provide the maternity service with the direction and support required to make positive changes to maternal

and child health. Getting this process right is key to achieving these changes.

Although this strategy is for the NHS Grampian maternity service, it recognises that the health of women and children is influenced by a wide range of factors. Therefore, there is a need to ensure continued collaborative working and a more holistic approach in order to have the biggest impact. This means close working with colleagues in health, local authorities and the Third Sector as well as women and families.

The 2010-2015 strategy was based on a wide-ranging consultation with women and staff and set out the future direction for the maternity service. It laid out some key aspirations and led to many programmes of work. The refreshed strategy maintains the same direction and aspirations, but puts these into a wider, current context.

The vision of the original and refreshed maternity strategy is:

- "shared vision….where all maternity related services and communities work closely together to support women and families to give their children 'the best possible start in life'"

NHS Grampian Asset Management Plan 2017

The NHS Grampian Asset Management Plan (2017-2027) aims to ensure that assets are used efficiently, coherently and strategically. The development of The Baird Family Hospital (as a replacement for AMH) is identified as a priority in the plan. The accommodation currently used by the clinical services is overcrowded, non-compliant and presents risks to the delivery of efficient, safe and timely care.

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

The Scottish Government commissioned a review of maternity and neonatal services which resulted in the publication of this report in January 2017.

This outlined a future vision of maternity and neonatal services across Scotland where:

- 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

With reference to the number of Intensive Therapy Units (ITU) across Scotland, no definite answers nor timescales have been actioned on this recommendation to date. It is therefore not clear where the 3-5 ITU locations across Scotland will be.

A reasonable assumption could be made that there will be a Neonatal ITU in Aberdeen. The design of The Baird has maximised flexibility of ITU/HDU spaces to be able to provide the appropriate level of ITU care as part of a Scottish network.

Planning for The Baird has, from the outset of the Project, included the principles of keeping mother, baby and family together. The creation of the Transitional Care Unit as a service development in The Baird will help to achieve this aim. The maternity service in the new facility will see increased collaboration between community midwifery teams and teams based in the

hospital, with the aim of providing support in local communities where possible.

Accommodation planning for the NNU has included the foresight to have maximum flexibility of clinical space e.g. the ability to flex between high dependency and intensive levels of care. NHSG is therefore confident that The Baird has been designed to adapt to any future changes in neonatal provision across Scotland.

The Project Team have therefore considered the recommendations from the Best Start report and will ensure that the accommodation provided will be as flexible as possible.

North of Scotland Regional Clinical Strategy 2017

The first Regional Clinical Strategy for the North of Scotland was published in 2017 and covers a five year period. The regional strategy refers to the National Clinical Strategy for Scotland and demonstrates a clear commitment and alignment to this strategy. The vision in this document is to create and support healthier populations in the North of Scotland and to plan high quality services and hospital networks across the region. Planning for The Baird Family Hospital aligns with the themes of this strategy and the Project has engaged widely with regional partners to ensure that the Baird will contribute positively to the provision of clinical services for the North of Scotland.

Regional Delivery Plan – Delivering Health and Social Care to the North of Scotland (Draft) September 2017

This draft plan has been produced to detail the actions required to improve the health and social care of residents in the North of Scotland, focussing on those actions that can only be conducted at regional level. The main principles included in the plan include:

- equitable access to safe and effective, highest quality care and treatment
- reduce the need for hospital care and increase the resource available to provide care in the community

- to have the North of Scotland regarded as one of the best places to work in the UK
- tertiary services are stable and sustainable in the North of Scotland and provide good access to specialist care for the population of the region

The plan refers to key investments that will be made in capital planning over the next five year timescale and highlights The Baird Family Hospital and The ANCHOR Centre as one of these major investments.

2.11 Case for Change

This section outlines the benefits to be gained from this investment proposal and covers:

- What are the current arrangements related to this proposal?
- What is the need for change?
- What is NHSG seeking to achieve from this proposal?
- What measurable objectives will be gained from addressing these needs?
- What risks could undermine these benefits?

To inform the Strategic Case the Project Team undertook a significant programme of activity analysis during 2015, supported by Buchan + Associates as the Project's healthcare planners. This work included looking at activity from Highland and the Northern Isles in particular, as well as Moray, to consider a series of scenarios regarding potential future changes in service delivery pathways in the North to support the development of the SoA for these facilties.

In addition, members of the Project Team liaised with clinical colleagues regarding any regional changes that should be factored into the assumptions. The Service Project Managers visited Orkney, Shetland and Highland in late 2016 and met with a range of managers, clinicians, patient representatives and Third Sector groups to help shape thinking and influence the Baird and ANCHOR developments. Follow up visits are currently being arranged for

May 2018. Tayside is also part of our ongoing involvement process going forward.

2.11.1 Current arrangements

NHSG provides a comprehensive range of services to women, babies and families from the Grampian region and also to the North of Scotland. Secondary and tertiary services are provided from the Foresterhill Health Campus, supplemented and supported by a specific range of secondary services provided at Dr Gray's Hospital in Elgin. In addition, there is community service provision across Grampian.

The current arrangements for the relevant clinical services are:

Maternity Services:

Secondary and tertiary maternity services are provided from AMH on the Foresterhill Health Campus. There are currently around 6,000 total deliveries per year in the Grampian region, with 4,500 of these in AMH. Future planning predictions and assumptions are that this total figure will increase to around 7,000 total deliveries by 2025.

The service provision constitutes a full range of maternity services including:

- tertiary service for fetal medicine which includes services to support high risk women from Grampian, Orkney and Shetland
- provision of theatre, High Dependency Unit (HDU) and recovery
- early pregnancy loss service
- specialist clinics to support high risk women e.g. diabetes, haematology, epilepsy, hypertension
- support to women both antenatally and postnatally within AMH
- patient choice in delivery location

There are 50 antenatal/postnatal beds in AMH, with nine Labour Ward rooms (including one birthing pool), four recovery beds, two obstetric theatres, four CMU rooms, 17 beds in the Triage/Assessment Ward and seven beds in the Early Pregnancy Ward.

AMH provides a full out-patient service including scanning and antenatal care.

The tertiary service works closely with service provision in the CMUs located in Aberdeenshire, with women transferred when clinically required from a CMU to AMH. There is an existing CMU in Peterhead, currently under refurbishment including service expansion, with an additional CMU currently being built in Inverurie and due to become operational in 2018.

Ultrasound and plain film radiology (mobile only) is provided within AMH. Specialist services such as Magnetic Resonance Imaging (MRI), Computed Tomography (CT) and Nuclear Medicine are accessed in ARI. This necessitates an external journey for women and staff to access these services.

The main referrers into the service are:

- Community Midwifery
- General Practitioner (GP)
- Grampian Medical Emergency Department (GMED)
- Emergency Department (ED)
- Antenatal Clinic
- Aberdeen Centre for Reproductive Medicine (ACRM)
- Pregnancy Advisory Service
- Labour Ward
- Gynaecology

Neonatology Services:

The NNU based within AMH provides level 3 tertiary neonatal services for the North of Scotland. There are around 900 admissions to the unit each year with 90% of the activity coming from the Labour Ward in AMH.

The unit has 37 cots which comprises:

- ITU x 10 cots
- HDU x 7 cots
- Special Care x 19 cots
- Isolation Room x 1

In addition to this, there are three parentcraft rooms within the unit where accommodation is provided for parents to take the lead on caring for their baby, usually immediately prior to discharge from the unit.

The departmental function is to provide the following services to babies from Grampian, Highland, Orkney and Shetland:

- tertiary medical and surgical services
- delivery of care to newborns, in particular to premature babies
- provide support to babies in the AMH postnatal wards
- provide support to Labour Ward for newborns
- provide out-patient services
- support neonatal surgery (most of which is carried out in RACH)
- provide the Northern regional transport service as part of the Scottish national transport service network

The unit provides care to around 25 babies each year from Moray, ten from Highland and four each from Orkney and Shetland.

The unit is increasingly supporting extremely premature babies (<26 weeks) and these numbers are anticipated to continue to increase. Some of these babies can be in the unit receiving care for up to four months.

There is mobile imaging equipment within the unit to provide plain film and ultrasound, however babies require to be transported to ARI in order to access MRI, Nuclear Medicine and CT and to RACH for neonatal surgery. This requires babies to be transported by ambulance on an external journey.

Gynaecology Services:

A comprehensive secondary and tertiary gynaecology service is provided from ARI, including the provision of gynae-oncology services to Grampian and the North of Scotland.

Service provision includes:

- tertiary centre for North of Scotland
- elective gynaecology
- benign gynaecology
- emergency gynaecology
- in-patient, day-case and out-patient services
- specialist services e.g. urogynaecology, endometriosis, colposcopy, vulval disorders
- medical termination services
- gynae-oncology surgical services (as part of NOSCAN)
- provide services to women from Orkney and Shetland (in addition to NHSG consultant-delivered services on the islands)
- Endometriosis Centre for the North of Scotland
- infertility services

The service is provided primarily for women, however there are also some male patients who access the service.

There are 28 in-patient beds (for both gynaecology and breast services) and four beds (Monday to Friday) for termination services. Day-case beds are also utilised in the Short Stay Unit (SSU) which services multiple surgical specialities in ARI. There is no dedicated HDU provision for gynaecology patients so the service utilises the main HDU in ARI as required.

Theatre sessions are allocated in the ARI Main Theatre Suite (12 sessions per week) and also in the Short Stay Theatre Suite (nine sessions per week).

Out-patient services are provided from the Women's Day Clinic and other out-patient clinic locations in ARI. Referrals come predominantly from GPs with other referrals from AMH, Cytology, Emergency Department, Sexual Health Services etc.

Aberdeen Centre for Reproductive Medicine:

The Aberdeen Centre for Reproductive Medicine (ACRM) is the sole referral centre for Reproductive Medicine Services in NHSG. It serves as a secondary care centre for Aberdeen, Aberdeenshire, Orkney and Shetland, whilst providing tertiary referral services for the North of Scotland.

Within ACRM, services are provided by the Andrology Department, Fertility Clinic, Assisted Reproduction Unit and Embryology Laboratory and these are delivered as a partnership between NHSG and the UoA. The service is heavily regulated by the Human Fertilisation Embryology Authority (HFEA) whose purpose is to set standards for, and issue licenses to, centres in the UK. The HFEA monitor all UK fertility clinics and all UK research involving human embryos, as well as providing impartial and authoritative information to the public.

The service is also at the forefront of research and teaching and has an excellent national and international reputation.

Approximately 1200 new referrals (secondary care and tertiary) are seen in the NHS Fertility Clinic per year. Activity figures for this service are anticipated to increase by 25% by the year 2020.

Treatments provided within the centre include:

- ovulation induction and artificial insemination
- In Vitro Fertilisation (IVF)
- Intra-Cytoplasmic Sperm Injection (ICSI)
- sperm, egg and embryo cryostorage
- egg, sperm and embryo donation

- surrogacy
- donor insemination
- fertility preservation
- surgical sperm retrieval (currently undertaken in Main Theatre Suite, ARI)
- reproductive surgery (currently undertaken in ARI)

High level activity figures for the service are as below (2014 data with anticipated 2020 activity in brackets):

- 7,880 out-patient appointments (9,840)
- 7,166 ultrasounds (10,150)
- 1,320 semen analysis (2,000)
- 1,256 procedures (2,380)

Referrals are received from GPs, other Health Boards in the North of Scotland (Highland, Orkney and Shetland), requests from other medical specialities for patients to be seen for fertility preservation, transgender requests from Tayside and early pregnancy assessment services.

Breast Services:

The breast service is split into two component parts – breast screening and breast symptomatic services.

The Grampian-wide service provision includes:

- assessment clinics
- out-patient services
- emergency and elective provision
- mobile screening units
- breast symptomatic surgery
- in-patient imaging services
- breast reconstruction surgery
- biopsy service provided for the whole of Scotland

Breast patients who require in-patient admission are accommodated in Wards 308/309 in ARI which is shared with the gynaecology service.

High level activity figures for the service are:

- 9,000-10,000 patients routinely screened each year (approximately 1,000 are called back to clinic, with subsequently about 400 called back for biopsy)
- 4,200 attendances each year for symptomatic imaging
- 8,000 in-patient guided biopsies
- MRI guided service (provided for the whole of Scotland) sees around 15 patients per year (takes 3 hours per patient)
- 100 patients on average per year attend for reconstructive surgery
- 140 patients on average per year undergo surgery for mastectomy

2.11.2 Need for change

NHSG has an ongoing programme of service improvement for the clinical services which will be provided in The Baird Family Hospital, consistent with relevant local, regional and national policies. In particular, a considerable strategic programme of service improvement for maternity services has been a priority for NHSG since the development of the Maternity Strategy.

The Baird will allow the opportunity to redesign clinical services to deliver the best possible care for patients. The provision of modern day accommodation in the new facility will provide the base for such redesign to take place, supporting care delivery in the right place in the right environment.

Working with patients and staff to improve services is a key driver for the organisation and the need for change, to be supported by the provision of the Baird.

A summary of the main issues supporting the need for change is included in the following Table S12, followed by detailed specialty narrative supporting the need for change.

Table S12: 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 physical facilities and locations.	Unsustainable to continue with current service configuration, services 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.

The high-level case for change made in Table S8 is consistent across all of the clinical services to be included in The Baird Family Hospital. The narrative included in the next few pages details service specific requirements for change and why the current service configuration is not sustainable.

Maternity Services:

NHSG has focussed considerable effort over the past few years in reviewing the strategic direction of maternity services, with the formal output of this culminating in the NHS Grampian Strategic Review of Maternity Services in 2012.

In December 2011, as one part of the wider ongoing strategic review of maternity services, the Board of NHSG approved the launch of a formal consultation on proposed changes to maternity services. The proposals that were consulted on were developed by a group of women from the catchment area, clinicians and managers who took part in an inclusive Option Appraisal in early 2011. The overwhelming majority of participants agreed on a preferred option.

A comprehensive follow up process, involving local staff and women, was then undertaken to review and recommend possible locations for CMUs, which formed an integral part of the proposals. After sharing the Option Appraisal proposals, NHSG received feedback from the Scottish Government which deemed these proposals to be major service change.

The formal consultation on the proposals ran from 11 December 2011 to 22 March 2012 and an official report outlining the process and details of the main responses received was presented and considered by the Board of NHSG in June 2012.

Throughout the wider review process, NHSG has ensured an ongoing dialogue with the SHC, an independent organisation with a role to assess how well the NHS is involving the public. In cases of major service change, the SHC must approve the engagement process used to develop any proposals before an NHS Board can proceed to formal consultation. The SHC must also approve the subsequent formal consultation process. In June 2012, the SHC produced a detailed report on NHSG's process for involving local people in the maternity review, outlining its approach to quality assurance, charting communication with NHS staff in relation to the engagement and consultation process and highlighting issues raised by local people during the process.

The report stated that: "The Scottish Health Council has quality assured the consultation process and is satisfied that NHS Grampian has followed the Scottish Government's CEL (4) (2010) guidance on involving local people in service change".

As well as this strategic review approved in 2012, NHSG produced the NHS Grampian Maternity Strategy 2010-2015. This strategy was refreshed in 2016.

Since the publication of the 2010 strategy, the main drivers for change include the following policy documents and patient trends:

- A national review of maternity and neonatal services has been carried out and has resulted in the publication in January 2017 of "The Best Start: A Five-Year Forward Plan for Maternity and Neonatal Care in Scotland" report. This report sets out a new way of planning maternity and neonatal services in the future. The Project Team have considered the

recommendations from this report and have ensured that the Baird design is flexible to accommodate any future changes in service delivery.

- The Perinatal Confidential Enquiry Report produced in November 2015 (MBRRACE – UK) provides a focus for services around improvements required in care to reduce antepartum stillbirths. The Project Team has been cognisant of these recommendations when developing the clinical strategy for the new facility.
- The Kirkup Report into the failures at Morecambe Bay that led to unnecessary maternal and child deaths. This report makes a range of recommendations for all maternity units and the wider NHS, all of which will be taken into consideration when operationally planning for The Baird.
- Complexity of care is increasing e.g. pregnancy in older women, pregnancy in women with chronic disease etc
- Increased success with fertility services
- Increased morbidity
- Increased success with rescue of younger gestational age babies

NHSG has therefore invested considerable efforts in recent years to ensure a clear strategy for maternity services, highlighting the high level aspirations which demonstrate the need for change. At an operational level, the implementation of this strategy is clear but has been hampered by the physical infrastructure in which the services operate. The need for service change e.g. to have increased CMU provision is evident, is welcomed and is well supported by the local population as well as service providers. The desire to allow women enhanced birth choices as well as increasing service provision in an ambulatory setting is also clear but is not currently able to be fully implemented due to the ageing infrastructure in AMH and the lack of accommodation flexibility to be able to redesign services fully.

The provision of enhanced CMU facilities is a priority for NHSG. There are existing CMUs in place in Peterhead and Aberdeen, with a new CMU in Inverurie becoming operational in 2018. NHSG has recently invested £1m to refurbish and upgrade the CMU accommodation located in Peterhead

Community Hospital. The need to improve the facilities in Peterhead was recognised as part of the strategic review of 2012. This investment will not only refurbish the existing CMU facilities but will provide additional space for antenatal services to be provided, allowing women increased opportunities to receive all of their pregnancy care in the local area. This work will be completed by the first quarter of 2018.

Maternity modelling for The Baird Family Hospital is partly based on the successful implementation and use of the CMU model across Aberdeen City and Aberdeenshire. CIG concerns were raised during the IA process as to predictions of CMU uptake for the Inverurie unit and, if not fully successful, the knock-on effect this would have on planning services for The Baird Family Hospital.

The success of Peterhead CMU, and the additional benefits to be gained from investment in the accommodation, will be a useful comparator when predicting the impact of Inverurie CMU when it opens in 2018. Peterhead CMU has an aspiration to support an average of 250 deliveries per year with the Inverurie unit designed to be able to support up to 500 deliveries per year. Current delivery numbers in Peterhead are less than 250 but the service will be enhanced with the refurbishment of the unit (including the provision of a birthing pool and enhanced clinic accommodation), making delivery as part of pregnancy care in the unit a more attractive option. This will be further supported by increased scanning, day assessment and consultant-led community clinics as part of service redesign.

The agreed investments for Peterhead and Inverurie will allow time for the maternity service to promote and fully establish the reputation and uptake of the new and enhanced community facilities before The Baird Family Hospital becomes operational. A communication plan has been developed and is being implemented which will be used by the community midwifery teams to ensure that women in the local areas are aware of their options for pregnancy care.

The aims and aspirations of Best Start will also support the shift to community based models of care, further strengthening the investment in community maternity services.

As described, NHSG already delivers significant elements of care in the community. Existing community provision was included in the planning assumptions for the accommodation to be included in the Baird. No additional community infrastructure requirements have been identified except for the aforementioned new Inverurie CMU and the refurbished Peterhead CMU.

The future configuration of maternity services in Grampian, including The Baird, will therefore be:

- two consultant units – one in Aberdeen and one in Elgin
- 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

Table S13: Future state of maternity services in Grampian

Key Service Activity	
• 5,500 births per annum in AMH • 7,000 total births per annum across Grampian • 13,500 maternity out-patients per annum • approximately 25% of women in The Baird will deliver in the CMU	
Planning Principles	**Patient Benefits**
Ambulatory care as the norm	In-patient admission only if clinically indicated
100% surgical pre-assessment (achieved currently)	Reduction in unnecessary hospital attendances
Enhanced Recovery	Reduced length of stay, increased patient control over their maternity recovery

Increased choice of birth location	Ability to have informed choice of where to give birth
Integrated pregnancy loss service	Streamlined service with obstetric and gynaecology specialist input
New services e.g. Maternity Triage	Support ambulatory care
Include third regional Community Maternity Unit	Increased choices for women in The Baird and across Grampian
Increase clinical research	Opportunities to engage in research to support service improvement
Increase community-based ante-natal services	Increased opportunity to have maternity care close to home

Neonatal Services:

The need for change in the provision of neonatal services is hampered by the poor physical accommodation supporting the clinical service. The existing facilities in AMH are not fit for purpose, do not comply with modern statutory building standards and are poorly designed in terms of space utilisation and functional suitability. This severely limits the ability of the clinical team to redesign services due to lack of accommodation options i.e. the desire to create more parentcraft and transitional care options.

Currently, neonates can be cared for in a postnatal ward or in the special care unit (in the NNU) for longer than is necessary as the baby is receiving treatment that means care at home is not possible. This can mean inappropriate hospital stays for mothers, when it is actually their baby who requires care.

The Baird Family Hospital will address this by providing facilities which better suit the needs of neonates and their families with the creation of a Transitional Care Unit as a new service development. This accommodation will allow parents/family members to remain in the hospital and provide care

for their baby in accommodation which is co-located with the main clinical area. This will allow parents to be the primary carer for their baby, enhance bonding opportunities and be confident in the knowledge that support and treatment is available from the clinical team when required.

Other factors which support the need for change in neonatal services:

- As indicated in the maternity section, "The Best Start: A Five-Year Forward Plan for Maternity and Neonatal Care in Scotland" report will see the redesign of neonatal services across Scotland. The recommendations from this report, published in January 2017, proposes radical change to neonatal intensive care provision in Scotland. To date, no significant progress has been made with implementing these neonatal recommendations. The Project Team 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.
- The Kirkup Report into the failures at Morecambe Bay that led to unnecessary maternal and child deaths. This report makes a range of recommendations for all NNUs and the wider NHS.
- Increased success with rescue of younger gestational age babies.

Table S14 below summarises the future state of neonatal service provision in The Baird.

Table S14: Future state of neonatal service provision

Key Service Activity	
• 900 admissions per annum • approximately 6% of babies born pre-term	
Planning Principles	**Patient Benefits**
Transitional Care as new service	Supports appropriate family-led care, reduced inappropriate admissions to postnatal beds
Increase clinical research	Opportunities to engage in research to support service improvement

Flexibility of ITU/HDU spaces	Minimises unnecessary movement of babies within unit
Support patient and family-centred care	Keep parent and baby together
Cot numbers to meet at least 95% of North of Scotland neonatal demand	Reduced need for families to travel outwith region to receive care
Surgery to be carried out in RACH	Short internal journey to RACH from Baird

Gynaecology Services:

Gynaecology services are located across several departments in ARI, creating a disparate service which does not allow for efficiencies of patient flow and staff utilisation. Out-patient care is provided from two locations at opposite ends of ARI, the in-patient facility is in another part of the hospital and theatre services are in separate ARI locations.

The Project Team have undertaken considerable analysis of gynaecology activity trends and anticipated changes in medical advances, supporting the case for a modern day gynaecology service which can predominantly be provided on an ambulatory basis. This analysis has demonstrated that approximately 28% of gynaecology surgical activity can and should be day-case/ambulatory delivered. However, this is unable to be achieved currently due to a lack of ambulatory appropriate facilities to allow this important shift in care from a mainly in-patient service focus.

The care of women in the early stages of pregnancy, including the distress of suffering pregnancy loss, is an area of clinical practice which involves both gynaecologists and obstetricians. Until recently, this support had been delivered from both AMH and ARI, with patient pathway flows not as clear as they should have been as to where a woman should attend to receive the most appropriate care. A service redesign exercise carried out in 2017 has

seen this care now concentrated from AMH. The Baird Family Hospital will further support an enhanced and fully integrated pregnancy support service to ensure prompt clinical care is provided to women from the team best suited to care for her particular circumstances.

Table S15 below summarises the future state of gynaecology service provision in The Baird.

Table S15: Future state of gynaecology service provision

Key Service Activity	
• 14,000 out-patients per annum • 4,000 in-patient admissions per annum • increase in referrals from over 60 age group • activity move from in-patient to ambulatory care	
Planning Principles	**Patient Benefits**
Ambulatory care as norm	In-patient admissions only if clinically indicated
100% surgical pre-assessment	Reduction in unnecessary hospital attendances
85% admission same day surgery	Reduction in length of stay, supported by Patient Hotel accommodation
Procedures to be carried out in ambulatory setting, not theatre	Ability to attend as day-case and have procedure carried out in less clinical setting
Enhanced Recovery	Reduced length of stay, increased patient control over recovery
Increase clinical research	Opportunities to engage in research to support service improvement
Increased one-stop clinic provision	Reduction in unnecessary visits to hospital

Breast Services:

Breast services on the Foresterhill Health Campus are delivered from the BSC (a building physically separate from ARI), as well as separate out-patient and in-patient locations in the main ARI building.

The Scottish Breast Screening Programme Major Service Review report published in 2014 recommended that co-location of breast screening and breast symptomatic services should be pursued by health boards as a strategic goal. It is important to note that the Baird will allow NHSG to create a co-located, not fully integrated, service in recognition of the need to keep patient flows appropriately separate.

The Baird Family Hospital will allow for this co-location to be achieved, thereby creating more efficient use of shared clinical equipment as well as staff expertise and time.

Table S16 below summarises the future state of breast service provision in The Baird.

Table S16: Future state of breast service provision

Key Service Activity	
• 10,000 screening attendances per annum at Breast Screening Centre • up to 25,000 women screened in Grampian per annum • 8,500 symptomatic attendances per annum • symptomatic attendances increasing by 4% per annum	
Planning Principles	**Patient Benefits**
Ambulatory care as norm	In-patient admission only if clinically indicated
100% surgical pre-assessment	Reduction in unnecessary hospital attendances
85% admission same day surgery	Reduction in length of stay, supported by Patient Hotel accommodation
Enhanced Recovery	Reduced length of stay, increased patient control over recovery

Increase clinical research	Opportunities to engage in research to support service improvement

Aberdeen Centre for Reproductive Medicine (ACRM):

The ACRM service is provided jointly by NHSG and the UoA. The formal integration of these two teams took place in January 2016 and has already demonstrated benefits of allowing for opportunities to maximise staff time and expertise to benefit patient care and improve access to this specialist service provision.

This organisational integration is commendable and has produced benefits to patients who access the service. However, there will remain limitations on what the service can provide within the existing accommodation e.g. limited opportunity to undertake some procedures within the department due to lack of appropriate facilities to sedate patients safely. This provision will be integral in the department in The Baird Family Hospital.

The demand on reproductive medicine services will continue to increase and diversify. The application of a HEAT target to this speciality has focussed attention on patient access and waiting times for IVF treatment. Any further future changes to the national criteria for accessing the service will only increase demand further and will require additional capacity to be found.

The current accommodation limits the ability of the service to provide additional clinics to achieve and sustain the HEAT target. Planning for The Baird Family Hospital has taken these target and criteria assumptions into consideration, as well as known advances in reproductive techniques and treatments, when considering the allocation of clinical accommodation required to meet demand.

Table S17 summarises the future state of reproductive service provision in The Baird.

Table S17: Future state of reproductive service provision

Key Service Activity	
• 1,200 new referrals per annum • 7,800 out-patients per annum • 2,000 laboratory procedures per annum • service demand anticipated to increase by 25% by 2020 (based on 2014 figures)	
Planning Principles	**Patient Benefits**
Ambulatory care as norm	In-patient admission only if clinically indicated
85% admission same day surgery	Reduction in length of stay, supported as appropriate by Patient Hotel accommodation
Increase clinical research	Opportunities to engage in research to support service improvement

Research and Teaching:

As well as the new facility allowing for change in the delivery of clinical services, The Baird Family Hospital will also provide enhanced facilities for research and teaching purposes. NHSG sees the provision of such support as a key priority and works very closely with the UoA and RGU to support both under-graduate and post-graduate teaching, as well as a growing profile of research across all clinical services.

Accommodation will be provided in the new facility to support the provision of the highest calibre of teaching and learning as well as space to allow for increased recruitment to clinical trials to take place in the correct environment for patients. This will minimise repeat attendances to the Foresterhill Health Campus as well as creating the environment to increase recruitment to key clinical trials.

The inclusion of such spaces in The Baird will also seek to increase collaboration between clinical and research teams, thereby embedding clinical trials activity into the everyday clinical scene.

2.11.3 Current Accommodation

Taking cognisance of the varying needs of the core clinical specialities to be included in The Baird, the accommodation has therefore been designed to allow for patient pathways to be streamlined, ensuring women and patients are cared for in the correct environment for their needs. Some examples of the principles which have been applied to the design of the facility include helping to achieve admission on day of surgery, out-patient triage instead of admission to an in-patient bed, pre-assessment before surgery, CMU care where appropriate etc.

Across all Baird clinical services, the Project Team have worked with independent healthcare planners, as well as internal health intelligence resources, to scrutinise activity figures and predict ahead as far as possible to determine future demands on care and treatment. The resulting SoA for the facility and the type of accommodation to be provided has been designed to allow for maximum flexibility to ensure The Baird remains fit for purpose in the future.

A major factor influencing the need for change is therefore the current accommodation supporting these clinical services. Table S18 outlines the current condition and performance of the accommodation. The appraisals of the buildings noted below have been undertaken in accordance with the NHSScotland property appraisal guidance “A risk based methodology for property appraisal”. These appraisals show that there are significant problems with the current accommodation in terms of physical condition, compliance with statutory standards, space utilisation and functional suitability. There is very little potential for developing either existing or new services within the existing facilities due to the physical condition of AMH (recommended in the Maternity Strategy for replacement) or of extending or changing the use of accommodation used in ARI. The current design and functional suitability seriously compromises the provision of modern health and care services from these buildings.

Table S18: Current Accommodation

	Current condition and performance of the Estate based on NHSScotland National Standards				
	Existing areas sq.m	**Physical Condition**	**Statutory Standards**	**Space Utilisation**	**Functional Suitability**
Aberdeen Maternity Hospital	15127	Poor	Poor	Over-crowded	Not Satisfactory
Breast Screening Centre	793	Satisfactory	Satisfactory	Fully Used	Satisfactory
Women's Day Clinic, Clinics B and E, Wards 308/309/ 315, ARI	3509	Poor	Poor	Fully Used	Not Satisfactory

The assessment detailed in the Table above shows that there are significant problems with the majority of the accommodation that supports these clinical services. In particular, AMH is in poor physical condition, does not comply with statutory standards and space utilisation and functional suitability is not satisfactory.

The BSC is the only accommodation currently in use which meets the 'satisfactory' standard and is deemed fit for purpose. *However, this accommodation is only able to support the breast screening service and does not allow for the co-location of breast screening and breast symptomatic services, as detailed in the Scottish Breast Screening Programme Major Service Review published in 2014 which stated 'to realise maximum sustainability and efficiency, co-location should be pursued as a long term*

goal'. The BSC also requires to be relocated in order to allow The Baird Family Hospital to be built on the preferred site.

To illustrate the findings in the Table above, the following photographs and narrative are some examples of the unsuitability of current accommodation in AMH and ARI.

Photograph 9 – front entrance of Aberdeen Maternity Hospital

Photograph 9 demonstrates the poor physical condition of the AMH main entrance and the main building. This entrance does not provide a welcoming arrival for women and their families, and does not provide for separation of entrance for emergency ambulances from walking arrivals and logistic deliveries. In addition, the entrance does not allow any separation of patient access for those women arriving in heavy labour or to attend for routine appointments and those women unfortunately hearing bad news or suffering pregnancy loss.

Photographs 10 and 11 – NNU in AMH

Photographs 10 and 11 clearly show the cramped clinical conditions in the NNU. There is not enough space at the cotside for families to be with their babies without feeling that they are impinging on the privacy of other families in the same room or disturbing the workflows of staff. The unit suffers from inadequate storage space and Photograph 11 shows the poor visibility for staff to see from one room into the next.

Photograph 12 – Clinic B in ARI

Clinic B in ARI is where some gynaecology out-patient clinics are provided. This photograph of one of the clinic room shows the space issues which prevent two-sided access to the consulting couch and the lack of space to allow for adequate delineation between clinical and desk space.

Photograph 13 – Clinic B in ARI

Photograph 13 is the corridor in Clinic B. Due to lack of space, this is also the only area in this department where nursing staff can write up nursing documentation and also the only available space to see patients for height and weight measurements.

Photograph 14 – Ward 309 in ARI

Photograph 14 is of an in-patient bedroom in Ward 308/309 which is the gynaecology and breast ward. This photograph is actually of one of the larger bedrooms but clearly shows the lack of space between the bed, partner chair, table and sliding door access to the en-suite. Some women remain in this ward for up to one week.

Table S19 shows that the backlog maintenance expenditure requirement recorded for these buildings is around £6.5m and that 49% of this backlog is assessed as being of significant or high risk.

Table S19: Backlog Maintenance

	Backlog Expenditure Requirement £000s by Risk Profile				
	Low	**Moderate**	**Significant**	**High**	**Total**
Aberdeen Maternity Hospital	1,152	1,856	1,717	827	5,552
Women's Day Clinic	42	13	61	12	128
Breast Screening Centre	6	1	5	0	12
Clinic B	68	22	96	18	204
Clinic E	29	30	48	16	123
Wards 308/309 (Breast/Gynae)	85	28	120	22	255
Ward 315 (Breast/Gynae admin)	55	59	94	30	238
Total	1,437	2,009	2,141	925	6,512
	20%	32%	34%	15%	100%

This backlog maintenance expenditure requirement is defined as the basic cost of works to bring the buildings back to an acceptable condition. This definition is in accordance with the Health Facilities Scotland Guidance on backlog costing and, as such, it excludes VAT, contractor's preliminaries, temporary re-housing costs etc.

Experience of undertaking backlog works in existing hospitals has shown that the final outturn cost of such works can be significantly higher than the basic backlog cost, often resulting in a doubling of the basic cost. To eradicate the backlog maintenance burden costs in these buildings would cost NHSG circa £13 million.

It should also be borne in mind that this backlog maintenance expenditure requirement is associated with the structure and physical condition of the

buildings and, even if these monies were expended, it would not address the space utilisation and functional suitability issues which currently exist in the buildings.

In addition to the property appraisals described above, the buildings within the scope of this OBC have been the subject of design evaluation exercises using AEDET.

This exercise evaluates a design by posing a series of clear, non-technical statements based on three key criteria: Functionality, Build Quality and Impact. This evaluation has enabled the Project's stakeholders to develop a clear understanding of the weaknesses of the existing buildings in terms of design and to provide a baseline for re-provision. The baseline score together with a target score for the proposed new building was submitted to CIG with the IA as part of the mandatory NDAP.

It is clear from the property appraisals and the AEDET evaluations of the existing buildings that, without investment in modern facilities, the essential changes required in service models to meet the challenges associated with delivering national and local policy simply will not happen. Furthermore, the retention and recruitment of appropriately skilled medical and midwifery/nursing, allied health professionals and support staff is becoming increasingly more difficult as the facilities become progressively more inadequate. This lack of fit for purpose accommodation will exacerbate the ability to retain and recruit the necessary staff to provide services in the future.

An AEDET review of the design at OBC stage was carried out in December 2017. Table C6 in the Commercial Case outlines the AEDET scores for the existing accommodation (baseline), the target scores being sought and the scores for the emerging design at OBC stage to inform areas for further design development in advance of the FBC submission.

We have outlined in this section of the OBC the many shortcomings with the current facilities and the restrictions this places on enabling services to work differently. The future accommodation to be provided in The Baird Family Hospital has therefore required detailed planning with stakeholders, patients and expert advisers to optimise this opportunity to create a facility that is designed to allow the clinical teams to provide patient-centred care in line with the changing models of care outlined in this Business Case.

Appendix II illustrates the current physical accommodation and the proposals for the Baird which demonstrates the appropriate and proportionate shift from in-patient accommodation to increased ambulatory accommodation.

2.12 Investment Objectives and Benefits

2.12.1 Investment Objectives

This section identifies the investment objectives by considering what NHSG is seeking to achieve with the development of The Baird Family Hospital.

The new facility will bring significant benefits to patients, public and staff and will address many of the risks and shortcomings in current service provision. The IA of this Project rehearsed the benefits which will be achieved with the provision of a new facility to support clinical services.

Table S20 seeks to summarise the resulting investment objectives for this proposal, included in the IA in more detail.

Table S20: 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. neonates access to RACH/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

2.12.2 Benefits Realisation

It is vital that all projects are able to identify the potential benefits to be gained from investment. By identifying demonstrable and positive benefits from the start of the Project, the Project Team will be able to monitor throughout the life of the Project if the perceived and agreed benefits materialise. The Benefit Registers created for both facilities will be important documents used to determine the success of this investment. Benefits realisation is explored in more detail in the Management Case.

The Benefits Register for The Baird Family Hospital is included as Appendix I and is referred to in the Management Case. This includes the benefits already described as part of the Strategic Investment Priorities, but builds on these by including other kinds of benefits including eg:

- local community benefits
- backlog maintenance opportunity savings
- environmental benefits
- improved joint working with voluntary sector partners

A baseline value and target for each benefit has been identified with some baseline patient and staff survey work scheduled for 2018 to inform the Benefits Register.

The Benefits Realisation Plan for the facility is included in Appendix K.

This plan builds on the Project benefits identified in the Benefits Register and includes details of how these benefits will be achieved.

The plan confirms the Responsible Officers/Teams who will lead on the achievement and monitoring of these benefits, a key component for a successful Project Evaluation. This is covered further in section 6.7 in the Management Case.

2.13 Key Service Risks, Constraints and Dependencies

A comprehensive Risk Register for the Project is in place and is actively managed by the joint Project Team. Risk is rehearsed in more detail in section 6.5 of the Management Case, a copy of the Risk Register is included as Appendix L.

This section seeks to highlight a number of key service risks, constraints and dependencies that need to be addressed to support the successful delivery of the investment objectives and the benefits outlined in the Benefits Register. In addition, a comprehensive Service Redesign Plan has been

developed to mitigate a number of these risks in order to prepare clinical services for new ways of working in The Baird Family Hospital when commissioned in 2021.

Details of this plan are included in Appendix N, section 6.3 of the Management Case. The redesign plan, and associated service risks, are being managed by the Operational Management Team for Women's Services, led by the Divisional General Manager, supported by the Project Team.

Staffing to deliver services are key and this is referred to in the Project's risk considerations. In general, NHSG has a concentrated programme of work in place to address workforce and staffing challenges. For the Baird specialities, most services are successful in the recruitment and retention of the required personnel. Detailed workforce planning is underway in areas such as neonatal and theatre nursing in order to ensure the required skill mix and establishments are in place for 2021, however there are no significant concerns about the ability to recruit to these specialities.

The Project will not add significantly to the workforce establishment and demands for the Baird specialities. As indicated, the operational management team are leading on the workforce issues. It is anticipated that the Project will have a positive effect on the future workforce configuration and NHSG's ability to recruit.

Table S21 seeks to highlight a number of service risks, constraints and dependencies that need to be addressed over the life of the Project.

Table S21: Key Service Risks, Constraints and Dependencies

Risk/ Constraint/ Dependency	Impact	Mitigation
Ambulatory care vision not achieved	Inappropriate ratio of ambulatory: in-patient accommodation provided.	Detailed clinical data analysis conducted. Redesign work will reconfigure services and workforce. Governance structure in place.
Healthcare modelling flawed	Facility not sized or configured appropriately.	Modelling supported and scrutinised by independent healthcare planners and clinical advisors. Accommodation flexibility incorporated to mitigate unanticipated factors.
Inability to realise new models of clinical care e.g. Transitional Care	Incorrectly sized and configured neonatal and maternity services.	Detailed analysis carried out on patient and family needs, including looking at future trends in healthcare, partly based on current service need. Research into other similar units, reconfiguration of workforce and education of families all part of service redesign agenda.
Maternity modelling inaccurate and/or CMU usage not as planned	Facilities for low, medium and high risk women across Grampian under- or over-utilised e.g. women not appropriately accessing local	Priority for maternity services to educate women regarding choices, supported by education provided by community midwifery teams. Development of appropriate clinical and operational policies. Maximise utilisation of the soon to be refurbished Peterhead and new Inverurie CMU to be opened in 2018.

	CMU services and choosing to access The Baird Family Hospital.	
Lack of a clear Service Redesign Plan	Service re-modelling not achieved	Redesign Plan developed and now being implemented by operational teams.
Proposal not endorsed by stakeholders (internal and external)	Success of Project will be adversely affected if not supported by key stakeholders.	Comprehensive Communication and Involvement Framework in place, supported by dedicated Public Involvement Officer. Support and endorsement from SHC in all communication activities. Regular stakeholder engagement, HR and Partnership involved in all levels of Project.
Workforce redesign not achieved	Inability to redesign clinical services without appropriately trained workforce.	Workforce Plan being developed and implemented by Operational/Project Teams. HR and Partnership input and advice at every stage.
Required investment in workforce is not realised	Inability to redesign and provide clinical services in the new facility without required levels of workforce in place.	Additional revenue needs have been identified and will be progressed by the Operational/Project Teams.

2.14 Revisiting the Strategic Case

The IA was approved by the SGHSCD in September 2015 (letter of approval included as Appendix A) and no specific conditions were outlined in the approval letter.

The Project Team have thoroughly reviewed the Strategic Case presented in the IA. This important process seeks to provide assurance at OBC stage that the strategic context and priorities which influence the Project remain appropriate, highlighting any key changes that may need to be addressed before the Project moves forward to the FBC stage.

Following this review process, no significant strategic or policy changes have occurred that require the Strategic Case as outlined in the IA to be amended.

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

2.15 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.

NHSG remains committed to the provision of high quality and tertiary services to populations in the North of Scotland, including Orkney and Shetland. The new facility will provide the modern-day clinical facilities

required, as well as providing spaces to support women, patients and families.

3. The Economic Case

3. The Economic Case

3.1 Introduction

The purpose of the Economic Case within this Outline Business Case (OBC) is to undertake a detailed analysis of the costs, benefits and risks of a short-list of options illustrating how NHS Grampian (NHSG) has selected the preferred options to be taken forward to the next stages of planning (the Full Business Case (FBC)). It demonstrates the relative value for money of the chosen options in delivering the required outcomes and services.

The facilities associated with the options are being delivered under a single procurement Project, however these will support discrete ranges of service needs and therefore a separate Economic Case has been produced for each facility. The facilities are: The Baird Family Hospital and The ANCHOR Centre.

Each Case appraises the costs, risks and benefits associated with the site options identified. These are summarised in Tables E1 and E2 and demonstrate that changes since the preparation of the Initial Agreement (IA) do not materially change the outcome i.e.:

- The ANCHOR Centre to be sited adjacent to the existing Radiotherapy Centre
- The Baird Family Hospital to be sited on Foresterhill Health Centre site

As set out on page 1 of Appendix Q.

To provide some context Appendix MM outlines an image of the site indicating the location of all known or planned developments over the next five years. This image was developed for discussion with the Planning Department as part of the works undertaken for the Planning in Principle received in October 2016. The plan is consistent with the previously agreed Foresterhill Development Framework. Appendix MM also provides a status update on each development indicated on the five year plan.

Table E1: 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	58	44	55	46
Risk Appraisal	100	85	100	77
Total Score	**158**	**129**	**155**	**123**
Overall Ranking	1	3	2	4
IA Ranking	1	3	4	2

*Do-minimum option exclude see 3.9

Table E2: 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	73	61	67
Risk Appraisal	100	81	67	100
Total Score	**181**	**153**	**128**	**167**
Overall Ranking	1	3	4	2
IA Ranking	1	3	4	2

*Do-minimum option exclude see 3.16

3.2 Adaptation of Scottish Capital Investment Manual (SCIM) Options Development and Appraisal Process

The Project described in this OBC has a number of unusual aspects which have necessitated adapting the SCIM process and the development and appraisal of options, has focused on site option appraisals. This adapted process maintains the SCIM overall objective of ensuring that a sound, robust analysis is undertaken to support effective decision-making and that ultimately:

- resources are applied effectively to support service delivery
- the impact of the investment decisions are maximised in terms of benefits
- the Project provides value for money
- the process facilitates good Project management and Project evaluation

These Economic Cases do not examine service delivery strategies as these have already been developed and agreed, with this Project being a consequence of their implementation.

The relevant strategies are outlined in Sections 2.3 and 2.10.

3.2.1 The ANCHOR Centre

NHSG has been incrementally working towards improved provision for people receiving cancer care for some years now. This started with the relocation of the in-patient haematology and oncology wards to the new Matthew Hay Building in 2012 along with the creation of the new Radiotherapy Centre which opened in 2013. The creation of The ANCHOR Centre is the final piece of the jigsaw, ensuring that patients receiving out-patient and day assessment and treatments are cared for optimally and consistent with the principles outlined in the national cancer strategy: “Better Cancer Care, An Action Plan (2008)”, and, more recently, “Beating Cancer: Ambition and Action”.

The ANCHOR Centre is to be co-located with the Radiotherapy Centre so that all patients attending for ambulatory assessment, investigation and treatment come to a single centre which delivers care in a co-ordinated manner.

3.2.2 The Baird Family Hospital

The NHS Grampian Maternity Services Strategy 2010 – 2015 and the subsequent Strategic Review of Maternity Services 2012, which involved a major public consultation, identified the need to replace the existing Aberdeen Maternity Hospital (AMH) and to create three separate locality based Community Maternity Units (CMUs). The CMUs will serve communities across the region with one in Aberdeen, Peterhead and Inverurie, in addition to the obstetrics unit at Dr Gray's Hospital in Elgin.

The strategy also outlined the need for the new hospital to be physically linked to Aberdeen Royal Infirmary (ARI) and Royal Aberdeen Children's Hospital (RACH) to facilitate easy access to other specialist services e.g. paediatric surgery and imaging.

This strategy is now being implemented in NHSG with:

- The Baird Family Hospital on the Foresterhill Health Campus replacing AMH in 2021
- Three CMUs in:

Peterhead	The existing maternity unit is being refurbished (completion Q1 2018) from £1,000,000 of NHSG formula capital funding and Endowment funding.
Inverurie	A new CMU is being developed as part of the hubCo Inverurie Health and Care Hub Project due to open summer 2018.
Aberdeen	The new Baird Family Hospital will replace the existing Aberdeen Midwives Unit in 2021.

The investment in infrastructure proposed in this OBC is a continuation of the implementation of NHS Grampian's Healthfit 2020 vision for continuous change and modernisation of the health system in Grampian.

A key part of this vision is the role of the Foresterhill Health Campus in the introduction of new models of care which aim to deliver care as close to home as possible, placing less reliance on acute in-patient beds and with a clear focus on responding to individuals' needs. This requires significant redesign and re-organisation of clinical services on the site if current good practice is to be applied consistently and comprehensively.

Significant investment in infrastructure has already been made in recent years to support this vision and this inevitably limits the options for this Project to those which are compatible with the overall vision of the future use of the site and which build on the recent investment already completed.

Many of the services within the scope of this Project have critical links to other clinical services and research facilities on the Foresterhill Health Campus. Similarly, they make extensive use of the major infrastructure, skills and technology capacity that is inherent on this major acute site. Again, it was not considered to be appropriate or technically feasible to examine options for re-locating these services from the Foresterhill Health Campus.

3.3 Approach to Revisiting the Assumptions in the Initial Agreement

The process to identify the preferred way forward was documented in the Initial Agreement. This appraised both facilities within the Project using a single process. This work has been revisited by the Project Team and the solution for each facility has been considered separately as part of the development of this document.

The monetary implications used in the appraisal are based on the draft elemental cost plan and emerging revenue implications for the preferred options.

The Economic Case

The ANCHOR Centre

3.4 The ANCHOR Centre

This section details the Economic Case for The ANCHOR Centre and considers:

- the identification process of short-listing the options
- the monetary and non-monetary costs and benefits of options
- the economic appraisal of the options
- the non-financial risk appraisal of the options
- Value for Money Analysis (VFM) of the preferred option

The Case includes the final short-listed option considered appropriate to take forward to FBC stage and the rationale for excluding the other options.

Capital funded procurement is confirmed.

3.4.1 Revisiting the Preferred Way Forward – Short-List of Options

The short-list of options in relation to The ANCHOR Centre are listed in Table E3, these have been revisited and are technically still feasible.

3.4.2 Identification of a Short-List of Implementation Options

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 as follows:

Table E3: 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.

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

3.5 Identification and Quantification of Monetary Costs and Benefits of Options

3.5.1 Monetary Costs

3.5.1.1 Initial Cost Implications

Table E4 outlines the capital costs that have been identified for each option as the cost of developing the new facility. Further details can be found in Appendix P.

Table E4: Initial Cost Implication Summary – Short-Listed Options - The ANCHOR Centre

	Option 1	Option 2	Option 3	Option 4	Option 5
	£000s	£000s	£000s	£000s	£000s
Opportunity Cost	170	170	170	170	0
Initial Capital Costs					
Construction Cost	15,579	12,970	13,120	13,120	1,375
Site Specific Costs	1,064	3,201	1,501	2,201	0
Prelims, Fees, On-Costs	5,166	4,425	4,136	4,267	338
Risk - Quantifiable	1,509				
Risk – Non Quantifiable (optimism bias)		5,527	5,087	5,285	336
Enabling Projects	4,229	4,229	4,229	4,229	3,914
Equipment	963	963	963	963	482
Client Costs	1,000	1,000	1,000	1,000	0
Project Development	1,564	1,564	1,564	1,564	0
Commissioning Costs	42	42	42	42	0
Transitional Period Costs	n/a	n/a	n/a	n/a	n/a
Cost of Embedded Accommodation	n/a	n/a	n/a	n/a	n/a
Total Initial Cost Implications	**31,288**	**34,092**	**31,812**	**32,842**	**6,444**

The following reflects the approach taken in the development of this cost:

- Opportunity Costs: the sites proposed for this development are already in the ownership of NHSG on behalf of the Scottish Ministers, and as such, the use of the land for this Project represents an opportunity cost. The land of the Foresterhill

Health Campus is valued annually and has been pro-rated against the footprint of each option to identify the opportunity cost

- Initial Capital Costs - Construction Costs: for the initial site option appraisal, indicative capital construction costs were provided by a Third Party Quantity Surveyor. These have been refreshed to align with the refined scope and anticipated construction and completion programme. The backlog maintenance costs are taken from the NHSG Backlog Maintenance Register
- Initial Capital Costs - Financial Risk: the preferred way forward has undergone detailed development and refinement of costs which are reflective of financial risks for this option. For the other options, Optimism Bias reflects non quantifiable risk and has been used to estimate a provision
- Initial Capital Costs - Equipment Costs: there is a need to provide new equipment. Equipment lists been developed from Room Data Sheets (RDS) and will continue to be refined. Where possible, it is intended that existing equipment will transfer with services to assist in keeping the total cost of new equipment to a minimum. For each of the options, with the exception of do nothing, the same estimate of £963,000 excluding VAT has been included, based on the most recent prices
- Revenue Development Costs: costs associated with a Project Team, a set of advisors and the procurement process have been identified. These costs have been pro-rated between each facility based on anticipated construction cost
- Revenue Commissioning Costs: costs associated with the commissioning of the facilities have been identified. For each of the options, with the exception of do nothing, £42,000 has been included
- Embedded Accommodation: University of Aberdeen (UoA) is a significant partner on the Foresterhill Health Campus and will have a presence in the new buildings (e.g. research and teaching facilities). Regular meetings have been held with the UoA to

consider scope and estimated additional revenue costs. A letter confirming UoA Agreement in Principle to the costs associated with this arrangement is included as Appendix U. The UoA will be kept advised of progress and any additional financial implications on a regular basis. Embedded costs of this accomodation are reflected in the construction costs above

3.5.1.2 Recurring Revenue Cost Implications

Table E5 sets out recurring revenue costs that have been identified for each option. These represent the incremental additional costs of delivering services and running the new facility:

Table E5: Recurring Revenue Cost Implications – The ANCHOR Centre

	Option 1	Option 2	Option 3	Option 4	Option 5
	£000s	**£000s**	**£000s**	**£000s**	**£000s**
Life Cycle Costs (Average)	158	150	150	150	72
Clinical Service Costs	164	164	164	164	164
Non-Clinical Service Costs	85	85	85	85	0
Building Related Running Costs	747	799	799	799	0
Net Income Contributions	0	0	0	0	0
Income from Embedded Accommodation	-21	-21	-21	-21	0
Displacement Costs	0	0	0	0	0
Total Recurring Revenue Cost Implications	**1,133**	**1,176**	**1,176**	**1,176**	**236**

- Lifecycle Costs - indicative lifecycle costs for the maintenance and replacement of assets during the appraisal period for each option have been provided by NHSG's Cost Advisors. The clinical service area of change which is anticipated to have a

material incremental financial impact for The ANCHOR Centre relates to the satellite provision of Pharmacy Services

- the non-clinical support service areas of change that are anticipated to have a material incremental financial impact for The ANCHOR Centre refers to Equipment Maintenance
- 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 building 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
- Net Income Contribution (income generated from non-public sector organisation) - none is anticipated
- Embedded Accommodation – Revenue Costs – these relate to the area anticipated to be occupied by the UoA
- Displacement Costs - none are anticipated

3.5.1.3 Service Redesign

This Project will facilitate service enhancement and significant service redesign. A service redesign agenda has been outlined and is being managed by a Service Redesign Group which is supported with specific operational management-led redesign. This structure oversees implementation of the agreed redesign initiatives planned for the next five years.

Three main categories of redesign have been identified by this group:

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

Some 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 those cost pressures that are as a direct consequence of the new building have been included in this OBC.

3.5.1.4 Optimism Bias/Financial Risk

Optimism Bias has been calculated for all but the preferred way forward option, in accordance with HM Treasury's guidance, as these options have not been developed following the initial approval. The preferred way forward option reflects the formal cost plan which includes inherent risk provision and an allocation arising from a costed Risk Register. The Optimism Bias templates for each option are included as Appendix R.

3.5.1.5 Monetary Benefits

No specific and material monetary benefit associated with the development of this facility has been identified for inclusion within the costing of options. Minor efficiencies and income streams are expected to be realised and used to offset minor recurring revenue cost pressures arising from the delivery of the preferred service option.

3.6 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 Benefits Register:

- 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 the 8 December 2014.

The workshop was facilitated by an independent management consultant and the workshop process involved:

- reviewing and agreeing a set of non-financial benefit criteria and weighting these to reflect the workshop group's view of the relative importance of each criterion
- examining a short-list of options against the criteria and, following discussion, agreeing on how well each option could be expected to meet the criteria and then allocating a score (maximum 10 and minimum 0) for each option against each criterion
- computing an overall weighted benefit score (summated scores x weight) for each option. This weighted benefit score is simply a measure of how well the workshop participants considered each option was likely to deliver the benefits required from the Project
- reviewing the weighted benefits scores from the appraisal and, following discussion, agreeing that they represented an accurate assessment of the group's views of how well each option is likely to perform in terms of delivering the benefits required from the investment in the Project

The Benefit Criteria agreed and weighted to reflect the workshop group's views on the relative importance of each criterion are shown in the Table E6.

Given the period of time that has elapsed and design development that has occurred since the original workshop, and in preparation for this Business Case, the Project Team revisited the initial appraisal and the relative importance of each criterion rescored. The results are set out in Table E6 and demonstrates a slight change in ranking.

Table E6: Weighting and Ranking of Benefit Criteria for Option Appraisal – The ANCHOR Centre

	OBC Review		Workshop 08/12/14 (IA)
Benefit Criteria	**Rank**	**Weight**	**Rank**
Effective and Safe Service Delivery	1	23.75	1
Best Use of Resources	2	20.00	5
Accessibility	3	18.75	2
Compatible with Foresterhill Development Framework	4	13.75	3
Flexibility/Future Proofing	4	13.75	4
Disruption	6	10.00	6
Total		100	

In preparing the OBC, the outcome of the 2014 work was revisited, with the non-monetary benefit criteria, scoring of the individual aspect of the Project together with a “do minimum” option considered by the Project Team. Re-running the workshop described above was not believed to deliver the best use of resources. The outcome of this work is reflected in Appendix O and summarised in Tables E6 & E7 and demonstrates a slight change in ranking.

The benefits registered were considered as part of the work to revisit the initial appraisal, however as it is service delivery focused, it could not be directly aligned to the site option appraisal approach previously agreed for this Project.

Table E7: 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 OBC		1	4	2	3	5
Rank IA		1	3	4	2	n/a

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.

3.7 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 the 8 December 2014. 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 Eye Out-Patient Department (EOPD)
- road layouts and accessibility for urgent access
- safety – personal safety

This appraisal was similar to that used for the non-monetary benefits and has been reviewed by the Project Team, involving:

- reviewing each of the short-listed options to identify potential non-financial risks
- assessing each risk in terms of its likelihood and impact as at November 2017
- computing a risk score for each option by multiplying the likelihood and impact scores

The Risk Register was considered as part of the work to revisit the initial appraisal, and all site related risks on the register were captured by those used in 2014 those non-financial risks on the Risk Register and not covered

by this appraisal relate to service delivery and could not be directly aligned to the site option appraisal approach previously agreed for this Project.

The results from the appraisal of non-financial risks are summarised in Table E8 and demonstrates that the do minimum scores highest with option 1 scoring lowest:

Table E8: 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 OBC			1			3			1			4			5
Rank IA			3			1			4			2			n/a

3.8 Net Present Cost of Options

3.8.1 Calculation of Net Present Cost

The financial evaluation, calculating net present cost, of each option is set in the context of the guidance provided in the 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 Net Present Costs (NPC).

The appraisal process identifies the relevant costs and financial risks and benefits over the Project development and 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.

Table E9 provides a summary of the cost implications together with NPC for each of the short-listed options for The ANCHOR Centre. The detailed output of the analysis can be found in Appendix T.

In accordance with guidance, capital charges, inflation and VAT are excluded from the calculations. Capital and revenue costs are added together to calculate a net present cost for total expenditure.

Table E9: Summary Cost Implications Short-List Options - The ANCHOR Centre

	Option 1	Option 2	Option 3	Option 4	Option 5
	£000s	£000s	£000s	£000s	£000s
Initial Cost Implications	31,288	34,092	31,812	32,842	6,444
Additional Recurring Revenue Implications	1,133	1,176	1,176	1,176	236
Net Present Cost (NPC)	40,817	43,635	41,833	42,647	8,403
Rank	2	5	3	4	1

3.8.2 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 Scenario Analysis has been used, examining the impact of changing scores, weights and net present costs through a number of scenarios.

Option 5 “do minimum” has been excluded from the sensitivity analysis on the grounds that it is not a viable option.

3.8.2.1 Scenario Analysis – Net Present Cost

The NPC has been subjected to a range of sensitivity tests to check whether changes to any of the assumptions concerning capital or revenue costs have a significant impact on the option rankings. The tests undertaken were:

- Running Costs +10%
- Capital Construction Costs + 20%

The outcome of these tests are detailed in Table E10.

Table E10: Sensitivity Scenario – NPC – The ANCHOR Centre

	Option 1		Option 2		Option 3		Option 4	
	NPC	Rank	NPC	Rank	NPC	Rank	NPC	Rank
	£000s		£000s		£000s		£000s	
Scenario 1: No Changes	40,817	1	43,635	4	41,833	2	42,647	3
Scenario 2: Increase Recurring Revenue Costs by 10%	42,110	1	44,996	4	43,194	2	44,008	3
Scenario 3: Increase Capital Costs by 20%	45,006	1	48,267	4	46,104	2	47,081	3

It has been demonstrated that there is little sensitivity arising from flexing these costs.

3.8.2.2 Scenario Analysis – Non-Financial Benefits

This analysis has examined the impact arising from flexing the weighted benefit scores and is detailed in Table E11.

Table E11: Sensitivity Scenario (Equal Weight) - Non-Financial Benefits - The ANCHOR Centre

	Option 1		Option 2		Option 3		Option 4	
	NPC	Rank	NPC	Rank	NPC	Rank	NPC	Rank
	£000s		£000s		£000s		£000s	
Scenario 1: No Changes	770	1	621	4	751	2	637	3
Scenario 2: Equal Weight	767	1	617	4	750	2	638	3

Table E12: Sensitivity Scenario (Top Rank) - Non-Financial Benefits - The ANCHOR Centre

	Option 1		Option 2		Option 3		Option 4	
	NPC	Rank	NPC	Rank	NPC	Rank	NPC	Rank
	£000s		£000s		£000s		£000s	
Scenario 1: No Changes	770	1	621	4	751	2	637	3
Scenario 3: Exclude Top Rank Score	586	1	461	4	567	2	488	3

It has been demonstrated in Table E11 and 12 that the ranking of options does not significantly change as a result of applying these scenarios as option 1 remains superior in terms of expected non-financial benefits in all three scoring scenarios.

3.8.3 Conclusion from the Sensitivity Analysis

In conclusion, the option rankings show little sensitivity to amending the underlying assumptions.

3.9 Conclusion and Identifying the Preferred Option

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 HM Treasury guidance and the results are shown in Table E13.

Table E13: NPC per Non-Monetary Benefit Score – The ANCHOR Centre

	Option 1	Option 2	Option 3	Option 4	Option 5
Net Present Cost (NPC) (£000s)	40,817	43,635	41,833	42,647	8,403
Non-Financial Weighted Benefit Score	770	621	751	637	274
NPC per Weighted Benefit Score	53	70	56	67	31
Score (Out of 100)	58	44	55	46	100
Rank	2	5	3	4	1
Rank IA	1	3	4	2	n/a

Option 5 is discounted as not being viable on the basis of the following reasons:

- 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.
  - improved access to treatment
  - patient centred care
  - improved efficiency and effectiveness
- it will not provide the second stage of the Radiotherapy Centre, 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

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

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

A summary of the results of all the evaluation criteria of the economic and risk appraisals are presented together in Table E14 and, discounting the do minimum option, affirms option 1 to be the preferred option to be taken forward.

Table E14: Option Appraisal – The ANCHOR Centre

	Option 1	**Option 2**	**Option 3**	**Option 4**	**Option 5**
	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**	**Do Minimum**
Score (Out of 100)					
Economic Appraisal	58	44	55	46	100
Risk Appraisal	100	85	100	77	75
Total Score	158	129	155	123	175
Overall Ranking	2	4	3	5	1

The Economic Case

The Baird Family Hospital

3.10 The Baird Family Hospital

This section details the Economic Case for The Baird Family Hospital and considers:

- the identification process of short-listing the options
- the monetary and non-monetary costs and benefits of options
- the economic appraisal of the options
- the non-financial risk appraisal of the options
- Value for Money Analysis (VFM) of the preferred option

It includes the final short-list of options considered appropriate to take forward to FBC stage and the rationale for excluding the other options.

For the purpose of the option appraisal, capital funded procurement continues to be assumed.

3.10.1 Revisiting the Preferred Way Forward – Short-List of Options

The short-list of options in relation to The Baird Family Hospital are listed in Table E15. These have been revisited and are technically still feasible.

3.10.2 Identification of a Short-List of Implementation Options

Early in the Project and prior to undertaking the option appraisal analysis, preliminary technical feasibility studies and design work was undertaken to develop a short-list of options, 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 as follows:

Table E15: 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.

3.11 Identification and Quantification of Costs and Benefits of Options

3.11.1 Monetary Costs

3.11.1.1 Initial Cost Implications

Table E16 outlines the capital costs that have been identified for each option as the cost of developing the new facility. Further details can be found in Appendix P.

Table E16: Initial Cost Implication Summary – Short-Listed Options - The Baird Family Hospital

	Option 1	Option 2	Option 3	Option 4	Option 5
	£000s	£000s	£000s	£000s	£000s
Opportunity Cost	848	848	848	848	0
Initial Capital Costs					
Construction Costs	70,807	63,134	62,334	63,634	18,434
Site Specific Costs	275	272	272	272	0
Prelims, Fees, On-Costs	13,782	10,948	10,852	11,009	3,256
Risk Quantifiable	6,454				
Risk Non Quantifiable (optimism bias)		20,850	20,635	20,984	2,979
Enabling Projects	7,885	0	0	0	0
Equipment	11,187	11,187	11,187	11,187	5,593
Client Costs	1,550	1,550	1,550	1,550	0
Project Development	6,254	6,254	6,254	6,254	0
Commissioning Costs	168	168	168	168	0
Transitional Period Costs	n/a	n/a	n/a	n/a	n/a
Cost of Embedded Accommodation	n/a	n/a	n/a	n/a	n/a
Total Initial Cost Implications	**119,210**	**115,211**	**114,100**	**115,905**	**30,263**

The following reflects the approach taken in the development of these costs:

- Opportunity Costs: the sites proposed for this development are already in the ownership of NHSG on behalf of the Scottish Ministers and, as such, the use of the land for this Project represents an opportunity cost. The land of the Foresterhill

Health Campus is valued annually and has been pro-rated against the footprint of each option to identify the opportunity cost

- Initial Capital Costs - Construction Costs: for the initial site option appraisal, indicative capital construction costs were provided by a Third Party Quantity Surveyor. These have been refreshed to align with the refined scope and anticipated construction and completion programme. The backlog maintenance costs are taken from the NHSG Backlog Maintenance Register
- Initial Capital Costs - Financial Risk: the preferred way forward has undergone detailed development and refinement of costs which are reflective of financial risks for this option. For the other options, Optimism Bias reflects non-quantifiable risk and has been used to estimate a provision
- Initial Capital Costs - Equipment Costs: there is a need to provide new equipment. Equipment lists have been developed from Room Data Sheets (RDS) and will continue to be refined. Where possible, it is intended that existing equipment will transfer with services to assist in keeping the total cost of new equipment to a minimum. For each of the options, with the exception of do minimum, the same estimate of £11,187,000 excluding VAT has been included, based on the most recent prices
- Revenue Development Costs: costs associated with a Project Team, a set of advisors and the procurement process have been identified. These costs have been pro-rated between each facility based on anticipated construction cost
- Revenue Commissioning Costs: costs associated with the commissioning of the facilities have been identified. For each of the options, with the exception of do nothing, £168,000 has been included
- Embedded Accommodation: UoA is a significant partner on the Foresterhill Health Campus and will have a presence in the new buildings (e.g. research and teaching facilities). Regular meetings have been held with the UoA to consider scope and

estimated additional revenue costs. A letter confirming UoA Agreement in Principle to the costs associated with this arrangement is included as Appendix U. The UoA will be kept advised of progress and any additional financial implications on a regular basis. Embedded costs of this accomodation are reflected in the construction costs above.

3.11.1.2 Recurring Revenue Cost Implications

Table E17 sets out recurring revenue costs that have been identified for each option. These represent the incremental costs of delivering services and running the new facility.

Table E17: Recurring Revenue Cost Implications – The Baird Family Hospital

	Option 1	Option 2	Option 3	Option 4	Option 5
	£000s	£000s	£000s	£000s	£000s
Life Cycle Costs (Average)	671	655	655	655	758
Clinical Service Costs	784	784	784	784	0
Non-Clinical Service Costs	340	340	340	340	0
Building Related Running Costs	2,527	2,223	2,223	2,223	0
Net Income Contributions	0	0	0	0	0
Income from Embedded Accommodation	-144	-144	-144	-144	0
Displacement Costs	0	0	0	0	0
Total Recurring Revenue Cost Implications	**4,178**	**3,858**	**3,858**	**3,858**	**758**

- Lifecycle Costs - indicative lifecycle costs for the maintenance and replacement of assets during the appraisal period for each option has been provided by NHSG's Cost Advisors

- The clinical service areas of change that are anticipated to have a material incremental financial impact for The Baird Family Hospital relate to nursing and midwifery staffing costs and include the consequences of e.g. 100% single in-patient rooms, introduction of transitional care and additional emergency theatre capacity
- The non-clinical support service area of change that is anticipated to have a material incremental financial impact for The Baird Family Hospital relates to Equipment Maintenance
- 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 builidng 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
- Net Income Contribution (income generated from non-public sector organisation) - none is anticipated
- Embedded Accommodation – Revenue Costs – these relate to the area anticipated to be occupied by the UoA
- Displacement Costs - none are anticipated

3.11.1.3 Service Redesign

Table E17 sets out recurring revenue costs that have been identified for each option. These represent the incremental costs of delivering services and running the new facility.

This Project will facilitate service enhancement and significant service redesign. A service redesign agenda has been outlined and is being managed by a Service Redesign Group supported by specific operational management-led redesign groups. These have been established to oversee implementation of the agreed redesign initiatives over the next five years.

Three main categories of redesign have been identified by this group:

- 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 those cost pressures that are as a direct consequence of the new building have been included in this OBC.

3.11.1.4 Optimism Bias/Financial Risk

Optimism Bias has been calculated for all but the preferred way forward option, in accordance with HM Treasury's guidance, as these options have not been developed following the initial approval. The preferred way forward option reflects the formal cost plan which includes inherent risk provision and an allocation arising from a costed Risk Register. The Optimism Bias templates for each option are included as Appendix R.

3.11.1.5 Monetary Benefits

No specific and/or material monetary benefit associated with the development of this facility has been identified for inclusion within the costing of options. Minor efficiencies and income streams are expected to be realised and used to offset minor recurring revenue cost pressures arising from the delivery of the preferred service option.

3.12 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 Benefits Register:

- 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 the 8 December 2014.

The workshop was facilitated by an independent management consultant and the workshop process involved:

- reviewing and agreeing a set of non-financial benefit criteria and weighting these to reflect the workshop group's view of the relative importance of each criterion
- examining a short-list of options against the criteria and, following discussion, agreeing on how well each option could be expected to meet the criteria and then allocating a score (maximum 10 and minimum 0) for each option against each criterion
- computing an overall weighted benefit score (summated scores x weight) for each option. This weighted benefit score is simply a measure of how well the workshop participants considered each option was likely to deliver the benefits required from the Project
- reviewing the weighted benefits scores from the appraisal and, following discussion, agreeing that they represented an accurate assessment of the group's views of how well each option is likely to perform in terms of delivering the benefits required from the investment in the Project

The Benefit Criteria agreed and weighted to reflect the workshop group's views on the relative importance of each criterion are shown in the Table E18.

Table E18: Weighting and Ranking of Benefit Criteria for Option Appraisal – The Baird Family Hospital

	OBC Review		Workshop 08/12/14 (IA)
Benefit Criteria	**Rank**	**Weight**	**Rank**
Effective and Safe Service Delivery	1	23.75	1
Best Use of Resources	2	20.00	5
Accessibility	3	18.75	2
Compatible with Foresterhill Development Framework	4	13.75	3
Flexibility/Future Proofing	4	13.75	4
Disruption	6	10.00	6
Total		100	

In preparing the OBC, the outcome of the 2014 work was further revisited, with the non-monetary benefit criteria, scoring of the individual aspect of the Project together with a "do minimum" option considered by the Project Team. Re-running the workshop described above was not believed to deliver the best use of resources. The outcome of this work is reflected in Appendix O and summarised in Tables E18 and E19 and demonstrate a slight change in ranking.

The benefits registered were considered as part of the work to revisit the initial appraisal, however as it is service delivery focused, they could not be directly aligned to the site option appraisal approach previously agreed for this Project.

Table E19: 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 OBC		1	2	4	3	5
Rank IA		1	3	4	2	n/a

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

3.13 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 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 the 8 December 2014. Those identified were:

- buildability
- operational problems - car park management, buses etc
- patient choice – women choose Baird to give birth rather than CMU
- planning
- impact on radiology configuration
- transfer times - internal pre-Phase 2
- transfer times - Internal post-Phase 2
- replacement of FHC 2018
- road layouts and accessibility for urgent access
- safety - personal safety for The Baird

This appraisal was similar to that used for the non-financial benefits and has been reviewed by the Project Team, involving:

- reviewing each of the short-listed options to identify potential non-financial risks
- assessing each risk in terms of its likelihood and impact
- computing a risk score for each option by multiplying the likelihood and impact scores

The Risk Register was considered as part of the work in revisiting the initial appraisal, and all site related risks on the register were captured by those used in 2014. Those non-financial risks on the Risk Register, and not

covered by this appraisal, relate to service delivery and could not be directly aligned to the site option appraisal approach previously agreed for this Project.

The results from the appraisal of non-financial risks are summarised in Table E20 and demonstrates that the do minimum scores least with option 1 scoring second lowest.

Table E20: 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 OBC			1			3			4			1			5
Rank IA			3			1			4			2			n/a

3.14 Net Present Cost of Options

3.14.1 Calculate Net Present Cost

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

A 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 EAC and NPC.

The appraisal process identifies the relevant costs, financial risks and benefits over the Project development and 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.

Table E21 provides a summary of the cost implications together with NPC for each of the short-listed options for The Baird Family Hospital. The detailed output of the analysis can be found in Appendix P.

In accordance with guidance, capital charges, inflation and VAT are excluded from the calculations. Capital and revenue costs are added together to calculate a NPC for total expenditure.

Table E21: 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
Initial Cost Implications	119,210	115,211	114,100	115,905	30,263
Additional Recurring Revenue Implications	4,178	3,858	3,858	3,858	758
Net Present Cost (NPC)	142,732	135,523	134,625	136,084	44,313
Rank	5	3	2	4	1

3.14.2 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, it has been undertaken in two stages:

- Scenario Analysis – examining the impact of changing scores, weights and net present costs through a number of scenarios
- Switching Values – computing the change required to bring about a change in the ranking of the options

Option 5 “do minimum” has been excluded from the sensitivity analysis on the grounds that it is not a viable option.

3.14.2.1 Scenario Analysis – NPC

The NPC has been subjected to a range of sensitivity tests to check whether changes to any of the assumptions concerning capital or revenue costs have a significant impact on the option rankings. The tests undertaken were:

- Running Costs +10%; and,
- Capital Construction Costs + 20%.

The outcome of these tests are detailed in Table E22.

Table E22: Sensitivity Scenario – NPC – The Baird Family Hospital

	Option 1		Option 2		Option 3		Option 4	
	NPC	Rank	NPC	Rank	NPC	Rank	NPC	Rank
	£000s		£000s		£000s		£000s	
Scenario 1: No Changes	142,732	4	135,523	2	134,625	1	136,084	3
Scenario 2: Increase Recurring Revenue Costs by 10%	147,121	4	139,025	2	138,127	1	139,586	3
Scenario 3: Increase Capital Costs by 20%	158,534	4	153,039	2	151,961	1	153,713	3

It has been demonstrated that there is little sensitivity arising from flexing these costs.

3.14.2.2 Scenario Analysis – Non-Financial Benefits

This analysis has examined the impact arising from flexing the weighted benefit scores and is detailed in Table E23:

Table E23: Sensitivity Scenario (Equal) - Non-Financial Benefits - The Baird Family Hospital

	Option 1		Option 2		Option 3		Option 4	
	NPC	Rank	NPC	Rank	NPC	Rank	NPC	Rank
	£000s		£000s		£000s		£000s	
Scenario 1: No Changes	784	1	673	2	563	4	624	3
Scenario 2: Equal Weight	775	1	667	2	558	4	621	3

Table E24: Sensitivity Scenario (Top Rank) - Non-Financial Benefits - The Baird Family Hospital

	Option 1		Option 2		Option 3		Option 4	
	NPC	Rank	NPC	Rank	NPC	Rank	NPC	Rank
	£000s		£000s		£000s		£000s	
Scenario 1: No Changes	784	1	673	2	563	4	624	3
Scenario 3: Exclude Top Rank Score	588	1	506	2	408	4	482	3

It has been demonstrated in Table E23 & E24 that the ranking of options does not significantly change as a result of applying these scenarios as option 1 remains superior in terms of expected non-financial benefits in all three scoring scenarios.

3.14.2.4 Conclusion from the Sensitivity Analysis

In conclusion, the option rankings show little sensitivity to amending the underlying assumptions, however the switching values demonstrates that marginal changes to revenue or capital costs would give rise to a change in the option delivering the lowest NPC.

3.15 Conclusion and Identifying the Preferred Option

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 HM Treasury guidance and the results are shown in Table E25.

Table E25: NPC per Non-Monetary Benefit Score – The Baird Family Hospital

	Option 1	Option 2	Option 3	Option 4	Option 5
Net Present Cost (NPC) (£000s)	142,732	135,523	134,625	136,084	44,313
Non-Financial Weighted Benefit Score	784	673	563	624	302
NPC per Weighted Benefit Score	182	202	239	218	147
Score (Out of 100)	81	73	61	67	100
Rank	2	3	5	4	1
Rank IA	1	3	4	2	n/a

Option 5 is discounted as not being viable on the basis of the following reasons:

- 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

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

A summary of the results of all of the evaluation criteria of the economic and risk appraisals are presented together in Table E26 and affirms option 1 to be the preferred option to be taken forward.

Table E26: Option Appraisal – The Baird Family Hospital

	Option 1	**Option 2**	**Option 3**	**Option 4**	**Option 5**
	The Baird Family Hospital adjacent to the existing Radio-therapy Centre	**The Baird Family Hospital between Radiotherapy and Matthew Hay Building**	**The Baird Family Hospital adjacent to the Radiotherapy Centre**	**The Baird Family Hospital integrated with The Baird Family Hospital**	**Do Minimum – Backlog Maintenance and Imaging**
Score (Out of 100)					
Economic Appraisal	81	73	61	67	100
Risk Appraisal	100	81	67	100	66
Total Score	181	153	128	167	166
Overall Ranking	1	4	5	2	3

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 £160m. 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 the 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 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, attached as Appendix CC.

Following the change in funding arrangements, the Board identified the capital procurement options open to it. It 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 paper attached as Appendix BB sets out this appraisal. The process was supported with advice from Health Facilities Scotland (HFS).

The short-listed option 3 i.e. NEC3 Option C using FS2 was adopted in relation to the appointment of the Principal Supplier 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 Project Bank Account 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 drafted and will be entered into by NHS Grampian and the PSCP to facilitate this arrangement. In addition robust financial governance and contractual arrangements are being developed to ensure the safeguard of funds and the optimal and efficient delivery of the benefit associated with this arrangement.

Effective engagement in relation to PBA arrangements with the supply chain during their appointment is a key objective of the Procurement Strategy of the Project.

It is the intention that the PBA will be operational during Stage 3 of the Project as a pilot and be comprehensively operational during Stage 4 the construction phase.

The documentation and contractual arrangements associated with setting up the PBA have been drafted and are in the process of being agreed and authorised. This process should be complete with first payments in early summer 2018 during Stage 3.

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 OBC details the arrangements for those elements of the Project to be procured through FS2 process only. The 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 (BSC) and the permanent move of the Eye Out-patient Department (EOPD) to an area to be refurbished within Phase 1 of Aberdeen Royal Infirmary (ARI) have 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 NHSScotland Professional Services Consultants Frameworks (PSCs) 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 are to be provided and the specific form of contract to be used. It also sets out what the procurement process would look like for programme and deliverables, and the detailed evaluation and selection criteria. The PSCP is 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. The HLIP is attached as Appendix DD and sets out the agreed evaluation criteria.

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 PSCPs 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 NHSScotland 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 and 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, Healthcare Planner from Buchan + Associates, Development Manager from 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 Procurement Timetable

The programme for delivery of the Project has changed since the IA approval. The IA anticipated that the completion date for The ANCHOR Centre and The Baird Family Hospital would be December 2020.

During the intervening period the delivery model has changed from a revenue funded to a capital funded project. This change required a delivery partner (PSCP) to be recruited using the mini competition for the FS2 capital procurement process. Following the PSCP appointment in November 2016 an affordable Royal Institute of British Architects (RIBA) Stage 2 design that met the clinical and non-clinical brief had to be developed for both facilities.

This process identified a number of areas of complexity in the required building designs, which needed mitigation resulting from the complex adjacencies required to meet the clinical and non-clinical briefs and a number of ground conditions issues that required detailed assessment and management. This resulted in a period of cost reconciliation and redesign which resulted in programme delay, refer to section 4.3.4. Table C1 sets out the current Procurement Milestones/Timetable for the Project:

Consistent with previous projects, to de-risk the construction phase of the Project and to help mitigate some of the recent programme delay, plans are being put in place to deliver a range of 'Enabling Works' prior to FBC approval which will improves the construction programme by 12 weeks. This programme of works is scheduled to take place during the period September 2018 – March 2019. An outline of the proposed scope of these Enabling Works is outlined in Appendix KK.

The additional costs of undertaking the enabling works are negligible and principally a re-profiling of works previously programmed for Stages 3 and 4. The financial benefits are the avoided indexation costs associated with an elongated delivery programme and avoided Project Team costs associated with supporting a longer programme, together with the benefits of having a

more mature allowance associated with risk when agreeing the Stage 4 Target Price.

Table C1: Procurement Milestones/Timetable

Stage	Milestone	Date	Status
Initial Agreement			
Appointment of Healthcare Planner		October 2014	Complete
Appointment of Technical, Legal and Financial Advisors (NPD)		May 2015	Complete
Initial Agreement approved by SGHSCD		September 2015	Approved
SGHSCD letter changing the Project from NPD to Capital		May 2016	Instructed
Outline Business Case			
Stage 2 appointment of PSCP		November 2016	Complete
Stage 2 appointment of Joint Cost Advisor		November 2016	Complete
Stage 2 appointment CDM Advisor		May 2017	Complete
Stage 2 appointment of Project Manager		May 2017	Complete
Construction Procurement Strategy		April 2017	Approved
Construction Procurement Plan		November 2017	In Progress
Early Market Engagement		January 2018	In Progress
Outline Business Case Approval		March 2018	Complete
Full Business Case			
Stage 3 extension of appointment, PSCP		April 2018	
Stage 3 extension of appointment, PSCs		April 2018	
FBC Approval		April 2019	
Enabling Works			
Enabling Works Commencement		September 2018	
Enabling Works Completion		March 2019	
Construction			
Stage 4 appointment of PSCP		April 2019	

Stage 4 appointment of PSCs	April 2019	
Construction Commencement	April 2019	
Construction Completion - ANCHOR	April 2021	
Construction Completion - Baird	October 2021	
AMH Demolition	January 2022	
Contract Completion	January 2022	
Defects Period etc.	24 months from the completion of each facility	

4.2.5 Advisors

Four further appointments under the NHSScotland Consultants Framework have been made. The appointments were based on responses to a HLIP and interview and were evaluated by a multi-professional panel from NHS Grampian (NHSG) supported by HFS. The appointed consultants are outlined in Table C2.

Table C2: Appointed External Advisors

Framework	Appointment	Date
Healthcare Planner	Buchan + Associates	October 2014
Joint Cost Advisor	Currie & Brown	October 2016
CDM Advisor	AECOM	April 2017
Project Manager	Currie & Brown	April 2017

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 Appendix DD.

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 Econominc Case
List of relevant design guidance to be followed – NHSScotland Technical Standards, HBNs, HTMs, HFNs, including a schedule of	Yes. Referenced within Board Construction Requirements

any key derogations	
Evidence that Activity Data Base (ADB) use is fully utilised	Yes. Using Codebook as a project delivery tool, using ADB codes for production of Room Data Sheets (RDS) and equipment lists
Geometric models. Proprietary 3D Building Information Modelling (BIM) Requirements with 2D pdfs cut from the models to the above noted levels of definition/scales	Yes. Using BIM Level 2. The Employer Information Requirements (EIR) and BIM Execution Plan are in place. Refer to section 4.3.7
Design Statement, with any updates in benchmarks highlighted	Yes. Design Statements agreed at IA.
Evidence of completion of self-assessment on design in line with the procedures set out in the Design Statement	Yes. Assessment using AEDET reviews. Baseline, Target and OBC assessments completed.
Completed AEDET review at current stage of design development	Yes. Refer to section 4.3.8.
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 2017 identifies the Foresterhill Health Campus site for “Existing Community Sites and Facilities (CF1)”. In 2008, The Aberdeen City Council approved the Foresterhill Development Framework on behalf of the site’s joint owners, namely NHS Grampian (NHSG) (as per The Scottish Ministers) and the University of Aberdeen (UoA), and this was further updated to reflect new

	planning policy in 2012. The Foresterhill Development Framework is recognised as supplementary planning guidance to the Local Delivery Plan. Planning in Principle was obtained for The Baird and Anchor Project in October 2016. This confirmed that, subject to massing, the palette of materials to be used and the landscaping strategies to be adopted are consistent with Government Planning Policy and is also supported at Local Government level. 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 6.5 and Appendix L.
Photographs of site showing broader context	Yes. Refer to Appendix EE.
Building Research Establishment Environment Assessment Method (BREEAM) healthcare pre-assessment	Yes. BREEAM assessments for both facilities completed and targets agreed in dialogue with HFS. Refer to section 4.3.9.
Evidence that relevant Disability Discrimination Act (DDA), dementia, health promotion and equality commitments are incorporated	Yes. Outlined in Board Construction Requirements (BCRs).

Developed brief	Yes. Outlined in BCRs including clinical and non-clinical briefs.
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. OBC designs to RIBA Stage 2, reviewed by Project Team and its advisors and assessed as part of NDAP. Refer to 4.3.6.

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 ARI adjacent to the Radiotherapy Centre and close to the site currently occupied by the EOPD. The first stage, the Radiotherapy Centre, was completed in 2013 and the investment proposed in this OBC 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 estimated Gross Internal Floor Area (GIFA) for the development is 5,488.8 m2. 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.

The Baird Family Hospital (Option 1)

The development of The Baird Family Hospital, which will replace the existing Aberdeen Maternity Hospital (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 symptomatic breast services.

The Baird Family Hospital will be located towards the west of the Royal Aberdeen Children's Hospital (RACH) on the site currently occupied by the FHC and the BSC. 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. The proposed site plan is shown in Figure C1.

The estimated GIFA for the development is 25,893 m2. 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 the North of Scotland. This will facilitate more integrated working e.g. obstetrics and gynaecology as well as symptomatic breast services and breast screening services.

Additionally, the new facility has prompted the development of new ways of working facilitated by the development of appropriate accommodation, providing the opportunity for a move towards ambulatory care as the norm, with in-patient care being reserved for patients with care 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 space 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 and Cost Reconciliation

SoAs were developed for both buildings at the IA stage of the Project in collaboration with clinical colleagues, the healthcare planner and technical advisors. The estimated GIFA for the Baird was 21,555.1m2 and for ANCHOR was 5,501.6m2. During the design development process following IA approval it became clear that the GIFA for both buildings was in excess of the briefed area. Following a review it was established that the increased GIFA was a consequence of primarily additional plant, planning and communication space. Following a further period of design review and subsequent redesign within the existing brief, the increased GIFA was reduced as far as was possible to support safe working in plant areas and appropriate, safe flows within the buildings for patients, visitors, staff and FM.

A number of reasons for the increased GIFA were identified. In the main, the original brief was found to have underestimated the likely plant and communication space requirements for these complex acute buildings. Additionally, in both buildings, there are no repeating floors making the efficiencies that can be achieved when floors repeat unachievable.

A benchmarking exercise was undertaken to compare the plant and communication space in these buildings with other recently built acute hospital buildings in Scotland. It was established that these projects had experienced similar issues with an increase in plant and communication between the original brief and design. This seemingly recurring issue has been raised with officers from HFS and CIG, in terms of national learning.

The increased GIFA also resulted in an increase in the capital cost. This resulted in a programme delay while a period of redesign and cost reconciliation was worked through in collaboration with the PSCP and their design team, the JCA, the Project Team and clinical colleagues.

The Project Board were briefed regularly throughout this process and have now agreed on the GIFA and the costs to be presented in the OBC.

The updated GIFA position is outlined in the SoAs included as Appendices V and W. The current estimated GIFA for the Baird in now 25,893 m2 and for ANCHOR is 5,489 m2. Table C4 shows the GIFA for each building at IA stage and OBC stage and indicates the shift in GIFA and the main causes of the shift.

Table C4: GIFA Changes between IA and OBC

Building	IA GIFA m^2	OBC GIFA m^2	+/- m^2	Reasons
Baird	21,555	25,893	+ 4,338	This increase is due to a number of reasons described in section 4.3.4. The main reasons are an increase in planning, circulation, plant and interdepartmental communication to meet the requirements of the clinical brief.
ANCHOR	5,501	5,498	-3	There is a small reduction in the GIFA as a consequence of a redesign which reduced the FM and office accommodation and removed the CT scanner included in the original SOA. The plant and interdepartmental space is greater than originally briefed, refer to section 4.3.4.

4.3.5 NHSScotland Design Assessment Process (NDAP)

The purpose of the NHSScotland Design Assessment Process (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 OBC stage of the Project, the Project Team has worked 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 that the OBC NDAP should be conducted in two phases. This would include an early assessment and then another to be scheduled towards the end of the OBC process once the design was more settled, thus allowing time for some of the issues identified during the early assessment to be incorporated in the designs.

In February 2017, A+DS completed a desktop assessment and led a panel assessment including representatives from A+DS, HFS, and A+DS panel experts, the Project Team, GRAHAM Construction and their design team and representatives from the Planning Department at Aberdeen City Council. An initial NDAP report was developed and has influenced the developing design for The Baird and ANCHOR Project and the wider Landscaping Strategy for the whole Foresterhill Health Campus.

A second assessment will be held in January 2018 in advance of the OBC submission. The issues identified in the report will be addressed during the

FBC stage of the Project. A copy of the A+DS "supported" NDAP report received on 16 March 2018 is included as Appendix G.

4.3.6 Building Information Modelling Requirements

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

The Project will use 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 NHS Grampian BIM Strategy and Employers Information Requirements (EIR) has been developed in collaboration with the NHSScotland 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.

This has informed the development of a BIM Execution Plan, developed over recent months with GRAHAM Construction for use throughout the design,

construction and operational phase of the Project. The BIM Execution Plan has been developed to meet NHSG requirements, including project specific fields for asset information. By providing a good understanding of the inputs required by the NHSG FM and Estates teams the design team is able produce information from the model that can be fed directly into the NHS software.

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, Achieving Excellence Design Evaluation Toolkit (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 refer to section 4.3.6.

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 1 - 6. The standard required should result in all 10 dimensions of the AEDET toolkit scoring between 4 and 6.

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 C6 and C7 below demonstrate that the existing facilities score poorly at between 1.0 and 3.5 in all 10 categories. This reinforces the NHSScotland healthcare estate assessment outlined in Tables S6 and S18.

AEDET Target workshops for each facility were completed in December 2015. Target scores of between 4 and 6 were agreed for each dimension by the team. Subsequent AEDET workshops will assess the emerging design at key stages throughout the Project against the agreed target scores. The target scores are summarised in Tables C6 and C7.

In March 2016, AEDET workshops were held to review the emerging reference designs against the agreed target scores. This workshop involved clinicians, patient representatives, Project Team, the Board's Technical Advisors and the architectural team who developed the reference design.

On 14 December 2017, AEDET workshops were held to review the OBC stage designs against the agreed target scores. This workshop 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 OBC AEDET scores are included in Tables C5 and C6.

The next AEDET assessments will be undertaken at FBC stage.

Table C5: The ANCHOR Centre AEDET Scores

ANCHOR Centre AEDETs	Baseline March 2015 (existing accommodation)	Target December 2015	OBC December 2017
► Use	1.1	5.7	4.2
► Access	2.3	5.8	3.9
► Space	1.7	5.8	4.7
► Performance	3.5	6.0	1.6
► Engineering	1.5	5.1	0.8
► Construction	0.0	5.9	0.5
► Character and Innovation	1.7	5.6	3.9
► Form and Materials	2.4	6.0	2.9
► Staff and Patient Environment	1.5	6.0	4.4
► Urban and Social Integration	0.0	6.0	3.4

Table C6: The Baird Family Hospital AEDET Scores

The Baird Family Hospital AEDETs	Baseline March 2015 (existing accommodation)	Target December 2015	OBC December 2017
► Use	1.0	5.6	4.4
► Access	1.5	5.7	4.1
► Space	1.0	5.6	3.9
► Performance	1.5	5.8	0.2
► Engineering	1.3	5.7	0.7
► Construction	0.0	5.7	0.3
► Character and Innovation	1.0	5.6	3.9
► Form and Materials	1.4	5.9	3.7
► Staff and Patient Environment	1.1	5.9	4.1
► Urban and Social Integration	2.3	5.8	3.4

4.3.8 Sustainability

Sustainable developments are a major requirement for NHSScotland 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 NHSScotland, 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. A follow up workshop was held in December 2017 and the current targets being pursued for each building are as follow:

- The ANCHOR Centre - Target score of 70.6% with possible score of 89.6%.
- The Baird Family Hospital - Target score of 70.1% with possible score of 83.6%.

The PSCP is using a software system called Tracker Plus to manage and record progress with achievement of the targeted credits over the life of the Project.

During the design development stage, a range of analyses has been undertaken with the PSCP and their design team to ensure the anticipated carbon emission and energy consumption targets are met. The Energy Performance Certificate (EPC) targets will meet or exceed those set out in the BCR. The PSCP will ensure that the Baird and ANCHOR facilities operate to achieve an EPC rating of D and C respectively, both buildings have estimated EPC ratings of B.

Passive Design Analysis has been carried out on both buildings during Stage 2 to identify where energy demands of the buildings can be reduced and improved efficiencies will, in turn, reduce the carbon demand associated with the buildings.

Progress reports have made recommendations in a number of areas, these will be re-evaluated during Stage 3 to ensure they are all still appropriate.

The Passive Design Analysis has covered the opportunities and carbon reduction associated with the following:

- Ventilation Strategy - Mechanical Ventilation with Heat Recovery, Single Sided Natural Ventilation, Natural Cross Ventilation, Mixed Mode
- Indoor Thermal Comfort – Overheating Analysis, Energy Consumption, Space Requirements, Flexibility, Control Requirements
- Thermal Mass Evaluation
- Natural Lighting Considerations - Building Orientation Optimisation, Solar Control Strategies, Glazing Optimisation, Solar Shading and Daylighting Strategy
- Building Fabric improvements have been incorporated into the design to date

The carbon reduction associated with the Mechanical and Electrical systems will be analysed further during Stage 3 in line with the BCR, Building Regulations and BREEAM requirements and as design progresses.

Anticipated net additional energy costs have been provided for within the business case. These are based on m^2 metrics for existing facilities, no specific adjustment has been made to these metrics for reduction in energy consumptions.

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 Appendix AA and to section 6.4.1.1.

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	Potential allocation of risk		
	Public	Private	Shared
Client/business risks (title, ground conditions, where not disclosed)	100%	0%	
Design	0%	100%	
Development and construction (note dark ground, contamination remain with public)	50%	50%	✓
Transition and implementation (commissioning, migration Board responsibility)	100%	0%	

Risk Category	Potential allocation of risk		
	Public	Private	Shared
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, PSCs 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 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 Compensation Event (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 compensation event 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 and 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 specific Z clauses have been developed in dialogue with HFS and GRAHAM Construction. Legal advice from Pinsent Mason on the wording of these clauses was commissioned by HFS.

The Project specific Z clauses relate to:

- sectional completion
- defects liability
- gain share
- retention
- Project Bank Account

The Project will operate a Project Bank Account during the Stage 3 (FBC) and Stage 4 (construction) contract phases, 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 OBC. 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.	Early and ongoing engagement with Planning Authority, statutory consultees and stakeholders.	
Additional redundant service duct identified.	Survey unable to be carried out until works commence on site, as building currently located over duct.	
High groundwater table gives problems on both sites for basements.	Current design proposals take into account the high groundwater levels across the site. To be further investigated once the demolitions works have taken place.	
Ground conditions, bearing pressure and contamination. Requirement for expensive ground gas protection and removal/capping of contaminated ground.	Early Site Investigations to be carried out to inform design specification.	
Dark ground – surveys and investigations – access difficulties and risks inherent in areas which are not surveyed	Early survey work should seek to make assessment close to existing buildings not yet demolished to help inform risk cost.	

i.e. areas of existing buildings unable to be surveyed.		
Aberdeen City Council requirement for limit on discharge leads to large attenuation requirement on site where space is limited. Existing drainage from Radiotherapy also needs to be moved.	Sourcing of information regarding existing drainage rates. Work currently underway.	
Asbestos may be more extensive than highlighted in the management surveys.	Ability to carry out demolition surveys to be agreed. May not be possible due to live nature of site. Desktop study of available info together with meeting with NHSG Asbestos Officer. Sufficient cost and programme allowances to be made.	
Unknown services – accuracy of GPR surveys of existing services below ground.	Ground Penetrating Radar (GPR) surveys to be carried out. Further trial digs at hot spots to understand risks, risk allowance for unknowns. Possible early diversion enabling works to de-risk programme.	
Water infrastructure may not have sufficient capacity.	Resilience in reservoir and public supply to be investigated.	
The Water Environment Controlled Activities (Scotland) Regulations 2011 (CAR) Licence timescales and planning.	To be progressed in the timescales to avoid futures issues (normally takes four – six months)	
Recent treatment of Knotweed infestation	Knotweed strategy for the campus has been developed and initial treatment has	

elsewhere on the campus affects the Project sites.	been completed. An ongoing treatment plan is now established.	
Potential lack of co-ordination of Greenspace Strategy being delivered incrementally.	The Greenspace Strategy is being implemented on an incremental basis as funding becomes available. The Project Team is seeking to work in a collaborative fashion with other design teams when funding for other sections becomes available. This will ensure a planned and co-ordinated approach to the implementation phase in terms of material, plants etc.	
Requirement to meet Scottish Health Technical Memorandum (SHTM) 02-01 compliance for campus and not just the two new facilities	NHSG has identified funding in the 2017/18 capital plan to fund the creation of a second Vacuum Insulated Evaporator (VIE) on site connected to the oxygen ring main providing campus wide resilience in compliance with the SHTM. Work to install this VIE is currently at the design stage and will be installed early in 2018.	
Fire strategy not defined/agreed. Fire strategy remains open to testing throughout the design stage and derogations may be challenged.	Fire Strategy to be developed and reviewed by all parties including Grampian Fire and Rescue, ACC, NHSG and HFS.	
Project specific Z clauses are not agreed with PSCP.	The Central Legal Office and law firm Pinsent Masons have developed project specific Z clauses which have been shared with the PSCP for review by their commercial team and legal advisors in	

	advance of Stage 3.	
Procurement of supply chain is inadequate.	A procurement strategy has been agreed and approved by the Project Board. A procurement plan has now been developed, and implementation is underway.	

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 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 are set out in Table F1 and the revenue implications in the first full year of operation are set out in Table F2.

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

The Scottish Government (SG) have indicated that capital funding will be provided. The University of Aberdeen (UoA) have indicated they will contribute to the building related running costs.

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

Table F1: Summary of Initial Capital Investment

	Baird	ANCHOR	Total
	£000s	£000s	£000s
Enabling Projects	8,702	4,762	13,464
Construction Related Costs	115,948	30,768	146,716
Furniture and Equipment	15,652	1,348	17,000
Project Development Costs	5,398	1,350	6,748
Commissioning Costs	168	42	210
Total Initial Investment	**145,868**	**38,270**	**184,138**
Sources of Funding			
SG Additional Capital Funding	131,600	32,116	163,716
Hub Contract	7,531	0	7,531
NHSG Capital Funding	1,066	4,762	5,828
NHSG Revenue Funding	5,671	1,392	7,063
Total Sources of Funding	**145,868**	**38,270**	**184,138**

Table F2: Summary of Revenue Implications - First Full Year of Operation (2022/23)

	Baird	ANCHOR	Total
	£000s	£000s	£000s
Revenue Costs			
Additional Depreciation	3,505	784	4,289
Clinical Service Costs	784	164	948
Non-Clinical Service Costs	340	85	425
Building Related Running Costs	2,295	679	2,974
Total Costs	**6,924**	**1,712**	**8,636**
Sources of Funding			
Third Party (UoA)	144	21	**165**
NHSG Revenue Funding (Other Scheme Costs)	3,275	907	**4,182**
Total Identified Sources of Funding	**3,419**	**928**	**4,347**
Revenue Funding (Depreciation)*	3,505	784	**4,289**

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

5.2 Revisiting the Financial Case

The Initial Agreement (IA) was approved by Scottish Government Health and Social Care Department (SGHSCD) on 30 September 2015 and no specific conditions were outlined in the approval letter in relation to the Financial Case. The case had been developed to assume delivery by the Non Profit Distributing (NPD) model via a 'Project Company' (a special purpose company limited by shares) and attracting SG revenue funding support as part of the NPD programme.

In March 2016 NHSG were notified that, due to the uncertainty regarding the account classification of the NPD model, NHSG would receive capital funding from the SG to deliver the Project. This meant that the NPD model was no longer an appropriate procurement option.

This has resulted in a fundamental redraft of the Financial Case in this Outline Business Case (OBC) which sets out the financial consequences of the Project and affirm overall affordability.

The key differences of this change are:

- Construction – financed by capital allocation not long term lease which attracted a repayment and interest annual service payment
- Life Cycle and Hard Facilities Management costs – incurred as arise rather than as part of an annual service payment
- Land and Building Depreciation funding pressure
- VAT forms part of the construction cost

Table F3 sets out the impact of these changes.

Table F3: Update to Intitial Investment

	£millions
Indicative Capital Costs per IA	134.00
VAT	17.76
Furniture and Equipment Uplift	12.00
Project Development and Commissioning Costs	6.96
Adjusted Initial Investment	**170.72**
Increase in Construction Related Costs	13.47
Updated Initial Investment	**184.19**

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.

It also considers any relevant cost variations in relation to the short-listed options that formed part of the appraisal in the Economic Case for this Project. However, given the appraisal focussed on site solutions rather than service solutions, these are limited.

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.

Table F4 sets out the anticipated construction costs for the new facilities and a more detailed cost plan is contained in Appendix Y. The assumptions in preparing these costs are as follows:

- Construction start date: Q2 2019
- Construction end date: Q3 2021 (ANCHOR); Q4 2021 (Baird)
- Tender Inflation: current Building Cost Informatin Service (BCIS) Tender Inflation rates for the relevent period are negative and an estimate has been arrived at through discussions between NHSG and Currie & Brown. An allowance of 2.5% has been included. Construction inflation has been estimated from the date of tender return to the mid-point of the construction phase using the BCIS Building Cost Index up to anticipated mid-point 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

- main contractor preliminaries and overhead and profit are based on tender submission
- quantified construction risk is based on those risks identified in costed risk at construction
- both new facilities will be built on land already owned by NHSG, on behalf of the Scottish Ministers, jointly with the UoA

Table F4: Construction Costs

	Baird	**ANCHOR**	**Total**
	£000s	**£000s**	**£000s**
Construction Related Costs			
Enabling Works	3,627	864	4,491
Building Costs	62,517	15,840	78,357
Site Specific Costs	6,488	1,065	7,553
Prelims, Fees, On-Costs	13,782	5,166	18,948
Inflation	6,441	1,709	8,150
Risk	5,335	1,413	6,748
VAT	17,758	4,711	22,469
Total Construction Costs	**115,948**	**30,768**	**146,716**
Sources of Funding			
SG Additional Capital Funding	115,948	30,768	146,716
Total Sources of Funding	**115,948**	**30,768**	**146,716**

5.3.1.2 Enabling Projects– Service Relocations (Site Clearance)

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

- the works replacing the existing EOPD and BSC forms part of Phase 1/Yellow Zone Aberdeen Royal Infirmary (ARI) backlog

maintenance project which is being delivered using the Frameworks Scotland 2 (FS2) Agreement. Backlog maintenance work planned within the Phase 1 block at ARI has been brought forward to 2017/18 to enable the relocation of the existing EOPD. A Target Price has been contractually agreed and these works will be funded by NHSG capital funding

- the replacement of FHC is being delivered as a revenue funded hub Design, Build, Finance and Maintain (DBFM) Project. The facility has been bundled with The Inverurie Health and Care Hub. The project reached Financial Close in December 2016 and construction is due to complete in Q1 2018. Investment in the relocation of this facility is the key financial difference of the options consisdered
- it is anticipated the clearance of the sites will be undertaken by the PSCP and these costs have been included within the construction cost for the Project
- the assets that are being vacated will have been 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 F5 and are inclusive of indexation and risk for those works.

Table F5: Summary Enabling Project

	Baird	ANCHOR	Total
	£000s	£000s	£000s
Service Relocations			
Breast Screening Centre	354	0	354
Eye Out-patient Department	0	4,229	4,229
Foresterhill Health Centre	8,253	0	8,253
VAT	95	533	628
Total Initial Investment	**8,702**	**4,762**	**13,464**
Sources of Funding			
Hub Contract	7,531	0	7,531
NHSG Capital Funding	1,171	4,762	5,933
Total Sources of Funding	**8,702**	**4,762**	**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 2021.

An early indicative capital cost associated with additional Group 2, 3 and 4 equipment based on these equipment lists has been prepared and analysed, allowing for a transfer of existing equipment assumption of 30%. 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 the Scottish Government is required to bridge the gap. Table F6 sets out the requirement in relation to equipment.

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 Projects Schedule of Accommodation (SoA) and examination of equipment suitable for transfer.

Table F6: Summary Equipment Cost Implications

	Baird	**ANCHOR**	**Total**
	£000s	**£000s**	**£000s**
Equipment Costs			
Furniture	2,189	420	2,609
IT	1,580	425	2,005
Medical Equipment	9,268	285	9,553
VAT	2,607	226	2,833
Total Initial Investment	**15,644**	**1,356**	**17,000**
Sources of Funding			
SG Additional Capital Funding	15,644	1,356	17,000
Total Sources of Funding	**15,644**	**1,356**	**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 the five years to commissioning. The Joint Cost Advisor fees form part of the fees reflected in the Construction Cost. Table F7 sets out the Project Development Costs.

Table F7: Project Development Costs

	Total
	£000s
Project Development Costs	
Project Team	4,992
Project Advisors	1,341
Other Project Costs	415
Total Project Development Costs	**6,748**
Sources of Funding	
NHSG Revenue Funding	6,748
Total Sources of Funding	**6,748**

5.3.2.2 Commissioning Costs

Additional non-recurring costs are anticipated in 2021/22 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 commissioning phase and project evaluation, as set out in Table F8**.** These requirements and estimates will continue to be developed and refined in the years leading up to the handover.

Table F8: Project Commissioning Costs

	Total
	£000s
Commissioning Costs	
Removal (Inc 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 F9 sets out the revenue cost estimates and assume that services are in place and available for use in 2021, with 2022/23 being the first full year of operation.

Table F9: Summary of Recurring Revenue Implications - First Full Year of Operation (2022/23)

	Baird	ANCHOR	Total
	£000s	£000s	£000s
Recurring Revenue Costs			
Additional Depreciation	3,505	784	**4,289**
Additional Clinical Service Costs	784	164	**948**
Additional Non-Clinical Service Costs	340	85	**425**
Additional Building Related Running Costs	2,295	679	**2,974**
Total Recurring Revenue Costs	**6,924**	**1,712**	**8,636**
Sources of Funding			
Revenue Funding (Depreciation)	3,505	784	4,289
NHSG Revenue Funding *(Other Scheme Costs)	3,419	928	4,347
Total Sources of Funding	**6,924**	**1,712**	**8,636**

*NHSG have requested that the Scottish Government 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 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 F10 below, and sets out a net additional depreciation of £4,289,000.

Table F10: Total Depreciation - First Full Year of Operation (2022/23)

	Baird	**ANCHOR**	**Total**
	£000s	**£000s**	**£000s**
Depreciation			
Equipment	2,923	703	3,626
Building	1,554	145	1,699
Total Net Depreciation	**4,477**	**848**	**5,325**
Sources of Funding			
NHSG Revenue Funding (Depreciation Current Budget Provision)	972	64	1,036
Revenue Funding (Depreciation Additional Costs)	3,505	784	4,289
SG Depreciation	0	0	0
Total Sources of Funding	**4,477**	**848**	**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 Foresterhill Health Centre, the Breast Screening Center and Eye Out Patient Department by applying an impairment cost of £3.2 million and in 2017/18 it will reflect a further £7.16 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 SoA were developed in line with the SHPNs 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 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 our 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.

Detailed costing of building running costs based on the emerging design has been undertaken and the net costs are summarised below in Table F11.

Table F11: Additional Building Related Running Cost - First Full Year of Operation (2022/23)

	Baird	ANCHOR	Total
	£000s	£000s	£000s
Building Related Running Costs			
Rates	1,397	303	**1,700**
Water Rates	68	14	**82**
Electricity	438	92	**530**
Heating	342	72	**414**
Domestics	2,127	199	**2,326**
Property Maintenance	966	204	**1,170**
Total Annual Costs	**5,338**	**884**	**6,222**
Sources of Funding			
NHSG Revenue Funding (Current Budget Provision)	3,043	205	**3,248**
NHSG Revenue Funding (Other Scheme Costs)	2,151	658	**2,809**
Third Party (UoA)	144	21	**165**
Total Sources of Funding	**5,338**	**884**	**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 F12.

Table F12: Additional Clinical Service Costs - First Full Year of Operation (2022/23)

	Baird	ANCHOR	Total
	£000s	£000s	£000s
Clinical Service Costs			
100% Single Rooms (Nursing and Midwifery)	407	0	**407**
Additional Emergency Theatre Sessions	114	0	**114**
Provision of anaesthetics - ACRM	27	0	**27**
Transitional Care	236	0	**236**
Aseptic Pharmacy Resilience	0	135	**135**
Pharmacy Dual Site	0	29	**29**
Total Annual Costs	**784**	**164**	**948**
Sources of Funding			
NHSG Revenue Funding	784	164	**948**
Total Sources of Funding	**784**	**164**	**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 F13.

Table F13: Non-Clinical Service Costs - First Full Year of Operation (2021/22)

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

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

5.3.4 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 HMRC
- Enabling Projects: EOPD & BSC - a rate of 12% has been applied this is net of the recoverable sums (39.89%) for this scheme agreed with HM Revenue and Customs
- Enabling Projects: FHC - VAT on the build cost is excluded as tis 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

All of the risks are identified within the Project Risk Register and are currently open. It is anticipated that the majority of these risks will be closed or mitigated to reduced levels in the period leading up to FBC submission and Financial Close. Those risks that are financial in nature have been quantified using recognised risk management techniques.

Those financial risks that relate to the Construction Contract (£6.7 million) have been explicitly reflected in the Initial Investment Tables above. The residual risk will be managed by the Board within the funding requirements identified.

The financial risks carrying the greatest impact are those that relate to the uncertainty of macro economic market conditions and the unknown site conditions, refer to the costed Risk Plan Appendix S. These could impact on the Project being able to deliver within affordability caps. Appendix S sets out these risks in detail. The risks will be managed and monitored during the procurement and construction period to identify and resolve issues as early as possible if they transpire.

The Project Team will continue to monitor these and other financial risks and mitigate the impact.

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

It is likely that a public fundraising campaign will be undertaken in order to provide enhancements to the Project that would not normally be paid for from NHS budgets. These are likely to take the form of non-standard decoration, art works, soft furnishing, additional landscaping etc. Plans are underway regarding the organisation and management of the fundraising process. It is likely that a committee will be established to oversee the fundraising effort and to determine how the funding will be spent.

At this point in time, there are no other anticipated external partner financial contributions. However, the UoA is a significant partner on the Foresterhill Health Campus and will have a presence in the new buildings (e.g. research facilities). It is therefore not possible to rule out future contributions at this stage.

5.4 Statement of Overall Affordability

5.4.1 Provision in Financial Plans

In addition to the recurring additional revenue costs of the Project from financial year 2021/22, there are also a number of non-recurring capital and revenue costs that are being incurred directly by NHSG during the life of the Project. These costs will be fully accounted for in preparation of the current 5 year LDP.

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

Table F14: Capital Costs

	Total
	£000s
Construction Related Costs	146,716
Furniture and Equipment	17,000
Total Capital Costs	**163,716**
Sources of Funding	
SG Additional Capital Funding	163,716
Total Sources of Funding	**163,716**

Additional capital investment by NHSG has been required to fund the enabling works with revenue investment in project development and commissioning costs.

FHC requires to be relocated under the preferred option and the cost of this relocation is included in the preferred way forward with a capital construction cost above £7.6 million. This has been procured as part of a hub bundle with Inverurie Health and Care Hub. The SG approved the funding for this relocation is to be provided from The Baird Family Hospital and The ANCHOR Centre original NPD allocation.

Table F15: Enabling and Other Project Development Costs

	Total
	£000's
Enabling Projects	13,464
Project Development Costs	6,748
Commissioning Costs	210
Total Initial Investment	**20,422**
Sources of Funding	
Hub Contract	7,531
NHSG Capital Funding	5,828
NHSG Revenue Funding	7,063
Total Sources of Funding	**20,422**

The preferred options also require the sites of the EOPD and the BSC to be cleared. The cost of relocating these services is reflected and is being incurred by NHSG.

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

The UoA have indicated they will contribute to the building related running costs.

The phase of costs associated with the delivery of the Project have been profiled to align with the current Programme for the Project. This assumes the acceleration of £6 million for the demolition vacated buildings and enabling works into 2018/19. This will deliver the benefits of: (i) de-risking the Project programme and removing up to 12 weeks of pre-construction inflation and costs and (ii) removing the risk and costs associated with vacant properties situated on the Foresterhill Campus.

Tables F16 and F17 consolidate the capital and revenue cash flows and funding requirements to support the Project during development and the first full year of operation.

Funds have been provisionally identified within NHSG's Capital Plan for the enabling works and equipment.

Table F16: Costs – Cashflow

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Total
	£000s	£000s	£000s	£000s	£000s	£000s	£000s	£000s	£000s
Enabling Projects	136	557	5,218	22	0	0	0	0	5,933
Enabling Works	0	0	0	6,000	0	0	0	0	6,000
Construction Related Costs	0	1,897	1,700	3,874	45,394	70,070	17,588	193	140,716
Furniture and Equipment	0	0	0	0	0	2,000	10,000	5,000	17,000
Total Capital Costs	**136**	**2,454**	**6,918**	**9,896**	**45,394**	**72,070**	**27,588**	**5,193**	**169,649**
Project Development Costs	1,550	782	850	994	946	877	749	0	6,748
Commissioning Costs - Revenue	0	0	0	0	0		210	0	210
Impairments		3,211	7,155						10,366
Additional Depreciation							0	4,289	
Clinical Service Costs							501	948	
Non-Clinical Service Costs							331	425	
Building Related Running Costs							1,596	2,974	
Total Revenue Costs	**1,550**	**3,993**	**8,005**	**994**	**946**	**877**	**3,387**	**8,636**	
Total Costs	**1,686**	**6,447**	**14,923**	**10,890**	**46,340**	**72,947**	**30,975**	**13,829**	

Table F17: Funding – Cashflow

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Total
	£000s	£000s	£000s	£000s	£000s	£000s	£000s	£000s	£000s
SG Additional Capital Funding	0	1,897	1,700	9,874	45,394	72,070	27,588	5,193	163,716
SG Additional Funding (non cash del)									
NHSG Capital Funding	136	557	5,218	22	0	0	0	0	5,933
NHSG Revenue Funding (Project)	1,550	782	850	994	946	877	959	0	6,958
Depreciation/Impairment		3,211	7,155					4,289	
NHSG Revenue Funding (Other Scheme Costs)							2,339	4,182	
Third Party (UoA)							89	165	
Total Sources of Funding	**1,686**	**6,447**	**14,923**	**10,890**	**46,340**	**72,947**	**30,975**	**13,829**	

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 F16.

Table F18: Sensitivity Analysis

Area	Impact £millions	Management
Capital Expenditure – Build	14.6	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 PSCP and associated supply chain will apply innovation to ensure delivery within that cap.
Capital Expenditure – Equipment	1.7	Structured processes of identifying and programming need and managing delivery is in place.
Recurring Revenue Costs	0.6	Regular review including a detailed programme of service redesign forms part of budget planning process.

5.4.3 Value for Money

The construction costs included within the business case have been scrutinised by external Joint Cost Advisors as part of their due diligence towards their validation of the cost representing value for money at this stage. In particular, the elements making up the total capital cost have been compared with other similar comparator projects and existing market conditions. This has also included area benchmarking and a value engineering process. Moving forward to market testing and the implementation of a staged Procurement Strategy, there is an expectation that further value will be applied to reflect competitive market testing.

The stages in cost planning undertaken since Currie & Brown were appointed are outlined as follows:

- development of an Elemental Order of Cost Estimate (this is a rate per metre squared for each building element applied to the total area) based on the initial design
- as the Stage 2 design developed a more detailed Formal Cost Plan (this is based on actual measurements of each building element from the design drawings at this stage) was developed
- the costs were then subjected to a detailed review by the Joint cost Advisor in conjunction with the PSCP, GRAHAM on a line by line basis with both parties challenging and interrogating the rates and quantities used to build up the overall project cost in the Formal Cost Plan. During this review the GIFA was also challenged and potential Value Engineering identified
- the mechanical and electrical services costs comprise approximately 40% of the project costs and so these were reviewed in the same detail as the building elements by the M&E leads for Currie & Brown and GRAHAM
- the review identified high cost elements such as substructures, external facades, and elements of M&E in both Baird and ANCHOR in the cost plan that resulted in savings in some of the building and M&E cost elements. GIFA reductions that had also been identified were also applied.

As part of the cost development the Joint Cost Advisor in conjunction with GRAHAM and NHSG also reviewed the Risk and Inflation allowances in the formal cost plan to ensure that these were appropriate for the project stage.

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 costs.

5.4.5 Closing the Affordability Gap

5.4.5.1 Construction Costs

In early 2017, an affordability gap between indicative funding for the Project (£133.8 million) and the cost of the emerging design became apparent. The reasons for the gap were primarily as a result of design complexity and the under provision of allowances for plant and communication area. An extended period of cost reconciliation commenced to remedy the situation consisting of value engineering, review of GIFA, refinement of cost planning assumptions and scope refinement. The impact was to reduce the construction cost of the emerging design to £146.7 million.

5.4.5.2 Equipment Costs

An allowance for equipment of £5 million was made in the IA. Following the completion of the Schedule of Accommodation (SoA) and review of RDS it became clear this was insufficient and the allowance has been increased to reflect this. In common with other major infrastructure projects, additional funding from the SG has been indicated.

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 (£8.6 million) are reflected in the OBC.

The additional recurring revenue costs of £8.6 million will be covered partly by anticipated revenue support funding (depreciation) from the SGHSCD (£4.3 million), third party contributions (£165,000) with additional cost pressure to be managed identified within NHSG's Financial Plan and LDP to cover the balance (£4.2 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 and The ANCHOR Centre.

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

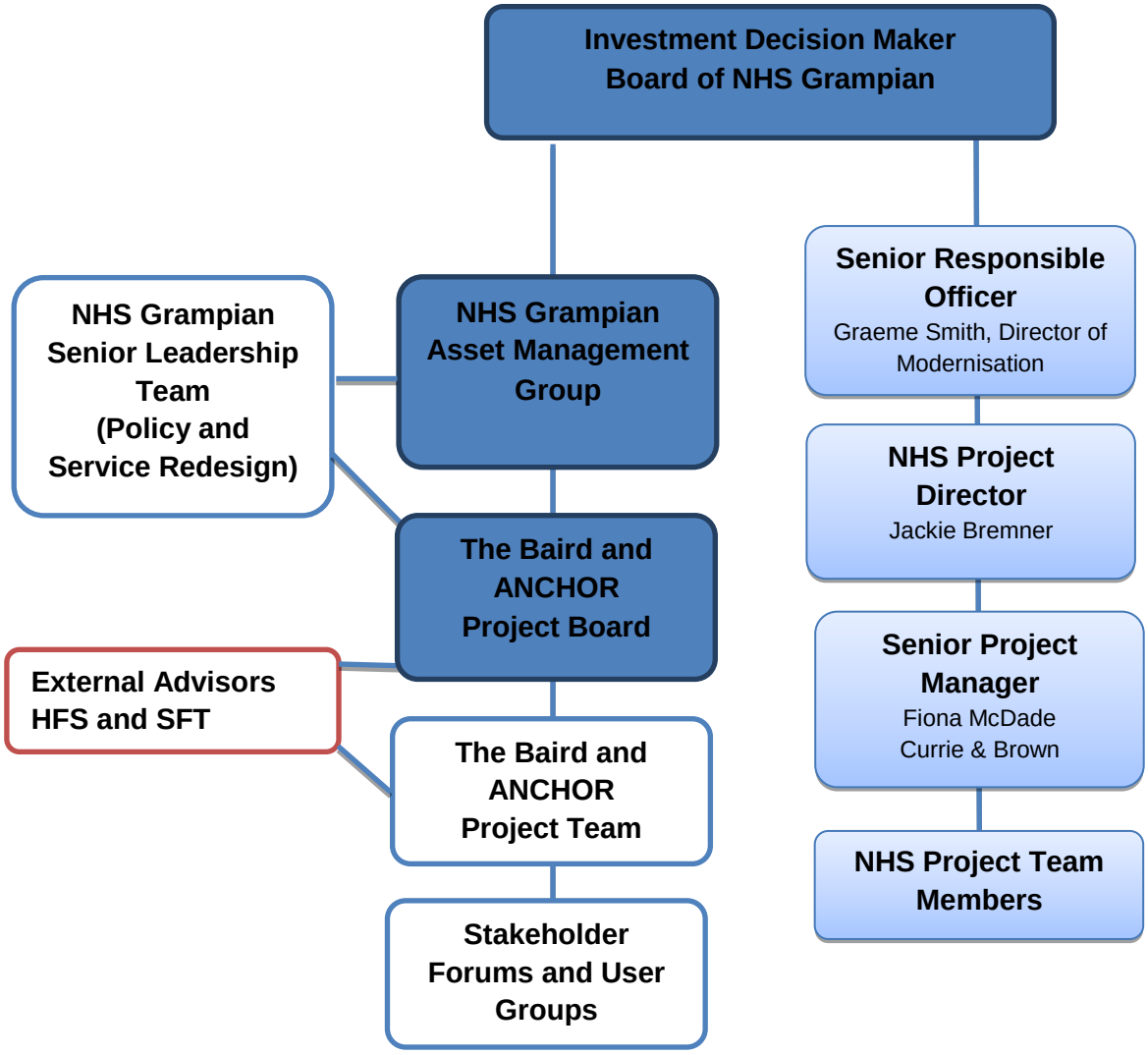
6.2.1 Reporting Structure and Governance Arrangements

The Project was initially part of a wider £409M 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. The Initial Agreement (IA) letter of approval from the Scottish Government Health and Social Care Department (SGHSCD) dated 31 September 2015 invited the Board of NHSG to progress the Project to Outline Business Case (OBC), see Appendix A. 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 governance of the Project is consistent with the Scottish Capital Investment Guidance (SCIM). The IA was approved by the SGHSCD Capital Investment Group (CIG) in September 2015 with the Project programme outlining plans for submission and approval of an OBC and a Full Business Case (FBC) prior to construction commencement. The Project governance arrangements described in this section seek to ensure that the SGHSCD 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 Senior 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 2021/22.

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 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 Gateway Reviews, Architecture and Design Scotland (ADS) 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 Works Information 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 Works Information.

15. To ensure compliance with EWI requirements.

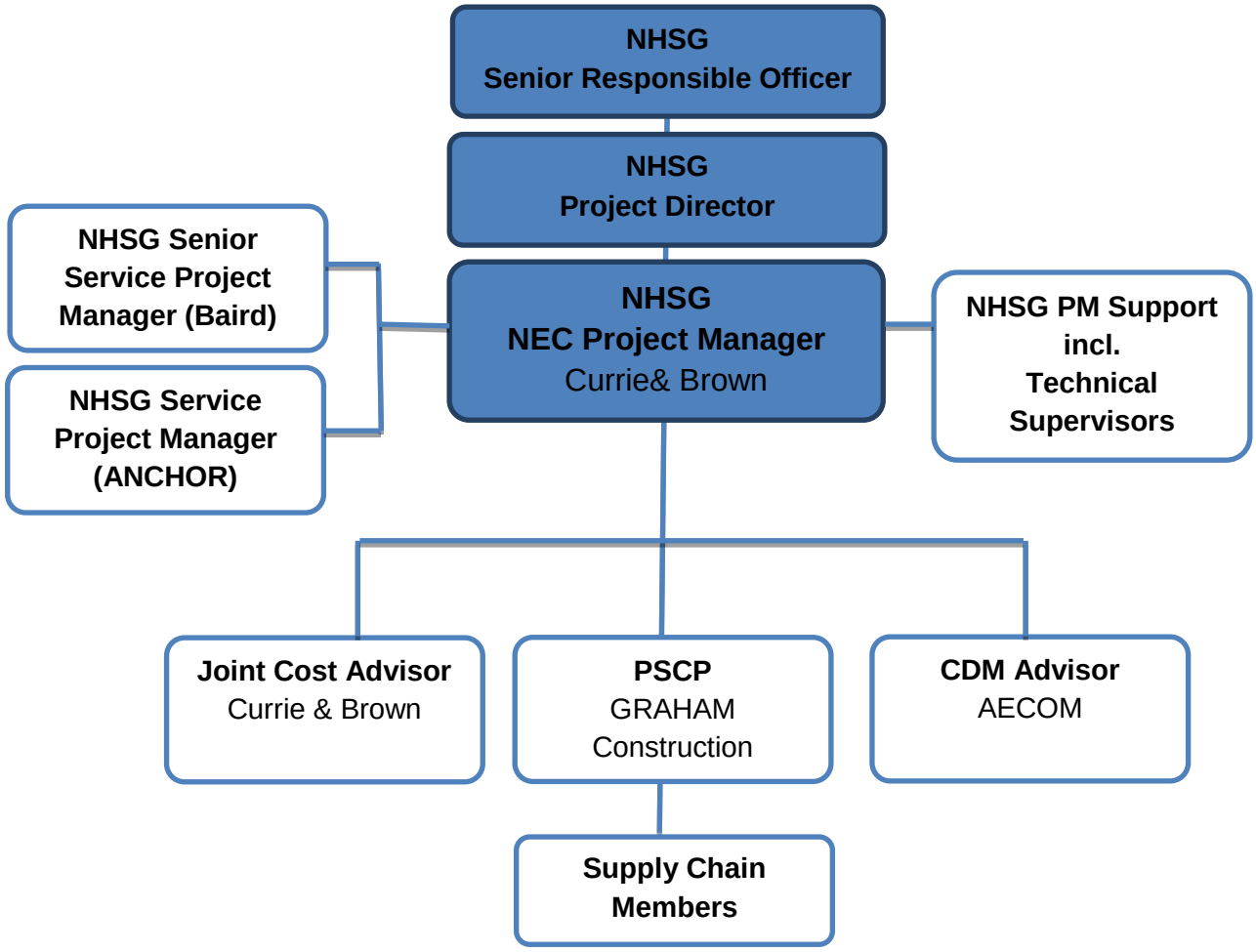
16. To ensure completion of the soft landings programme in advance of handover.

17. To lead development and implementation of 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 Graeme Smith, Director of Modernisation 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 similar major capital funded projects as PD in NHSG over the last 27 years.

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

Senior Responsible Officer: Graeme Smith		
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	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%	20%

The Project Director (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 20 years.

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
	25-75%	80%

The Senior Project Manager (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 12 years.

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

Senior Project Manager: 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 Involvement	Experienced
Commercial Acumen	Expert	Expert
Project Management	Expert	Expert
Stakeholder Management	Expert	Expert
Procurement Management	Experienced	Experienced
Contract Management	Experienced	Expert
Resource Commitment	100%	80 - 100%

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 Project role and main responsibilities of each member of the Project Board 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**
Graeme Smith Director of Modernisation Senior Responsible Officer	Graeme has 35 years experience in the NHS in a range of management and planning posts, with 27 of those years involving the development and implementation of major capital projects. Experience in the leadership of capital projects started in 1990 with the major redevelopment of Dr Gray's Hospital in Elgin, followed by the development of the new Royal Aberdeen Children's Hospital (RACH) in Aberdeen. Graeme subsequently led a wide range of major capital projects and associated service redesigns including the Aberdeen Dental School and Hospital, the Matthew Hay Building on the Foresterhill Campus in Aberdeen, the Foresterhill Campus redevelopment which has been underway since 2008 and, most recently, The Baird and ANCHOR Project.

Jackie Bremner Project Director	Jackie has worked in the NHS for 39 years, initially as a nurse. During the last 20 years she has worked on infrastructure projects in the role of Project Development Manager and PD/Project Manager for a number of Frameworks FS1 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 Design, Build, Finance and Maintain (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 RACH project from concept to operation. Jackie is an accredited NEC3 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 11 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 Frameworks Scotland 1 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 (ICU). 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**
Alan Gray Director of Finance	Alan is a member of the Institute of Chartered Accountants of Scotland and member of The Institute of Chartered Accountants for Scotland (ICAS) Public Sector Panel. Additionally, he is Chair of NHSG AMG. Alan was SRO on the first DBFM project under hub model in Scotland (Aberdeen Health Village) and SRO on the first joint project with two organisations under hub model in Scotland

	(Forres, Woodside and Tain). Alan is currently SRO on DBFM project for the replacement of Foresterhill and Inverurie Health Centres. Alan is the former Chair of the North of Scotland Territory Partnering Board, former member of hub National Programme Board and former shareholder representative on the Board of Hub North Scotland Limited.
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 35 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	
Gary Mortimer Director of Acute Services	Gary has held a number of roles in NHSG including General Manager Facilities and Estates before becoming Director of Acute Services. Gary has been a senior member of multiple project teams/major capital projects including RACH, Matthew Hay Building, Energy Centre, Backlog Maintenance programme etc. Involvement has been at all stages including business case development, design, procurement, construction, commissioning and in-operation facility management phases. Gary has also been involved in Building Research Establishment Environment Assessment Method (BREEAM) assessments, NEC3 delivery, Gateway Reviews and Achieving Excellence Design Evaluation Toolkit (AEDET) reviews. A member of The Royal Institute of Chartered Surveyors (RICS), Gary now brings his engineering background to operational clinical delivery as Director of Acute Services.
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 General Manager Estates and Facilities	Paul has worked in NHSG for 34 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 property, asset and commercial representative	**Representing the organisation's property, asset and commercial management interests**
Stan Mathieson Project Director hub Projects	Stan is a senior officer in NHSG leading on/involved in a variety of project delivery procurements and property related issues. More specifically he has been project lead on a number of projects delivered under main scheme NEC 2 and NEC 3 multi options and more recently delivered scheme contracts for PSCPs and consultants. Stan is an accredited NEC3 Project Manager.
Organisation's senior workforce management representatives	**Representing the organisation's workforce management interests**
Gwynne Cromar HR Manager	Gwynne is a member of The Chartered Member of the Institute of Personnel and Development (CIPD) and an experienced HR manager, with over 34 years service in the

	NHS. She has been involved in numerous service redesigns over the years, including the redesign of maternity services across Grampian which was complex and challenging involving changes in how and from where services are delivered. This involved public consultation and close working with staff and unions.
Sharon Duncan Employee Director	Sharon represents the organisation's workforce management interests. As Employee Director, she contributes to this Project Board in terms of staff involvement in line with the Staff Governance Standards. Involved in the Project from inception, Sharon 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. Sharon's previous involvement in the development of the Matthew Hay Building and the Royal Cornhill Hospital development has provided a framework for her involvement in The Baird and ANCHOR Project.
Organisation's senior clinical management representatives	**Representing the organisation's clinical interests**
Nick Fluck Medical Director	As the Board Medical Director, Nick has a specific role in accountability for NHS Grampian's Clinical and Performance Governance.

	Nick has been employed by NHSG for over 17 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.
Caroline Hiscox Associate Director of Nursing	Caroline is Associate Director of Nursing. During her career Caroline had led on a number of redesign initiatives.
Chris Hemming Divisional Clinical Director – Women and Children	Chris is a Consultant Gynaecologist and is Divisional Clinical Director for women's and children's services. Chris has limited experience of major capital projects.
Richard Herriot Divisional Clinical Director – Clinical Support Services	Richard is a Consultant Immunologist with NHSG and Divisional Clinical Director responsible for a number of Acute Sector services including oncology & haematology, laboratory medicine, radiology, medical physics and pharmacy. Richard is Lead Cancer Clinician for NHSG and Chair of the Grampian Cancer Strategy Board. He has chaired a number of professional, management, educational and advisory committees and working groups for various Medical Royal Colleges, specialist societies, clinical networks, patient groups and SG.
Health and Social Care Partnership (HSCP) Representative	**Representing the HSCP's interests**
In discussion, TBC	
The University of Aberdeen (UoA) Senior	**Representing the UoA's interests**

Representative	
Maggie Cruickshank 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 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 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 25 years experience within the construction industry, focusing on health projects for the last 15 years.
Martin Blencowe 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 contract and has particular experience in acting as an NEC3 Project Manager. For the past five 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 The ANCHOR Centre	Mike was a Consultant Haematologist at NHSG and until October 2017 represented the UoA on the Board of NHSG. Mike is currently Senior Vice Principal at the UoA. 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 he was clinical lead for neonatal services at 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	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. 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.
Julie Anderson Finance Manager	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.
Organisation's external Joint Consultant Cost Advisor	**Representing the organisation's commercial and cost management interests**
Jim Hackett Cost Advisor, Currie &	Jim has worked in the construction industry for 37 years, the latter 26 years being exclusively

Brown (in attendance)	on NHS projects. He is a Quantity Surveyor by background but has worked as both QS and PM as well as providing various strategic services such as seven facet surveys. Jim is a Director and Health Sector lead for Currie & Brown and has worked in the NHS, local authority, and private sectors. Jim has worked on major capital projects, Frameworks Scotland 1 & 2, Hub and business case preparation. These have included the Queen Elizabeth University Hospital and Royal Hospital for Children in Glasgow and the Glasgow Ambulatory Care and Diagnostic Hospital Hospitals where he sat on the Project Boards. Jim also engages directly with HFS and SGHSCD on commissions such as Procode and the re-fresh of SCIM, again sitting on the Project Boards. Jim has a BSc, QS, is a member of the RICS and a fellow of The Institute of Healthcare Engineering and Estate Management.

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 who were procured via the Public Contract Scotland quick quote portal from the FS2 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
Joint Cost Advisor	Currie & Brown Jim Hackett and Alistair Johnston
CDM Advisor	AECOM Leanne McDermott
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 have been provided for within the Project Budget.
All Project posts have been successfully recruited to and post-holders are in place. Additional new posts are planned to coincide with the commencement of the construction phase in 2018 and 2019. These will include a functional Commissioning Manager, Equipment 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 Office of Government Commence Gateway Reviews which looks at Project delivery

readiness at specific stages throughout the Project (refer to Table M7). A Gateway Review 2 was undertaken in May 2017. The report assessed the Project as Amber and suggested a small number of actions to help with delivery of a successful Project going forward. The Project Team have progressed the proposed actions during 2017, in advance of submitting the OBC. Another Gateway Review is to be scheduled for Q4 2018, in advance of the FBC submission.

Definition of Amber rating: *Successful delivery appears feasible but significant issues already exist requiring management attention. These appear resolvable at this stage and, if addressed promptly, should not present a cost/schedule overrun.*

In addition, the Project is also subject to the NHSScotland Design Assessment Process (NDAP) led by Architecture and Design Scotland (ADS) in collaboration with HFS, at OBC and FBC stages of the Project, refer to section 4.3.6. The OBC NDAP review was completed in two stages during the period February 2017 and January 2018. A copy of the OBC stage NDAP report is included as Appendix G.

The Project was also subject to an external design review in January 2016, commissioned by SFT while the Project was still being delivered as an NPD Project. The external review was conducted by SFT and Capita and the report was based on the Project at reference design stage, just before the Project was originally scheduled to go to Official Journal European Union (OJEU). The findings of the report were considered by the Project Team and Project Board and have informed the Project's development despite the change to a capital funded project.

Table M7: Gateway Reviews

Gateway Reviews	Programme
Gateway 2 – Delivery Strategy	May 2017
Gateway 3 – Investment Decision	Q4 2018
Gateway 4 – Readiness for Service	2022
Gateway 5 – Operations Review and Benefits Realisation	2023/24

6.2.5 Project Plan and Key Milestones

Table M8 below describes a number of key Project milestones. A copy of the more detailed Project Programme is included as Appendix Z. 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
Finalise Project Board/Team structure	April 2014	Complete
Project Board and Team updated to reflect change to capital Project	April 2017	Complete
Detailed clinical output specification – Project Brief	May 2015	Complete
IA Approval	September 2015	Complete
Planning in Principle Approval	October 2016	Complete
Consultant JCA Appointment	October 2016	Complete
PSCP Appointment	November 2016	Complete
OBC Approval	March 2018	Complete
Purification of Planning Conditions	2018 TBC	
Enabling Works commencement	September 2018	
Enabling Works Completion	March 2019	
FBC Approval	April 2019	
Start construction	April 2019	
ANCHOR Centre construction complete	April 2021	
ANCHOR Centre bring into operation	June 2021	
Baird Construction complete	October 2021	
Baird bring into operation	November 2021	
AMH demolition complete	January 2022	
Completion Date	January 2022	

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 at Appendix Z which provides a schedule of when activities will occur, Project and programme interdependencies and key milestones over the life of the Project.

A high level draft Stage 3 and indicative Stage 4 Project Programme are included as Appendix Z. 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 resources is a standing item on the Joint Core Group which meets monthly.
Design	Planning Permission in Principle (PiP) was obtained in October 2016. In December 2016 a Processing Agreement was agreed with the Planning Department at Aberdeen City Council outlining how we would work together with the PSCP to deliver all of the requirements to purify the PiP conditions required to achieve a Full Planning Consent (to take	The development of The Baird and ANCHOR developments are occurring on a 56 hectare brownfield site which operates on a 24/7/365 basis providing secondary and tertiary clinical services for the people of Grampian and the North of Scotland. This limits the scope for design innovation in comparison to, for example, a greenfield development site. A favourable NDAP report will be necessary to support the

	account of revised Project Programme). Acknowledgement of Approval of Matters Specified in Conditions – May 2017. In addition, ADS will complete an external NDAP in advance of the OBC submission. Baseline, Target and OBC design stage AEDET assessments have been completed, reviewing the emerging design and informing the next stage of the design process.	OBC.
Site Purchase	The site 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 location of the two new facilities are 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	A programme of site investigation surveys is underway, led by the PSCP to assess the risks associated with delivering the two buildings on the selected sites.	Provision has been made in the cost plan for risks outlined in the Risk Register.
Enabling Demolition Works	Before construction can commence, there are three existing buildings that need to be emptied and demolished. Plans for the relocation of staff and services from these buildings is scheduled to be completed during Q2 2018. This work is being progressed in two separate projects currently underway. Relocation of the existing Foresterhill Health Centre (FHC) to a new site is being delivered using the hub DBFM procurement method with hub North. Relocation of services	The successful relocation of these three buildings is critical to delivery of the Project. Delay with any of these projects would have a direct impact on the Project Programme. The NHSG Project Overview Group meets every two weeks and reviews progress with each project on the campus. Making sure that projects where possible stay on programme and that any slippage is reported early to other projects likely to be affected is part of this group's remit. A remaining risk to be resolved in relation to this programme of works relates to the successful relocation of university staff from the upper floor of the existing FHC. A permanent location for these

	from the existing BSC and the EOPD is also underway and being progressed as a FS2 capital project.	staff has not yet been secured, but contingency arrangements have been agreed with the UoA to ensure that the space is vacated to allow demolition to take place in 2018.
Construction Phase	NHSG has considerable experience of working collaboratively with external contractors in the safe, timeous and efficient delivery of major construction projects, with the RACH, The Dental School and the Matthew Hay Building being but three recent examples.	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 could include the planned 100 two bedroomed key worker flats to be delivered by Grampian Housing Association on the adjacent Westburn Road site between 2018 and 2020, dates still to be confirmed.
Equipment Procurement	A Commissioning Manager and an Equipment Manager will be recruited to the Project Team in 2018 to lead all functional commissioning activities and plan in detail the equipment for both facilities.	The OBC will include a budget cost for new equipment based on the completed RDS for each room in the new developments. An assumption will be made regarding the level of transferring equipment as this analysis will not be complete at the OBC stage. An audit of

	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. They will also agree with NHSG what existing equipment will be transferred.	existing equipment is however underway and will inform the list of transferring equipment in the FBC.
Hand-over	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 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	A Soft Landings Champion and Soft Landings Co-ordinator have been identified to facilitate the successful delivery of the programme over the life of the Project. They will help to ensure a structured approach to bringing the buildings into use. In addition, a functional Commissioning Manager and Equipment Manager will be appointed in 2018 to plan for the functional commissioning of both buildings.

	considerable experience of technical and functional commissioning of acute facilities.	
Functional Commissioning	A dedicated Commissioning Manager will be recruited in 2018 to the Project Team to lead and co-ordinate the consecutive functional commissioning of both the Baird and ANCHOR facilities in close collaboration with the respective NHSG Operational Management Teams.	Functional commissioning of the facilities will commence following the completion of technical commissioning and handover of each facility to NHSG. The ANCHOR Centre will be handed over and commissioned in advance of The Baird Family Hospital due to differing scale and complexity of each facility and to help ensure that appropriate resources can be deployed to support the smooth commissioning and bring into operation of both facilities.
Operational Change	To identify clinical, service and operational change objectives, approximately 200 clinicians, operational staff and public representatives took part in over 60 workshops co-ordinated by the Project	The new Baird and ANCHOR facilities are being developed in order to meet the operational change requirements identified in the Strategic Case of this OBC. If these operational changes and service redesign objectives are not realised, the Project will not have met its

	Team, and supported by independent Health Planners, Buchan & Associates. As a result, a substantial service redesign agenda has been identified. Appropriate governance and delivery mechanisms have now been put into place to enable the strategic investment priorities and the service benefits outlined in the OBC to be realised.	investment objectives and optimum clinical care requirements will be left unfulfilled. An active service redesign agenda is being progressed and led by senior operational managers with the support of the Project Team.

6.3 Change Management Arrangements

6.3.1 Service Redesign Plan

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 the operational management teams, a substantial service redesign agenda. This agenda will be delivered between now and 2021/22 to enable the strategic investment priorities and the service benefits outlined in the OBC 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 Gary Mortimer, Director of Acute Services. Additionally, three operational management-led Service Redesign Groups are led by:

- Sue Swift, Divisional General Manager, Women and Children's Services (Baird)
- Sean Berryman, 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 five years. The structure for this redesign work-stream 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)
- Louise-Anne Budge, Service Project Manager (ANCHOR)

These staff 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 will be included in the OBC. 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 Plans for each facility (including Soft FM) are included as Appendices M and N.

The service redesign plans are at an advanced stage across the Baird and ANCHOR services. 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 80 workshops held with clinical colleagues and patients as key stakeholders.

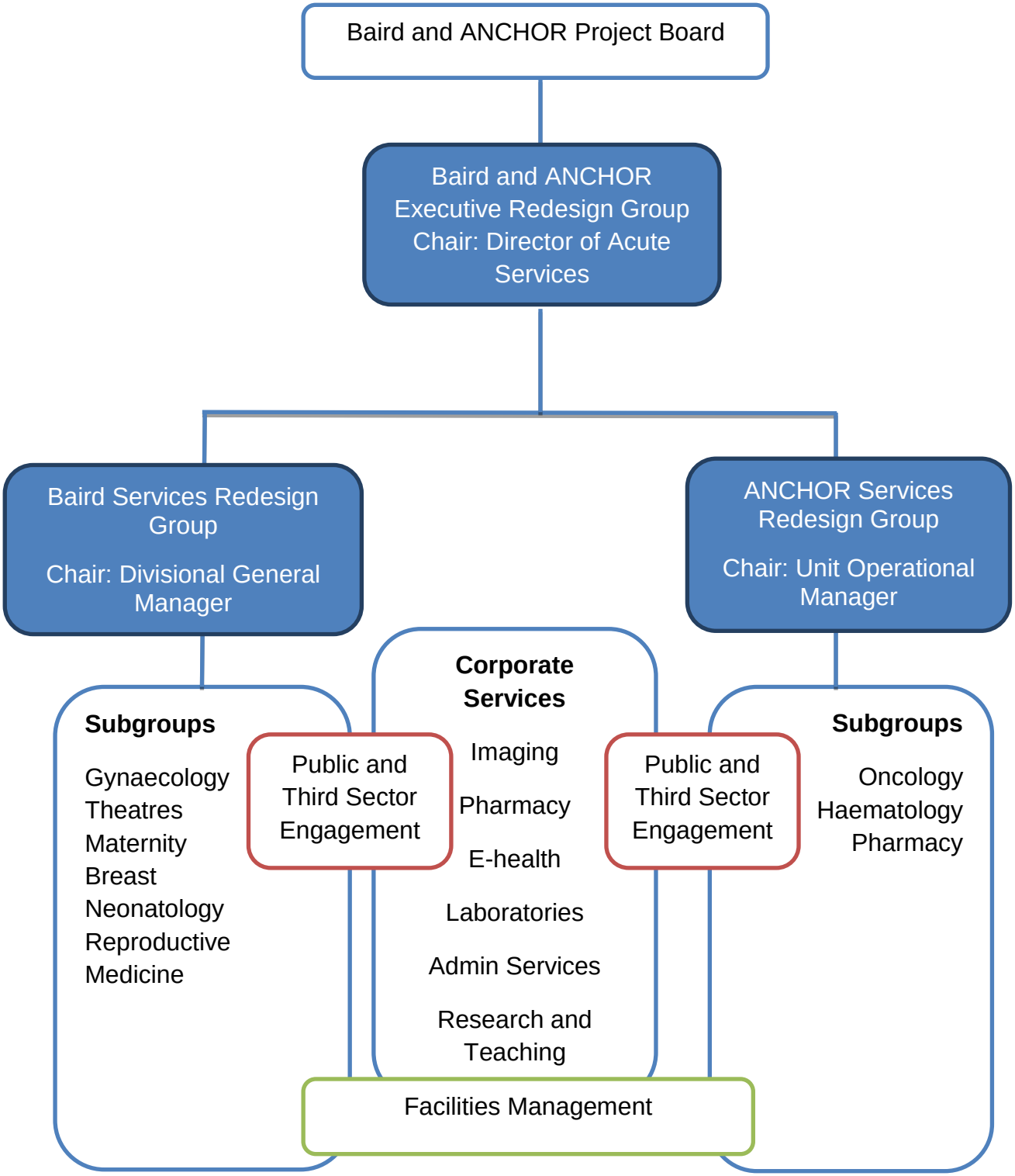
The respective Operational Management Teams are leading on the service redesign agenda, supported by the Project Team, thereby ensuring service commitment to the challenges of appropriate redesign, wherever possible, in the existing accommodation prior to the new buildings becoming operational in 2021.

Some examples of service redesign work at an advanced stage include:

- Chemotherapy – all out-patient and day-patient chemotherapy is now delivered in a single location for Oncology and Haematology patients as per The ANCHOR Centre model
- Nursing Staff – all new staffing are recruited to The ANCHOR Service as opposed to Oncology or Haematology specific
- Advanced Nurse Practitioners – ongoing development work to provide equitable service across Oncology and Haematology Departments
- Nursing and medical provision now in place for Teenage and Young Adults (16-24 age group)
- Neonatology – establishment of pilot Transitional Care Unit in Aberdeen Maternity Hospital being progressed

- Gynaecology – hysteroscopies to be carried out in out-patient setting, rather than theatre setting, from March 2018. This will then be rolled out to include other procedures
- Gynaecology – emergency clinics now held daily, to reduce unnecessary in-patient admissions
- Gynaecology – the out-patient service is currently split over two separate clinic locations in ARI but will come together into integrated space in April 2018, allowing for service redesign and new pathway of care to be tested and refined in advance of 2021
- Maternity/gynaecology – early pregnancy service had been carried out in AMH and ARI, now one integrated service in AMH
- Theatres – potential to cohort breast and gynaecology theatre activity in ARI in advance of the Baird
- Maternity – aim to have Triage service in place in AMH by end of 2018

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 e.g. domestic services, portering, receipt and dispatch, waste management and laundry etc. 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. The main redesign initiatives are outlined in the Service Redesign Plans enclosed as Appendices M and N.

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 has been developed and agreed by the Project Board, refer to Appendix B.

In addition, two Project specific Communication and Involvement work-streams have been established. These work-streams are reviewed weekly 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. Examples of recent action plans have 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 2017 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 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 will include 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

During 2016 and 2017, 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 Plans, refer to Appendices GG and HH.

The Training and Development Plans are being 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 Landing 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.

A more fully developed Training and Development Plan will be included in the FBC. Training and Development Plans are enclosed, refer to Appendices GG and HH.

6.4 Benefits Realisation Plan

6.4.1 Benefits Register

The rationale for an 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 the 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 2.2.3 and 2.9.3 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 survey work scheduled for 2018 to inform the Benefit Registers. This work will be completed in advance of FBC submission.

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. ISD data) and this will be compared with the same data source in 2022/23 when the PPE is completed.

For benefits that are qualitative in nature, a series of questionnaires have been developed and a mix of patient and staff surveys/interviews will be undertaken in 2018 in advance of the FBC submission 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.

6.4.1.1 Local Community Benefits

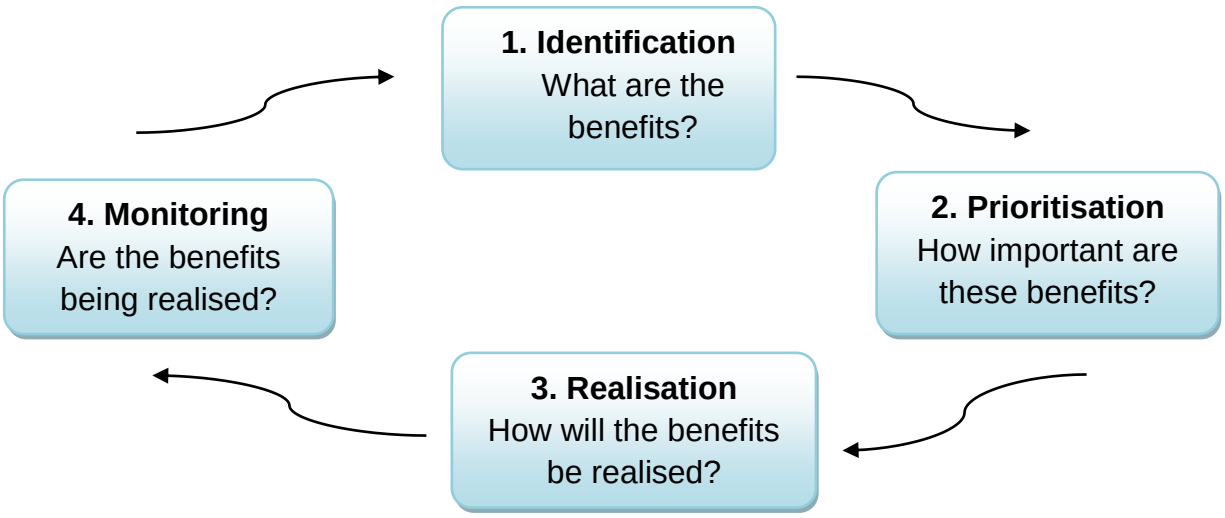
There are wider sustainability opportunities associated with this Project, notably the potential to deliver community benefits through education, training and recruitment opportunities associated with the new builds, targeting work packages offered to Small or Medium size Enterprises (SMEs) and wider 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 are now working with the PSCP to further develop and implement the Community Benefit Project Plan over the life of the Project. A copy of the Community Benefit Project Plan is included as Appendix AA.

6.4.2 Benefits Realisation Plan

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 will be reviewed regularly by the NHSG Executive Redesign Group and its sub-groups.

Figure M4: Benefits Realisation Process



The Benefits 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 etc 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 2023/24, 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 Project Director and managed by the Senior Project Manager.

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 revenue funded infrastructure project. Primary risks have been identified across a range of categories, including:

- construction (including enabling works) risks
- operational (including equipping and 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

Each risk has subsequently been assessed for its probability and impact and, where quantifiable, its expected value. The optimism bias allowance included in the IA has been developed into a fully costed risk allowance, where risks can be quantified.

A joint risk quantification exercise, facilitated by the JCA, was undertaken in December 2017 involving representatives from NHSG, GRAHAM Construction and members of their supply chain during which the current version of 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 the SG and the SFT
- the Project Plan includes Office of Government Commerce (OGC) led Gateway Reviews. These are conducted at key stages of a Project and provide a constructive assessment of their 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 M11.

Table M11: 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 review 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 managements 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, approvals 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

Commissioning can be divided into two important and overlapping processes that need to be planned and co-ordinated to ensure the successful bringing into operation of a new facility.

For clarity, commissioning has been described in two separate streams in this section of the OBC:

- Soft Landings
- Functional Commissioning (prepare to bring into operation)

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.

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 Building Information Modelling (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.

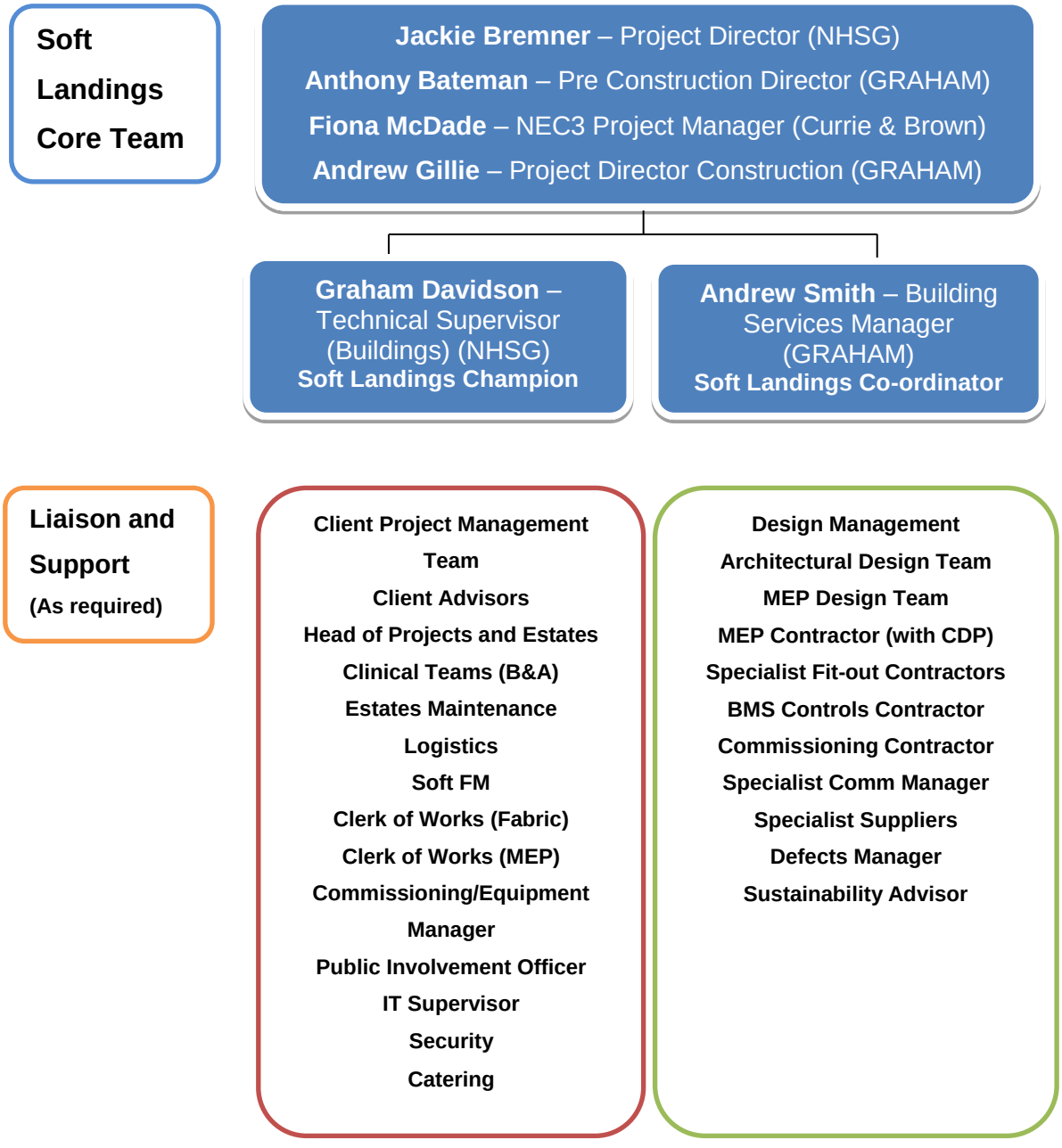
Establishing a project specific approach to Soft Landings was a key theme for a Project Development Day in August 2017. A workshop took place where each of the five Soft Landings Stages was discussed in order to identify the specific elements that would apply to the Project together with the actions necessary to implement them. NHSG has added a sixth dimension for functional commissioning.

Work is underway to develop a bespoke Soft Landing Programme and this will be in place during early 2018 and will be discussed more fully in the FBC. NHSG has identified a Soft Landing Champion and the PSCP has identified a Soft Landings Co-ordinator. These officers will co-ordinate and facilitate the delivery of this important programme of work through to handover and during the immediate post-handover period. NHSG will work with the PSCP to ensure the successful delivery of a detailed soft landings programme for

each facility which will ensure readiness for the functional commissioning, led by NHSG, to commence.

The structure of the Soft Landings Team is outlined in Figure M5.

Figure M5: Soft Landings Team Structure



6.6.2 Functional Commissioning

Functional commissioning of the facilities will commence following handover of each facility to NHSG. 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.

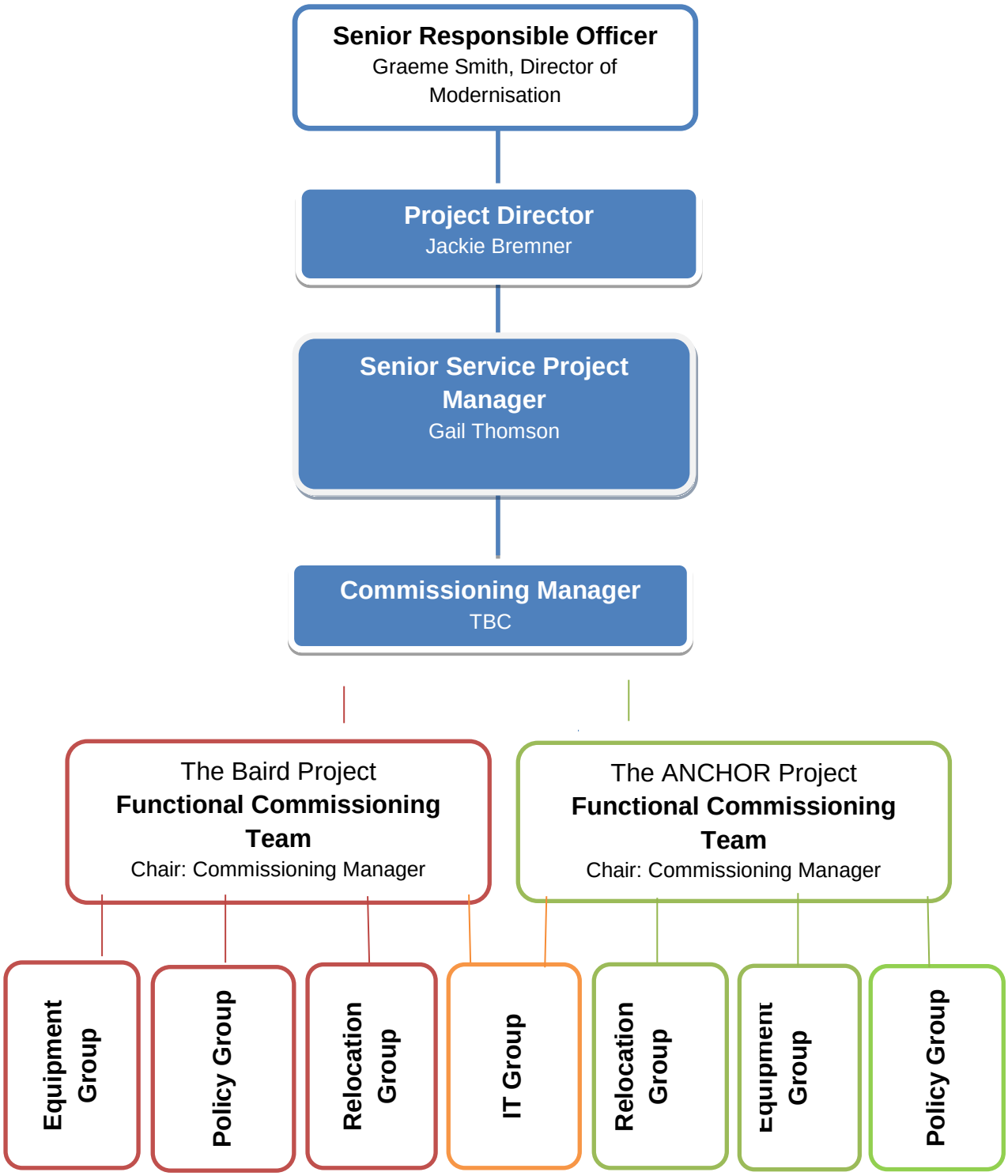
The commissioning of each facility will be led and co-ordinated by the Commissioning Manager and Project Team in close collaboration with the Operational Management Teams.

6.6.3 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 the Senior Service Project Manager and the Commissioning Manager and supported by other members of the team. During 2018, a Commissioning Manager and Equipment Manager will be appointed to begin to plan in detail the commissioning of both facilities consistent with the agreed construction programmes due to be completed in 2021/22.

Figure M6 outlines the planned reporting structure for commissioning activities. The commissioning teams, led by the Commissioning Manager, will include staff from operational management, FM and logistics, the Equipment Manager and the HFS Equipping Service along with appropriate members of the Project Team.

Figure M6: Functional Commissioning Structure



The Commissioning Manager and Equipment Manager, along with the HFS Equipping service, will work across the commissioning of both buildings.

6.6.4 Person Dedicated to Leading this Process

The PD and a number of Project Team members have considerable experience of commissioning major acute and primary healthcare facilities. The Commissioning Manager and Equipment Manager, once appointed, will have appropriate skills and will be supported by the wider Project Team to develop and implement a smooth and efficient Commissioning Programme.

The Commissioning Programme, once developed in detail, will cover the two - three year period from FBC approval until three – six months after buildings have been brought into operation. This will ensure that all activities are planned, co-ordinated and delivered and that all functional commissioning teething issues are resolved 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.

The 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 building and redesign agenda
- with operational colleagues, preparing staff to work differently to deliver new procedures (including formal training, job shadowing etc)
- confirming with the HFS Equipment Service, Medical Physics, 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 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 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
- to arrange and host opens days for the public to see the facilities before they are in use
- to arrange staff 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 etc 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

The Senior Service Project Manager and Commissioning Manager will be supported by the wider Project Team and Operational Management Teams to deliver this complex commissioning agenda in a planned and co-ordinated manner.

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. A Service Level Agreement is in place and work to agree the equipment lists as part of the RDS is completed for design and budgeting purposes. These RDSs, including equipment lists, have been used to inform the budget equipment cost outlined in section 5.3.1.3 of the Financial Case. Work to assess equipment able to be transferred to the new buildings is underway and will be available for consideration in advance of submission of the FBC.

6.6.5 Key Stages of Functional Commissioning

A detailed Functional Commissioning Programme will be developed for each building in due course. It is too early to produce the programme scheduled for delivery in 2021/22. The high level programme developed for the Project will likely include a 4 - 12 week period for the functional commissioning of each facility following handover from the PSCP.

Some of the key activities likely to be included in the Commissioning Programme include:

- safety and security of facilities and staff
- telecoms enlivenment
- clinical clean
- new equipment installation
- equipment transfer
- imaging equipment installation
- staff orientation and training (including fire, resuscitation and security etc)
- public open days
- consumable stock (including medicines, sterile products, stationery, etc)
- catering arrangements in place (staff and patients)
- receipt and dispatch arrangements in place
- patients and staff transfer arrangements in place
- equipment, furnishing etc transfer arrangements in place
- signage (internal and external) in place

- media communication in place
- patient and staff information booklets and other internet and social media communication in place
- FM arrangements in place
- empty vacated buildings ready for demolition

6.6.6 Resource Requirements

As outlined earlier in this section, a Whole Time Equivalent (WTE) Commissioning Manager and a WTE Equipment Manager will be recruited to the Project Team in 2018. Provision has been made by NHSG in the Project budget for these posts.

These two officers will report to the Senior Service Project Manager and lead on the commissioning of both buildings which will be co-ordinated so that finite resources can be deployed to ensure the successful bring into operation of both facilities.

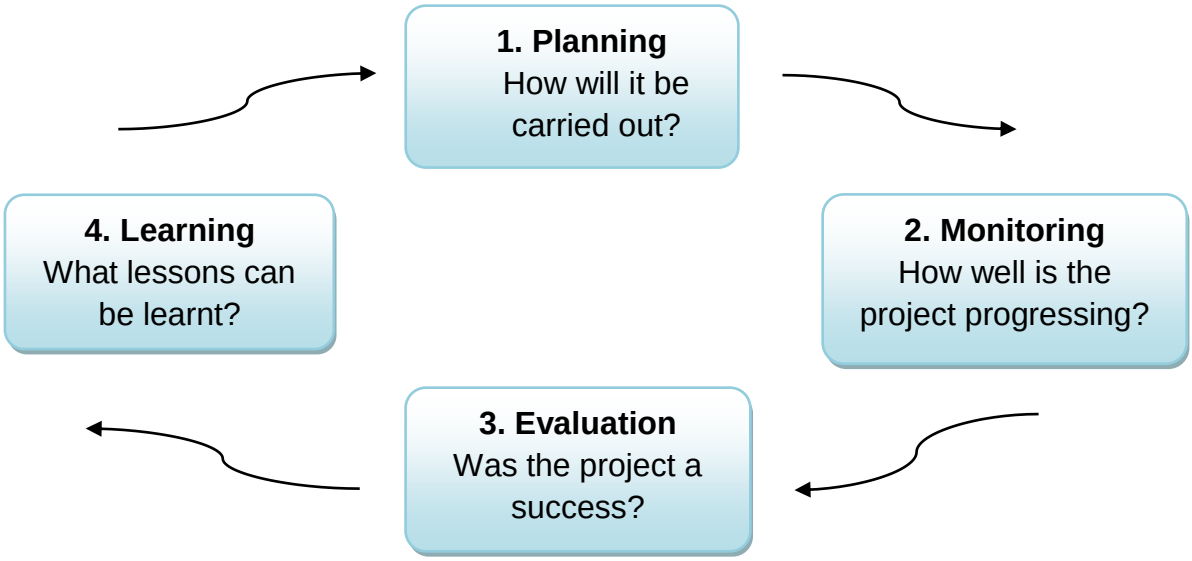
6.7 Project Evaluation

Project evaluation is a key element of any project. It must be well planned and executed. Evaluation of The Baird and ANCHOR Project will have two main strands:

- monitoring which involves the systematic review of project progress while it is proceeding
- 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 M7.

Figure M7: 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 as outlined in the Project Monitoring Plan, refer to Appendix II. A number of designated project officers will prepare and produce a series of monitoring reports for consideration by the Core Group, Project Board, AMG and CIG at designated intervals over the life of the Project. Completion of these reports will involve PSCP officers, the JCA, CDM Advisor and the Project Team, including e.g. Finance Manager, Senior Project Manager, Senior Service Project Manager, Technical Supervisors and Public Involvement Officer.

The post-Project Benefits Evaluation 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 period between OBC and FBC, NHSG will review its approach to project evaluation and outline how this will be led and managed in the FBC.

6.7.2 Monitoring and Evaluation Stages

6.7.2.1 Project Monitoring

The project monitoring element will be undertaken over the life of the Project and will cover the technical aspects of the Project e.g. programme, cost, quality and health and safety.

A Project Monitoring Plan has been developed and is included as Appendix II. The Plan outlines the key areas to be monitored, it also outlines who is responsible for producing the monitoring materials and at what intervals. The monitoring reports will be reviewed and any follow up action agreed at the appropriate governance level as outlined in Figure M1.

It is proposed that the Project monitoring activities are progressed as outlined the Project Monitoring Plan. Specific monitoring materials, to be confirmed, will be shared with CIG on a six monthly basis during the construction phase.

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. It will cover the impact of the

Project on service change and benefits 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 Benefits Realisation.

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:

- demonstrates that the Project was worthwhile by, for example, achieving its strategic investment objectives, realising its expected benefits, and carefully managing its associated risks
- promotes organisational learning to improve current and future performance
- avoids repeating costly mistakes
- improves decision-making and resource allocation (e.g. by adopting more effective project management arrangements)
- recognises how the impact of good design can improve stakeholder satisfaction, service performance and the efficiency and effectiveness of the NHS Board's operations

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 in the FBC. A provisional cost will be included in the Project cost assumptions at OBC stage until agreement is reached within NHSG regarding how this and other evaluations will be approached in line with the updated SCIM guidance.