Royal Edinburgh Hospital
Campus Redevelopment
Phase 1
Outline Business Case
September 2013

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1. EXECUTIVE SUMMARY

1.1 Introduction

This Outline Business Case seeks approval to invest £48.87m capital value equivalent) in Phase 1 of the Royal Edinburgh Hospital campus redevelopment providing inpatient mental health assessment, treatment, and rehabilitation facilities plus a reprovided national brain injury unit.

The project will be delivered under the hub initiative using the Design Build, Finance and Maintain (DBFM) contract and Scottish Futures Trust standard form Project Agreement.

The Phase 1 scheme is considered within the wider Royal Edinburgh Hospital campus redevelopment programme, as set out in the supporting REH Campus Redevelopment Masterplan.

The proposed phase 1 development will replace existing inpatient services currently provided in a series of facilities across the REH site that are no longer fit for purpose. The REH Masterplan identifies the development of a number of new inpatient facilities across the site, along with the refurbishment of a Mackinnon House (a listed building) to provide support facilities. The overall development of the Royal Edinburgh campus will allow the relocation of services from other hospital sites, in line with NHS Lothian's property and asset management strategy.

1.2 Strategic Case

1.2.1 The Strategic Context

The strategic drivers for this investment include:

- NHS Lothian's policy to reduce the number of hospitals by concentrating activity on key sites, one of which is the Royal Edinburgh
- Clinical best practice outlined in the recently approved NHS Lothian Clinical Framework.
- Joint strategies, approved by NHS Lothian and the four Lothian local authorities, reflecting the principles of the NHS Lothian Clinical Framework and following the common principles of improving quality, efficiency and person-centred care.

1.2.2 The Case for Change

In line with the Phase 1 investment objectives there is a business need to provide;

- an environment that supports clinical effectiveness and safety
- a physical environment that promotes health and wellbeing
- services that will be safely accessible to patients, visitors and staff by public and other transport
- facilities that promote the efficient use of energy, water, and waste management to reduce revenue costs and the campus carbon footprint
- an environment that supports research and development and attracts and retains highly skilled staff

Existing accommodation is unfit in various ways; much of it is provided in multi-bed wards and therapy space is generally limited and unsuited to modern approaches and interventions. As a consequence, models of care are seriously compromised.

1.3 Economic Case

1.3.1 The Longlist

The potential service solutions explored at the IA stage included:

- do minimum
- deliver all psychiatric services in the community
- refurbish, adapt, and reconfigure exiting REH buildings to provide fit-for-purpose accommodation to meet current clinical needs
- new build on REH site
- part new build, part refurbishment on the REH site
- new build on another NHS Lothian site
- new build on a non-NHS Lothian site
- reprovide services on another NHS Lothian site in new-build accommodation

Implementation options (single phase or multi-phase) were also considered and alternative funding routes were evaluated as part of this process.

1.3.2 The Shortlist

1.3.2.1 REH Campus Redevelopment

The IA set out the shortlist for the campus redevelopment as:

- Do Minimum
- New build on the REH site
- Part new build, part refurbishment on the REH site

The shortlisted options were examined during the options appraisal stage of the Royal Edinburgh Campus masterplan review. The options appraisal concluded that a refurbished MacKinnon House should be retained at the heart of the site to provide support facilities. The appraisal also concluded that all inpatient accommodation, including Phase 1, should be provided in new buildings across the site. The redevelopment strategy for the Campus is therefore the "Part New Build, Part Refurbishment" option.

The masterplan review also determined that Phase 1 should be developed on the greenfield area to the west of the current hospital accommodation.

1.3.2.2 Phase 1

Following discussions with SGHSCD it was agreed that the options appraisal for Phase 1 should be limited to evaluation of the 'Do Minimum' and 'New Build' options as the "Part New Build, Part Refurbishment" refers to the refurbishment of MacKinnon House and will be undertaken as a later phase of the campus redevelopment.

1.3.3 Non-Financial Benefits Appraisal

The benefits criteria established in the IA were reviewed and remain valid for the OBC. These were used to assess the potential of both options to meet the scheme's Investment Objectives. With weighted, non–financial benefits scores 330.5 and 811.9 for the 'Do Minimum' and 'New Build' options respectively, the 'New Build' option is preferred by a substantial margin.

1.3.4 Costs

A generic economic model has been used to derive the comparative costs of each of the options in the form of net present costs and equivalent annual costs.

The model considers the full cost associated with each option over the assumed life of the project - 25 years for the 'Do Minimum' option and 50 years for the 'New Build' option.

A key element of the model is the capital cost of each option:

- 'Do Minimum' [redacted]
- 'New Build' [redacted]

The initial capital outlay for 'Do Minimum' represents the backlog maintenance and functional suitability enhancements required to improve the

physical condition and meet statutory standards, including DDA compliance, for the existing accommodation. An allowance for risk (optimism bias) and the cost of the associated decants are also where required.

Whilst the capital cost is outlined above, it is the full unitary charge payable which is reflected in the 25/50 year cash flows. For each option, this is supplemented by the associated running costs.

1.3.5 Risk Management

NHSL, supported by their advisory team, developed a robust risk management and evaluation framework during the pre-OBC phase of the project. Risks have been identified and quantified; mitigation strategies have been developed in response to them. The top 10 risks are identified later in the OBC.

1.3.6 Economic Analysis

Net Present Costs (NPCs) and Equivalent Annual Costs (EACs) have been derived from the capital and revenue cost projections for both options using discounted cash flow techniques. Applying the weighted benefits criteria score to the EAC allows for a comparison of the cost per benefit point for each option to arrive at a comparable economic appraisal.

1.3.7 VFM Analysis

Value for money analysis identifies the optimum solution by comparing qualitative benefits to costs for the options as shown below:

	Do minimum	New build
Net present cost (£'000)	[redacted]	[redacted]
Equivalent annual cost (£'000)	[redacted]	[redacted]
Benefit score	[redacted]	[redacted]
Net present cost per benefit point (£'000)	[redacted]	[redacted]
Equivalent annual cost per benefit point (£'000)	[redacted]	[redacted]

The best value option is the one that demonstrates the lowest cost per benefit point; on this basis, the preferred option for Phase 1 is new build.

1.3.8 Sensitivity Analysis

The NPCs were subjected to sensitivity tests to determine whether changes to any of the capital or revenue cost assumptions have a significant impact on the option rankings. Capital and revenue costs were increased by 10% and 20%, service costs were reduced by 10%, and a one year delay in capital programme was introduced. The ranking is unchanged in all cases and therefore 'new build' remains the preferred option.

1.4 Commercial Case

1.4.1 Procurement Strategy

It has been agreed that redevelopment of the Royal Edinburgh Hospital Campus should be procured under the Scottish Futures Trust hub initiative.

1.4.2 Required Services

The Royal Edinburgh Hospital Campus redevelopment will be delivered by a 'Sub-hubco' underpinned by a 25-year service contract. The Sub-hubco will therefore be responsible for providing all aspects of design, construction, ongoing hard facilities management (maintenance services and lifecycle replacement of components), and finance throughout the course of the project term with the only service exceptions, in relation to the buildings, being a number of NHSL maintenance obligations, principally responsibility for making good and replacing wall, floor, and ceiling finishes.

1.4.3 Potential for Risk Transfer and Potential Payment Mechanisms

A key feature of the hub initiative is the transfer of inherent construction and operational risk to the private sector that traditionally would be carried by the public sector. The following table outlines ownership of known key risks.

	Risk Category	Potential Allocation		
		Public	Private	Shared
1	Design risk		√	
2	Construction and development risk		√	
3	Transitional and implementation risk		√	
4	Availability and performance risk		√	
5	Operating risk			√
6.	Variability of revenue risks		√	
7	Termination risks			√
8	Technology and obsolescence risks		√	
9	Control risks	√		
10	Residual value risks	√		
11	Financing risks		√	
12	Legislative risks			√

	Risk Category	Potential Allocation		
		Public	Private	Shared
13	Sustainability risks			√
14	Title risk	√		

1.4.4 Implementation Timescales

The milestones for delivery of Phase 1 of the Royal Edinburgh redevelopment are outlined below:

Milestone	Milestone dates
New Project Request	September 2012
Stage 1 submission	September 2013
Stage 2 submission	October 2014
Financial Close	October 2014
Phase 1 construction commencement	November 2014
Phase 1 construction completion	September 2016
Services Commencement	December 2016
Services Completion (Expiry Date)	December 2041

1.5 Financial Case

1.5.1 Capital Costs

The total capital cost comprises the affordability cap agreed with hubCo plus all other costs directly related to Phase 1, mainly IT and other equipment.

At [redacted] the original affordability cap was based on a prime cost benchmark. Since the New Project Request (NPR) was agreed, the affordability cap has been increased to reflect agreed changes to the scope including an increase in the size of the building from (15,071m^2 to 15,345m^2), allowances for building efficiency design, an expansion in non-carbon energy solutions, and an increase in electrical infrastructure and reinforcement.

The combined impact of these changes has led to an increase of [redacted] in the affordability cap i.e. the revised cap is now [redacted]. Adding costs not included in the cap brings the projected capital cost to [redacted].

These costs, and the impact on funding, are outlined below:

	Total £'000	Amount outside Unitary Charge £'000	Covered by Unitary Charge £'000
Affordability cap Agreed adjustments	[redacted]		[redacted]
Total Affordability Cap	[redacted]	[redacted]	[redacted]
Items to be paid Stage 1 design Infrastructure Balance of capital injection Subordinated Debt	[redacted]	[redacted]	[redacted]
Total Funding required	[redacted]	[redacted]	[redacted]
Exclusions from Affordability Cap Equipment cost beyond group 2 Telecoms & IT Advisor fee Planning Permission Other Fees	[redacted]	[redacted]	
Total Exclusion	[redacted]	[redacted]	[redacted]
Total	[redacted]	[redacted]	[redacted]

1.5.2 Unitary Charge

The unitary charge is based on the affordability cap, adjusted for the costs of setting up the SPV, debt interest and fees, less any cash contribution; this forms the basis of the senior debt requirement. Based on a senior debt requirement of [redacted] the total unitary charge payable over 25 years is [redacted]. The annual unitary charge, before indexation, is [redacted]

1.5.3 Revenue Costs

In order to assess the revenue implications of the project, it is necessary to establish the baseline costs of the current service, particularly workforce for the existing service model. These baseline costs are then compared to the provisional costs of the new models of care to assess the financial implications and quantify any shortfall.

1.5.3.1 Service Model Costs

The service model costs for Phase 1 are summarised below:

Services	Baseline Budget £'000	Forecast Costs £'000	Increase in costs £'000	Change in bed numbers
Acute mental health (including intensive psychiatric care)	[redacted]	[redacted]	[redacted]	[redacted]
Mental health rehabilitation	[redacted]	[redacted]	[redacted]	[redacted]
Older people's mental health admission and assessment	[redacted]	[redacted]	[redacted]	[redacted]
Acquired brain injury	[redacted]	[redacted]	[redacted]	[redacted]
Total	[redacted]	[redacted]	[redacted]	[redacted]

1.5.3.2 Running Costs

Elements of the ongoing running costs will be covered by the Unitary Charge whilst other services (for example catering and cleaning) will be provided by NHS Lothian. In addition, the cost of services provided by NHS Lothian (often referred to as Soft FM) is also expected to change when phase 1 comes on stream. These incremental increases are summarised in the following table:

	Cost	Reason
	£'000	
Victorian Orchard	[redacted]	Currently not maintained
Domestics	[redacted]	Increase in floor areas and en-suite rooms
Catering	[redacted]	Reduction in meals (excluding overheads)
Energy	[redacted]	inc savings achieved from ADC demolition
Other	[redacted]	Including IT maintenance and capital equipment
Total	[redacted]	

1.5.3.3 Non-recurring Costs

The cost of the NHS Lothian's project team, its accommodation, and other associated costs is in the region of [redacted] per annum and appropriate provision has been made in the NHS Lothian financial plan.

1.5.4 Accounting Treatment

As the project meets all requirements under HMT guidance the contract would appear to fall within the scope of IFRIC 12 and should be treated as a service concession. It is assumed that, following completion the asset will be

held on the balance sheet at fair value; this is likely to give rise to an impairment which would be funded by SGHSCD.

1.5.5 Governmental Accounts

For phase 1 it has been assessed that hubCo will bear the construction and availability risks whilst NHS Lothian will retain the demand risk. Therefore the analysis under the Manual on Government Deficit and Debt would suggest that for Government accounts purposes the asset would be off balance sheet.

1.5.6 Affordability

Funding for the build element of the phase 1 development is a combination of traditional capital and unitary charge (UC) payments. Agreed elements of both capital and revenue funding will be provided by SGHSCD with the balance coming from NHS Lothian.

SGHSCD has committed support up to the capital value originally agreed in the New Project Request i.e. [redacted] This takes the form of a traditional capital contribution of [redacted] and revenue support equivalent to a capital value of [redacted]

The balance will be funded as follows:

- Capital - [redacted] of capital (relating mainly to IT and other equipment) from NHS Lothian's CRL
- Revenue - the unitary charge to support a capital cost of [redacted] via NHS Lothian's revenue allocation. This equates [redacted] based on the indicative financial model supporting the business case. The balance of the unitary charge [redacted]) will be funded from the revenue support made available by SGHSCD.

The following table summarises how the capital costs will be funded:

	Capital Total £'000	Capital **Outwith** Revenue Supported Element £'000	Capital **Within** Revenue Supported Element £'000	Unitary Charge £'000
Total capital cost/unitary charge SGHSCD funding agreed				
Difference to be funded by NHS Lothian	[redacted]	[redacted]	[redacted]	[redacted]

1.5.7 Revenue Requirement

Provision has been made in the NHS Lothian financial plan for the overall recurring revenue requirement of [redacted] made up of:

- Costs of the clinical service model [redacted]
- Running costs [redacted]
- Unitary Charge [redacted]

The SGHSCD capital contribution will be capped at [redacted] with the revenue support capped to a capital value of [redacted]. NHS Lothian confirms that the resultant financial consequences will be fully explored as part of the full business case and ultimately managed as part of the financial and capital planning processes

1.6 Management Case

1.6.1 Project Management Arrangements

A programme for Phase 1 has been agreed that will bring the new facility into operation at the end of 2016. Robust project management arrangements have been developed to implement the preferred option on time and to specification. Project roles have been identified and allocated to suitably experienced personnel. Remits have been specified for the phase 1 project groups and project organisational charts have been approved.

The relationship between the specific project groups and NHS Lothian's governance structure such as the Joint Management Team and the Finance and Resource Committee is described and are consistent with governance assurance policies of NHS Lothian.

NHS Lothian will continue to be supported by a team of external advisers (legal, financial and technical) throughout the Phase 1 development to Financial Close and then as required throughout the construction phase.

SFT retain responsibility for managing and agreeing any changes to the Design Build Finance and Maintain (DBFM) Phase 1 agreement and will continue to give support to NHS Lothian through the Key Stage Review process.

1.6.2 Benefits Realisation and Risk Management Arrangements

The guidance for NHS Scotland health boards in using benefits realisation management has been followed and the associated toolkit is being adopted. Key benefits and measures will be explored more fully during Full Business Case (FBC) development.

The performance measures identified in the Benefits Measurement Plan will be reviewed as part of the Post Project Evaluation Plan.

Risk is managed within the Project Team and led by the Project Director. Since IA approval, a number of risk workshops, undertaken on a quarterly basis, have been conducted to identify the retained risks. The workshops explore all risks covering business and services and identifies ways of eliminating, reducing, and managing the risks to mitigate any effect on the project overall.

The risk register is shown in Appendix X.

1.6.3 Post Project Evaluation Arrangements

Post Project Evaluation will take place in the stages set out in current guidance:

- Stage 1: Procurement Process evaluation (post financial close)
- Stage 2 Construction Phase Monitoring
- Stage 3: Initial Project Evaluation of Service outcomes (12 months after commissioning)
- Stage 4 Follow-up Project Evaluation (2 years into the operational phase)

1.7 Conclusion

NHS Lothian seeks approval and funding to progress with Phase 1 of the REH redevelopment to provide new inpatient facilities on land to the western end of the existing site.

Phase 1 is part of a masterplan and therefore further business cases will be developed for these works going forward.

2. THE STRATEGIC CASE

2.1 Introduction

The purpose of this document is to present the Outline Business Case (OBC) for the phase 1 development of the Royal Edinburgh Hospital (REH) Campus Redevelopment. It has been drawn up In accordance with the Scottish Capital Investment Manual and requirements of HM Treasury's Green Book (A Guide to Investment Appraisal in the Public Sector),

The Initial Agreement (IA) for the campus redevelopment was approved by the Scottish Government Health and Social Care Directorate Capital Investment Group in March 2012. The IA has been revisited as part of the OBC development and key sections revalidated with any changes or updates highlighted in this document. As such, the OBC should be read in the context of, and as an update to, the approved IA, providing more detail where appropriate.

Phase 1 provides new inpatient accommodation for mental health services and a national acquired brain injury service. This OBC also needs to be considered in the context of the masterplan report which sets out the vision for the full redevelopment of the campus; a summary is given in Appendix 1. Although the full document is not appended, it is available for inspection from NHS Lothian.

2.2 Part A: The Strategic Context

The Cabinet Secretary for Health, Wellbeing and Cities set out a statement of intent for delivery of health and healthcare in September 2011. This recognised the need for health care to be delivered in radically different ways if NHS Scotland is to continue to provide high quality services in the context of significant challenges. These challenges include Scotland's public health record, its changing demography and the economic environment.

The Scottish Government's vision for health care is that by 2020:

- Everyone is able to live longer healthier lives at home, or in a homely setting
- We will have a healthcare system where we have integrated health and social care, a focus on prevention, anticipation and supported self management
- When hospital treatment is required, and cannot be provided in a community setting, day case treatment will be the norm
- Whatever the setting, care will be provided to the highest standards of quality and safety, with the person at the centre of all decisions
- There will be a focus on ensuring that people get back into their home or community environment as soon as appropriate, with minimal risk of re-admission

Scotland's vision for health promotion and public health remains focused on:

- Developing a fairer society and reducing inequalities in health
- Addressing the needs of disadvantaged groups
- Promoting health in all policies and prioritising prevention, for example by ensuring children get the best start in life.

Planning also takes account of the NHS Scotland Healthcare Quality Strategy (2010); this scheme's Investment Objectives and Benefit Criteria mirror the internationally recognised dimensions of healthcare quality upon which the strategy is based:

- Person centred
- Safe
- Effective
- Efficient
- Equitable
- Timely

The relationship between Healthcare Quality Strategy, the project's investment objectives, and the business needs as described in the IA remain valid and applicable.

2.2.1 Organisational Overview

NHS Lothian provides healthcare for over 850,000 people through 20 hospitals and over 300 health/medical centres. The following points illustrate the scope of its functions:

- Each year there are more than 4.4 million patient contacts across all of NHS Lothian - more than 90% of them in primary and community settings
- Each year there are more than 60,000 emergency admissions and almost 90,000 inpatient episodes
- The organisation employs 24,000 members of staff, including some 10,000 nurses, almost 1,800 hospital doctors, and just under 1,800 allied health professionals
- NHS Lothian has an annual gross revenue expenditure of [redacted] (2010/11 figure)

The organisation overview, with particular reference to its purpose, goals, and operational environment, remains the same as that reflected in the IA but with additions and updates identified in the following sections.

2.2.2 Business Strategies

'Our Health, Our Future' – NHS Lothian Strategic Clinical Framework 2013 - 2020

NHS Lothian has developed a clinical framework that sets out the principles and themes that will be adopted to deliver the Cabinet Secretary's vision for achieving sustainable quality healthcare services, which will deliver a healthier future for everyone.

There are a number of specific challenges which NHS Lothian needs to address and will require changes to how we currently operate, key amongst which and directly relating to this development is recognition of the prediction that between 2011 and 2020 the population of Lothian is to increase by 9.3%, from 846,104 to 925,207. The greatest increase with be in the over 75 age group, which will increase by 22.2% over the same period. With that we can expect to see higher incidence of a range of conditions associated with advancing years including dementia.

Key principles of the planning framework are therefore to:

- ensure services are safe, clinically effective and person-centred
- focus on prevention and early intervention to help people keep well and anticipate care needs
- take a whole system approach to planning and managing integrated pathways of care working with partner agencies in local authorities and voluntary sector
- reduce unnecessary variation in the way patients are cared for
- deliver services with the appropriate mix of staff skills, ensuring viable clinical staff rotas
- reduce spend on property and buildings as hospital stays reduce to release money for direct patient services
- consider the continued use of active treatments which have not been shown to extend the length of life or improve quality of life
- identify services that are not sustainable in longer term and proactively plan a new way of delivering care
- make sure we stop procedures and treatments which add no clinical value
- maximise the opportunities for use of new technologies to support health and healthcare.

Six strategic aims have been identified to ensure that we can deliver safe, effective, and person-centred health and social care to meet the needs of the people of Lothian:

1. Prioritise prevention, reduce inequalities and promote longer healthier lives for all

2. Put in place robust systems to deliver the best model of integrated care for our population – across primary, secondary, and social care

3. Ensure that care is evidence-based, incorporates best practice and fosters innovation, and achieves seamless and sustainable care pathways for patients

4. Design our healthcare systems to reliably and efficiently deliver the right care at the right time in the most appropriate setting

5. Involve patients and carers as equal partners, enabling individuals to manage their own health and wellbeing and that of their families

6. Use the resources we have – skilled people, technology, buildings and equipment – efficiently and effectively.

2.2.3 Other Organisational Strategies

'A Sense of Belonging' - Joint Mental Health and Wellbeing Strategy (2011 – 2016)

The Joint Mental Health and Wellbeing Strategy 'A Sense of Belonging' (2011 – 2016) embraces the principles of the Clinical Framework and has already gone a significant way towards achieving the Framework's strategic aims.

The current strategy is an extension of the previous 5-year strategy building upon many of its successes and seeks to further shift the balance of care from hospital to community. There has been further investment in community services with consequent reduction in inpatient provision having been achieved and further reductions planned. This strategy was subject to a period of extensive public consultation during which there was overwhelming support for its overall ambitions and aspirations.

The IA referred to the adoption of a Public Social Partnership approach to service delivery with the intention of creating better partnership and co-production approaches to planning service delivery with a view to achieving a wider social return on our investments. Much progress has already been made in taking this approach to the provision of community focussed mental health rehabilitation.

Scottish Intercollegiate Guidelines Network (SIGN) 130 guidelines March 2013 - Rehabilitation of head injured patient.

The Strategic Programme - Physical Disability and Complex Needs Strategy (2008 – 2013) referenced in the IA has now completed and a revised Physical Disability and Complex Strategy Programme Board has been established to take forward the vision set out in the NHS Lothian Clinical Framework 2013 – 2020. It is anticipated that the focus of effort in terms of patients with acquired brain injury will recognise the fact that the current service falls short of meeting the requirements of the recently published SIGN guideline above and updating the strategic plan for the coming years.

NHS Lothian's Property and Asset Management Strategy 2013-2020

NHS Lothian's current strategy reflects its commitment to improving the health care environment and to reducing both the number of hospital and other sites it currently manages, to reduce property expenditure. This approach, reinforced by the economic downturn, informed NHS Lothian's Finance and Performance Review Committee's decision on the 9th August 2010 to retain the current REH campus and to aim for its maximum development. This decision was informed by a masterplanning and feasibility study of the REH campus which reported in April 2010.

The Finance and Performance Review Committee reviewed the masterplan and feasibility study report and supported the recommendation to progress work required to develop an Initial Agreement reflecting the maximum development of the REH site with the view to collocating services from other hospital sites. This masterplan has since been revised and updated though the strategic ambitions remain the same. This is reflected in the masterplan report (summary appended). In broad terms the 2013 masterplan differs from the 2010 version in that the clinical drivers are very different. For example, where the 2010 scheme was predicated on 3-storey inpatient units, the 2013 masterplan is based on the requirement to provide inpatient accommodation in ground floor accommodation; this has a major impact on the scale and location of facilities on the site.

The Scottish Government's commitment to deliver a greener Scotland will be pursued through a focus on sustainability in all new developments and refurbishments. The property and asset management strategy, including the redevelopment of the Royal Edinburgh Hospital campus, will allow NHS Lothian to maximise the sustainability of its estate.

2.3 Part B: The Case for Change

2.3.1 The IA summarised the scheme's Investment Objectives as follows:

- To implement service models which support the services' strategic objectives by optimising the quality of safe inpatient care delivered in Edinburgh and the Lothian's
- To ensure that care is structured around the needs of patients and delivered through an integrated (inpatient and community) pathway as agreed within the NHS Lothian Strategic Programmes

- To provide a physical environment that complies with modern standards of healthcare and that promotes the safety, dignity, and privacy of all patients in purpose-built facilities that significantly improve the patient experience

- To provide a better therapeutic environment allowing the delivery of more appropriate care that benefits patients and provides staff with improved working conditions

- To rationalise the existing estate and reduce costs with more efficient and sustainable facilities and infrastructure.

Specific investment objectives for this project are to provide:

1. A clinical environment that supports clinical effectiveness.
2. A physical environment that promotes health and wellbeing
3. Easily and safely accessible services
4. Efficient, green and sustainable facilities for inpatient services
5. Facilities that support the delivery of efficient services
6. An environment that promotes research and development
7. A project that minimises disruption to patients.

These objectives have been reviewed and remain valid.

2.3.2 Existing Clinical Service Estate Arrangements

Mackinnon House

MacKinnon House sits at the heart of the existing site. Amongst other services, it currently accommodates the national acquired brain injury service.

It is a 'B' listed H shaped 3-storey building built as an asylum over three phases beginning in the 19th century. The main building has a gross area of about 10,400 sq. m with a further 2,000 sq. m in single or two storey extensions built around a courtyard to the rear. It has undergone various interior refurbishments and alterations over the years, and is currently used for both administrative and patient accommodation.

Andrew Duncan Clinic

The Andrew Duncan Clinic**,** and adjacent Professorial Unit, is comprised of a conglomeration of buildings completed in the 1960s, which were built to provide acute inpatient care and currently accommodates adult acute beds in multi bedded dormitory arrangements.

Attempts have been made over the years to bring the Andrew Duncan Clinic up to current standards; however, it is inherently unsuited for conversion because of its structure and servicing arrangements. There is very limited space for active therapeutic activity of either a group or individual nature.

Andrew Duncan Clinic – Internal views

Jardine Clinic

The Jardine Clinic provides inpatient services for older people. Although built in the 1980s, it has similar problems to the Andrew Duncan Clinic as it too was designed to provide multi-bedded dormitory accommodation.

It has a relatively deep plan, making it economically and practically inefficient for conversion to single-bedroom accommodation. Treatment and therapy space is limited and unsuited to modern approaches and interventions.

Affleck Centre

The Affleck Centre is a single-storey former nurses' home built in the 1920s. This has been adapted to provide the Intensive Psychiatric Care Unit and the Department of Rehabilitative Continuing Care.

Although reasonable in scale and form externally, its internal layout creates an unsuitable environment for its current care and therapy purposes. The building presents many operational challenges for the staff that manage the unit and does not allow for the maximisation of therapeutic activity for the patients.

The Phase 1 services are currently provided across four buildings; this arrangement is ineffective and does not maximise the clinical opportunities and flexibilities that collocation will provide.

2.3.3 Business Needs

This section provides an account of the problems, difficulties and service gaps associated with the existing arrangements (the status quo) in relation to future business needs (i.e. the problems associated with the status quo).

In line with the project investment objectives and to achieve national quality standards there is a business need to:

- provide an environment that supports clinical effectiveness
- provide a safe physical environment that promotes health and wellbeing

- provide services that will be safely accessible to patients, visitors and staff by public and private transport
- optimise the efficient use of energy, water, and waste management to reduce both revenue costs and the hospital's carbon footprint
- provide an environment that supports research and development and attracts and retains highly skilled staff.

The business needs have been revisited and remain valid for mental health services in Phase 1. They have been tested in detail with stakeholders of the Brain Injury Service which will also be reprovided in Phase 1 and are equally applicable and relevant to that service.

2.3.4 Potential Business Scope and Key Service Requirements

The Phase 1 services and the bed requirements are detailed below.

Clinical Service	Current bed numbers	Phase 1 bed numbers	Difference
Adult acute mental health	100	80	-20
Mental health rehabilitation	55	15	-40
Intensive Psychiatric Care	12	10	-2
Older people's mental health admission and assessment	70	60	-10
Acquired brain injury	19	20	+1
Total	**256**	**185**	**-71**

It is important to see the reduced bed requirements in the context of the history of developments in mental health. Mental health services in Lothian have benefitted from having clear agreed strategic direction over the past eight years and clear plans for the remainder of the current strategy.

These strategies have delivered significant bed reductions in the previous 5 years with balancing investments in community services such as intensive treatment teams and crisis intervention services.

The number of sites from which acute mental health inpatient services are delivered in Lothian reduced from 4 to 2 during this period. This has resulted in significant shifts from hospital to community in the balance of care and clinical service functions providing safe, supportive assessments and treatments to patients at home who previously had to come into hospital.

The mental health strategies, and all resulting community developments, have been agreed and developed jointly with our local authority partners and Third Sector organisations who remain key to the success of the plans for all Phases of the REH and work is well developed to deliver sustainable community services and improved inpatient services to ensure that we have

an optimal inpatient provision that requires only the most unwell to have to come into hospital for the shortest, safest possible time. A Sense of Belonging, the current Lothian Mental Health Strategy, prepares much of the ground for the reprovision of the REH including service redesign, investments in community services and associated improvements in reduced inpatient services – a better quality of inpatient care for those who cannot be safely or appropriately supported at home.

The bed reductions required by Phase 1 need to be considered in this context, and in relation to older people's mental health and adult acute service, these are relatively modest but take into account reductions of patients delayed in hospital awaiting community care supports including residential care as well as improvements in community services such as the newly introduced Edinburgh Behavioural Support Service and redesign of Community Mental Health Services. A key part of the business case is to ensure that patients receive optimal care in hospital and whilst bed reductions are appropriate, ward team budgets are not planned to reduce so that intensive support is given in the assessment, treatment and care of patients recovering in hospital. With the support of carers, families and health and social care staff and agencies, many people who become unwell at home can now successfully be supported at home and assessed and treated and cared for at home. Our models of care over the past 4 years clearly demonstrate that severe mental illness does not always require hospital admission and when it does, community services can continue to work with inpatient teams to minimise the time in hospital, safely and appropriately.

Whilst bed numbers have and will reduce further, the length of time patients need to be in hospital has and continues to reduce as intensive community services provide alternative options for all or part of an acute episode of care which allows the smaller number of beds to continue to serve an ageing population.

Future provision of mental heath rehabilitation functions in Edinburgh are being developed under a knowledge transfer partnership called The Wayfinder Project. This will see a larger scale reduction in institutional NHS beds with a corresponding significant increase in community provision provided by Third Sector providers and planned in partnership with Edinburgh local authority partners. This project uses the most recent and robust research evidence available to shape the new rehabilitation pathway arrangements. This builds on the significant successes of the mental health strategy which has seen a reduction to zero of institutional mental health rehabilitation beds in East, West and Midlothian in recent years. The psychiatric rehabilitation beds at the REH have reduced by 20 in the past 2 years with the support of the City of Edinburgh Council and the Third sector and successfully and safely supported people with long term, significant mental illness to live meaningful lives outwith the hospital. The recovery model of mental health is well established in Lothian and the next stage plans for psychiatric rehabilitation are well advanced but do require a small inpatient facility to aid recovery and successful discharge.

NHS Lothian and its partners, through the current mental health strategy: A Sense of Belonging; has planned to deliver a new hospital with the required investments and developments in community services. This OBC reflects that commitment.

2.3.5 Main Benefits Criteria

This section describes the main outcomes and benefits associated with the scheme in relation to business needs. Investment in the project will deliver the high level strategic and operational benefits set out in the table below. The benefits criteria were used to help determine which of the longlisted options were shortlisted in the IA.

Investment Objectives	Main Benefits Criteria	Relative Value
A clinical environment that supports clinical effectiveness	Clinical Quality • maintains or improves clinical outcomes • provides timely and appropriate services enabling care to be delivered by the right people, in the right place, and at the right time • minimises clinical risk • provides appropriate clinical adjacencies	High
A physical environment that promotes health and wellbeing	Functional Suitability • provides an environment suitable for the delivery of care and one which improves the morale of patients, staff and visitors • provides an environment that promotes safety, privacy and dignity including single en-suite bedrooms for all service users	High
Easily and safely accessible services	Accessibility • provides good access to the hospital's services whilst promoting sustainable travel options • provides appropriate levels of parking for those staff and visitors that need to travel by private car • minimises the need for delivery vehicle traffic within the site	Medium
Efficient, green and sustainable facilities	Sustainability • optimises the use of energy, water, and waste management • reduces the carbon footprint of the hospital's services • able to meet current and future demands in activity • able to respond to future local and national service changes	High

Investment Objectives	Main Benefits Criteria	Relative Value
Facilities that support the delivery of efficient services	Efficiency • supports the delivery of services through access to required resources • provides for the delivery of appropriate quality standards • there is certainty in securing and preparing a site within a timeframe that allows anticipated delivery as agreed by Lothian NHS Board • represents a project that is affordable • demonstrates value for money	Medium
An environment that promotes research and development	Research • service arrangements that facilitate engagement with research opportunities • provides comprehensive facilities for student and staff training and development including access to training facilities and teaching staff, in keeping with the role of a major regional teaching hospital • provides appropriate research facilities • promotes formal partnership arrangements	Medium
A project that minimises disruption to patients	Maintained Service • maintains continued service delivery and quality during project • minimises disruption to services users, staff and others on site	Low

The benefit criteria as described in the IA have been revisited and remain valid. They have also been tested in detail with stakeholders from the brain injury service and have been agreed as equally applicable and relevant. This position has been formally approved by the Stakeholder Board and Project Management Board.

These benefits criteria will be reviewed and refined if necessary to reflect any changes to investment objectives and critical success factors as subsequent OBCs are brought forward.

2.3.6 Main Risks

Risks to the project include:

- Bed numbers do not reduce as planned
- Phase 1 design exceeds schedule of accommodation allowances

- Changes in sustainability regulations, including LZCT, impact on technologies used.

- Failure to meet energy performance requirements

- Failure to obtain planning permission in line with programmed dates (16 weeks).

Risks are considered further in section 3.7.

2.3.7 Constraints

The phase 1 development is subject to the following constraints:

Financial	Project must demonstrate value for money and be affordable to • Scottish Government Health and Social Care Department • NHS Lothian
Commercial	The Key Stage review must be agreed with all relevant parties. All affordability parameters satisfied and clearly demonstrated.
Programme	The programme must be robust and deliverable
Quality	Utilising the AEDET scoring methodology, design is periodically reviewed to assess if original design criteria are being met
	The design is compliant with the NHS Lothian's technical and clinical brief requirements and other applicable health guidance / standards.
Planning	The necessary planning consents to be in place and the 3 month consultation period is complete prior to financial close. (Detailed planning approval is anticipated in early 2014)
Sustainability	The BREEAM pre-assessment demonstrates the potential to achieve BREEAM Very Good[1].
Service	The existing facility needs to continue to deliver services until the new facility is in full operation.

[1] The NPR requires that each phase of the redevelopment must, as a minimum, achieve a BREEAM "very good" rating as well as targeting energy efficiency and carbon reduction credits; this forms the basis of the NPR Affordability Cap. The BREEAM Pre-Assessment, undertaken in June 2013, is attached (Appendix 4). It shows the overall estimated score at that point as 59.48%; this was based on an ENE01 score of 3. At the time 6 credits were under investigation, however, the current energy strategy is set to deliver 9 credits (BREEAM Excellent level for ENE01). Given this, the final rating is likely to be around 5 credits short of BREEAM Excellent overall.

Financial support is already in place for a dedicated core NHS project team (including specialist advisers) with support including offices, equipment, expenses and other costs.

The project team has input from senior clinical staff through protected sessional time that allows their release from clinical duties to contribute directly to the clinical leadership of the phase 1 development. Senior management is committed to funding this sessional release and the backfill of all other potential contributors to Phase 1 on an “as required” basis.

2.3.8 Dependencies

Phase 1 will be subject to a range of dependencies that have been carefully planned for, monitored to ensure preparedness for phase 1 commissioning. These include:

- dependence on the success of the community components of the new models of care in reducing the numbers of admissions and the specialist teams facilitating early hospital discharge.

- successful removal of automatic transition between adult and older people’s services at the age 65 and a new focus on continuity of treatments through transition ages.

3. THE ECONOMIC CASE

3.1 Introduction

This section documents the options that have been considered in response to the project scope identified within the strategic case. Evidence is then provided to show that the preferred option meets service needs and delivers the best value for money.

3.2 Critical Success Factors

Critical Success Factors **(**CSFs) were used in conjunction with the project's investment objectives to evaluate the longlist of possible options. The CSFs identified in the IA were as follows:

- CSF1: **business needs** – how well the option satisfies the existing and future business needs of the organisation.
- CSF2: **strategic fit** – how well the option provides synergy with other key elements of national, regional, and local strategies.
- CSF3: **benefits optimisation** – how well the option optimises the potential return on expenditure – business outcomes and benefits (qualitative and quantitative, direct and indirect to NHS Lothian) – and assists in improving overall Value For Money (VFM) (economy, efficiency, and effectiveness).
- CSF4: **potential achievability** – NHS Lothian's ability to innovate, adapt, introduce, support and manage the required level of change, including the management of associated risks and the need for supporting skills (capacity and capability) as well as engendering acceptance by staff.
- CSF5: **supply side capacity and capability** – the ability of the market place and potential suppliers to deliver the required services and deliverables.
- CSF6: **potential affordability** – the organisation's ability to fund the required level of revenue and capital expenditure.

The project's CSFs have been revisited and remain valid for the Phase 1 development.

3.3 The Longlisted Options

The IA identified a longlist of options for the redevelopment of the Royal Edinburgh Campus as a whole; these were:

- Scoping and Service Solution Options
    - do minimum
    - deliver all psychiatric services in the community
    - refurbish, adapt, and reconfigure exiting buildings to provide fit-for-purpose accommodation to meet current clinical needs
    - new build on REH campus
    - part new build, part refurbishment on the REH campus
    - new build on a non-NHS Lothian site
    - reprovide services on an existing NHS Lothian site in new-build accommodation on:
        1. St John's Hospital
        2. Western General Hospital
        3. Myreside at Royal Edinburgh Hospital campus (western end of the site)
        4. Astley Ainslie Hospital
        5. Liberton Hospital
        6. Royal Victoria Hospital
        7. Greenfield site at Little France
- Implementation Options
    - phased building schedule
- Funding Options
    - NHS Capital
    - Revenue Funded Model

During the IA stage each option was evaluated against the project's Investment Objectives (IOs) and Critical Success Factors (CSFs); an option was discounted if it failed to meet an IO or CSF.

Category of Choice	Potential Options	Satisfies IOs and CSFs?	Review Outcome
Scoping option	Existing catchment area or range of services onsite	Yes	Possible
	Extend catchment area of services	Yes	Possible
Service solution options	Deliver all psychiatric services in the community.	No – fails IO1, IO2, and CSF1	Discounted
	Refurbish, adapt and reconfigure existing buildings to provide fit-for-purpose accommodation to meet current clinical needs	Yes	Possible
	New build on the REH site	Yes	Possible
	Part new build, part refurbishment on the REH site	Yes	Possible
	New build on a non-NHS Lothian site	No – fails IO5, CSF2, and CSF6	Discounted
	Re-provide services on an existing NHS Lothian site in new build accommodation	Yes	Possible
Service delivery options	In house, NHS	Yes	Preferred
	Outsourced	No – fails CSF2	Discounted
Implementation options	Phased building schedule	Yes	Possible
	Single build to completion	No – fails CSF 6	Discounted

Cont'd Category of Choice	Potential Options	Satisfies IOs and CSFs?	Review Outcome
Funding options	Hub model	Yes	Possible
	NPD	Yes	Possible
	Capital Funding / Frameworks Scotland	No –CSF6	Discounted

The longlist has been revisited; as no new options have been identified the longlist remains valid.

3.4 The Preferred Way Forward – Shortlisted Options

The IA set out the preferred way forward (i.e. the shortlisted options) for the campus redevelopment as follows;

Option	Definition
'Do Minimum'	**Scoping Option:** existing catchment area and services **Service Solution:** existing arrangement and models of care **Service Delivery:** in house, NHS **Implementation :** phased building schedule **Funding :** capital
'New Build on the REH Site'	**Scoping Option:** extend catchment area and/or services, with opportunity to incorporate services from other hospital sites **Service Solution:** redesigned models of care in new build ward and support services accommodation **Service Delivery**: in house, NHS **Implementation:** phased building schedule **Funding:** capital or revenue

Option	Definition
'Part New Build, Part Refurbishment on the REH site'	**Scoping Option:** extend catchment area and/or services, with opportunity to incorporate services from other hospital sites **Service Solution:** redesigned models of care in new ward accommodation and redeveloped support services accommodation **Service Delivery**: in house, NHS **Implementation**: phased building schedule **Funding:** capital or revenue

The shortlisted options were examined during the options appraisal stage of the Royal Edinburgh Campus masterplan review. The options appraisal concluded that a refurbished MacKinnon House should be retained at the heart of the site to provide support facilities. The appraisal also concluded that all inpatient accommodation, including Phase 1, should be provided in new buildings across the site. The redevelopment strategy for the Campus thus adopted the "Part New Build, Part Refurbishment" option.

The masterplan review also determined that Phase 1 should be developed on the greenfield area to the west of the current hospital accommodation. This option minimises disruption in this initial phase and allows its early delivery.

Following discussions with SGHSCD it was agreed that the options appraisal for Phase 1 should be limited to evaluation of the 'Do Minimum' and 'New Build' options. Although the 'Do Minimum' option does not satisfy the necessary criteria to be shortlisted as a potential preferred option it has been taken forward as a baseline to measure the 'new build' option against.

3.5 Non-Financial Benefits Appraisal

3.5.1 Methodology

As indicated above, the benefits appraisal assessed the 'Do Minimum' and 'New Build' options for Phase 1

The process followed the guidance set out in the Scottish Capital Investment Manual (SCIM) adopting the weighted scoring method. The option appraisal workshop group was made up of NHS Lothian clinicians, service user/carer representatives, and both NHS Lothian clinical and non-clinical managers. This group ranked and weighted the benefits criteria and scored both options.

The benefits criteria are those established during the development of the IA and are directly linked to the project's Investment Objectives. The criteria features were retested with participants to ensure that they remained relevant and applicable; no changes were made as a consequence of this exercise. The agreed criteria are set out below:

Investment Objectives	Benefits Criteria
Clinical effectiveness A clinical environment that supports clinical effectiveness	Clinical Effectiveness • maintains or improves clinical outcomes • provides timely and appropriate services enabling care to be delivered by the right people, in the right place, and at the right time • minimises clinical risk • provides appropriate clinical adjacencies
Health and Wellbeing A physical environment that promotes health and wellbeing	Functional Suitability • provides an environment suitable for the delivery of care and one which improves the morale of patients, staff and visitors provides an environment that promotes safety, privacy and dignity including single en-suite bedrooms for all service users
Accessible Services Easily and safely accessible services	Accessible Services • provides good access to the Hospital's services whilst promoting sustainable travel options • provides appropriate levels of parking for those staff and visitors that need to travel by private car • minimises the need for delivery vehicle traffic within the site

Cont'd Investment Objectives	Benefits Criteria
Sustainable Facilities Efficient, green and sustainable facilities	Sustainability • optimises the use of energy, water, and waste management • reduces the carbon footprint of the hospital's services • able to meet current and future demands in activity • able to respond to future local and national service changes
Delivery of Efficient Services Facilities that support the delivery of efficient services	Efficiency • supports the delivery of services through access to required resources • provides for the delivery of appropriate quality standards • there is certainty in securing and preparing a site within a timeframe that allows anticipated delivery as agreed by NHSL Board • represents a programme that is affordable demonstrates value for money
Research and Development An environment that promotes research and development	Research • service arrangements that facilitate engagement with research opportunities • provides comprehensive facilities for student and staff training and development in the field of mental health, including access to training facilities and teaching staff, in keeping with the role of a major regional teaching hospital • provides appropriate research facilities promotes formal partnership arrangements
Minimises Disruption A programme that minimises disruption to patients	Maintained Service • maintains continued service delivery and quality during programme • minimises disruption to services users, staff and others on site

3.5.2 Criteria Ranking and Weighting

The Stakeholder Group ranked and weighted the criteria as follows:

Criteria	Rank	Weight
Clinical Effectiveness	1	19.3%
Health and Wellbeing	2	18.4%
Accessible Services	3	15.6%
Sustainable Facilities	4	13.3%
Delivery of Efficient Services	5	11.9%
Research and Development	6	11.3%
Minimises Disruption to Patients	7	10.2%

3.5.3 Benefit Scoring

The ranked and weighted benefit criteria were then used to assess the potential of both options to meet the agreed benefit criteria, each criterion for the options being scored from zero ('could hardly be worse') to 10 ('could hardly be better'). The weighting factors were then applied to the scores to provide a total weighted result as follows:

Option	Non-Financial Benefits Score
Do Minimum	330.5
New Build for Phase 1	811.9

As can be seen, on the basis of the non-financial benefits score, the new build option for Phase 1 is preferred by a substantial margin. The options appraisal process is outlined in Appendix 2.

3.6 Costs

This section explains the methodology for costing the shortlisted options. It then sets out the economic appraisal for each of the shortlisted options, comparing the non-financial benefits and equivalent annual costs (EACs) to identify which option represents best value for money.

A generic economic model (GEM) has been used to derive the comparative costs of each of the options in the form of net present costs (NPC) and equivalent annual costs (EAC).

The model considers the full cost associated with each option over the assumed life of the project - 25 years for the 'do minimum' option and 50 years for the 'new build' option.

A key element of the model is the capital cost associated with each option as summarised below:

	Do minimum	New build for phase 1
	£'000	£'000
Refurbishment/construction	[redacted]	[redacted]
Equipment and IT	[redacted]	[redacted]
Other costs	[redacted]	[redacted]
Total	[redacted]	[redacted]

The initial capital outlay for 'Do Minimum' represents the backlog maintenance and functional suitability enhancements required to improve the physical condition and meet statutory standards, including DDA compliance, for the existing accommodation. An allowance for risk (optimism bias) and the cost of the associated decants are also where required.

Whilst the capital cost is detailed above, it is the full unitary charge payable which is reflected in the 25/50 year cash flows. For each option, this is supplemented by the associated running costs.

3.7 Risk Management Methodology

3.7.1 Introduction

NHSL, supported by their advisory team, developed a robust risk management and evaluation framework during the pre-OBC phase of the project. Risks have been identified, quantified, and mitigation strategies developed.

During the risk workshops undertaken during stage 1, a risk allocation matrix was prepared. Risks are managed in two distinct categories - 'Project Risks' and 'Corporate Risks'. The project risk register has been reviewed on a monthly basis by the Project Team, focussing on the day-to-day project risks that could impact on the delivery of the works. The corporate risk register has been reviewed quarterly, focussing on the over-arching strategic risks of the project.

3.7.2 Risk Management and Way Forward

A revised risk management approach will be adopted, following approval of the OBC, as the risks identified in the OBC stage will need to be monitored and updated to demonstrate affordability and Value for Money during the procurement phase as the probability and impact of individual risks change. SCIM Guides 2 and 3 explain the framework for risk management under an NPD procurement route.

Guide 3 explains the suggested methodology and output required for this stage, as outlined below:

Objective of risk analysis	Suggested methodologies/ *sources of information*	Output
To inform the demonstration of value for money and affordability of scheme **To demonstrate that the procuring entity will manage risk**	Risk analysis should build on work done at OBC stage: Possible further analysis includes: • Statistical techniques (e.g. multi point probability analysis); • Further sensitivity analysis; • Further weighting and scoring.	**FBC should show:** • NPC of risk retained by the public sector; • Risk allocation matrix (referenced to contractual agreement); • Risk management strategy; • Description table for each individual risk.

It is advised that risks are allocated and distinguished between the following categories:

- design risk
- construction and development risk
- availability and performance risk
- operating cost risk
- variability of revenue risk
- termination risk
- technology and obsolescence risk
- control risk
- residual value risk
- other project risk.

3.7.3 Approach

During Stage 1 of the project development process the aim has been to achieve a robust framework under which the project can be moved forward to Outline Business Case approval and thereafter be developed at Stage 2 without significant change to obtain approval for delivery. Understanding the risks in a project and reducing them to a manageable level is a key aspect of the Project Development Services. The approach to managing and mitigating risks is to:

- Identify the risk, whether theoretical or real
- Establish who is best suited to manage the risk
- Consider methods and actions to and/or mitigate potential impact of risks
- Consider mitigation of risk (design out/insurance).

Any residual risks which are passed down to relevant members of the supply chain are monitored by hub South East to ensure that they are being dealt with correctly under the Supply Chain Agreements.

Following FBC approval, hub South East risks are intended to be minimal due to robust risk management in the previous stages. The management of remaining project risk is the responsibility of the Supply Chain Members.

3.7.4 Top 10 Risks

The top 10 project risks are shown in the table below:

Ref	Risk Description	Risk Consequence	Rating
3-5	FM (revenue) costs Error in revenue cost forecast.	Increased life-cycle costs and possible re-structuring of FM team to account for any changes in the PPM regime.	ORANGE
4-1	Failure to meet performance requirements building does not meet spatial design requirements.	The building does not meet user requirements.	ORANGE
4-3	Sustainability Agenda Changes in sustainability regulations, including LZCT design and the BREEAM scoring requirements impact on technologies used.	Potential delay to design works and additional cost associated with abortive design works.	RED
4-4	Failure to meet energy performance requirements Failure to meet targets and control energy costs.	Additional revenue costs incurred through building lifecycle. Carbon footprint increase.	ORANGE
4-13	Bed number reductions not achieved Bed numbers do not reduce as planned.	The current design model does not provide the required number of beds to enable continued clinical service delivery. Failure to discharge current beds will result in delay to decant of existing facilities.	RED
4-14	Phase 1 design exceeds schedule of accommodation allowances	Impact clinical/therapeutic spaces to accommodate additional communication space requirements and/or increase in affordability cap.	RED
4-15	Design statement compliance Non-negotiable objectives set out in Design Statement not met by Ph 1 design.	Failure to achieve the non-negotiable objectives detailed within the Design Statement will impact on obtaining OBC approval.	ORANGE
6-1	Planning Permission Failure to obtain planning permission in line with programmed dates (16 weeks).	Delay to obtaining key approvals and ultimately delay in the overall project programme.	ORANGE

6-2	Change of government policy	Potential to impact on delivery of future phases.	ORANGE
15-6	Bed modelling risk The reduction in bed numbers is not achieved in time for future phase demolition and construction.	Failure to reduce bed numbers in line with policy will result in the masterplan not being achievable in line with proposed decant strategy - leading to programme delays and possible changes to the scope of future phases.	RED
15-9	Masterplan is unaffordable	Review of planned accommodation layout and Clinical services on the site; review the disposals of land to facilitate.	ORANGE
15-11	REH listed buildings increases Listing extended to include additional buildings (including Kinnair etc.) following CEC/HS review.	Additional constraints placed on developable space on the site.	ORANGE

The current Risk Register is shown in Appendix 3.

3.8 Economic Analysis

This section takes the capital and revenue cost projections for the short-listed options and derives the NPCs and EACs using discounted cash flow techniques. Applying the weighted benefit points score to the EAC allows for a comparison of the cost per benefit point for each option to arrive at a comparable economic appraisal. The discounted cash flow calculations are shown as NPC and EAC.

3.9 Value for Money Analysis

Value for money analysis identifies the optimum solution by comparing qualitative benefits to costs. This analysis has been performed on an economic annual cost basis[2] in line with HM Treasury guidance; the results are presented in the table that follows.

	Do minimum	New build
Net present cost (£'000)		
Equivalent annual cost (£'000)		
Benefit score		
Net present cost per benefit point (£'000)		
Equivalent annual cost per benefit point (£'000)		
Ranking		

The best value option is the one that demonstrates the lowest cost per benefit point. On this basis, the preferred option for Phase 1 is new build.

[2] The following assumptions have been used in the Economic Appraisal:

1) Discount factor 3.5%
2) VAT and inflation excluded
3) Depreciation excluded
4) New builds have a life of 50 years
5) Refurbishment for the do minimum options would have a life of 25 years
6) Equipment has a life of 10 years
7) Project team costs are considered to be sunk cost

Optimism bias 23.2% for do minimum option

3.10 Sensitivity Analysis

The net present costs have been subjected to sensitivity tests to determine whether changes to any of the assumptions about capital or revenue costs have a significant impact on the option rankings. The tests undertaken were capital and revenue costs increased between [redacted] reduction in service costs, and a one year delay in capital programme. The outcome of these tests is set out below:

	Do Minimum	New Build
Baselines EAC (£000)	[redacted]	[redacted]
EAC per benefit point (£000)	[redacted]	[redacted]
Ranking	[redacted]	[redacted]
Increase capital costs by 20% (£000)	[redacted]	[redacted]
EAC per benefit point (£000)	[redacted]	[redacted]
Ranking	[redacted]	[redacted]
Reduce capital costs by 20% (£000)	[redacted]	[redacted]
EAC per benefit point (£000)	[redacted]	[redacted]
Ranking	[redacted]	[redacted]
Increase service costs by 10% (£000)	[redacted]	[redacted]
EAC per benefit point (£000)	[redacted]	[redacted]
Ranking	[redacted]	[redacted]
Reduce service costs by 10% (£000)	[redacted]	[redacted]
EAC per benefit point (£000)	[redacted]	[redacted]
Ranking	[redacted]	[redacted]
One year delay in capital programme (£000)	[redacted]	[redacted]
EAC per benefit point (£000)	[redacted]	[redacted]
Ranking	[redacted]	[redacted]

The ranking is unchanged in all cases and therefore 'new build' remains the preferred option.

4. THE COMMERCIAL CASE

4.1 Introduction

It has been agreed that redevelopment of the Royal Edinburgh Hospital Campus should be procured under the Scottish Futures Trust hub initiative.

The hub initiative in the South East Territory is provided through a joint venture company (hub South East Scotland Limited) bringing together local public sector participants, Scottish Futures Trust (SFT), and a Private Sector Development Partner (PSDP).

SPACE (Scottish Partnership and Community Enterprise) is a trading company registered in Scotland and created in 2009 by Galliford Try, Fulcrum, and Davis Langdon to work in partnership with public sector organisations participating in the hub initiative. SPACE was appointed in 2010 as the PSDP for hub South East Scotland.

The Commercial Case outlines details of the contract that management and the NHSL Board will be asked to sign up to; it covers the following:

- Structure of the project development and scope of contracted services
- Agreed risk allocation
- Type of contract used and key contractual terms
- Methods of payment for the services and outputs including any premiums for risk transfer
- Implementation timescales which have been agreed for the delivery.

4.2 Required Services

The hub initiative was established to provide a strategic long-term programmed approach to the procurement of community-based developments.

The Royal Edinburgh Hospital Campus redevelopment will be delivered by a ‘Sub-hubco’ (a non recourse vehicle funded from a combination of senior and subordinate debt underpinned by a 25-year service concession contract). The senior debt is provided by a project funder that will be appointed following a funding competition and the subordinate debt by a combination of Private Sector (60%), Scottish Futures Trust (10%), and Participant (i.e. NHS Lothian) investment (30%).

The contractual agreement is based on SFT's hub standard form Design, Build, Finance, Maintain (DBFM) contract (the “Project Agreement”) version 2.0 June 2012 updated by the Scottish Futures Trust and agreed by SPACE. The Sub-hubco will therefore be responsible for providing all aspects of design, construction, ongoing facilities management (hard maintenance services and lifecycle replacement of components), and finance throughout the course of the project term with the only service exceptions being a number of NHSL maintenance obligations, principally responsibility for making good/replacing wall, floor, and ceiling finishes.

The Project Agreement term (Concession Period) will commence following certificate of availability and facility handover from the SPV to the Authority. The sites will remain in ownership of the NHS throughout the term, although a form of lease or license will be entered between NSHL and the Sub-hubco for the duration of construction and concession period. On expiry of the Project Agreement the facilities (Phase 1 only) will revert to NHSL at no cost to the Board on behalf of the Scottish Ministers.

Sub-hubco will be responsible for hard FM services (e.g. structural and external maintenance) relating to the facilities. The financial model for the project will include capital sums for the life cycle replacement of fixtures, fittings and equipment within the facilities for the duration of the Project Agreement. Soft facilities management services (such as domestic services, catering, portering, laundry, and external grounds maintenance) are excluded from the Project Agreement with sub-hubco; these services will be provided by NHS Lothian.

Procurement, supply, installation and lifecycle responsibilities associated with equipment follow standard form procurement, using groupings 1 to 3. An equipment strategy will be developed as part of the FBC process.

The responsibility and interface of equipment and soft FM in the operational facility is a key consideration of the service provision. To facilitate this, an 'Equipment Responsibility Matrix' will be prepared, detailing all equipment by description, group reference, location, and responsibility between NHSL and Sub-hubco in terms of supply, installation, maintenance, and replacement over the course of the operational period. To facilitate joint working arrangements between NHSL and the hard FM services provider an 'Interface Responsibility Matrix' will articulate responsibility at a practical operational level; this will supplement the Project Agreement. An Outline Commissioning Programme will be updated by agreement of the parties during construction into a Final Commissioning Programme, which will ensure that each party is able to access the Site to install the equipment for which it is responsible and verify that all items function correctly together prior to the completion date.

4.3 Potential for Risk Transfer

A key feature of the hub initiative is the transfer of inherent construction and operational risk to the private sector that traditionally would be carried by the public sector. The table below outlines ownership of known key risks.

	Risk Category	Potential Allocation		
		Public	Private	Shared
1	Design risk		√	
2	Construction and development risk		√	
3	Transitional and implementation risk		√	
4	Availability and performance risk		√	
5	Operating risk			√
6.	Variability of revenue risks		√	
7	Termination risks			√
8	Technology and obsolescence risks		√	
9	Control risks	√		
10	Residual value risks	√		
11	Financing risks		√	
12	Legislative risks			√
13	Sustainability risks			√
14	Title risk	√		

Design risk sits with Sub-hubco subject to the Project Agreement. However, agreed derogations identified within the Authority's Construction Requirements and on-going Authority's Maintenance Obligations during operation may give Sub-hubco relief on certain designed components.

Construction and development risk sits with Sub-hubco subject to the Project Agreement. However, a small number of delay and compensation events could entitle Sub-hubco to compensation, should they materialise, and this would be reflected in a revised Unitary Charge calculation.

Transition and implementation risk sits with Sub-hubco subject to compliance with the Authority's Requirement and agreed commissioning timetable.

Availability and performance risk sits with Sub-hubco subject to the Project Agreement. However, availability or performance failures that arise as a result of an excusing clause could give Sub-hubco relief from payment deduction.

Operating risk is a shared risk subject to NHSL and Sub-hubco's responsibility under the Project Agreement and joint working arrangements within operational functionality.

Variability of revenue risk is a shared risk subject to adjustments of the Annual Service Payment under the Project Agreement. In addition NHSL is responsible for a number of pass through utility costs such as energy usage and direct costs such as local authority business rates, all of which are subject to factors such as indexation.

Termination risk is a shared risk within the Project Agreement with both parties being subject to events of default that can trigger termination. In addition, NHS Lothian has an additional right of voluntary termination subject to the Project Agreement.

Technology and obsolescence risk predominantly sits with Sub-hubco. However, NHS Lothian could be exposed through specification and derogation within the Authority's Construction Requirements, obsolescence through service change during the period of functional operation, and relevant or discriminatory changes in law under the Project Agreement.

Control risks sit with NHSL subject to the Project Agreement.

Residual value risks sits with NHS L.othian.

Financing risks predominantly sit with Sub-hubco subject to the Project Agreement. However, relevant changes in law, compensation events that compensate Sub-hubco, and changes under the Project Agreement may all give rise to obligations on NHSL to provide additional funding. Authority Voluntary Termination may also bring an element of reverse risk transfer due to aspects of the funding arrangement with the funder.

Legislative risks are shared subject to the Project Agreement. Whilst Sub-hubco is responsible to comply with all laws and consents, the occurrence of relevant changes in law as defined in the Project Agreement can give rise to compensation to Sub-hubco.

Sustainability risks are proportionately shared, subject to the Project Agreement. Sub-hubco carry the risk of complying with the Authority's Requirements in terms of sustainable design and lifecycle of hard FM components, however, NHSL has exposure to aspects of Authority Maintenance Obligations and carry some of the risk of thermal efficiency of the facility. Title risk sits with NHS Lothian.

4.4 Proposed Charging Mechanisms

NHS Lothian will pay for the services in the form of an Annual Service Payment.

A standard contract form of Payment Mechanism will be adopted within the Project Agreement with specific amendments to reflect the relative size of the project, availability standards, core times, gross service units (number of service units applied to each functional area), and a range of services specified in the Service Requirements. This will introduce mechanisms of performance deductions to address facility non-availability issues from the Sub-hubco, these deductions will result in a reduction to the Unitary Charge.

NHS Lothian will pay the Annual Service Payment to Sub-hubco on a monthly basis, calculated subject to appropriate performance adjustments (as per the preceding section), deductions for availability failures and performance failures, and other amounts due to Sub-hubco. Where any payment is in dispute the party disputing the payment will pay any sums which are not in dispute.

NHS Lothian has a contractual right to set off any sum due to it under the Project Agreement.

The Annual Service Payment is subject to indexation as set out in the Project Agreement by reference to the Retail Prices Index published by the Government's National Statistics Office. Indexation will be applied to the Annual Service Payment on an annual basis. The base date will be the date on which the project achieves Financial Close.

Costs such as utilities usage charges (heating, water, and electrical power) and operational insurance premiums will be treated as pass-through costs and, as such, will be arranged by Sub-hubco but added to the Monthly Service Payment as applicable. Utility charging will be developed as part of the FBC process to demonstrate best value for money. In addition, NHSL is directly responsible for arranging and paying all connection, line rental, and usage telephone and broadband charges. Local Authority rates will be paid directly by NHS L.othian.

Sub-hubco is obliged to monitor its own performance and maintain records documenting its service provision both in terms of the Project Agreement and the Territory Partnering Agreement. NHS Lothian will carry out performance monitoring on its own account and will audit Sub-hubco's performance monitoring procedures in terms of the Project Agreement.

4.5 Proposed Contract Length

The proposed contract length is 25years.

4.6 Proposed Key Contractual Clauses

The agreement for Phase 1 of the Royal Edinburgh redevelopment will be based on SFT's hub standard form Design, Build, Finance, Maintain (DBFM) contract (the "Project Agreement"). The Project Agreement is signed at Financial Close; any derogation to the standard form position will be agreed with SFT prior to this.

Sub-hubco will delegate the design and construction delivery obligations of the Project Agreement to its Tier 1 building contractor under a building contract. Sub-hubco will also enter into a separate agreement with an FM service provider to provide hard FM service provision.

NHS Lothian will provide the Participants Sub-ordinate Debt Equity to support the development. This investment will be provided for at Financial Close.

NHS Lothian will procure the grant of a license or lease (subject to the senior debt funding provider) from the Scottish Ministers to Sub-hubco in line with the standard contract position previously developed for Health PFI projects in Scotland. It should be noted that funder requirements may require amendments to this preferred position e.g. some funders may require a lease rather than a licence.

‘Termination of Contract’ - On expiry of the contract the facility reverts to NHSL on behalf of The Scottish Ministers.

Service level specifications will detail the standard of output services required and the associated performance indicators. Sub-hubco will provide the services in accordance with its method statements and quality plans which indicate the manner in which the services

NHS Lothian’s (The Authority’s) Maintenance Obligations comprise of repairs and making good of all interior walls and ceiling finishes and, where appropriate, repairs and/or replacement of carpets and other non-permanent floor coverings in accordance with the frequency cycles stated in the Project Agreement. In addition, NHS Lothian is also responsible for inspection and testing of electrical appliances. Failure by NHS Lothian to carry out the Authority’s Maintenance Obligations would result in a breach of the agreement and entitle Sub-hubco to carry out the works and be reimbursed.

Not less than 2 years prior to the expiry date an inspection will be carried out to identify the works required to bring the facilities into line with the hand-back requirements which are set out in the Project Agreement.

Sub-hubco will be entitled to an extension of time on the occurrence of a Delay Event and to an extension of time and compensation on the occurrence of Compensation Events (in either case, during the carrying out of the works). Sub-hubco is relieved of the Board’s right to terminate the Project Agreement for non-performance on the occurrence of Relief Events. This reflects the standard contract position in relation to PFI in Scotland.

NHS Lothian will set out its construction requirements in a series of documents. Sub-hubco is contractually obliged to design and construct the facilities in accordance with the Authority’s Construction Requirements

NHS Lothian has a monitoring role during the construction process and only by way of the agreed Review Procedure and/or the agreed Change Protocol will changes occur. Sub-hubco will be entitled to an extension of time and additional money if the Board requests a change.

NHS Lothian and Sub-hubCo will jointly appoint an independent tester who will also perform an agreed scope of work that includes such tasks as undertaking regular inspections during the works, certifying completion, attending site progress meetings, and reporting on completion status, identifying non compliant work, reviewing snagging progress as well as a range of other independent functions.

NHS Lothian will work closely with Sub-hubco to ensure that the detailed design is completed prior to financial close. Any areas that do remain outstanding will, where relevant, be dealt with under the Reviewable Design Data and procedures as set out within the Review Procedure.

The Project Agreement details the respective responsibilities towards malicious damage or vandalism to the facilities during the operational term. NHSL has an option to carry out a repair itself or instruct Sub-hubco to carry out rectification.

Compensation on termination and refinancing provisions generally follow the standard contract position.

4.7 Personnel Implications (including TUPE)

As the management of soft facilities management services, such as domestic and portering services, will continue to be provided by NHSL there are no anticipated personnel implications for this contract.

No staff will transfer and therefore the alternative standard contract provisions in relation to employee transfer (TUPE) will not been used.

4.8 Procurement Strategy Implementation Timescales

The indicative implementation timescales for procuring Phase 1 of the Royal Edinburgh redevelopment has been discussed and agreed with hubCo. NHSL submits this OBC to SGHD's Capital Investment Group for approval on the basis that NHSL, SFT, and its advisers have agreed that the proposed Stage 1 submission represents value for money at this stage in the process and is affordable.

Since the IA was approved in March 2012, the project has been subject to Key Stage Reviews by SFT prior to issue of the New Project Request and the Stage 1 Submission.

The pre-NPR Key Stage Review process was successfully completed in September 2012 with the Stage 1 Key Stage Review undertaken during August 2013 in advance of the Stage 1 acceptance by NHSL in discussion with its advisers.

4.9 Implementation Timescales

The timetable for delivery of Phase 1 of the Royal Edinburgh redevelopment is outlined below:

Milestone	Milestone dates
New Project Request	September 2012
Stage 1 submission	September 2013
Stage 2 submission	October 2014
Financial Close	October 2014
Phase 1 commencement	November 2014
Phase 1 completion	September 2016
Services Commencement	December 2016
Services Completion (Expiry Date)	December 2041

5. THE FINANCIAL CASE

5.1 Introduction

The Financial Case considers the affordability of the preferred option. This section sets out all associated capital and revenue costs, assesses the affordability of the preferred option and considers the impact on NHS Lothian's financial statements.

In order to make this assessment an overall affordability model has been developed which includes all aspects of projected costs, and incorporates estimates for:

- Capital costs;
- Revenue costs (pay and non-pay) associated with existing services, i.e. baseline costs;
- Changes to revenue costs associated with service redesign as a direct result of the re-provision; and
- The projected unitary charge as derived from the hubCo financial model.

This section considers each of these aspects in turn.

5.2 Capital Costs

The total capital cost comprises the affordability cap agreed with hubCo plus all other costs directly related to phase 1, mainly IT and other equipment.

[redacted] the original affordability cap was based on a prime cost benchmark, comparing phase 1 with similar buildings from across the UK. As well as the cost of construction and associated infrastructure, it covered design team fees, the fee payable to hubCo, surveys and project specific assessed risks such as ground conditions.

Since the New Project Request (NPR) was agreed, the affordability cap has been increased to reflect agreed changes to the scope including an increase in the size of the building[3] from (15,071m^2 to 15,345m^2), allowances for building efficiency design, an expansion in non-carbon energy solutions, and an increase in electrical infrastructure and reinforcement. The combined impact of these changes has led to an increase of [redacted] in the affordability cap i.e. the revised cap is [redacted]

The stage 1 submission has been reviewed by Turner and Townsend, NHS Lothian's technical advisers. They have provided reassurance that, generally, the Stage 1 Submission from Hub South East meets the requirements of the Territory Partnering Agreement, subject to a number of clarifications that will

[3] The schedule of accommodation that underpins the affordability cap was developed prior to completion of the clinical brief for Phase 1. Consequently, it was acknowledged that the schedule would be subject to further review. However, effective healthcare planning has ensured that space within the new facility will be used as intensively as possible. Given this, revisions to the schedule were minimal and resulted in an increase in area of less than 2% from that estimated in the NPR.

be addressed during Stage 2.

Incorporating the costs not included in the affordability cap brings the total projected capital cost [redacted]. This will be funded through a combination of unitary charge and NHS capital.

The total projected capital cost, and the impact on funding, is summarised below:

	Total £'000	Amount outside Unitary Charge £'000	Covered by Unitary Charge £'000
Affordability cap Agreed adjustments	[redacted]	[redacted]	[redacted]
Total Affordability Cap	[redacted]	[redacted]	[redacted]
<u>Items to be paid</u> Stage 1 design Infrastructure Balance of capital injection Subordinated Debt	[redacted]	[redacted]	[redacted]
Total Funding required	[redacted]	[redacted]	[redacted]
<u>Exclusions from Affordability Cap</u> Equipment cost beyond group 2 Telecoms & IT Advisor fee Planning Permission Other Fees	[redacted]	[redacted]	[redacted]
Total Exclusion	[redacted]	[redacted]	[redacted]
Total	[redacted]	[redacted]	[redacted]

The assumptions underpinning these figures are shown in the following table. Each of these will be explored as the full business case is developed.

Cost	Assumption
VAT	VAT paid on construction related to the DBFM contract is recoverable by hubCo. VAT paid on any costs outwith this contract is not recoverable (for example the advanced infrastructure works).
Design fees	Stage 2 design fees are rolled up into the unitary charge whilst stage 1 fees are not.
Capital injection	[redacted]
Subordinate debt	[redacted]
Building regulations	Construction costs are based on 2010 building regulations.
Equipment	Equipment costs are assumed to be 3% of the total construction cost.
IT and telecoms	An exercise is still required to be completed surrounding the forecast of the Telecoms and IT cost.
Finance and SPV Costs	The affordability cap does not include finance and SPV costs, although these form part of the unitary charge.

5.3 Unitary Charge

Under the rules for NHS revenue-funded projects, usually referred to as design, build, finance and manage (DBFM schemes), a payment is made to the private sector for the services it provides. This payment is referred to as a unitary charge which has five separate components as detailed below:

Component of UC	Description
1. Facilities management (hard FM)	Cost of maintaining the building.
2. Lifecycle	Replacement cost of major equipment during the life of the project, for example replacing boilers and lifts.
3. Interest	Finance cost associated with borrowing.

Cont'd Component of UC	Description
4. Debt repayment	Repayment of the original capital cost. This includes any financing cost such as arrangement and debt monitoring fee.
5. Special purpose vehicle (SPV)	Administering, insuring, debt monitoring fee and running the sub-hubCo

As part of the stage 1 submission, hubCo supplied an outline financial model to support the OBC. This model makes a number of assumptions, as set out below

Cost	Assumption
Affordability caps	[redacted]
Floor Area	[redacted]
VAT	[redacted]
Construction start and end dates	[redacted]
Funding costs	[redacted]
Costs out with the unitary charge	[redacted]
Dividend returns	[redacted]
Inflation	[redacted]

Specifically excluded from the unitary charge are rates, energy costs, floor and ceiling finishes, and soft FM.

The unitary charge is based on the affordability cap, adjusted for the costs of setting up the SPV, debt interest and fees, less any cash contribution. This

forms the basis of the senior debt requirement - the amount of money that the sub-hubCo has to borrow; this is summarised below:

	Senior Debt Required £'000
Affordability cap	[redacted]
Other development cost:-	
SPV Set up/construction	[redacted]
Debt interest & fees	
Total development Cost	[redacted]
Reduction of funding	
Stage 1 design fee	[redacted]
Sub-ordinated Debt NHSL	[redacted]
Sub-ordinated Debt other partners	[redacted]
Capital Injection	[redacted]
Total injection	[redacted]
Senior debt requirement	[redacted]

Based on a senior debt requirement of [redacted] the total unitary charge payable over 25 years is [redacted] and the annual unitary charge before indexation is [redacted]. The elemental breakdown is shown below:

	Hard FM	Lifecycle	Debt & interest	SPV Central Cost	Total
	£'000	£'000	£'000	£'000	£'000
Unitary Charge 16/17 (part year)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Unitary Charge 17/18	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Unitary Charge 18/19	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Total over 25 years (indexed @ 2.5%)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

One determinant in the model (which will be agreed as the full business case is developed) is the level and timing of any capital contribution. The financial model currently assumes an injection of [redacted] at the end of construction. For each [redacted] increase in the capital injection the unitary charge will decrease by [redacted].

At financial close, financing rates are confirmed and the total unitary charge payment is set subject to inflation for the term of the contract. An updated model will be included in the Full Business Case in order that value for money can be assessed at this stage.

5.4 Revenue Costs

In order to assess the revenue implications of the project, it is necessary to establish the baseline costs of the current service, particularly workforce for the existing service model. These baseline costs are then compared to the provisional costs of the new models of care to assess the financial implications and quantify any shortfall. To support this, a number of assumptions have been agreed, as detailed below:

Cost	Assumption
Workforce	Calculated based on agreed NHS Lothian methodology including allowances for on on-costs, enhancements, sick leave, public holidays and annual leave.
Medical staff	No change from current levels
Psychology staff	
Administration staff	
Junior doctors	
Drugs	No change from current levels, although bed numbers are reducing the overall number of patients remains unchanged.
Facilities assumption	Changes in staffing information are based on current designs.
Depreciation	Equipment - 10 years, telecoms - 7 years.

5.5 Service Model Costs

As described earlier, work to redesign clinical services is being progressed via the Joint Mental Health and Wellbeing Strategy and other partnerships arrangements. Work is ongoing to precisely identify the requirements for services to support the reduced bed capacity and the projected financial consequences have been assessed. These will be updated as the full business case develops. The impact on the revenue costs for Phase 1 are summarised below (these figures include costs for intensive community services to support the reduction in bed numbers):

Services	Baseline Budget	Forecast Costs	Increase in costs	Change in bed numbers
	£'000	£'000	£'000	
Acute mental health (including intensive psychiatric care)	[redacted]	[redacted]	[redacted]	[redacted]
Mental health rehabilitation	[redacted]	[redacted]	[redacted]	[redacted]
Older people's mental health admission and assessment	[redacted]	[redacted]	[redacted]	[redacted]
Acquired brain injury	[redacted]	[redacted]	[redacted]	[redacted]
Total	[redacted]	[redacted]	[redacted]	[redacted]

5.6 Running Costs

As indicated earlier, elements of the ongoing running costs will be covered by the unitary charge whilst other services (for example catering and cleaning) will be provided by NHS Lothian.

A standard Service Level Specification (SLS) has been developed for all revenue-funded hub projects and a number of changes have been agreed to ensure alignment with NHS Lothian policies. Specifically, the standard SLS now reflects the inclusion of window cleaning, pest control, and a 30-minute response period.

In addition to the services covered by the unitary charge, the cost of services provided by the inhouse team (often referred to as Soft FM) is also expected to change when phase 1 comes on stream. These incremental increases are summarised in the following table:

	Cost	Reason
	£'000	
Victorian Orchard	[redacted]	Currently not maintained
Domestics	[redacted]	Increase in floor areas and en-suite rooms
Catering	[redacted]	Reduction in meals (excluding overheads)
Energy	[redacted]	inc savings achieved from ADC demolition
Other	[redacted]	Including IT maintenance and capital equipment
Total	[redacted]	

5.7 Non-recurring Costs

A project team has been set up to ensure that the project runs smoothly. The cost of the team, accommodation and other associated costs is in the region of [redacted] per annum and appropriate provision has been made in the NHS Lothian financial plan.

5.8 Accounting Treatment

In considering the appropriate accounting treatment for phase 1, the project was reviewed to consider whether it should be treated as a service concession falling within the scope of HM Treasury guidance on IFRIC 12.

The project will be delivered using the standard contract for hub projects issued by SFT. As it meets all the necessary requirements under the HMT Guidance, the contract would appear to fall within the scope of IFRIC 12.

The main accounting entries required for the DBFM contract would be in line with accepted accounting practice as defined in the Capital Asset Accounting Manual. It is assumed that, following completion, the asset would be held on the balance sheet at fair value, which is likely to give rise to an impairment. This would be funded by the SGHSCD via the outside departmental expenditure limit (ODEL) mechanism.

Similarly, the advanced infrastructure works, which are subject to a separate contract, would be capitalised at cost (currently [redacted]). On completion, these would be held at fair value, triggering an impairment, which would be funded by the SGHSCD through annually managed expenditure (AME).

5.9 Governmental Accounts

From 1st April 2009 the accounting and budgetary treatments for revenue funded projects diverged. As noted above, accounts for bodies such as NHS Boards follow IFRIC 12. Departmental budgets, such as those of the Scottish Government, must follow national accounting standards, as set out in the

Manual on Government Deficit and Debt (MGDD). This provides guidance on assessing balance sheet treatment for 'services purchased by Government on the basis of dedicated assets'. As such, the proposed arrangement would fall within the scope of MGDD.

The key issue under MGDD is the classification of the assets involved in the arrangement, either as Government assets or as the (hubCo) operator's assets. The assets can be considered as non Government assets only if there is strong evidence that the operator is bearing most of the risk attached to the specific partnership. In this context the risk assessment focuses on the three main categories of risk: construction, availability and demand.

The assets should be classified as off balance sheet from a Government perspective if the operator bears the construction risks, and at least one of either availability or demand risk.

For phase 1 it has been assessed that hubCo will bear the construction and availability risks whilst NHS Lothian will retain the demand risk. Therefore the analysis under the MGDD would suggest that for Government accounts purposes the asset would be off balance sheet.

5.10 Statement of Affordability

Funding for the build element of the phase 1 development is a combination of traditional capital and unitary charge payments. Agreed elements of both capital and revenue funding will be provided by SGHSCD with the balance coming from NHS Lothian.

The SGHSCD has defined the level of revenue support to be made available for each aspect of an NPD project as:

- 100% of the cost of construction and the resulting cost of finance (ie debt and interest);
- 50% of lifecycle costs; and
- 100% of private sector development (SPV) costs and running costs of the
- project company.

Discussions are ongoing at a national level to determine how best to align the budgetary requirements of this support with the agreed accounting treatment.

Sources of Capital Funding

SGHSCD has committed support up to the capital value of the agreed new project request (NPR), i.e [redacted]. This takes the form of a traditional capital contribution of [redacted] and revenue support equivalent to a capital value of [redacted].

The balance will be funded as follows:

- Capital - [redacted] of capital (relating mainly to IT and other equipment) from NHS Lothian's CRL; and
- Revenue - the unitary charge to support a capital cost of [redacted] via NHS Lothian's revenue allocation. This equates to [redacted] based on

the indicative financial model supporting the business case. The balance of the unitary [redacted]) will be funded from the revenue support made available by SGHSCD. The table below shows how the capital costs are funded:

	Total £'000	Amount outside unitary charges £'000	Covered by unitary charge £'000	Unitary charge £'000
Total capital cost/unitary charge SGHSCD funding agreed	[redacted]	[redacted]	[redacted]	[redacted]
Difference to be funded by NHS Lothian	[redacted]	[redacted]	[redacted]	[redacted]

These numbers will flex depending on the modelling assumptions agreed at financial close, including the level and timing of any capital injection.

5.11 Revenue Requirement

Provision has been made in the NHS Lothian financial plan for the overall recurring revenue requirement of [redacted] as demonstrated below.

	£'000
Costs of the clinical service model	[redacted]
Running costs	[redacted]
Unitary Charge	[redacted]
Total revenue funding required	[redacted]

NHS Lothian confirms that the financial consequences will ultimately be managed as part of the financial and capital plan process; with support from the SGHSCD. This will be fully explored as part of the full business case.

6. THE MANAGEMENT CASE

6.1 Introduction

This section of the OBC addresses the achievability of the scheme. It builds on the arrangements described in the IA by setting out in more detail the actions that will be required to ensure the successful delivery of the scheme in accordance with best practice.

6.2 Programme Management Arrangements

The phase 1 development is an integral part of the REH Campus Redevelopment Programme. The programme comprises a number of phases, as demonstrated in the masterplan, for the delivery of a range of hospital services on this campus. Clinical services not included in Phase 1 will remain in their current accommodation until new facilities are provided. Phasing is covered in detail in the REH Masterplan Report which is available from NHS Lothian.

6.3 Project Management Arrangements

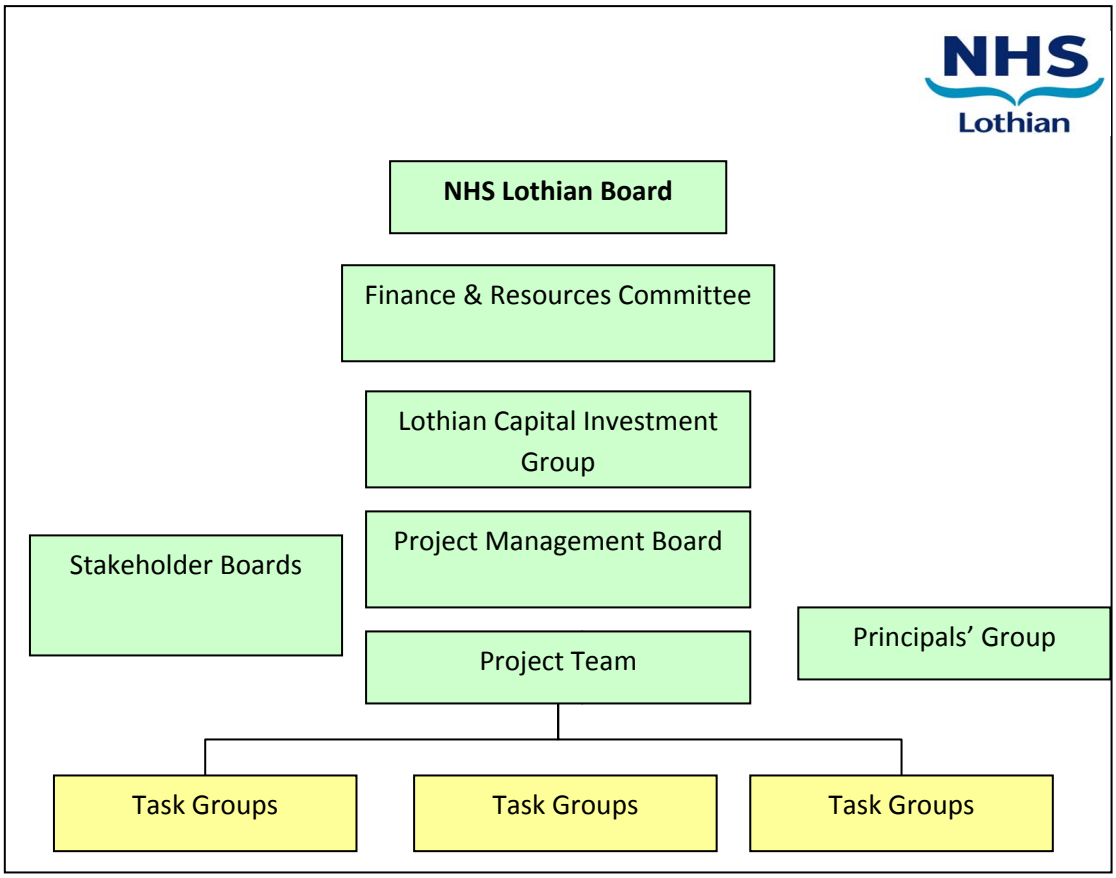
A joint project team has been established by members of the NHSL and HubCo project teams to direct and monitor progress through the business case process through to Financial Close. The remit is to ensure that all programme objectives are being met consistent with the project timetable.

A Financial Close programme has also been agreed to clearly document the process to be undertaken in order to achieve Financial Close and market engagement.

Robust project management plans have been developed to undertake Stage 2, the production of the Full Business Case for approval of the preferred option, Financial Close and thereafter to supervise construction and prepare for commissioning and occupation of the buildings. Project roles have been identified and appropriately experienced personnel have been identified, see Section 1.3.

The project will be managed in accordance with PRINCE 2 methodology.

The reporting organisation and the reporting structure for the project are as follows:



6.4 Project Reporting Structure

The organisational structure is common to the OBC, FBC, financial close, contract close and through to the operation phase of the project.

6.4.1 NHS Lothian Board (NHSL)

The role and responsibilities of NHSL are set out in the various National Health Services (Scotland) Acts from 1974 onwards. Its main role is to protect and improve the health of the people of Lothian and plan services for the local population within the budget set by Parliament.

6.4.2 Finance and Resources Committee

The Finance and Resources Committee is made up of seven non-executive members and four executive directors including the Chief Executive, Finance Director, Nurse Director, and Medical Director. In the main its remit is to provide financial governance of the Boards major strategic/capital projects and the property and asset management strategy. The Committee also reviews the development of the Board's Financial Strategy and recommend approval to the Board

6.4.3 NHS Lothian Joint Management Team

The Joint Management Team provides advisory support to the Chief Executive and comprises executive directors, joint accountable directors (health and social care) and senior operational directors.

6.4.4 Lothian Capital Investment Group

The Lothian Capital Investment Group has a critical analysis and quality assurance role in respect of strategic and operational capital schemes. It provides guidance, advice and support to the Joint Management Team on property and asset management matters.

6.4.5 Project Management Board

The remit of the Project Board is to provide strategic guidance to the project team in addition to reviewing key project issues and providing authorisation or deferring items to the Capital Investment Group or Finance and resources committee where necessary.

Membership of the Project Board, who meet on a monthly basis, includes the NHSL Project Sponsor, in addition to representation from Capital Planning, Finance, Partnership and attendance from Senior Management within the Hospital. The HubCo Project Lead and Tier One Contractor Project Manager are also invited to attend to report on progress and to present any project specific matters requiring authorisation.

6.4.5 Project Team

The remit of the Project Team is to coordinate the delivery of the works from design stage through to the construction stages. Membership of the project team includes NHSL Project Manager, hubCo Consultancy team, the Tier One Contractor, a full Design Team, and the Tier One FM Contractor.

Project Team meetings are held monthly. Key updates are given at these meetings with regard to design progress, cost updates, FM strategy, and programme. This group also provides a forum to discuss any issues that require to be escalated to the Project Board for further discussion or to obtain any necessary approvals.

6.4.6 Project Stakeholder Board

The Stakeholder Board has a remit for project assurance and comprises service users, clinicians, clinical and hospital managers and a wide variety of Third Sector and other providers.

6.4.7 Clinical User Groups

To enable development of a robust clinical brief and the subsequent design solution. Clinical and technical user groups were set up during the briefing stage of the project. The remit of these groups is to liaise with colleagues within their respective specialties to provide informed feedback on the emerging design.

6.4.8 Masterplan Steering Group

To facilitate the identification of the preferred master plan option (in parallel with the Phase 1 development), a Masterplan Steering Group was formed. The remit of this group was to agree the over-arching development strategy of the REH campus, including clinical interface issues and assist in identifying the preferred option for recommendation to the Executive Group. Membership of this group included the appointed Planning Consultant, hubco, and key NHSL personnel.

6.4.9 Masterplan Advisory Group

The remit of the Masterplan Advisory Group was to agree the over-arching priorities for the site, review design proposals, and provide guidance regarding operational policy and technical requirements for the site. Membership of the advisory group included the planning consultant, hubco, and key NHSL personnel, both clinical and non-clinical.

6.5 Project Roles and Responsibilities

6.5.1 Senior Responsible Officer (David Small, Director of Health and Social Care, East Lothian)

The Project Sponsor is ultimately responsible for the project and its overall business assurance i.e. that it remains on target to deliver the outcomes that will achieve the anticipated business benefits and that the project will be delivered within it's agreed tolerances for budget and timescale.

The Project Sponsor is also responsible for securing investment and resources for the project from the NHS Lothian Board, acting as a vocal and visible champion for the project within the organisation, legitimising the goals and objectives, and keeping abreast of major project activities.

6.5.2 Project Director (Andrew Milne)

The Project Director provides the interface between project ownership and delivery acting as a single point of contact with the project team for the day-to-day management. The Project Director is responsible for ongoing management on behalf of the Project Sponsor to ensure that the desired project objectives are delivered.

Andrew's experience includes Management of PFI concession companies across a varied property portfolio. Responsibilities include major capital projects and service delivery to a range of Local Authority and NHS clients

6.5.3 Project Manager & Clinical Lead (Dick Fitzpatrick)

The Project Manager is responsible for ensuring that the project delivers the project outcomes to the required standard of quality and within the specified constraints of time and cost.

Dick has a mental health and general nursing background in addition to many years of service and general management experience. He has been working

as a project manager for the past 8 years on a variety of local regional and national service design, commissioning and re-design clinical projects.

6.5.4 Capital Planning Manager (Steve Shon)

The Capital Planning Manager provides support and expertise to the service management and user departments for capital projects with particular emphasis on business case development, design, construction and transition to ensure the effective delivery of the capital projects and smooth transition into the operational phase.

For the past 15 years Steve has worked as a senior project manager within NHS Capital Planning managing and co-ordinating all aspects of the procurement of major new health facilities, from preparation of business cases through to commissioning. In terms of procurement, he has been involved in traditional, D&B, and PFI schemes and is now working on hub developments, including the redevelopment of the Royal Edinburgh Hospital. Previous projects have ranged from small Learning Disabilities houses, through Care of the Elderly facilities, to the re-provision of the State Hospital at Carstairs.

6.5.5 Senior User (Tim Montgomery, Director of Operations (REH) and Interim General Manager, Edinburgh Community Health and Social Care Partnership)

The Senior User is accountable for ensuring that requirements have been clearly and completely defined and that the proposed development is fit for purpose and fully meets user needs. Following the principles of PRINCE2, the senior user has primary responsibility for quality assurance and represents the interests of all those who will use, operate, and maintain the hospital facilities.

In addition to his current Director of Operations role Tim is also interim General Manager for Edinburgh Community Health and Social Care Partnership. His background is in management having held a number of senior management roles in NHS Lothian.

6.6 Project Programme

The project milestones are as follows:

Activity	Date
Stage 1 Submission Sub HubCo	August 2013
Stage 1 KSR Approval	September 2013
Stage 1 Approval NHSL	September 2013
OBC Approval NHSL Boards	October 2013
OBC Consideration SGHD	November 2013
Stage 2 Submission Sub hubCo	July 2014
Stage 2 KSR Approval	July 2014
Stage 2 Approval NHSL	July 2014
FBC Approval NHSL Boards	July 2014
FBC Approval SGHD	September 2014
Financial Close	October 2014
Start on Site	November 2014
Clinical Commissioning	September 2016
Service Commencement	September 2016
Handover to NHSL	September 2016

A detailed programme is given in Appendix 4.

6.7 Use of Special Advisers

Special advisers have been used in a timely and cost-effective manner in accordance with the "Treasury Guidance: Use of Special Advisers**".** The project's advisers are:

Specialist Area	Adviser
Financial	Ernst and Young
Technical	Turner and Townsend
Procurement and legal	Burness Paull

The Project Team will continue to review the appointments to ensure appropriate and continued adviser support is made available throughout the construction period and into the early operation stage as necessary.

6.8 Outline Arrangements for Change and Contract Management

The strategy, framework, and plan for dealing with change and associated contract management is outlined in this section.

Contract change management procedures for the three identified stages of the project are defined within the Project Execution Plan. This includes the pre-financial close and project development period (OBC and FBC) stage, construction delivery stage, and during the concession period.

The change control procedures during the pre-financial close and project development period (OBC and FBC) stage are managed in accordance with hubCo's operation method statements.

The change control procedures during construction delivery and during the concession period are defined within the Project Agreement, Change Protocol (Schedule Part 16).

6.9 Outline Arrangements for Benefits Realisation

The benefit criteria and beneficiaries for phase 1 are intrinsically linked to the investment objectives and were detailed in appendices 3 and 10 of the IA. These have been updated and baseline measurement, targets and timescales have been added.

A Benefits Realisation Plan is being developed and will set out arrangements for the identification of potential benefits, their planning, modelling and tracking.

This sets out who is responsible for the delivery of specific benefits, how and when they will be delivered, and the required counter measures, as required.

6.10 Outline Arrangements for Risk Management

There is a strategy, framework, and plan for dealing with the management of risk. Risk is managed within the Project Team and led by the Project Director. The risk work stream has been established to identify, evaluate, manage and monitor risks throughout the life of the project. Since Initial Agreement approval, a number of risk workshops have been conducted to identify the retained risks. The workshops explore all risks covering business and services and identifies ways of eliminating, reducing, and managing the risks to mitigate any effect on the project overall.

6.11 Outline Arrangements for Post Project Evaluation

The arrangements for post implementation review and project evaluation reviews have been established in accordance with best practice and are outlined in this section.

These reviews ascertain whether the anticipated benefits have been delivered and are timed to take place in accordance with current guidance and good practice the project will be evaluated in stages:

Stage 1 – Procurement Process Evaluation

An evaluation of the procurement process will be undertaken following Financial Close to assess the effectiveness of the procurement process in meeting the project objectives and identify any issues and lessons to be learned. This stage will also enable the Project Team to review its performance and aid in future development of skills.

Stage 2 – Monitoring Process

During the construction period progress will be monitored to ensure delivery of the project to time, cost and quality to identify issues and actions arising. On completion of the construction phase the actual project outputs achieved

will be reviewed and assessed against requirements, to ensure these match the project's intended outputs and deliver its objectives.

In addition the Project Board will undertake a brief evaluation workshop at 6 monthly intervals throughout the project to allow for reflection, learning and improvement as the project progresses through its various phases.

Stage 3 – Initial Project Evaluation of the Service Outcomes

This will be undertaken 6 to 12 months after the new facility has been commissioned. The objective is to determine the success of the commissioning phase and the transfer of services into the new facilities and what lessons may be learned from the process.

Stage 4 – Follow-up Project Evaluation

This will be undertaken 2 years into the operational phase by the Evaluation Team to assess the longer term service outcomes and ensure that the project's objectives continue to be delivered.

In each stage the following issues will be considered:

- To what extent relevant project objectives have been achieved.
- To what extent the project went as planned.
- Where the plan was not followed, why this has happened.
- How plans for the future projects should be adjusted, if appropriate.

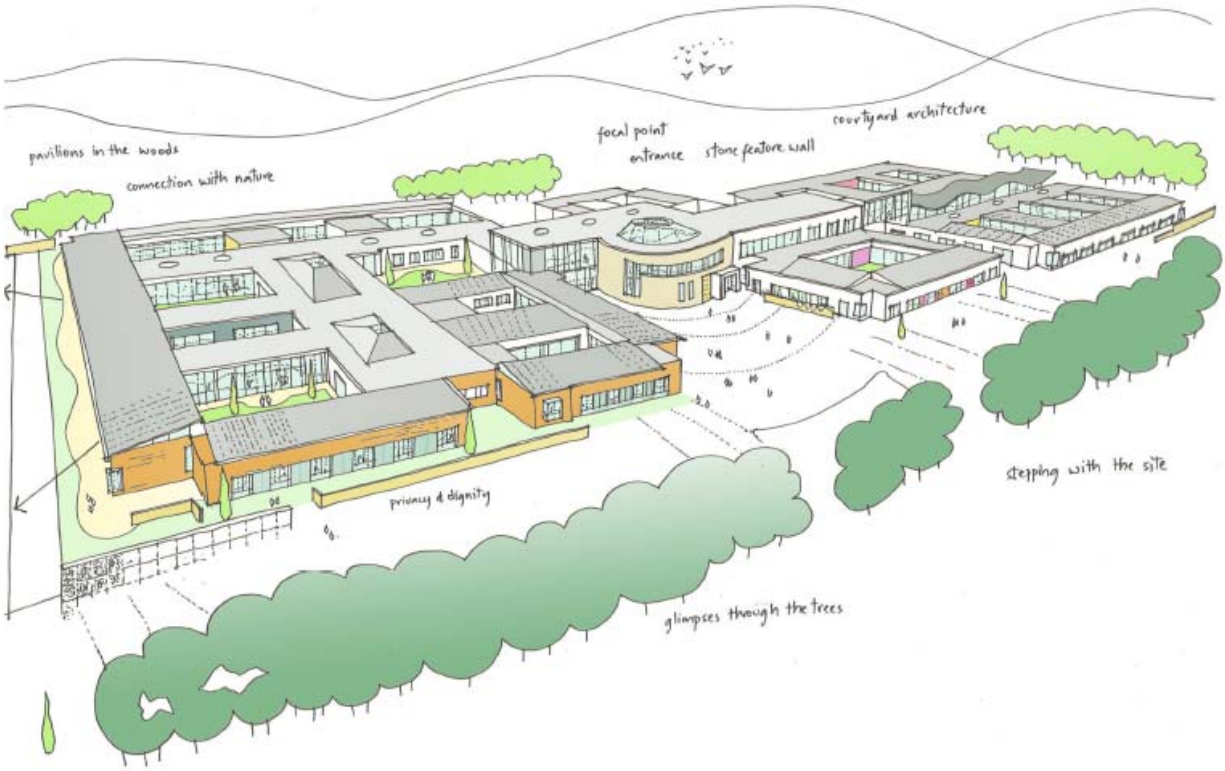
The purpose of undertaking a Project Evaluation is to assess how well the scheme has met its objectives and whether they have been achieved to time, cost and quality. Performance measures already contained in the Benefits Realisation Plan will not be replaced in the Project Evaluation Plan (PEP).

The evaluation will be led by the Project Team and supplemented by representatives of the user groups and other key stakeholders. The Project Management Board will receive evaluation reports on each element.

7. CONCLUSION

NHS Lothian seeks approval and funding to progress with Phase 1 of the REH redevelopment to provide new inpatient facilities on land to the western end of the existing site.

Phase 1 is part of a masterplan and therefore further business cases will be developed for these works going forward.



REH Phase 1Artist's Impression

APPENDIX 1

ROYAL EDINBURGH HOSPITAL MASTERPLAN SUMMARY

Whilst the OBC relates to the development of Phase 1 this scheme forms part of a whole campus redevelopment with the objective of integrating mental health, physical rehabilitation (referred to as integrated services), and learning disabilities onto a single operating site. To assist in the appraisal of site redevelopment hubCo were commissioned as part of the appointment process in the New Project Request to procure and jointly manage an integrated master planning exercise. This exercise has been undertaken in conjunction with the phase one options appraisal and business case development process. To assist in this a specialist team were competitively procured and appointed, the key deliverables of their appointment were:

- Identify clinical and support services that could be appropriately provided from the Royal Edinburgh site
- Assess and rationalize a range of briefing requirements, including re-provision of clinical services on the existing Royal Edinburgh Site, transfer of clinical and clinical support services from other NHS sites, release part of site for other public sector redevelopment or third party disposals;
- Establish through consultation with NHS Lothian and other Stakeholders a range of Long List master-planning options for site redevelopment;
- Undertake a detailed options appraisal exercise with the NHS Steering Group, to enable a short list to be identified;
- Develop outline proposals for the identified Short List options;
- Detailed technical development of the Preferred master-plan option;
- Develop the technical solution for the preferred option, including design, cost planning and phasing strategy; and
- Prepare and submit a 'Planning in Principle' application for the master-plan site.

Master Plan Options Appraisal

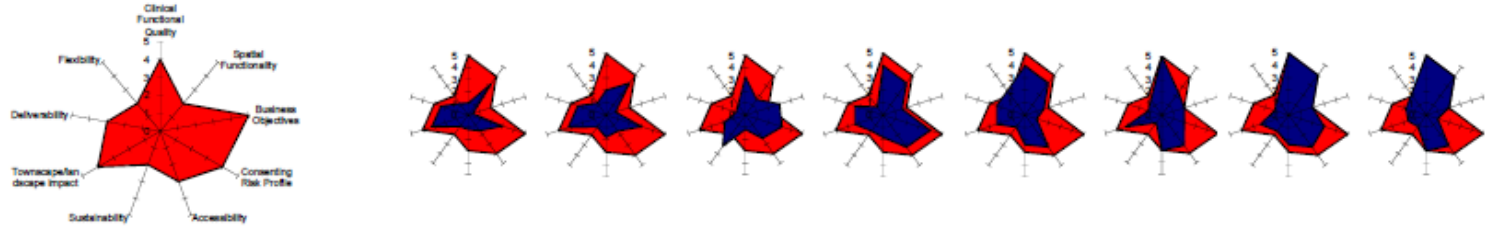
An Advisory Group was formed to help identify a master-plan solution that will best satisfy NHS Lothian's long term service objectives and ensure value for money on both the existing hospital and to allow rationalisation of other NHS sites,. This group comprised NHS staff from various disciplines including clinical, facilities management, finance, and capital planning. The remit of this group was to identify the brief and to review and support design development, making recommendations to the 'Steering Group' who were ultimately responsible for signing off proposals.

Following initial engagement with the Advisory Group a long list of 8 options was identified. These options were developed on the basis of the briefing criteria as agreed with the advisory group. Two options appraisal workshops were then held with both the Advisory and Steering groups to enable the long list to be reduced to a short list and then ultimately to enable the preferred option to be identified.

The following evaluation parameters were used to assess the long and shortlist options:

Criteria (Max score 10)	Client Priority	Option 1	Option 2	Option3 - AA on site			Option 4: AA plus LH on site		
		Mental Health	Learn Disab.	Dispose MKH	Retain MKH	Demolish MKH	Dispose MKH	Retain MKH	Demolish MKH
	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5
Clinical Functional Quality	5	1	2	4	4	4	5	5	5
Spatial Functionality	4	4	4	4	4	4	3	5	5
Business Objectives	2	1	2	4	4	4	5	5	5
Consenting Risk Profile	5	3	3	3	4	1	2	3	1
Accessibility	4	2	2	4	4	4	4	4	4
Sustainability	3	2	3	4	3	4	5	4	5
Townscape/landscape Impact	2	3	3	3	4	3	2	4	3
Deliverability	4	4	4	4	3	3	4	3	2
Flexibility	3	4	4	3	4	4	2	2	3
Alternative Opportunities	2	3	3	2	2	3	1	1	2
Overall Scores									
Fulfillment of Client Requirements		54%	60%	74%	76%	67%	71%	78%	71%
Ranking		8	7	3	2	6	4	**1**	4

Graphical Representation of Options Appraisal



These options were considered by the Joint Management Team in NHS Lothian, a grouped chaired by the Chief Executive Officer and represented by other service leads and service Directors. The short-list options and preferred option (option 4 above) was presented and ratified by this panel on basis of the identified evaluation parameters.

Development of the Preferred Option

Following identification of the preferred option, a technical solution was progressed, to the equivalent of RIBA Stage B in order to support a campus wide planning application for Planning Permission in Principle. This included:

- Developing the anticipated model of care and capacity planning estimates (including bed numbers, clinical support functions and non-clinical services etc);
- Level three asset appraisal and condition surveys across the existing estate;
- Review of listing status of buildings on the REH site;
- Valuation of existing site assets;
- Development of technical design inclusive of indicative building locations, high level building services, transport and landscape strategies; and
- Environmental Impact Assessments (inclusive of visual impact, ecological and transport surveys.)
- Financial appraisal of development commitments, including capex, Facilities Management, Lifecycle and funding treatment across an eleven year development and construction timeframe and standard twenty five year concession period.

Dialogue with the City of Edinburgh Council (CEC) Planning Department with regard to the Planning In Principal (PPiP) application also commenced at this stage. As part of the PPiP, which is due to be submitted to CEC on 27 September 2013, the master-planning team was also tasked with managing the public consultation process. This included engagement with local community council groups, consultation open days and national advertisements.

Phasing Strategy

Following identification of the preferred option and technical solution works, the master-planning team was also required to develop a phasing strategy for the site. A best case scenario has been developed considering the most effective method of site wide development, one which achieves optimum clinical functionality and avoids where possible any impact on the ongoing delivery of existing clinical service provision. Furthermore, this approach aligns with the wider service change plans for transfer of services from the Astley Ainslie site and improved patient centered services with mental health services being provided in the right environment for each patient with hospital admission only being used as appropriate when community / home based management of patients is not a viable option.

Following considerable dialogue with all stakeholders regarding the optimum phasing strategy, it was agreed that a 5 phase solution (with elements of sub-phasing) would provide the best solution. The table below provides more detail.

Phase	Step	Description	Services Incorporated	Beds Deleted	Comments	Timeframe
1 Mental Health	1	Construct new "Phase 1" Mental Health development on the Western plot of the REH campus.	Mental Health + IPCU	0		Completion by Nov 2016
	2	• Transfer IPCU part of Affleck Unit into Phase 1 development • Transfer Craiglea & Myreside part of Affleck to new accommodation off REH campus • Transfer Social work, ECT & tribunal part of Andrew Duncan clinic into Phase 1 development • Transfer outpatient, patient council, Jordanburn, data & med records part of Andrew Duncan to new accommodation **(potentially Jardine)** • Transfer part of MKH to Phase 1 development • *Transfer Alcohol addition beds from Andrew Duncan to St Johns* • *Transfer 12 older person beds off site*	-	Affleck = 63 MKH = 92 MKH Addiction = 7		Complete by Jan 2017
2 Learning Diabilities & Estates	3	Demolish: • Kinnair Unit • Affleck Unit • Andrew Duncan Unit	-	Andrew Duncan = 87		Complete by Jan 2017
	4	Construct new "Phase 2 - learning disabilities" unit on the site of the former Andrew Duncan clinic	Learning Disabilities	0		Start Jan 2017 Complete by Oct 2017
	5	Transfer Greenbank and William Fraser services into the new LD unit	-	0		Complete by Dec 2017
	6	Construct new combined Estates facility at the Western edge of the campus with access onto Myreside Road	Estates	0	Note that this step includes relocation in with the construction step	Start Jan 2017 Complete by April 2017
	7	Transfer Estates facilities into the new estates area to the west of the campus	-	0		Complete by July 2017
	8	Demolish Scottish Ambulance, Carnethy, Greenhouse, Greenbank & William Fraser	-	48		Complete by Sept 2017
	9	Demolish all old estates facilities	-	0		Complete by Sept 2017
3 MacKinnon House refurbishment	10	Relocate support service occupants of MKH that can be moved to temporary accommodation (either on site - **potentially to Jardine,** or off site) Note some services shall remain in MKH during refurb - catering etc	-	0		Start March 2016 complete May 2016
	11	Refurbish MKH	-	0	Allowance made for relcoation of staff decanted at Step 10 to move back into MKH from this point	Start June 2016 complete by June 2019
	12	Relocate all support services and temporarily decanted personnel back into the refurbished MKH including services temp housed in Jardine	-	0		Complete by Aug 2019
4 Integrated Rehab	13	Construct new "Integrated Rehab" development on the site of the former Affleck, Kinnair and estates sites to accommodate Integrated Rehab services. This unit will also accommodate the SMART building relcoated in from AAH	Integrated Rehab	0	Includes 2713m2 for AAH support serives (psychology, school, cunningham etc) - to be tested dependent on necessity Note GIFA likely to decrease	Start July 2017 Complete by June 2019
	14	Demolish Jardine unit	-	0		Start April 2019 Complete by June 2019
5 Future Provision	15	Construct 170 bed facility in the North Eastern corner of the campus to facilitate future provision.	TBC	0		Start June 2020 complete Dec 2021

CONSTRUCTION
DECANT/TRANSFER
DEMOLITION

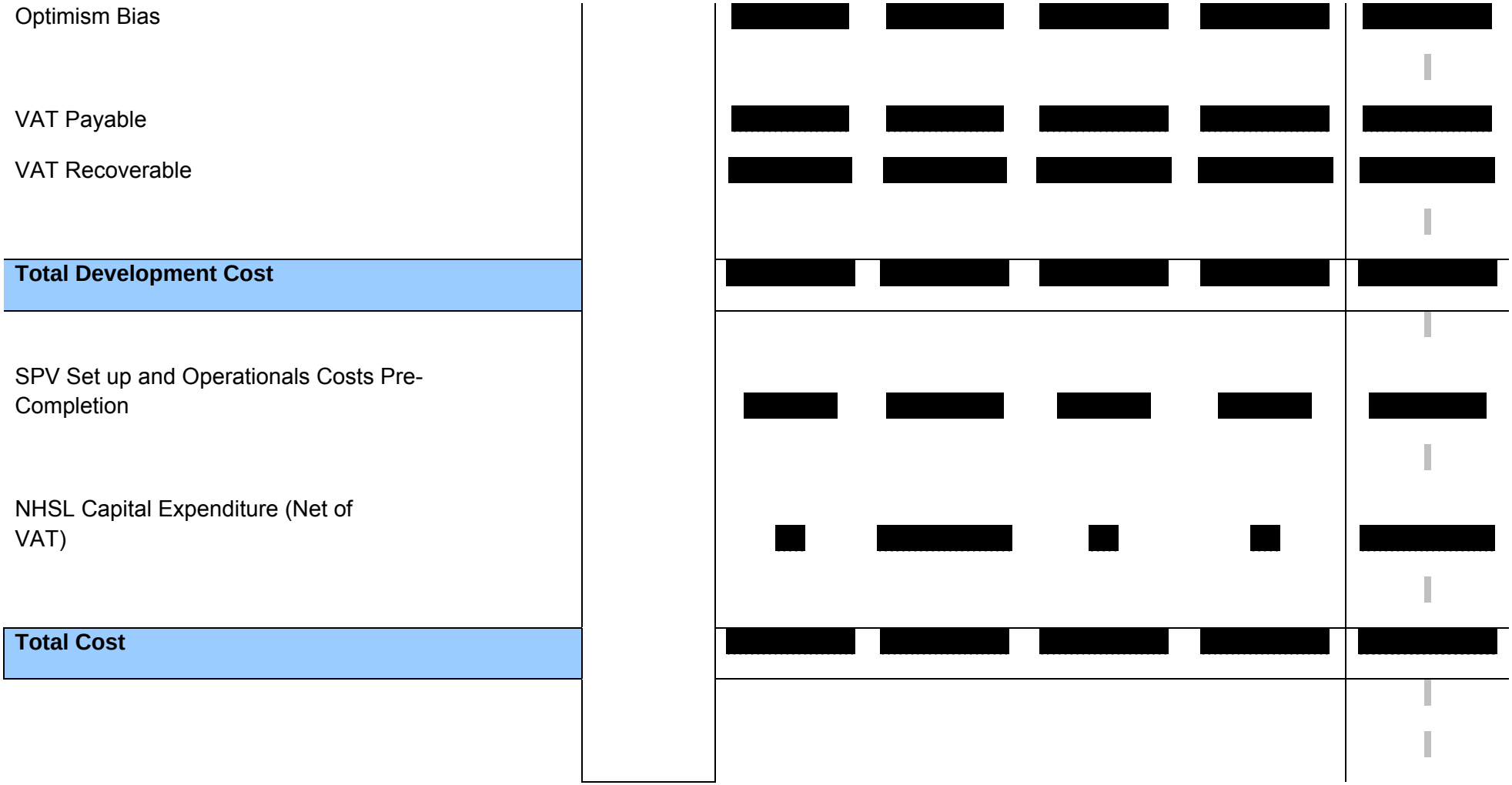
Financial Model

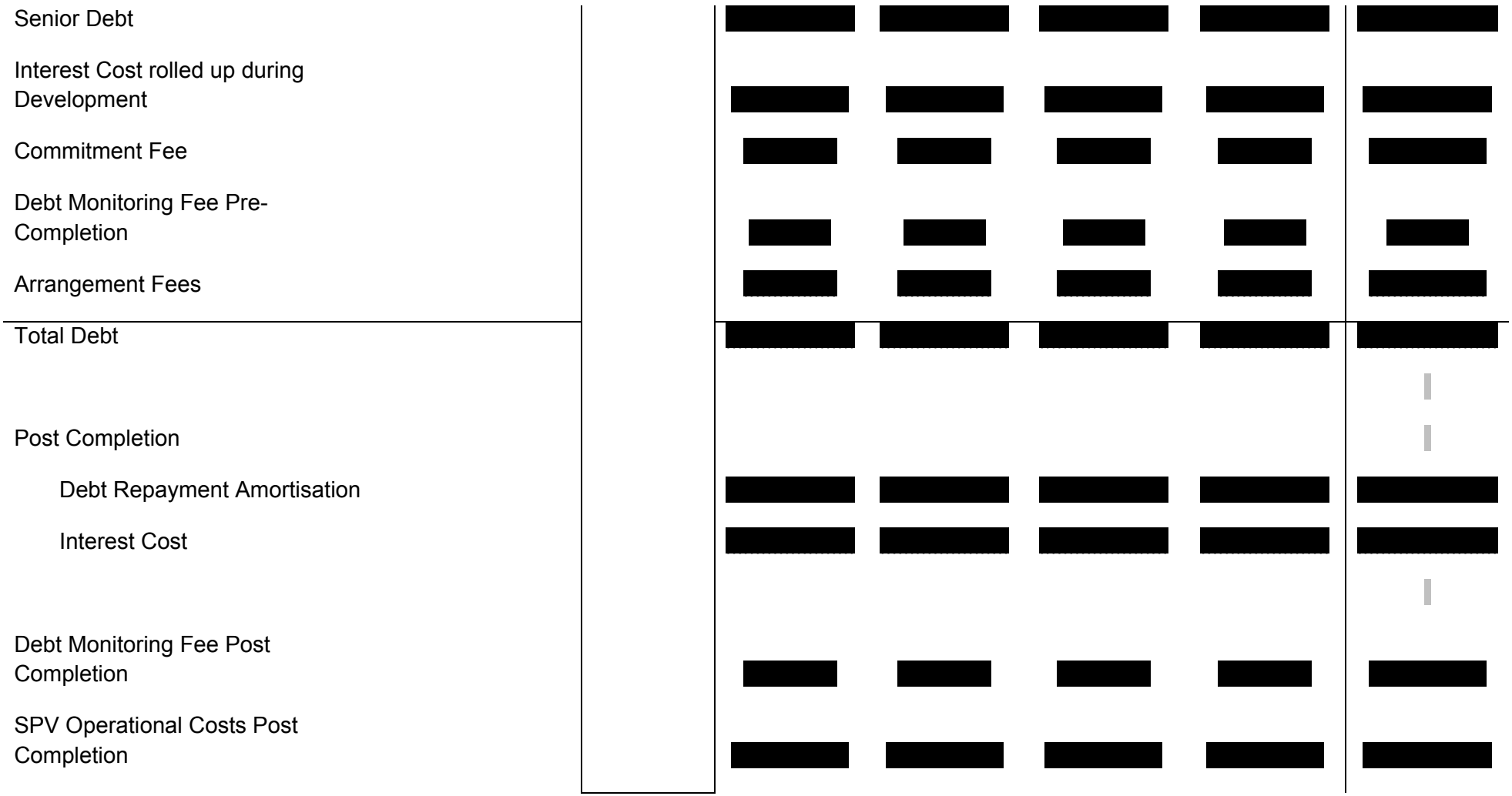
An indicative funding model has been developed applying the optimum phasing approach, see further details below. This model was constructed to assess all project costs including across a standard twenty five year concession period.

The model utilises senior debt terms considered to be a prudent estimate of the current funding market for projects of this nature. All commercial inputs based on current design and briefing requirements as agreed with the Participant, including both capex and opex elements.

Key model inputs are summarised in the table below. Prices are at 1 April 2013 unless otherwise stated.

Summary	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Overall
Construction	Refer to Stage 1 Phase 1 Financial Model	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Demolition / Site Preparation		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Roads		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Landscaping		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Infrastructure		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Total Construction Cost pre-inflation & fees		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Inflation		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Phasing		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Professional Fees		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]


Optimism Bias
VAT Payable
VAT Recoverable
Total Development Cost
SPV Set up and Operationals Costs Pre-Completion
NHSL Capital Expenditure (Net of VAT)
Total Cost


Senior Debt
Interest Cost rolled up during Development
Commitment Fee
Debt Monitoring Fee Pre-Completion
Arrangement Fees
Total Debt
Post Completion
Debt Repayment Amortisation
Interest Cost
Debt Monitoring Fee Post Completion
SPV Operational Costs Post Completion

Funding Cost	
Hard FM Costs (NHSL contributes 100% of the cost)	[redacted]
Lifecycle Costs (NHSL contributes 50% of the cost)	[redacted]
NHSL Contribution (There may be additional contributions re: Mackinnon House)	[redacted]
Total Hard FM & Lifecycle Costs	[redacted]
Subordinated Debt for Development Cost	[redacted]

Subordinated Rolled Up Interest during Development		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Total Subordinated Debt		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Subordinated Interest Paid Post Development on Total Subordinated Debt		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Total Charge		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Average Total Charge as % of Total Development Cost	*8.80%*	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Future Phase Development

Detailed studies were commissioned to examine the most appropriate phasing options for the whole campus in terms of a technical solution. This includes the consideration for service transfers, pre-construction development, construction and commissioning. In order to examine the commercial implications of these options a range of models have been developed, examining differing timescales between the development of phases. The phasing strategy summarised below is considered to demonstrate best value:

- Phase 1 – Mental Health
  - Construction Delivery – Nov-14 Oct -16

- Phase 2 – a)Estates & FM
  b) Learning Disabilities
  - Pre-Development - Jun-14 to Sept-15
  - Construction Delivery – Oct-15 to Oct-17

- Phase 3 – MacKinnon House (clinical support centre)
  - Pre-Development - Mar-15 to May-16
  - Construction Delivery – June-16 to June-19

- Phase 4 – Integrated Rehab
  - Pre-Development - Jan-16 to Jun-17
  - Construction Delivery – July-17 to June-19

REH Campus Masterplan

Appendix 2

NHS Lothian

REH Campus Project

Options Appraisal Report

9 September 2013

Contents

1. Introduction

As indicated in section 3.4 of the OBC, following discussions with SGHSCD it was agreed that the options appraisal for Phase 1 should be limited to evaluation of the 'Do Minimum' and 'New Build' options; this was conducted in August 2013.

The process followed the guidance set out in the Scottish Government's Scottish Capital Investment Manual and was facilitated by Dick Fitzpatrick - REH Reprovision project manager.

The initial options appraisal workshop group comprised two NHS Lothian clinicians, two service user/carer representatives and one NHS Lothian manager. Together they ranked and weighted the benefit criteria and then scored both options.

Several absences meant that attendance at the August option appraisal workshop was significantly smaller than expected. A second workshop was held in September in order to increase the number of participants and thus ensure that the results were robust. This second group also scored both options using the benefit criteria rankings and weightings agreed by the August group.

2. Option Appraisal Workshops

The aim of the workshops was to review, rank and weight the benefit criteria originally identified in the Initial agreement and then score the shortlisted options against those benefit criteria.

2.1 Benefit Criteria

The benefits criteria established in the IA were reviewed and remain valid for the OBC; these were ratified by attendees at the first workshop.

The agreed criteria are given in the table overleaf.

Objectives	Main Benefits Criteria
Clinical effectiveness A clinical environment that supports clinical effectiveness	Clinical Effectiveness • maintains or improves clinical outcomes • provides timely and appropriate services enabling care to be delivered by the right people, in the right place, and at the right time • minimises clinical risk • provides appropriate clinical adjacencies
Health and Wellbeing A physical environment that promotes health and wellbeing	Functional Suitability • provides an environment suitable for the delivery of care and one which improves the morale of patients, staff and visitors provides an environment that promotes safety, privacy and dignity including single en-suite bedrooms for all service users
Accessible Services Easily and safely accessible services	Accessible Services • provides good access to the Hospital's services whilst promoting sustainable travel options • provides appropriate levels of parking for those staff and visitors that need to travel by private car • minimises the need for delivery vehicle traffic within the site
Sustainable Facilities Efficient, green and sustainable facilities	Sustainability • optimises the use of energy, water, and waste management • reduces the carbon footprint of the hospital's services • able to meet current and future demands in activity • able to respond to future local and national service changes
Delivery of Efficient Services Facilities that support the delivery of efficient services	Efficiency • supports the delivery of services through access to required resources • provides for the delivery of appropriate quality standards • there is certainty in securing and preparing a site within a timeframe that allows anticipated delivery as agreed by NHSL Board

	• represents a programme that is affordable • demonstrates value for money
Research and Development An environment that promotes research and development	Research • service arrangements that facilitate engagement with research opportunities • provides comprehensive facilities for student and staff training and development in the field of mental health, including access to training facilities and teaching staff, in keeping with the role of a major regional teaching hospital • provides appropriate research facilities • promotes formal partnership arrangements
Minimises Disruption A programme that minimises disruption to patients	Maintained Service • maintains continued service delivery and quality during programme • minimises disruption to services users, staff and others on site

2.2 Stage 1: Ranking and Weighting the Criteria

The first stage of the option appraisal was to establish and assess the relative importance of the benefit criteria.

This process was split into two stages:

1. Ranking, provides a guide to the relative importance of each benefit criteria

2. Weighting, provides an opportunity to quantify the relative importance of each of the benefit criteria.

2.2.1 Ranking

This was achieved through group discussion of each of the criteria and their key features. The group agreed the order of importance of each and ranked them in that order - starting with the criteria considered the most important. At this stage the exercise was solely concerned with achieving an absolute ranking. Differentiation between the criteria was not made until the weighting exercise.

Final Ranking

Benefit Criteria	Final Rank (Where 1 is the most important)
Clinical Effectiveness	1
Health and Wellbeing	2
Accessible Services	3
Sustainable Facilities	4
Delivery of Efficient Services	5
Research and Development	6
Minimises Disruption to Patients	7

Table 1 Final Ranking of Benefit Criteria

2.2.2 Weighting

Ranking was followed by weighting the benefit criteria. This exercise determined the relative importance of the criteria through group discussion with real time input projected onto a large presentation screen.

Each criterion was weighted against the one ranked above it. The highest ranked criterion was given a score of 100 (highlighted orange in table 3 below). The relative weight of each criterion with respect to the criterion ranked above it is shown in yellow below. The weight for each criterion is calculated using the results of the total ranking. The relative weights and scores are shown in the table below. All numbers in this document are given to 1 decimal place.

Criteria	1V2	2V3	3V4	4V5	5V6	6V7	Weight (%)
Clinical Effectiveness	100						19.3
Health and Wellbeing	95	100					18.4
Accessible Services		85	100				15.6
Sustainable Facilities			85	100			13.3
Delivery of Efficient Services				90	100		11.9
Research and Development					95	100	11.3
Minimises Disruption to Patients						90	10.2

Table 2 Weighting Benefit Criteria

2.2.3 Summary of the Final Ranking and Weights

Criteria	Final Rank	Weight
Clinical Effectiveness	1	19.3%
Health and Wellbeing	2	18.4%
Accessible Services	3	15.6%

Sustainable Facilities	4	13.3%
Delivery of Efficient Services	5	11.9%
Research and Development	6	11.3%
Minimises Disruption to Patients	7	10.2%

Table 3 Rank and Weight Summary

2.3 Stage 2: Scoring the Short Listed Options

The ranked and weighted benefit criteria were then used in the next stage of the process of assessing the benefits of each of the shortlisted options (table 5). This involved an assessment of the potential of each of the options to meet the agreed benefit criteria.

Table 4 – Shortlisted options

Option 1	Do minimum
Option 2	New Build

Attendees had individual scoring sheets. Participants were asked to assess how well each of the options met the benefit criteria previously agreed and apply a score from the table below:

Scoring

Score	Evaluation
10	Could hardly do better
9	Excellent
8	Very Well
7	Well
6	Quite Well
5	Adequate
4	Somewhat Inadequate
3	Badly
2	Very Badly
1	Extremely Badly
0	Could Hardly be Worse

Table 5 Definitions for scoring

3. Results

3.1 Overall Results

Once collected the results were aggregated and averaged. The previously calculated weighting factors were then applied to the scores to provide a total weighted result for each option. The options are ranked below by their overall score.

Summary of Results

Rank	Score	Option
1	811.9	Option 2: New Build
2	330.5	Option 1: Do minimum

Table 6 Summary of results

When the scores were averaged across all participating groups the highest scoring option was clearly Option 2.

3.2 Sensitivity testing

In order to test the robustness of the results of the option appraisal an assessment of the sensitivity of the ranking of the scores to key variables and assumptions was carried out. Table 7 (below) shows the outcome of the scoring exercise by group, by combination, what the outcome would have been if each criterion had an equal weighting and the outcome if the top criterion is excluded. In all cases the top scoring option (highlighted in green) remained the same. This indicates the robustness of the final outcome.

Sensitivity Test	Option 1	Option 2
Overall Scores and Ranking		
Rank	2	1
Baseline Score	330.5	811.9
NHS Lothian Staff		
NHS Lothian Staff total		
Rank	2	1
Scores	358.1	790.5
Clinicians		
Rank	2	1
Scores	337.7	791.2
Managers/Other		
Rank	2	1
Scores	366.9	790.2
People who use the service/carer representatives		
Rank	2	1
Scores	192.6	918.8
All criteria given equal weighting		

Rank	2	1
Scores	338.2	802.6
Exclude scores for top criteria		
Rank	2	1
Scores	345.1	791.9

Table 7 Sensitivity testing

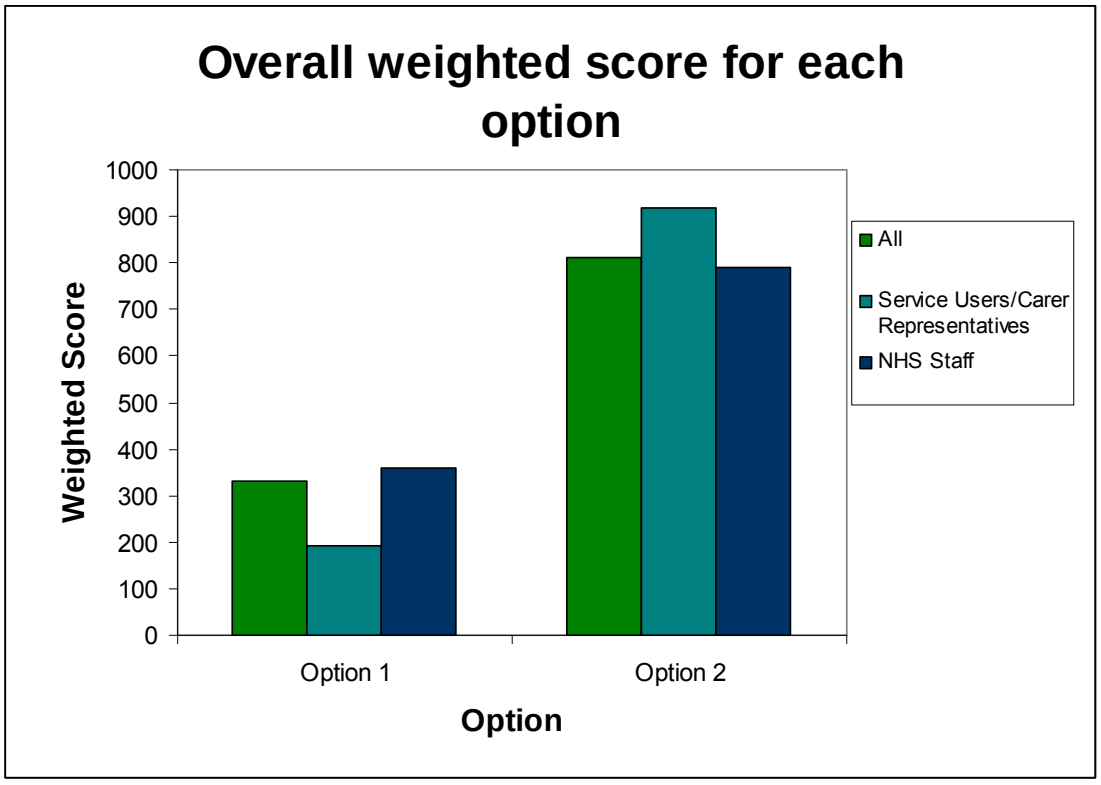


Figure 1 Overall weighted score for each option

Table 7 (sensitivity testing) and Figure 1 (above) show that the total score for each option varied by participant group. Although all groups showed a marked preference for Option 2 Figure 1 shows us that the group with the strongest preference for Option 2 were those who identified as service user/carer representatives. The top scoring option (Option 2) was consistent across all groups participating in the appraisal.

For thoroughness the NHS Staff scores are broken down into scores from Clinicians and Management/Other Staff (Figure 2). Again we see that both groups favour Option 2 – with very little variation in total score for either option between the groups.

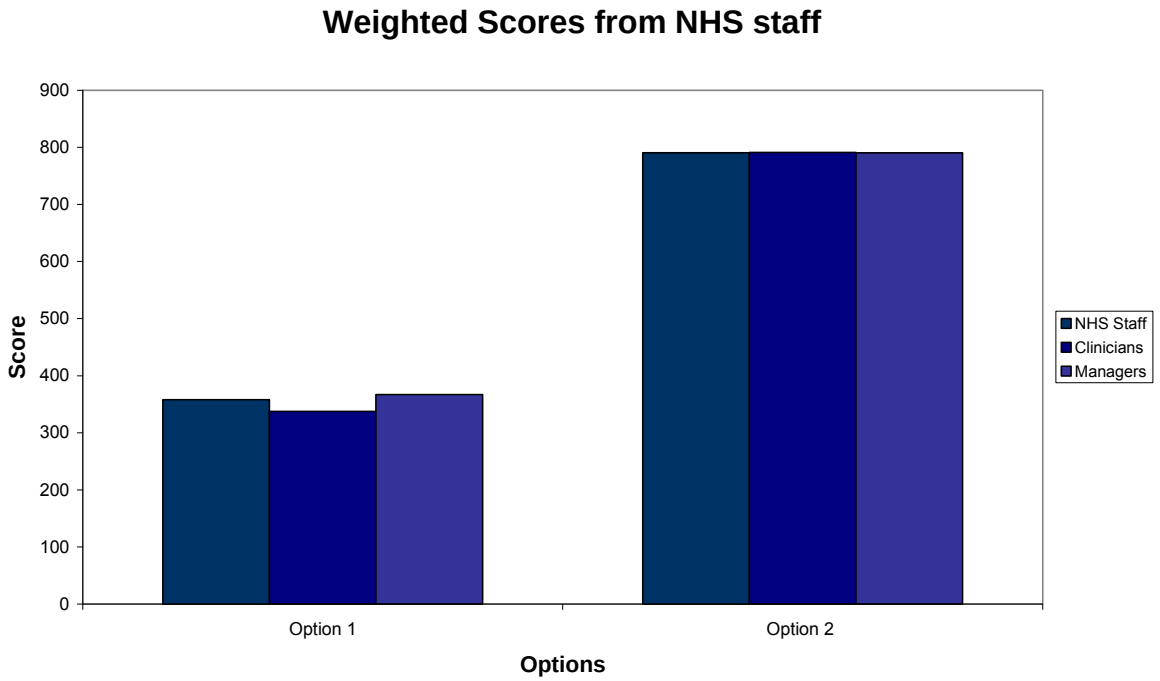


Figure 2 NHS Lothian scoring broken down into scores from Clinicians and Management/Other Staff

3.3 Score Breakdown for NHS Lothian Staff and Public Participants

The tables below break down the weighted score each option was given for each of the benefit criteria. Table 8 does this across all participants, while Tables 9-12 break the scores down by the different groups who attended the options appraisal (e.g. staff at NHS Lothian and members of the public). These broken down scores can be used to understand if different groups have different priorities – for instance if a group has particular concerns about one of the options with respect to a particular benefit criterion.

Weighted scores add together to give the 'Total Score for Each Option'. For each group of participants the option with the highest total score has been highlighted in purple.

The highest scoring option for each benefit criterion is highlighted green. For example in table 8 (all participants) the option with the highest score for being 'Accessible' is Option 2 - with a score of 118.3.

These (green) highlighted scores show that for all benefit criteria Option 2 is most highly scored by all groups – reinforcing the overall result that Option 2 (Part New Build / Part Refurbishment on the REH Campus) is the clear preferred option.

All participants

Benefit	Weight (%)	Option 1	Option 2
Clinical Effectiveness	19.3	58.0	169.0
Health and Wellbeing	18.4	50.5	159.0
Accessible Services	15.6	61.1	118.3
Sustainable Facilities	13.3	33.1	109.4
Delivery of Efficient Services	11.9	38.8	94.5
Research and Development	11.3	49.1	86.0
Minimises Disruption to Patients	10.2	40.0	75.7
Total Score for Each Option		330.5	811.9

Table 8 Weighted benefit scores from all participants

Total NHS Lothian Staff (Clinicians, Managers and Others)

Benefit	Weight (%)	Option 1	Option 2
Clinical Effectiveness	19.3	67.6	166.1
Health and Wellbeing	18.4	58.7	156.0

Accessible Services	15.6	57.7	113.9
Sustainable Facilities	13.3	34.5	107.4
Delivery of Efficient Services	11.9	41.8	91.9
Research and Development	11.3	49.9	82.8
Minimises Disruption to Patients	10.2	48.0	72.4
Total Score for Each Option		358.1	790.5

Table 9 Weighted benefit scores from NHS Staff

NHS Lothian Clinical staff

Benefit	Weight (%)	Option 1	Option 2
Clinical Effectiveness	19.3	77.3	161.0
Health and Wellbeing	18.4	55.1	165.2
Accessible Services	15.6	52.0	98.8
Sustainable Facilities	13.3	26.5	106.1
Delivery of Efficient Services	11.9	43.8	87.5
Research and Development	11.3	49.1	94.5
Minimises Disruption to	10.2	34.0	78.2

Patients			
Total Score for Each Option		337.7	791.2

Table 10 Weighted benefit scores from NHS Lothian Clinical staff

NHS Lothian Manager/Other

Benefit	Weight (%)	Option 1	Option 2
Clinical Effectiveness	19.3	63.5	168.3
Health and Wellbeing	18.4	60.3	152.1
Accessible Services	15.6	60.2	120.3
Sustainable Facilities	13.3	37.9	108.0
Delivery of Efficient Services	11.9	40.9	93.8
Research and Development	11.3	50.2	77.7
Minimises Disruption to Patients	10.2	53.9	70.0
Total Score for Each Option		366.9	790.2

Table 11 Weighted benefit scores from NHS Lothian Managers/Other

Service User/Carer Representatives

Benefit	Weight (%)	Option 1	Option 2
Clinical Effectiveness	19.3	9.7	183.5
Health and Wellbeing	18.4	9.2	174.3
Accessible Services	15.6	78	140.4
Sustainable Facilities	13.3	26.5	119.3
Delivery of Efficient Services	11.9	23.9	107.4
Research and Development	11.3	45.3	102.0
Minimises Disruption to Patients	10.2	0.0	91.8
Total Score for Each Option		192.6	918.8

Table 12 Weighted benefit scores from Service User/Carer representatives

3.4 Overall Option Appraisal Participants

Group	Number
NHS Lothian Clinicians	3
NHS Lothian Managers/Other Staff	7
Service User/ Carer Representatives	2

Table 13

3.5 Conclusions

It is clear from these results that Option 2 is the preferred option overall, for each group of scorers, and for each benefit criterion. Sensitivity checks excluding the scores for the top criteria and giving each benefit criterion equal weight show that the total scores have not

been unduly affected by one weighty issue/benefit criterion. In fact, there is no benefit criterion in which any of the scoring groups felt that Option 1(Do minimum) was superior to Option 2 (Part New Build / Part refurbishment on the REH campus).

Scores did not vary substantially between NHS Lothian staff groups (Figure 2, Table 10 and 11). However there was some variation between NHS Lothian Staff and Service User/Carer representatives. Service User/Carer representatives scored Option 2 more highly than NHS Lothian staff across all benefit criterion – perhaps most notably 'Minimises disruption to patients.

It is quite clear that Option 2 is the preferred option from this non-financial benefits option appraisal.

Appendix 3

Detailed Programme to Completion of Phase 1

Appendix 4

BREEAM Pre-Assessment for Phase 1

WALLACE WHITTLE

Royal Edinburgh Campus Development

BREEAM
New Construction 2011

Healthcare

Pre-Assessment

June 2013

Mechanical, Electrical and Public Health Consulting Engineers
6 Broughton Street Lane, Edinburgh, EH1 3LY
Telephone 0131 524 5800
Facsimile 0131 557 5801
Email: edinburgh@wallacewhittle.com
Web: www.wallacewhittle.com

Pre-Assessment Estimate

Wallace Whittle held an initial BREEAM workshop with the design team on the 25th June 2013 to undertake a BREEAM Pre-Assessment for the project.

Individual credits considered achievable were selected in order to achieve a targeted 'Very Good' BREEAM New Construction 2011 Assessment.

The following credits are mandatory for a 'Very Good' rating and have therefore been included:

BREEAM Issue	BREEAM Rating/ Minimum number of credits
	Very Good
Man 1 – Sustainable Procurement	1
Hea 1 – Visual Comfort	Criterion 1 only
Hea 4 – Water Quality	Criterion 1 only
Ene 2 - Sub-metering of substantial energy uses	1 *(First sub-metering credit)*
Wat 1 - Water consumption	1
Wat 2 - Water monitoring	Criterion 1 only
Mat 3 – Responsible Sourcing	Criterion 3 only
LE 3 – Mitigating ecological impact	1

A final target score of 59.48% a 'Very Good' rating was determined.

This will require the appointment of the following additional consultants to the project:

- BREEAM AP
- Ecologist
- Acoustician
- Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA)

Further Credits were identified as 'under investigation' those along with the percentage score they will achieve are noted within the body of the report.

The results of the Pre-Assessment are included within this report along with details of the credit criteria that the design and procurement must achieve.

Contents

Section 1 Introduction

1.1 General

The proposed Royal Edinburgh Campus development is required to undergo assessment and certification against the BREEAM environmental assessment method. The target requirement for the project is to achieve a 'Very Good' rating.

An initial Pre-Assessment exercise was conducted in June 2013. This report summarises the discussions held and the credits which are being targeted by the team. Credits have been allocated based on the discussion and commitments made by the design team at the workshop.

Analysis of the Pre-Assessment results shows that a BREEAM rating of **Very Good** can be targeted for this project, with an anticipated BREEAM score of **59.48%.**

1.2 BREEAM Categories

The BREEAM New Construction 2011 scheme awards credits in 9 separate sections which relate to the construction, design and procurement decisions made on a project:

- Management – commissioning, site practices, education and training of building users.
- Health and Wellbeing – natural ventilation, daylighting and occupant controls.
- Energy – carbon emissions, heating and lighting control, energy monitoring, use of daylight and provision of shading.
- Transport – car parking provision, cyclist facilities and public transport.
- Water – leak detection, water meters, low flush toilets and grey water use.
- Materials – specification of building material and prohibition of hazardous substances.
- Waste – waste management, waste recycling.
- Land Use and Ecology – existing and enhanced ecological value of the site.

Innovation credits can be achieved by meeting exemplary performance requirements or by making an application to BRE based on a particular building feature, system or process.

1.4 Explanation of Scoring

Each category is weighted differently to reflect the relative significance that it has on the environmental impact of the building as follows:

BREEAM Section	Weighting %	
	New builds, extensions & major refurbishments	Building fit-out only (where applicable to scheme)
Management	12%	13%
Health & Wellbeing	15%	17%
Energy	19%	21%
Transport	8%	9%
Water	6%	7%
Materials	12.5%	14%
Waste	7.5%	8%
Land Use & Ecology	10%	N/A
Pollution	10%	11%

Figure 1: Environmental Weightings

For each BREEAM section the number of credits achieved, as determined by the BREEAM Assessor, is converted into a percentage of the total credits available for the section. This percentage is then multiplied by the section weighting, giving the section score. Each section score is then added together to give the overall BREEAM score (as a percentage).

The BREEAM score then determines the BREEAM rating as described in the table below:

BREEAM Rating	MINIMUM SCORE REQUIRED
Unclassified	<30%
Pass	≥30%
Good	≥45%
Very Good	≥55%
Excellent*	≥70%
Outstanding*	≥85%

* There are additional requirements for achieving a BREEAM Excellent & Outstanding rating.

Figure 2: BREEAM 2011 rating benchmarks

To achieve an 'Excellent' rating the project must;

- Achieve the minimum performance standards as described in Section 1.5 of this report.
- Obtain a BREEAM In Use Certification of Performance within the first 3 years of operation and use.

In addition to the above to achieve an 'Outstanding' rating the project must also:

- Provide material for the production and publication of a case study on the building.

1.5 Minimum Performance

To achieve a BREEAM rating, the minimum percentage score must be achieved, as described in Section 1.4 of this report, and the minimum standards (i.e. number of credits achieved) applicable to that rating level complied with as outlined in the table below:

BREEAM Issue	BREEAM Rating/ Minimum number of credits				
	Pass	Good	Very Good	Excellent	Outstanding
Man 1 – Sustainable Procurement	1	1	1	1	2
Man 2 – Responsible Construction Practices	-	-	-	1	2
Man 4 – Stakeholder Participation	-	-	-	1	1
Hea 1 – Visual Comfort	Criteria 1	Criteria 1	Criteria 1	Criteria 1	Criteria 1
Hea 4 – Water Quality	Criteria 1	Criteria 1	Criteria 1	Criteria 1	Criteria 1
Ene 1 – Reduction of CO_2 Emissions	-	-	-	6	10
Ene 2 - Sub-metering of substantial energy uses	-	-	1	1	1
Ene 4 - Low or zero carbon technologies	-	-	-	1	1
Wat 1 - Water consumption	-	1	1	1	2
Wat 2 - Water Monitoring	-	Criteria 1	Criteria 1	Criteria 1	Criteria 1
Mat 3 – Responsible Sourcing	Criteria 3	Criteria 3	Criteria 3	Criteria 3	Criteria 3
Wst 01- Construction waste management	-	-	-	-	1
Wst 3 – Operational Waste	-	-	-	1	1
Le 3 – Mitigating ecological impact	-	-	1	1	1

Figure 3: Minimum BREEAM Standards

1.7 BREEAM Certification

The project will be assessed and verified at Design stage at which point an interim design certificate will be issued by BRE. Full certification will only be achieved following the Post Construction assessment.

Royal Edinburgh Campus Development June 2013

Section 2 Pre-Assessment

The information below sets out the BREEAM criteria/ Credit requirements and level of scoring in each section.

Ref	Title	New Construction 2011 Criteria	Available	Targeted
Management				
Man 1	Sustainable Procurement	Up to 8 credits available where the following is achieved: 1. Will roles, responsibilities and a training schedule be defined in accordance with BREEAM 2. Will a BREEAM AP be appointed at RIBA stage A/B and performance targets contractually agreed? 3. Will a BREEAM AP be appointed to monitor and report progress during RIBA stage B-E? 4. Will a BREEAM AP be appointed to monitor and report progress during RIBA stage F-L? 5. Will a thermograph survey be conducted and any defects uncovered remedied? 6. Will compliant commissioning of building services be carried out? 7. Will compliant seasonal commissioning of building services be carried out? 8. Will water/energy consumption data be recorded and aftercare support is provided for 12 months? **** BREEAM AP to be appointed, thermographic survey to included ****	8 *(+1 Innovation)*	8 + *1 Innovation*
Man 2	Responsible Construction Practices	Up to 2 credits available where the following is achieved: 1. Will the principal contractor be required to comply with the Considerate Constructor's Scheme? 2. What is the target performance level set for the site?	2 *(+1 Innovation)*	2

Ref	Title	New Construction 2011 Criteria	Available	Targeted
Man 3	Construction Site Impacts	Up to 5 credits available where the following is achieved: 1. Will site energy consumption be metered / monitored? 2. Will site water consumption be metered / monitored? 3. Will the transport of construction materials and waste to / from site be measured / monitored? 4. Will timber be sourced accordance with the Government's Timber Procurement Policy? 5. Will the principal contractor operate a compliant Environmental Management System AND will the principal contractor adopt best practice pollution prevention policies and procedures?	5	5
Man 4	Stakeholder Participation	Up to 4 credits available where the following is achieved: 1. Will an appropriate level of consultation activities be undertaken? 2. Will an access statement be developed and appropriate building user facilities provided? 3. Will building user guides and relevant user information be provided? 4. Will a post occupancy evaluation assessment be undertaken and information disseminated?	4	4
Man 5	Life cycle cost and service life planning	Up to 3 credits available where the following is achieved: 1. Will a feasibility stage Life Cycle Cost (LCC) analysis be commissioned and completed? 2. Will a strategic and system level LCC be commissioned and completed? 3. Will a technical design LCC be commissioned and completed? **** 3 credits under investigation, this would add an additional 0.55% to the overall score. ****	3	2

Note: ~~Strikethrough~~ text indicates this portion of the credit is not targeted.

Ref	Title	New Construction 2011 Criteria	Available	Targeted
Health & Wellbeing				
Hea 1	Visual Comfort	Up to 6 credits available where the following is achieved: 1. All fluorescent lamps are fitted with high frequency ballasts 2. Will all relevant building areas be designed to achieve the appropriate daylight factor(s) 3. ~~Will the design provide adequate glare control and view out for building users?~~ 4. Will internal / external lighting be specified in accordance with the relevant CIBSE / British Standards? 5. An art coordinator has been appointed for the specific project OR an art policy and an art strategy have been prepared for the development at the feasibility/ design brief stage. **** Item 3, glare control and view out is under investigation this would add an additional 1.70% to score ****	6 (1 mandatory)	3
Hea 2	Indoor Air Quality	Up to 4 credits available where the following is achieved: 1. ~~Will an air quality plan be produced?~~ 2. ~~Shall the building be designed to minimise air pollution?~~ 3. ~~Will the rules set products be specified to meet the VOC testing and emission levels required?~~ 4. ~~Will formaldehyde and total VOC levels be measured post construction?~~ 5. Will the building be designed to, or have the potential to provide, natural ventilation? **** Item 1 the Air Quality plan (AQP) is under investigation along with items 2 + 3, these elements would add 1.77% to score, please note the AQP is mandatory to achieve element 2 + 3. ****	4	1
Hea 3	Thermal Comfort	Up to 2 credits available where the following is achieved: 1. Will thermal modelling of the design be carried out? 2. Will the modelling inform the development of a thermal zoning and control strategy?	2	2

Ref	Title	New Construction 2011 Criteria	Available	Targeted
Hea 4	Water Quality	One credit available where the following is achieved: Will all water systems be designed to comply with the relevant HSE Approved Code of Practice and Guidance? AND ~~Where humidification is to be provided, will a failsafe humidification system be specified?~~ AND Will a wholesome supply of accessible, clean and fresh drinking water be supplied for building users?	1	1
Hea 5	Acoustic Performance	Up to two credits available where the following is achieved: 1. Will a suitably qualified acoustician be appointed to provide appropriate design advice? 2. Will the building meet the relevant acoustic performance standards and testing requirements? **"Acoustic Consultant to be appointed"**	2	2
Hea 6	Safety and Security	Two credits are available where the following is achieved: 1. Where external site areas are present, will safe access be designed for pedestrians and cyclists? 2. Will a suitably qualified security consultant be appointed and security considerations accounted for? **"Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA) to be consulted"**	2	2

Note: ~~Strikethrough~~ text indicates this portion of the credit is not targeted.

<table>
<tr><th>Ref</th><th>Title</th><th>New Construction 2011 Criteria</th><th>Available</th><th>Targeted</th></tr>
<tr><td colspan="5">Energy</td></tr>
<tr><td>Ene 1</td><td>Reduction of CO_2 Emissions</td><td>Up to 15 credits are available for the reduction of carbon dioxide emissions:
<table>
<tr><th>BREEAM credits</th><th>EPRNC</th><th>Minimum requirements</th></tr>
<tr><td>1</td><td>0.06</td><td rowspan="5">Requires a performance improvement (improvement) better than the target emission rate (TER) required for building regulations approval.</td></tr>
<tr><td>2</td><td>0.15</td></tr>
<tr><td>3</td><td>0.26</td></tr>
<tr><td>4</td><td>0.36</td></tr>
<tr><td>5</td><td>0.45</td></tr>
<tr><td>6</td><td>0.55</td><td rowspan="5">BREEAM excellent level (6 credits), requires a CO_2 parameter for EPCs calculations of 0.22. This is equivalent to a 25 % improvement on the TER.</td></tr>
<tr><td>7</td><td>0.60</td></tr>
<tr><td>8</td><td>0.63</td></tr>
<tr><td>9</td><td>0.67</td></tr>
<tr><td>10</td><td>0.72</td></tr>
<tr><td>11</td><td>0.75</td><td rowspan="5">BREEAM outstanding level (10 credits), requires a CO_2 parameter for EPC_{ss} calculations of 0.0. This is equivalent to 40 % improvement on the TER.
zero net CO_2 emissions</td></tr>
<tr><td>12</td><td>0.79</td></tr>
<tr><td>13</td><td>0.80</td></tr>
<tr><td>14</td><td>0.87</td></tr>
<tr><td>15</td><td>0.9</td></tr>
</table>
** 6 credits are under investigation this would add 2.11% to score and meet the minimum standards for excellent. **</td><td>15
(+1 innovation)</td><td>3</td></tr>
<tr><td>Ene 2</td><td>Energy Monitoring</td><td>Up to 2 credits are available for the inclusion of BMS and or sub-metering:
1. Will a BMS or sub-meters be specified to monitor energy use from major building services systems?
2. Will a BMS or sub-meters be specified to monitor energy use by tenant / building function areas?</td><td>2</td><td>2</td></tr>
<tr><td>Ene 3</td><td>External Lighting</td><td>Will external light fittings and controls be specified in accordance with BREEAM criteria?</td><td>1</td><td>1</td></tr>
<tr><td>Ene 4</td><td>Low and Zero Carbon Technology</td><td>Up to 5 credits available for the inclusion of a Low / Zero carbon technology.
1. What will the intended scope of the feasibility study?
2. Target percentage net reduction in whole life cycle CO_2 emissions
3. Please confirm the intended energy source of the Low and/or zero carbon system?
<s>4. Can free cooling be achieved for the building?</s>
** 3 credits under investigation which would require scope of study to include whole life analysis this would add 0.7% to score **</td><td>5
(+1 innovation)</td><td>2</td></tr>
</table>

Ref	Title	New Construction 2011 Criteria	Available	Targeted
Ene 6	Energy Efficient Transportation Systems	Up to two credits available for efficient lifts: 1. Will a transportation system be carried out to determine the optimum number and size of lifts? 2. Will three energy-efficient features offering the greatest potential energy savings be part of the system?	2	2
Ene 8	Energy Efficient Equipment	Two credits are available for the specification of efficient equipment to reduce unregulated energy use. Small power, plug in equipment for: 1. Office Equipment 2. Domestic scale white goods and other small powered equipment 3. Supplementary electric heating	2	2

Note: ~~Strikethrough~~ text indicates this portion of the credit is not targeted.

Ref	Title	New Construction 2011 Criteria	Available	Targeted
Transport				
Tra 1	Public Transport Accessibility	Up to five credits are available for close proximity to good public transport networks: 1. What is the Building's Indicative Accessibility Index? **"Assumed accessibility index 4. Three credits under investigation, this would add 0.8% to score."**	5	2
Tra 2	Proximity to Amenities	One credit available where the building is located in close proximity of and accessible to applicable amenities?	1	0
Tra 3	Cyclist Facilities	Up to two credits are available for the provision of dedicated cyclist facilities: 1. Will cycle storage spaces be provided? 2. Will cyclist facilities be provided?	2	2
Tra 4	Maximum Car Parking Capacity	Two credits are available for limiting the available car parking spaces on site: 1. One credit is available where there is 1 parking space per 5 building users. 2. Two credits are available where there is 1 parking space per 6 building users.	2	1
Tra 5	Travel Plan	One credit available where a transport plan based on site specific travel survey/ assessment is developed? **"Site Specific Travel Plan to be developed"**	1	1

Note: ~~Strikethrough~~ text indicates this portion of the credit is not targeted.

Ref	Title	New Construction 2011 Criteria	Available	Targeted
Water				
Wat 1	Water Consumption	Up to five credits are available for water fittings and recycling systems that reduce the water consumption for the building: % Improvement / No. of BREEAM credits 12.5 / 1 25 / 2 40 / 3 50 / 4 65 / 5	5 (subject to mandatory)	1
Wat 2	Water Monitoring	One credit can be awarded where the following is met: 1. Will there be a water meter on the mains water supply to the building(s)? 2. Will metering / monitoring equipment be specified on the water supply to any relevant plant/building areas? 3. Will all specified water meters have a pulsed output? 4. If the site / building has an existing BMS connection, will all pulsed meters be connected to the BMS?	1	1
Wat 3	Water Leak Detection & Prevention	Up to two credits are available for leak detection systems: 1. Will a mains leak detection system be installed on the building's mains water supply? 2. Will flow control devices be installed in each sanitary ware/facility?	2	1
Wat 4	Water Efficient Equipment	One credit available where water efficient irrigation methods are adopted. (Assumes no stumbed irrigation)	1	1

Note: ~~Strikethrough~~ text indicates this portion of the credit is not targeted.

Ref	Title	New Construction 2011 Criteria	Available	Targeted
Materials				
Mat 1	Life Cycle Impacts	Up to six credits are available for construction materials with a low environmental impact over the full life cycle of the building (Green Guide ratings).	6 (all mandatory)	3
Mat 2	Hard Landscaping and Boundary Protection	One credit is available if ≥80 % of all external hard landscaping and boundary protection achieve a Green Guide A or A+ rating.	1	0
Mat 3	Responsible Sourcing	Up to three credits are available for building elements to demonstrate they have been responsibly resourced, with appropriate Environmental Management Certification.	3 (all mandatory)	1
Mat 4	Insulation	Up to two credits are available where the following is provided: 1. Has the building targeted an insulating index of 2 or more? 2. Will the building's insulating materials be responsibly sourced?	2	2
Mat 5	Designing for Robustness	One credit is available where suitable durability / protection measures be specified and installed to vulnerable areas of the building.	1	1

Note: ~~Strikethrough~~ text indicates this portion of the credit is not targeted.

Ref	Title	New Construction 2011 Criteria	Available	Targeted
Waste				
Wst 1	Construction Waste Management	Up to four credits are available for a compliant site Waste Management Plan (SWMP): 1. Will a compliant SWMP be produced? 2. ~~Will a compliant pre-demolition audit be undertaken?~~ 3. What level of Non-hazardous construction waste? 4. What level of Non-hazardous non-demolition construction waste is diverted from landfill? 5. What level of Non-hazardous demolition waste diverted from landfill?	4 (All mandatory)	2
Wst 2	Recycled Aggregates	One credit is available for the use of recycled and secondary aggregates in construction. (>25% of total high grade aggregates).	1 (All mandatory)	0
Wst 3	Operational Waste	Facilities for the storage of operational recyclable waste volumes provided. One credit is available for the provision of dedicated storage facilities for operation waste streams. If relevant, will a vessel for composting suitable organic waste be specified/installed?	1	1

Note: ~~Strikethrough~~ text indicates this portion of the credit is not targeted.

Ref	Title	New Construction 2011 Criteria	Available	Targeted
Land Use & Ecology				
LE1	Site Selection	Two credits are available where the following is achieved: 1. Will at least 75 % of the proposed development's footprint be located on previously developed land? 2. Is the site deemed to be significantly contaminated?	2	0
LE2	Ecological Value of Site and Protection of Ecological Features	One credit available where the following is achieved: 1. Can the land within the construction zone be defined as 'land of low ecological value'? 2. Will all features of ecological value surrounding the construction zone/site boundary be protected?	1	0
LE3	Mitigating Ecological Impact	Two credits are available for increasing the ecological value as a result of the sites development. **"Small negative change assumed "**	2	1
LE4	Enhancing Site Ecology	Up to three credits are available where the following is met: 1. Will a suitably qualified ecologist be appointed to report on enhancing and protecting site ecology? 2. Will the suitably qualified ecologist's general recommendations be implemented? 3. Will the improvement in ecological value increase as targeted as a result of the enhancement actions?	3	1
LE5	Long Term Impact on Biodiversity	Up to two credits are available where the following is met: 1. Will the building meet BREEAM's mandatory criteria for this BREEAM issue? 2. Will a Biodiversity Champion be appointed to monitor / minimise the impacts of sites activities on biodiversity? 3. Will the contractor provide training for the site workforce on how to protect ecology during the project? 4. Will the contractor record actions to protect biodiversity and monitor their effectiveness during construction? 5. Will a new ecological valuable habitat, appropriate to the local area, be created? 6. Where flora/fauna habitats exist on site, will the contractor programmer site works to minimise disturbance?	2	2

Note: ~~Strikethrough~~ text indicates this portion of the credit is not targeted.

Ref	Title	New Construction 2011 Criteria	Available	Targeted
Pollution				
Pol 1	Impact of Refrigerants	Up to three credits are available where the following is achieved: 1. Will refrigerant containing system be installed in the assessed building? 2. Is the Global Warming Potential of the specified refrigerant(s) likely to be 10 or less? 3. What is the tenant ranges Direct Effect Life Cycle CO_2eq. emissions for the system? 4. Will a refrigerant leak detection and containment system be specified/installed?	3	0
Pol 2	NO_x Emissions	Up to three credits are available where low NO_x space heating / cooling systems have been specified. (Assumes 70mg/kWh)	3	2
Pol 3	Surface Water Run Off	Up to 5 credits are available where the surface water run-off of the site is restricted: 1. What is the actual/ likely annual probability of flooding for the assessed site? 2. Will a Flood Risk Assessment be undertaken and ground level of the building / access meet BREEAM criteria? 3. Will the site meeting meet the BREEAM criteria for peak rate surface water run-off? 4. Will the site meet the criteria for surface water run-off volume, attenuation and/or limiting discharge? 5. Will the site be designed to minimise watercourse pollution in accordance with the BREEAM criteria?	5	5
Pol 4	Reduction of Night Time Pollution	One credit is available where the external lighting is designed to reduce light pollution.	1	1
Pol 5	Noise Attenuation	One credit is available where the following is achieved: 1. Will there be, or is there noise-sensitive areas/buildings within 800m radius of the development? 2. Will a noise impact assessment be completed and, if applicable, noise attenuation measures specified?	1	1

Note: ~~Strikethrough~~ text indicates this portion of the credit is not targeted.

Section 3 "Very Good" Summary

The results of the pre-assessment indicate a predicted BREEAM score for The Royal Edinburgh campus development of 69.46% a "Very Good" Rating.

Overall Indicative Building Performance

Building name	Royal Edinburgh Campus
Indicative building score (%)	69.46%
Indicative BREEAM rating	Pre-Assessment result indicates potential for BREEAM Very Good rating
Indicative minimum standards level achieved	Pre-Assessment result indicates Full minimum standards for Very Good level

If all the credits under investigation are included, the potential score can increase to 67.17% and meet the minimum standards for 'Excellent' however the overall score would need to increase to over 70% to award an 'Excellent' rated certification.

Appendix 5

Risk Register