

SCOTTISH HOSPITALS INQUIRY

Hearing Commencing 9 May 2022

Bundle 3 - Governance

Volume 2 (of 3)

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1.0 BACKGROUND

On the 17th November 2010 John Swinney MSP, the Cabinet Secretary for Finance and Sustainable Growth announced, as part of the draft budget for 2011-12, that faced with significantly reduced capital budgets the Scottish Government would take forward a new affordable pipeline of revenue financed investment. The Royal Sick Children's Hospital and Department of Clinical Neurosciences in Edinburgh were specifically identified as projects which should proceed on this basis.

As a consequence of the above statement NHS Lothian instructed Davis Langdon to issue a Compensation Event notification to the Principal Supply Chain Partner (BAM) asking them to bring to a conclusion the works to design and agree a Target Price for the provision of a stand alone Children's Hospital in car park B of the Little France site (RIE).

Of significant interest to this project was the cabinet secretary's statement that the Government would support a £250m provision of revenue funded construction for the Royal Sick Children's Hospital **and** Department of Clinical Neurosciences. Earlier option appraisals had identified that this was best provided, both from a financial and clinical perspective, as a combined facility. This option however, while meeting NHS Lothian approval, was not taken forward to detailed design & procurement due to lack of available capital funding from the Government.

2.0 MOVING FORWARD

It was acknowledged by all interested parties that it was in the best interest of the project to act immediately to identify an appropriate way forward and after discussion it was agreed that the following exercises should take place.

- 1) Revisit the earlier Option Appraisal exercise and establish, given the considerable amount of work that has been undertaken over the last 18 months, if the combined RHSC/DCN facility remains the Board's preferred option.
- 2) Carry out a Feasibility Study to prove the clinical and physical viability of combining the two facilities on the Little France site.
- 3) Bam and Thomson Gray to prepare a joint Feasibility Cost Plan to assist in the process of proving affordability.

Given the short timescales available to conclude this work and in an effort to minimise delay it was agreed that these activities should be commenced in parallel.

The Option Appraisal exercise was undertaken on the 21st of December using broadly the same individuals as had participated in the previous exercise in July 2009 and using the same assessment criteria.

The Feasibility Report was commenced simultaneously with only the combined option being progressed in detail, on the assumption that this would remain the preferred option.

The Cost plan exercise was progressed using, wherever possible, the Market Tested information resulting from the recent procurement works on the stand alone RHSC scheme gathered by BAM and interrogated by Thomson Gray.

Given the short timescales no attempt has been made to draw a conclusion from the outputs of the 3 exercises and this report merely collates the information and presents it to NHS Lothian for consideration.

3.0 OPTION APPRAISAL EXERCISE

A full Site Option Appraisal Exercise was carried out to consider the most appropriate method of providing the DCN facility within the Little France Site.

The full report is included as appendix 1 to this document.

The Results were as follows:

		Capital Exposure	Adjusted	Rating
OPTION 1 Build DCN as 'extension' to Ward Arc	Option 1	94,600,000	91,440,360	2
OPTION 2 Combined DCN and RHSC (Plot 1, Car Park B)	Option 2	61,100,000	56,700,800	1
OPTION 3 Create fully embedded solution within RIE	Option 3	106,600,000	119,509,260	3

It is important to recognise that the above numbers are not a revised Capital Cost and should only be used as a scoring mechanism to arrive at the preferred option.

4.0 FEASIBILITY REPORT

The full Feasibility Report is included as appendix 2 to this report.

The purpose of the report is to test the feasibility of combining the proposed Royal Hospital for Sick Children and the Department for Clinical Neurosciences (DCN), on the existing development site known as car park B.

The feasibility study was instructed by NHS Lothian on 1st December 2010 and has been prepared in preparation for submission on the 24th December 2010. During the early stages of design development in 2009, the project included a combined RHSC/DCN facility; however since the omission of the DCN in December 2009 the design of the RHSC has developed in such a way so as to make the re-introduction of the DCN more complex. The inclusion of a stand-alone energy centre and service yard, more onerous parking & drop-off requirements and a rooftop helipad means that we are unable to simply look back at where we were 12 months ago.

In order to provide a high level response to the initial instruction the design team have sought to test the simple question – ‘can the existing site for the RHSC accommodate a combined RHSC/DCN facility with a stand-alone energy centre and FM service yard’?

This response is based on using what we already know about the site constraints and clinical adjacencies. The diagrams included in the appendix suggest a building form which is loosely based on our current approach to the RHSC with a similar footprint, clinical adjacencies and desire to take account of the height restrictions set by City of Edinburgh Council.

The separate reports from each design discipline summarise where the larger combined scheme may differ from the current proposal, highlighting key issues, challenges and opportunities rather than going into detail or offering definitive solutions.

In response to the original instruction to test the feasibility of combining the RHSC and DCN on the existing site, and incorporating a stand-alone energy centre, FM service yard, additional proximity parking and a helipad, this report suggests that this can all be achieved. It is important that the issues raised in this feasibility report are explored further through a more comprehensive option appraisal study involving detailed consultation with internal and external stakeholders. With such a significant change to the brief it will be important for this further study to be as detailed and as comprehensive as possible and therefore we encourage NHS Lothian to work with the design team to explore these ideas as soon as possible.

5.0 FEASIBILITY COST ESTIMATE

Summary of Overall Costs including Enabling Works and Potential Town planning Requirements / Conditions

	Cost £
Combined RHSC / DCN Building (As detailed Feasibility Cost Estimate Appended)	171,998,723
Other Potential Associated Works	
RIE Clinical Enabling Works	
• Laboratory Services	1,260,000
• Pharmacy Stores	480,000
• Aseptic Suite	400,000
RIE External Enabling Works	
• TAWO 142 (phase 1A & 1B) - Removal and diversion of existing services from Car Park B and extension of site boundary to accommodate RHSC / DCN works	2,078,000
• TAWO (phase 2A) - Revised road infrastructure work	4,900,000
• TAWO (phase 2B) - VIE relocation	1,200,000
Potential Town planning Requirements / Conditions	
• Landscaping works between RHSC / DCN building and RIE / Chancellor's building	1,846,000
• Form cycle path link from existing footway	153,000
• Way finding enhancements for RIE site	180,000
Flood protection enhancement works	2,000,000
Alterations to exiting storm water sewer	717,000
TOTAL	£187,212,723

The Above Feasibility Cost Estimate, which is included in full as Appendix 3, has been prepared by Thomson Gray in conjunction with BAM Construction. This estimate has been priced out on the principles of the market testing obtained for the stand alone RHSC project wherever possible, whilst recognising changes in building gross internal floor area, footprint area, external wall area, stair and lifts numbers, etc.

This Cost Estimate has been prepared on the assumption of a construction start date in September 2011 with completion being in March 2014. We highlight that the RICS Building Cost Information Services indices forecast an inflationary factor over this period of approximately 3.5% per annum (which we have used in our Cost Estimate calculation). Should the September 2011 start of construction date not be achieved then the BCIS indices indicates a year slippage in programme is likely to incur approaching a 5% inflation level. However it is also important to note that these are forecasted figures and, in our opinion, should programme slippage occur then a high potential exists for inflationary levels to increase beyond the current published forecast as the construction market place is likely to pick up and come out of recession.

APPENDIX 1

OPTION APPRAISAL EXERCISE

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1.0 BACKGROUND

Following the Cabinet Ministers decision to use a Non Profit Distributing Model to procure the Royal Sick Children's Hospital and Department of Clinical Neurosciences it has again become possible to consider combining the two facilities into one building. This option, while meeting NHS Lothian approval in 2009, had been dropped due to lack of available capital funding from the Scottish Government.

Although this process had already been carried out in July of 2009 it was felt appropriate to revisit this exercise taking on board the knowledge that had been gained over the last 18 months.

2.0 THE TEAM

The team being asked to consider this appraisal comprised:

Iain Graham	NHSL
Brian Currie	NHSL
James Steers	NHSL
Neil McLennan	NHSL
Fiona Halcrow	NHSL
Sue Loyd	NHSL
Ron Thomson	Thomson Gray
James Gibson	Thomson Gray
Kenneth Fraser	Davis Langdon
Richard Park	Davis Langdon

3.0 THE OPTION APPRAISAL EXERCISE

Step 1

Davis Langdon reviewed the 5 options previously considered and concluded that the two separated options (Option 1 & Option 3) were no longer appropriate given area restrictions. The remaining 3 options were considered with respect to:

- Clinical Adjacencies
- Physical constraints
- Service Disruption
- Capital Cost

and the following 3 options were scored.

Option 1: Build DCN as an 'extension' to the ward arc (Plot 2) with balance of space from within the existing RIE.

Option 2: Build DCN and RHSC as a combined building (Plot 1 Car Park B)

Option 3: Create accommodation in existing RIE by relocating other services

As in the previous exercise no attempt was made to consider the "life cycle" or "cost in use" benefits of the 3 options.

Step 2

The team's cost advisers were asked to prepare a best estimate of the capital cost of the options.

The estimates were as follows:

Option 1	£94,600,000
Option 2	£61,100,000
Option 3	£106,600,000

Step 3

The team reviewed the previous Pros & Cons of each of the 3 options and also considered any new issues. This is as presented in appendix 2 to this report.

Step 4

The team reviewed each of the identified risks/benefits and allocated them to one of 5 categories with associated weightings

	Description	Weighting %
1	Clinical adjacencies	35
2	Disruption	35
3	Programme	13
4	Deliverability	10
5	Existing PFI Provider	7
		100

Step 5

The last exercise was to consider the relative rating of each of the identified pros and cons giving them each a rating of 3%, 4% or 5%. This was converted to a score either –ve if the risks were pros or +ve if the risks were cons. This was added to the capital cost to give a revised score.

It is important to recognise that this does not produce a revised capital cost but should only be used as a scoring mechanism to arrive at the preferred option.

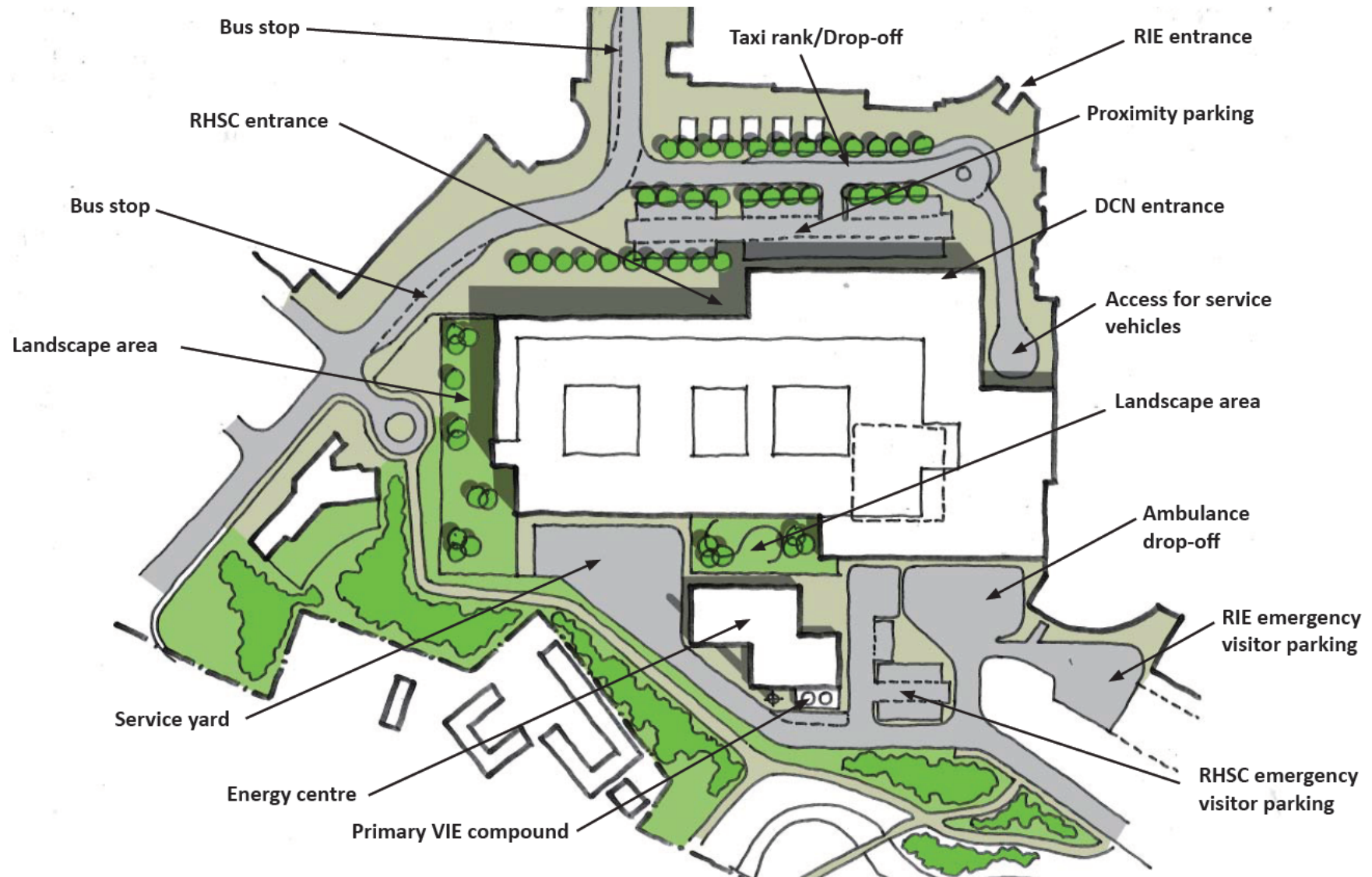
This is as presented in appendix 2 to this report.

RESULTS

		Grouped Adjusted for Pros / Cons									
		Capital Exposure	1 Clinical adjacencies	2 Disruption	3 Programme	4 Deliverability	5 Existing PFI Provider	Total	Adjusted		Rating
OPTION 1 (Previously 2) Build DCN as 'extension' to Ward Arc	Option 1	94,600,000	-8,939,700	4,966,500	614,900		198,660	-3,159,640	91,440,360	-3%	2
OPTION 2 (Previously 4) Combined DCN and RHSC (Plot 1, Car Park B)	Option 2	61,100,000	-3,207,750	-1,069,250	-397,150	488,800	-213,850	-4,399,200	56,700,800	-8%	1
OPTION 3 (Previously 5) Create fully embedded solution within RIE	Option 3	106,600,000	3,357,900	9,327,500	692,900	-319,800	-149,240	12,909,260	119,509,260	11%	3

APPENDIX 1

Site Plan



APPENDIX 2

Option Appraisal Matrix

APPENDIX 2

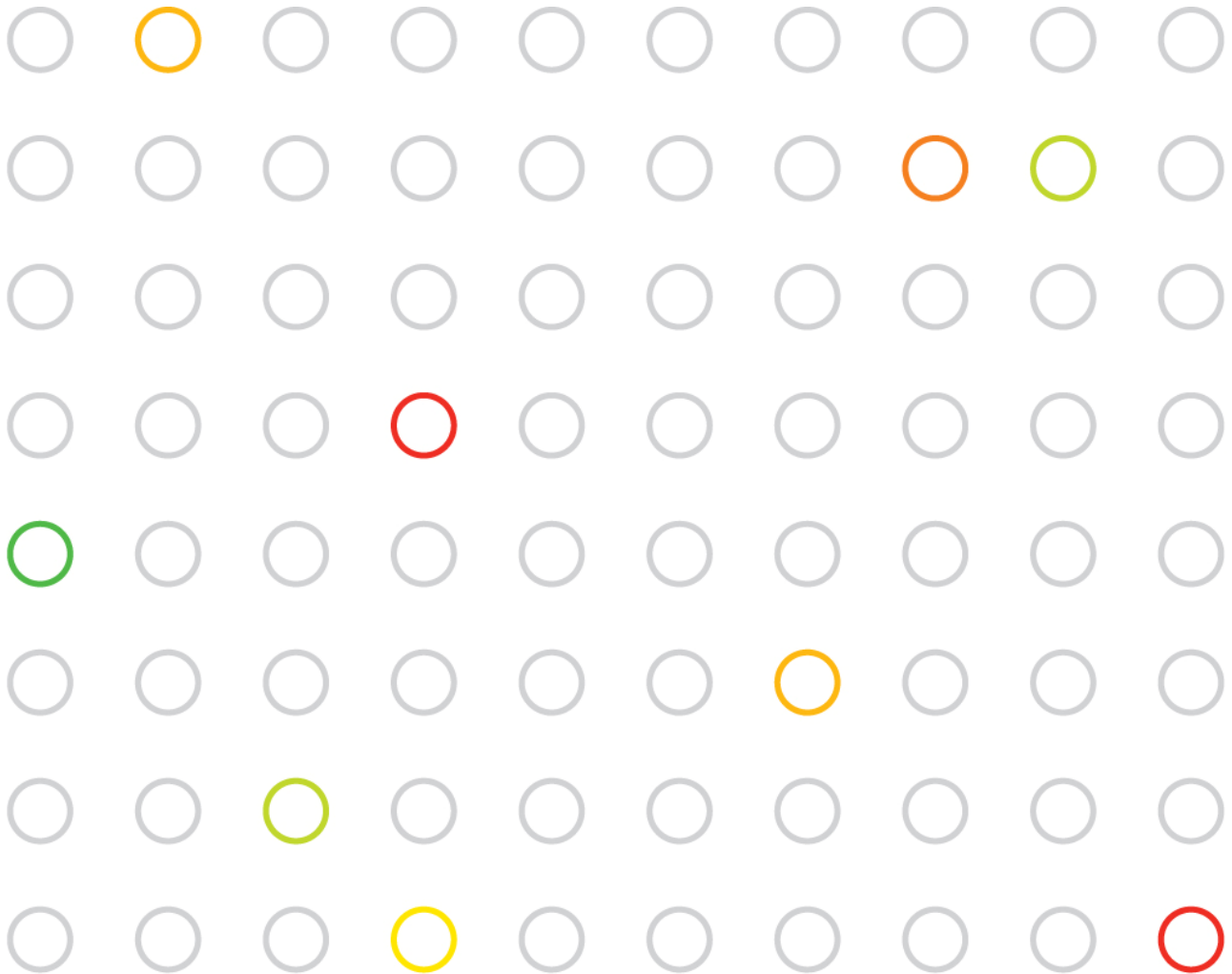
Option Appraisal							Notes
No	Risk Description	Consequence	Weighting	Rating 3%,4%,5%	Nominal Exposure		
	OPTION 3 (Previously 5) Create fully embedded solution within RIE				106,600,000	119,509,260	50m for decant of offices & Labs
	PROS						
1	Effective utilisation of space within RIE. Maximise clinical usage.	Clinical adjacencies	3.50	4.0	-1,492,400		
2	May ease negotiation with Consort	Existing PFI Provider	0.70	5.0	-373,100		
3	No procurement challenge. Eased contractual agreement	Deliverability	1.00	3.0	-319,800		
	CONS						
1	No current business plan to re-provide displaced services (including combined theatres)	Disruption	3.50	5.0	1,865,500		
2	Significant decant required	Disruption	3.50	5.0	1,865,500		
3	Major disruption to clinical activity within RIE	Disruption	3.50	5.0	1,865,500		
4	Fragmentation of clinical adjacencies RIE	Clinical adjacencies	3.50	4.0	1,492,400		
5	Consort interface (protracted legal negotiation)	Existing PFI Provider	0.70	3.0	223,860		
6	No adjacencies with Children's Hospital	Clinical adjacencies	3.50	4.0	1,492,400		
7	Less defined timescales due to displacements	Programme	1.30	5.0	692,900		
8	HAI buffer zone	Disruption	3.50	5.0	1,865,500		
9	Major disruption to clinical support activity within RIE	Disruption	3.50	5.0	1,865,500		
10	Dismantles core acute clinical services strategy	Clinical adjacencies	3.50	5.0	1,865,500		

Submitted by:

Kenneth Fraser
Partner

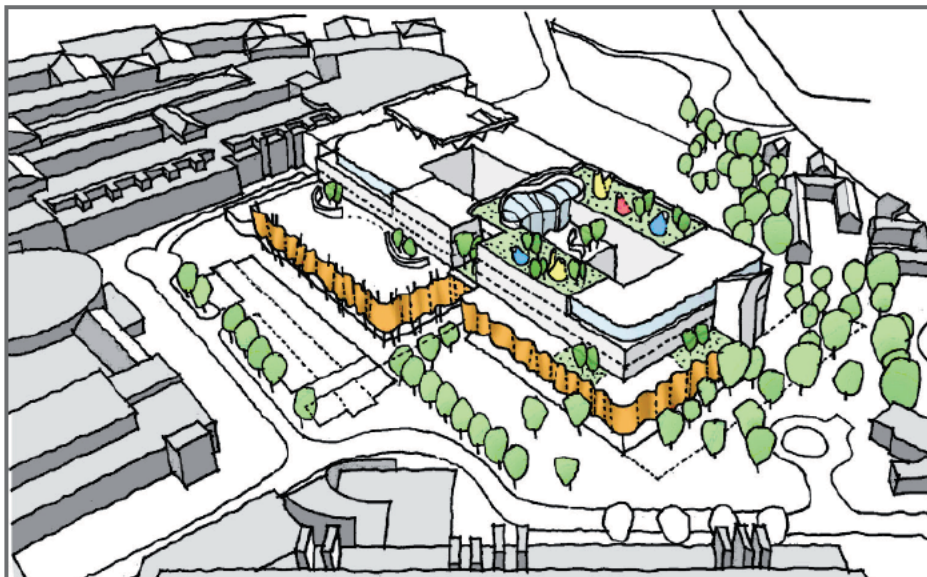
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APPENDIX 2

FEASIBILITY REPORT



ROYAL HOSPITAL FOR SICK CHILDREN and DEPARTMENT OF CLINICAL NEUROSCIENCES

Feasibility Report

December 2010



CONTENTS

1. Introduction
2. Architecture
3. Civil & structural engineering
4. Building services methodology
5. Construction methodology
6. Clinical design strategy
7. Benefits analysis
8. Supporting information

SECTION 1: INTRODUCTION

Executive Summary

The purpose of this report is to test the feasibility of combining the proposed Royal Hospital for Sick Children and the Department for Clinical Neurosciences (DCN), on the existing development site known as car park B. The feasibility study was instructed by NHS Lothian on 1st December 2010 and has been prepared in preparation for submission on the 24th December 2010.

During the early stages of design development the project included a combined RHSC/DCN facility; however since the omission of the DCN in December 2009 the design of the RHSC has developed in such a way so as to make the re-introduction of the DCN more complex. The inclusion of a stand-alone energy centre and service yard, more onerous parking & drop-off requirements and a rooftop helipad means that we are unable to simply look back at where we were 12 months ago.

In order to provide a high level response to the initial instruction the design team have sought to test the simple question – ‘can the existing site for the RHSC accommodate a combined RHSC/DCN facility with a stand-alone energy centre and FM service yard’?

Working within the time constraints our response is based on using what we already know about the site constraints and clinical adjacencies. The diagrams included in the appendix suggest a building form which is loosely based on our current approach to the RHSC with a similar footprint, clinical adjacencies and desire to take account of the height restrictions set by City of Edinburgh Council.

The separate reports from each design discipline summarise where the larger combined scheme may differ from the current proposal, highlighting key issues, challenges and opportunities rather than going into detail or offering definitive solutions.

Moving forward the combined facility will require a new brief, one which recognises some of the opportunities and challenges highlighted within this report. The new brief should be followed by a new design approach one which responds more closely to the specific requirements rather than simply being an adaptation of the current scheme. It is still too early to discuss the physical and aesthetic response in any detail. Opportunities for efficiency should be explored further with the clinical design teams, and site constraints must be challenged with external stakeholders before a solution can be agreed, and it is likely that the new scheme may be significantly different to the previous RHSC.

In response to the original instruction to test the feasibility of combining the RHSC and DCN on the existing site, and incorporating a stand-alone energy centre, FM service yard, additional proximity parking and a helipad, this report suggests that this can all be achieved.

It is important that the issues raised in this feasibility report are explored further through a more comprehensive option appraisal study involving detailed consultation with internal and external stakeholders. With such a significant change to the brief it will be important for this further study to be as detailed and as comprehensive as possible and therefore we encourage NHS Lothian to work with the design team to explore these ideas as soon as possible.

SECTION 2: ARCHITECTURE

Introduction

The purpose of this report is to respond to the instruction to test the feasibility of combining the proposed Royal Hospital for Sick Children and the Department for Clinical Neurosciences, on the existing development area known as car park B. The feasibility study has been prepared between the 2nd and 23rd December 2011 in preparation for submission to NHSL on the 24th December 2010.

Site

The site for the feasibility study uses the same area and has the same site constraints as for the previous scheme. Within the site boundary the scheme must now also incorporate a fully self-sufficient energy centre, service delivery yard and VIE compound which bring further constraints. For example the flue to the boilers and generators must be 40m away from any adjacent building (air quality), and the generators and VIE compound must be 15m away from the building (noise and explosion risk respectively).

Brief

The brief retains the same aspirations and clinical functionality as for the previous RHSC scheme with the inclusion of DCN services. The proposed building area is circa 50,000sqm. The functional content is based on the as drawn RHSC area of approximate-

ly 36,000sqm, the schedule of DCN accommodation issued on Compensation event 30, which is approximately 13,000sqm, and an additional 1,000sqm required for the energy centre and FM support areas. The overall area also takes account of the omission of the Community paediatric office spaces (CE28), and the omission of DCN critical care which will be located within the RIE.

The key challenges with the revised brief include;

- The desire to create separate identities for the RHSC and DCN functions,
- The need to provide sufficient access, parking and landscape amenity space externally
- The requirement to create separate patient flows for adults and children within the building
- The requirement to include a helipad with direct vertical access to emergency care

Consultation

During the development of this feasibility report the team have consulted with the NHSL project team at a series of review meetings. There has not been any direct consultation with clinicians, or with external stakeholder groups such as City of Edinburgh Council Planning department. Records of these consultation meetings are included as an appendix to this report.

Concept

We believe that it is important that we retain as many of the positives as possible from the previous scheme. Despite the changes to the brief we propose to continue developing the scheme along the same 3 basic principles of 'a new identity', the 'O-Zone' for the RHSC, and 'the perfect children's ward'.

The added pressure of the energy centre, service yard, VIE compound and additional parking for the DCN along with the aspiration to retain at least some external amenity space at ground level means that the building footprint must be much more compact. The feasibility report is based on achieving a target area of 11,000sqm for the ground floor (the current RHSC scheme is approx 10,000sqm) along with an additional 1,000sqm footprint for the energy centre.

Based on this target footprint and through consultation with NSHL's project team we have developed a series of adjacency diagrams which demonstrate the possible clinical links between departments on each floor. With greater pressure on the ground floor footprint the building can only accommodate the additional clinical area by adding an extra floor of accommodation.

SECTION 2: ARCHITECTURE

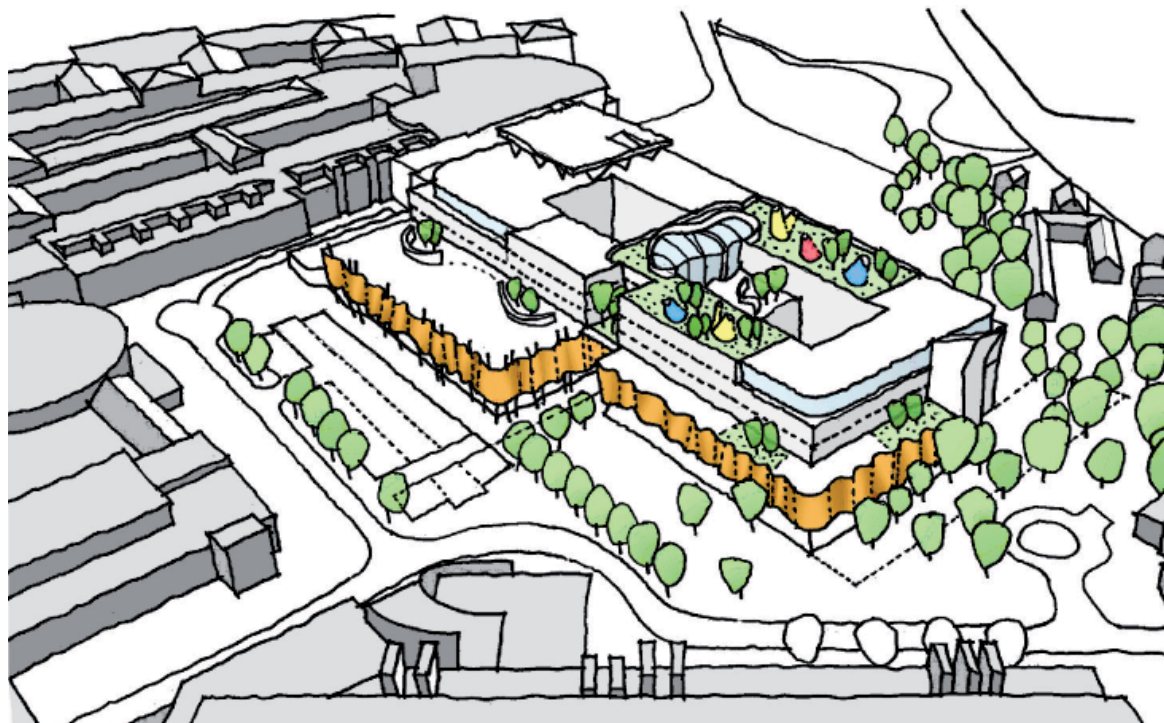
The increased height of the building, which is now 6 storeys with a helipad rather than 5 storeys will require a re-think of the cladding strategy. Our initial thoughts suggest that we treat the heavily serviced lower 3 floors as a podium with a similar mass to the adjoining RIE. The 3 upper floors which are smaller and less heavily serviced can be treated differently, perhaps with a more lightweight facade. Further development of the facade strategy will take place at the next design stage.

The increased height will need to be further discussed with CEC planning as it will contradict their current guidance on massing in the Bio-Quarter, however it may be looked on favourably by Architecture & Design Scotland who have previously pressed the team to increase the height and visibility of the building.

Clinical Adjacencies

The key clinical adjacencies are highlighted within a series of 'bubble diagrams' included in the appendix to this report. These adjacencies have then been tested as a series of scaled floor layout diagrams which follow the bubble diagrams. The key points raised by these diagrams are as follows;

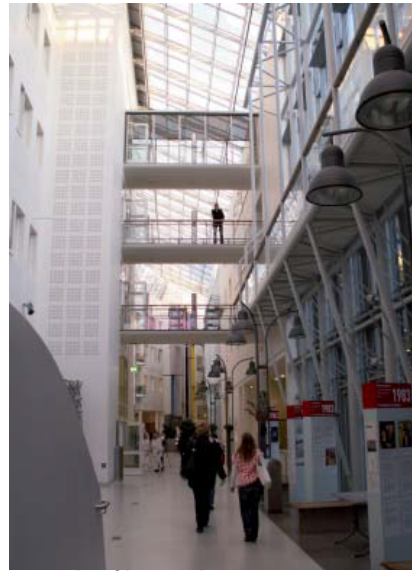
- The ground floor retains the emergency department, radiology, family support and CAMHS facilities. The ground floor also accommodates the new FM area and energy centre.
- The first floor includes the operating theatres, critical care, the academic suite and support functions such as staff changes and equipment stores.
- The second floor is now the main outpatient floor with clinics and therapies suites for both the RHSC and DCN. The second floor also houses a combined medical records suite and a significant area for ventilation plant serving the theatre suites below.
- The third floor is the main inpatient floor for the RHSC, and the fourth floor includes the DCN inpatient areas and the family hotel. The fifth floor includes a combined office suite and the balance of the ventilation plant rooms.
- The roof level includes rooftop access for the helipad and the remainder of the external plant



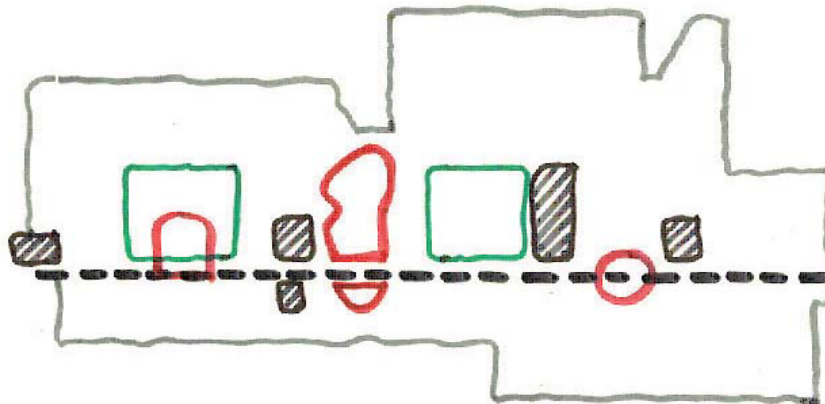
Massing study showing increased height, roof-top heli-pad and green spaces

SECTION 2: ARCHITECTURE

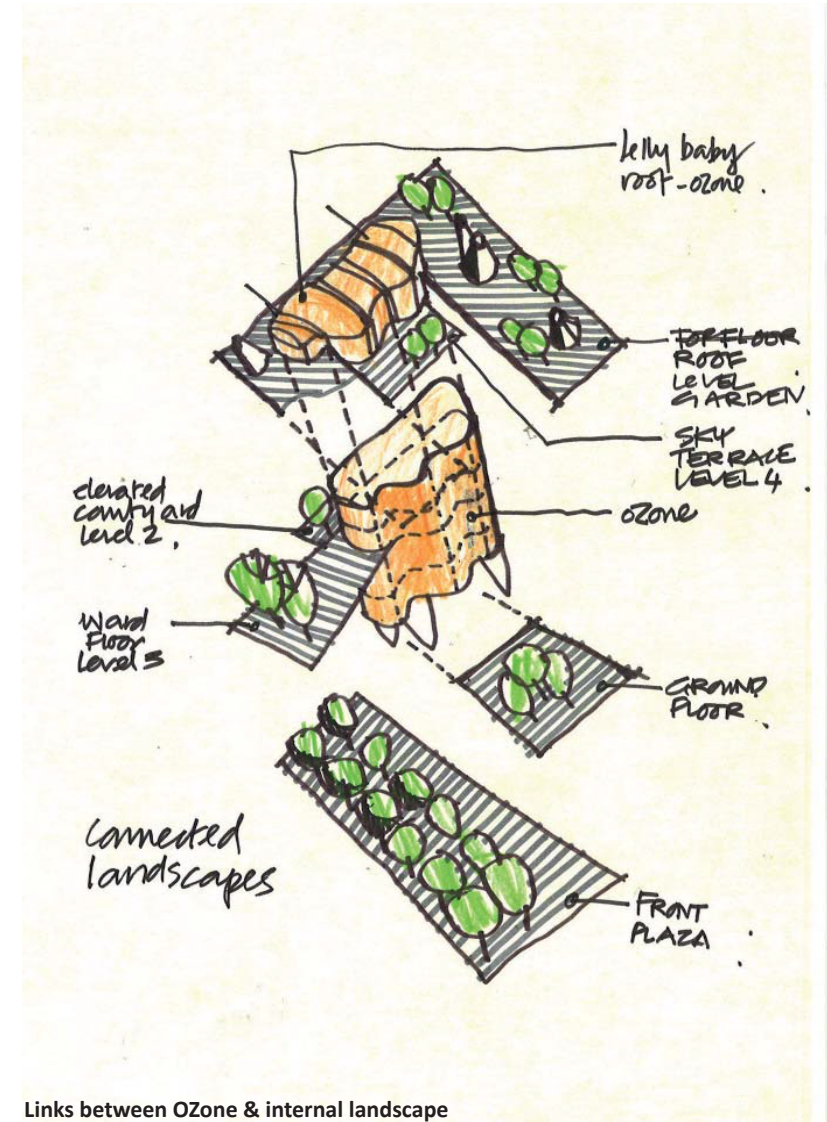
The separate flows for adults and children within the combined building will require separate entrances and vertical cores, but both facilities will share a 'hot core' linking the key diagnostic and treatment departments. The bubble diagrams demonstrate the complexity of the flows between these cores and department entrances. Our proposal is to manage this additional complexity with the inclusion of a hospital street running East to West and linking into the RIE. The street will run east to west and will link key spaces and voids such as the O-Zone & courtyards. The street will also link all of the vertical circulation cores and provide greater accessibility to departments for both patients and FM traffic. The street also provides a neat solution to the fire escape strategy.



Example of hospital street



Hospital street linking all key spaces and vertical circulation



Links between OZone & internal landscape

SECTION 2: ARCHITECTURE

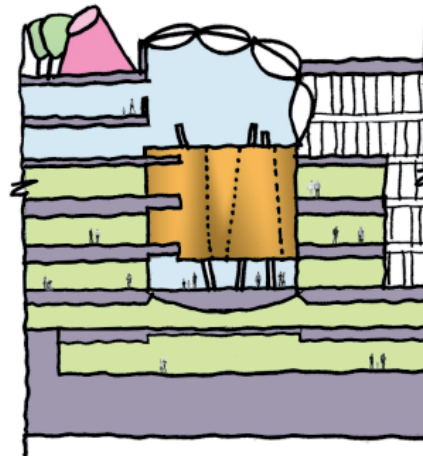
Further opportunities

This feasibility study serves only to test the ability of the existing site to accommodate the additional area and constraints. Through consultation in the limited time available to us we have confirmed that it is possible to achieve the majority of the desired clinical adjacencies within the available space.

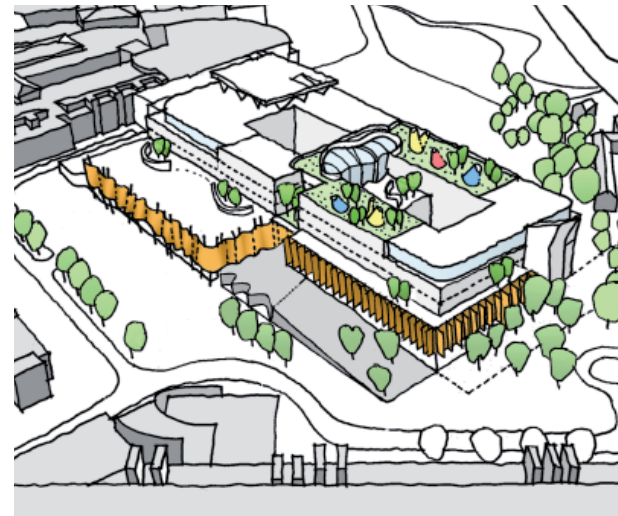
It is important to remember that this is only the beginning of the design process. There are other options which need to be explored further before we agree on a new concept.

The key themes for further thought are height and massing of the building on the site, alternative approaches to the clinical adjacencies, and how the building deals with the sequence of arrival. This last point is key. The additional site constraints will make clarity of wayfinding more challenging. We need to focus on providing a high quality external arrival space, a positive identity at the main entrance, and clear internal circulation routes.

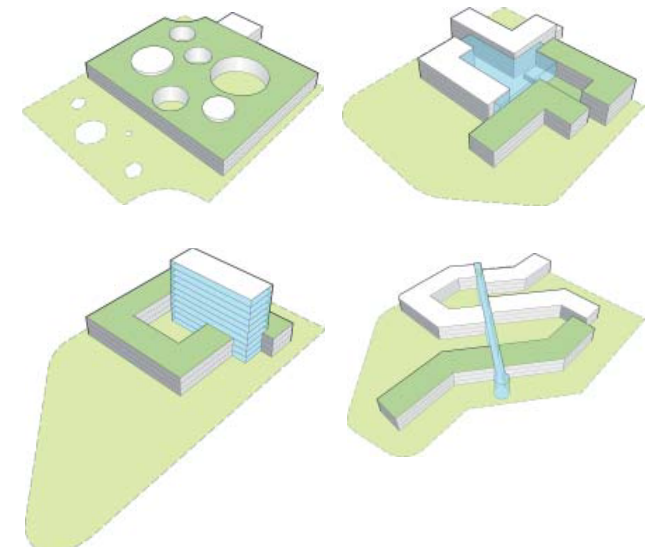
The following sketches identify some initial thoughts on how the scheme could develop.



Alternative approach: entrance at first floor



Alternative approach: entrance at first floor



Alternative approach: Previous massing studies

SECTION 2: ARCHITECTURE

Landscape

From the brief and throughout the design process to date it has been clear how important the landscape scheme is to the staff, patients and other users of these new facilities.

Key aims of the landscape scheme:

- To provide a landscape setting to the new building that benefits the status of these facilities
- To help enhance and integrate the new buildings with the existing on site
- Ensure users have access to high quality landscape spaces
- Deliver the 'healing landscape' principles so that the links to the landscape benefit all users of the site.
- Link the wider environment into the heart of this rather hard and unforgiving site

The Way Forward

The landscape principles already established have been extensively tested with clinicians and other stakeholders. This work will be carried forward and developed as part of the new facility requirements. The revised layout allows more opportunities to develop further roof terraces and gardens to provide stronger adjacencies with the wards and clinical bases for which they are designed. We feel

that the courtyards and roof garden spaces are the key to deliver the high quality landscape scheme required for this building.

As the site becomes more heavily occupied the importance of the landscape as a natural distraction and relief is even more important in delivering this scheme.

Challenges

The new proposals demand more of the site. This creates a challenge for the team to ensure that all servicing, parking and vehicular movements work in the most space efficient manner possible. This will generate space to ensure that we can create a meaning full landscape design that can be enjoyed by all the different users. It is key that the Hospital Square provides a legible and strong space emphasising the entrances and that this is delivered in safe manner that allows all necessary vehicular movements. Innovative solutions will be used to balance the site pressures. There is no doubt that some landscape space from the previous scheme will be lost. However, to mitigate against this there are more opportunities to develop high quality spaces in courtyards and roof terraces with closer clinical adjacencies. These spaces will need to work harder and deliver more; this will be reflected in the design.



SECTION 2: ARCHITECTURE



Proposed development within the wider landscape setting of Little France

SECTION 3: CIVIL & STRUCTURAL ENGINEERING

Basis for design

The basis of the Civil and Structural design will be largely as defined in the previous RHSC scheme. The differences in the new scheme relate to the provision of a rooftop helipad and an additional building storey.

Foundations & Basement

The foundation solutions developed for the previous scheme consisting of bored cast in situ piling remains the most appropriate design solution. The additional building height and loads do not alter this concept.

The most appropriate basement construction and waterproofing techniques for the site conditions were developed in considerable detail as part of the previous scheme. These were designed using the specific ground and groundwater conditions present to ensure that a Grade 3 basement space could be reliably constructed.

The new scheme does not alter these developed basement solutions. The basement will be formed as an integral reinforced concrete box protected by an external gas and waterproofing membrane and an internal drained cavity. The building layout and position within the site also lends itself to incorporating a basement parking arrangement if required.

Superstructure

The optimum building structural grid and frame choice will be fully considered again in the next design phase. With a new building form and grid it is important not to simply accept the structural frame choice developed for the previous scheme as the best solution. The final frame choice could be appropriate in either steel or concrete with the optimum solution resulting from a holistic review of structure, grid, services integration and riser strategy, building height, structural zone, architecture, fire protection, acoustics & vibrations, programme & market costs. Building stability would most likely be achieved through stiff stability core walls / bracing. The super structure will be designed to carry the roof mounted helipad.

Helipad

A rooftop helipad will be located at the highest building position and at a level with no nearby protruding structure. This will result in additional plant, accommodation and access requirements to the new hospital building.

A ramp structure will be required to transfer the patient to the hospital (lift) below. A second access is also required to the helideck which would be a stair. Any lift access needs to consider the requirements of not having any protruding structure in close proximity to the helideck. There will be a large foam tank required for the fire-fighting apparatus and also changing rooms for the fire-fighters who have to be present on every landing.

The helipad deck would be formed by a continuation of the structural frame. This could be formed with either a reinforced concrete slab or a steel framed solution. Both options will locally increase column sizes and foundation sizes beneath. Also, the downdraft loads created from the helicopters will require the building cladding and fixings in close proximity to consider these loads. These will typically be less than the critical wind loads but the number of loading cycles will be potentially much greater and fatigue may become the governing factor in the design of these elements.

SECTION 3: CIVIL & STRUCTURAL ENGINEERING

Drainage is required to the helipad perimeter to take surface water away from the deck in normal service but also to direct spilt fuel and fire fighting foam into the drainage system. It needs to be fire proof and separate from the normal drainage system and would include an oil/water separator. The guttering and down-pipes must be fire-resistant and should include a system to exclude air (sufficient to extinguish burning fuel).

To ensure that the proposed design solution meets the aviation operational aspects in relation to the RIE / RHSC / DCN site and also complies with the necessary regulatory and legal requirements an aviation / helicopter advisor should be appointed at an early stage in the design process.

Flood risk

The site is at risk of flooding from the adjacent Niddrie Burn. The existing flood defence embankment has not been designed or constructed to current best practice or to current recommendations for flood return periods. In addition, it has never been submitted to the approving authority as a formal flood defence. As a result, CEC will require a formal justification of the flood defence measures protecting the proposed RHSC / DCN site before they approve any Planning submission.

The flood defence design levels have been ascertained through additional hydraulic modelling work

of the Niddrie Burn and its catchment undertaken on the previous RHSC scheme. The most economical engineering solution to providing a formal flood defence will be ascertained following intrusive site investigations and geotechnical testing of the existing embankment and material beneath. However, an upper bound design solution has been developed in the meantime. This consists of a sheet piled cut off wall constructed through the existing embankment and this solution demonstrates that the site can be feasibly protected within the space constraints present.

Drainage design

In accordance with current best practice, the development will be served by separate foul and surface water drainage systems, and incorporate Sustainable Drainage System (SuDS) facilities. Below ground drainage from the helipad will be a further separate system.

Below ground surface water drainage

The principle of the surface water drainage strategy for the proposed scheme would be as developed for the previous RHSC scheme. Site levels dictate that it is not possible to drain to the Niddrie Burn immediately to the south. Surface water drainage is therefore by gravity into the existing surface water sewer located near the RIE entrance which ultimately joins the Niddrie Burn to the east of RIE where the levels

are suitable. The new drainage scheme will include below ground attenuation storage features and a flow control device. These will reduce the surface water discharge flows to considerably less than the current situation. The site levels dictate that a surface water drain must be maintained under the new building link to the RIE (running from south to north). To ensure that future access is possible this would be taken through an accessible service tunnel linking with the building basement.

Below ground foul drainage

The foul drainage strategy for the proposed scheme would be largely as has been developed for the previous RHSC scheme. This would drain the new hospital by gravity into the existing County Sewer located within the north west of site.

In this regard, consultation has been undertaken with Scottish Water as part of the previous scheme and an agreement is in place to allow the foul discharge from the proposed hospital to connect into The County Sewer. This is subject to remedial works taking place on the Scottish Water network out with the site. The increased size of development is not anticipated to significantly alter this agreement, albeit that Scottish Water will need to be provided with details of the revised proposals to enable them to confirm the effects on the proposed remedial works.

SECTION 3: CIVIL & STRUCTURAL ENGINEERING

Transport

In order to accommodate the RHSC / DCN proposals, modifications to the provision of the A&E facilities, public transport arrangements, parking / drop-off areas and pedestrian / cycle facilities are required. Many of these revisions are as developed for the previous RHSC scheme. In brief, they include:

- A re-configured blue-light route to the re-modelled A&E area;
- New and re-configured pedestrian facilities at both the west and east entrances of the RIE to facilitate safe access / egress;
- A re-configuration of the current disabled parking provision and drop-off areas at the western and eastern entrances of the RIE;
- A re-positioning of the bus halts at the western RIE entrance to a position west of their current location;
- A re-alignment of the rear 'loop' road around the back of the RIE.
- New bus lay-bays located along the re-aligned 'loop' road to the east of the RIE to accommodate 'through' bus services;
- New bus-bays located immediately in front of the RIE east entrance to accommodate 'terminating' bus services. This will include provision for a signal controlled bus turning facility and pedestrian crossing, thus helping to ensure safety of all road users;

- Relocated access / egress junctions for Car Parks 'C' and 'D' on the eastern side of the RIE;
- Re-configured junctions along the 'loop' road to safely accommodate the expected increase in the number of bus movements;
- Re-configured access arrangements to the A&E department, including ambulance bays, drop-off areas and general parking facilities.
- A revised MRI external scanner location will need to be established and agreed.
- FM service yard with dedicated access provisions and public segregation

Buses

A bus access strategy has been developed to provide for public transport demand within the site. Extensive consultation with the bus operators and the CEC officers has been undertaken in relation to the developed proposals. The basis of the design solution will be largely as defined in the Planning Submission documentation for the RHSC scheme.

Cars and Parking

The basis of the design solution for the site wide parking will be as defined in the Planning Submission documentation for the RHSC scheme.

Proximity parking has been developed to provide both DCN and RHSC parking near the respective building entrances at the north of the site. However,

er, to fulfil the brief in terms of numbers. This may require some or all of the car parking areas to be provided in a basement area or within a decked car park arrangement both of which would be structurally feasible.

CEC will require the proposed parking numbers to be justified within the planning application supporting documents. Extensive discussions have previously been undertaken with CEC offers to justify the parking numbers associated with the RHSC. Based upon these past discussions it is to be anticipated that they will request details associated with the operation of the existing DCN facility relating to how staff, patients and visitors access the current facilities.

RHSC A&E parking has been segregated from the ambulance area and is located to its west. A&E parking for RIE will be immediately south of the RIE building, adjacent to the existing parking area for ambulances, patient transport and Medic 1.

A&E Access / Blue light access

Vehicular access to the proposed and conjoined A&E department is to be taken off Little France Drive, consistent with the existing arrangements. This leads to a new area of parking that provides adequate space for arriving ambulances and lay-over ambulance bays. The existing 'blue-light' emergency routes from Little France Drive would be retained. A

separate area is provided for drop-off and public car parking (including disabled car parking).

In addition, a secondary blue-light emergency route would be provided, with emergency vehicles arriving via a new access area accessed from Little France Crescent to the north of the conjoined A&E department.

Typical ambulance vehicle tracking into this area is shown on Arup drawing 209592 ATR20.

Service vehicles & waste management

A new service yard is provided to the south west of the building. This is will be sized to accommodate the manoeuvring associated with both large articulated and rigid vehicles as required for hospital and energy centre deliveries and waste management and is sized to accommodate a turning circle to minimise reversing. It has been positioned to ensure segregation from the A&E parking and parking areas.

Typical vehicle tracking in this area is shown on Arup drawing 209592 ATR20

Cycle routes

The site wide cycle provision was the subject of much dialogue during pre Planning consultation with CEC. The basis of the agreements reached need to be taken forward with the new scheme. The proposed solution will improve the existing footway between the RIE site and Craigmillar Castle Road to provide an additional lit direct cycle link into the site. A cycle route will also be provided around the west side of the new development.

Environmental Impact Assessment

An Environmental Impact Assessment in accordance with domestic legislation has been completed as part of the development of the previous scheme. The majority of impacts, assessment summaries and mitigation will also be applicable to the emerging scheme, however, certain elements are different that may have environmental impacts. These are likely to relate to:

SECTION 3: CIVIL & STRUCTURAL ENGINEERING

- Landscape and Visual Impact Assessment – the changes in building form and increase in the number of storeys is likely to alter the findings of this section;
- Noise and Air Quality – the relocation of the helipad and the location of the proposed ‘Energy Centre’ and service yard is potentially significant
- Flooding – any new flood defence works required may result in impacts on the Niddrie Burn for both hydrology and ecology.

A review of the Environmental Statement, produced as part of the Environmental Impact Assessment, should therefore be undertaken as part of the next stage to ensure that the emerging scheme is robustly assessed against domestic legislation and guidance.

SECTION 4: BUILDING SERVICES

Concept & Principles

The building services engineering design shall be developed as far as is practical to provide a low energy and low carbon acute hospital facility without detriment to reliability of service or comfort to the patient and staff whilst complying with all relevant statutory legislation and relevant healthcare guidance through provision of a resilient and autonomous energy provision. A pro-active design shall be focused on patient and end user requirements whilst ensuring ease of operation and maintenance.

The hospital building form has large areas of external facade allowing maximum use of daylight on external and courtyard surfaces. Solar control glass will be provided on southerly and westerly facing facades exposed to direct sun path to reduce solar gain and minimise glare. The facades and courtyards allow use of natural ventilation reducing the requirement for supplementary mechanical ventilation where function permits, albeit the hospital facility shall be predominantly provided with mechanical ventilation through high efficiency heat recovery air handling plant.

Integral to the design process shall be the development and adoption of measures which shall reduce the impact on the environment. By continually monitoring the design against the BREEAM Healthcare 2008 Assessor scoring and rating manual, a holistic design solution shall be provided which assists

with the aims to establish an excellent score rating.

In accordance with the BREEAM strategy the design philosophy shall incorporate features which shall reduce energy consumption and carbon emissions, reduce water use and consumption and improve energy management and monitoring. Materials selected shall be graded in terms of environmental cost and impact on the embodied energy and life span of the buildings.

Credits shall be achieved by the use of energy efficient heating, cooling and ventilation systems and lighting and power systems. This shall be reinforced by effective computerised monitoring and metering of HVAC plant and systems as well as departmental lighting energy consumption and departmental small power and clinical equipment energy consumption.

Our design approach with respect to energy efficiencies adopts the guidance as provided under HTM 07-02/EnCO2de – making energy work in healthcare.

In addition our services design solution shall comply with the 2007 version of Section 6 of the Building Regulations Scotland as well as the new 2010 version of Section 6 in terms of targeted reduction of carbon emissions. Compliance with the Edinburgh Standards for Sustainable Building Priority Standard 1 and 2 shall be set aside in lieu of the CEC's

alternative approach to accept at least a Very Good BREEAM Rating. In order to achieve these aims, we have set out the following building design principles from which our Energy Strategy and Dynamic Simulation Model will evolve:

- 2007 Section 6 minimum reduction in CO2 of 28% versus the notional equivalent building.
- 2010 Section 6 minimum reduction in CO2 of 50% versus the same notional equivalent building referred to in 2007 regulations.
- Envelope U Values (roof/external walls/floor/glazing) - these should be better than the minimum Section 6 2010 version backstops and as the following targets: External Walls = 0.21 v 0.27max, Floor = 0.21 v 0.22max, Roof = 0.21 v 0.20 max, Windows/Glazing = 1.8 v 2.0 max,
- Building Airtightness - this will be designed and constructed to achieve a minimum of 7.5 m3/m2/hr at 50pa (v 10 building standards maximum backstop). This means that the building will need to be pressure tested upon completion.
- On site LZCT Energy Generation via gas fired Combined Heat and Power Engine sized for continuous running associated with heating base load.
- Solar Control glazing on South and West facades exposed to direct sunlight to reduce cooling loads and internal summertime temperatures.
- High efficiency heat recovery to AHU plant.
- Inverter Drives to AHU motors and Circulation

SECTION 4: BUILDING SERVICES

Pumps.

- Occupancy/presence detectors in conjunction with automatic lighting controls.
- Comprehensive Metering, Monitoring and Targeting system.
- Building Energy Management System (BEMS)
- Natural Ventilation via manually openable windows where function permits and where briefed maximum internal temperatures can be achieved with all known constraints.
- Energy Efficient Transportation Systems (Lifts).
- Voltage Power Optimization (VPO)
- Automatic cold water services flushing system for legionella control (Kemper KHS Hygiene System)

Utilities and Infrastructure

Existing external services and the implications of a new building on car park B site on the existing services have been collated and referenced in separate HK report Services External Services Diversion and Infrastructure Options Version 2 dated 18.12.09. Note that the new feasibility building footprint and position of the combined RHSC/DCN on site will have a direct influence on the outcome of final scope of diversions required to be carried out by Consort.

This will require to be developed to a conclusion at an early stage which shall define services diversions required and any associated enabling works. In addition, the combined new autonomous RHSC/DCN

utility service connections (mains water, sprinkler and hydrant mains water, natural gas, power, telcoms) should also be developed and identified at an early stage after feasibility.

A Water Impact Assessment carried out by Scottish Water (One Source) to assess the impact of the additional mains water supply demand to the site to serve both the new RHSC and the DCN requirements confirmed that there was no predicted impact or requirement to reinforce the local Scottish Water mains water network.

In summary, the new utility connections to serve the combined RHSC/DCN facility are :

- Electrical supply to serve the combined RHSC/DCN facility to be a new autonomous supply derived from Scottish Power network to connect to a new Scottish Power Sub-Station location within the Energy Centre which shall connect to the adjacent RHSC/DCN HV Switchroom and Sub Station.
- Gas supply to serve the combined RHSC/DCN facility to be a new autonomous supply derived from Scottish Gas network to connect to a new Gas Shipper meter enclosure located adjacent to the energy centre. Gas pipework supplies shall be routed to both the energy centre boiler plant and CHP unit and also via an underground pipeline to the combined RHSC/DCN hospital facility to serve kitchen gas supplies and gas fired

steam generator plant if required.

- Mains Water supply to serve the combined RHSC/DCN facility to be a new autonomous supply derived from Scottish Water network to connect to a new water meter enclosure located adjacent to the energy centre. Mains water pipework supplies shall be routed to both the energy centre plant and also via an underground pipeline to the combined RHSC/DCN hospital facility to serve bulk cold water storage tanks and mains water filtration plant located within the basement of the facility. A separate fire/sprinkler mains water supply connection shall also be provided to service hydrants to be positioned around the combined new hospital and energy centre facility and also to serve the sprinkler storage tank and pumproom located within the basement of the new facility.

Autonomous Energy and VIE Provision Plant Strategy for RHSC/DCN Building

The engineering services feasibility stage autonomous energy provision plant strategy includes for a separately located "Energy Centre " building which shall contain the following plant and equipment to provide resilient heat source and power supply to the building:

- Electrical supply to serve the combined RHSC/DCN facility to be a new autonomous supply derived from Scottish Power network to connect

SECTION 4: BUILDING SERVICES

to a new Scottish Power Sub-Station location within the Energy Centre which shall connect to the adjacent RHSC/DCN HV Switchroom and Sub Station.

- 3 off 11kV emergency standby generators to provide back up power under mains failure conditions to provide N+1 redundancy and to include 25% spare capacity for future proofing.
- A new 11kV ring main shall be derived from the new switchboard to supply two sub-stations within the basement of the combined RHSC/DCN building.
- Gas fired CHP engine providing contribution to base load power and base load heating demand linked through a plate heat exchange skid to the MTHW heating system.
- 3 off (N+1 redundancy) dual fuelled gas and oil fired forced draught boiler units to provide MTHW heating through a service duct/tunnel link to four heat-station plantrooms located within the basement of the combined RHSC/DCN building.
- MTHW primary ,secondary and pass through boiler and chp skid pump circuits.
- MTHW Pressurisation Unit and Expansion Vessels.
- MCP BMS Control Panels.
- Natural Gas Meter Enclosure.
- Generator Day Tanks.
- Generator Neutral Earth Resistors.
- CHP Heat Rejection Radiators located external to the energy centre.

- Boiler and Generator Integrally banded Oil Storage Tanks located external to the energy centre. Oil storage sized to provide approx 200hrs of generator use at maximum calculated power demand and 120hrs of boiler use at maximum calculated heat demand. A ground trench c/w removable covers shall be required from the oil tank pump units to the boiler burners and generator day tanks.
- Boiler and CHP Flue chimney mast located externally to support flues. Flue mast must be adjacent to boiler and chp units to minimise horizontal flue run. The Clean Air Act dictates the flues should be at least 8mtrs above roof height of the building attached to the flues. In the case of the energy centre this would be assumed 7m peak roof height (5m clear internally) plus 8mtrs which equals 15mtrs tall with a 40 m exclusion zone from any building taller than 12m. This advice dictates the position of the energy centre on the site.

The feasibility stage client brief also requires an autonomous VIE/Oxygen provision plant strategy. This shall be addressed by the following approach: Primary and Secondary Oxygen Supply VIE compound located close to the service yard/energy centre area to the south of the new hospital facility but also positioned to avoid compromises with the 8 mtr and 15 mtr exclusion zones around any VIE. Because a second VIE compound could not be

practically located on the site available, it is decided that the Tertiary supply of Oxygen shall be provided through bottle oxygen systems plantrooms located internally within the combined RHSC/DCN hospital building. These shall be linked to automatic bottle manifolds and integrated into the oxygen pipeline network accordingly.

M&E Plant Strategy

The building engineering services feasibility stage plant strategy includes basement plant accommodation - two HV sub stations, Sprinkler Tank and Pump Room, Bulk cold water storage tanks and Mains Water Filtration Plant and Booster Pumps, four Heat Stations, Medical Gases plantrooms (Compressed Air, Surgical Air, various bottled gases), Pneumatic Tube Plant, UPS Battery Room, Emergency Lighting Battery Room.

There shall also be strategically placed AHU plantrooms at Level 2 (directly above both RHSC and DCN Theatres) and Level 5, and Filtered Water Storage Day Tanks and Booster Pumps at Level 5 and three off Air Cooled Chiller Units and Isolation Room En Suite Extract Fans (17 RHSC, 8 DCN plus fume cupboard and safety cabinet extracts and 3mtr high discharge stacks) all located at roof level. Refer to HK RHSC/DCN Plant and Riser Strategy Schedule of Accommodation and Architect Feasibility Report Layouts.

SECTION 4: BUILDING SERVICES**M&E Service Riser Strategy**

The building services feasibility stage service riser strategy has been developed to include strategically positioned dedicated mechanical pipework risers, dedicated ventilation ductwork risers and dedicated electrical service risers, all of which shall be vertically aligned throughout their length to allow off-site modular prefabrication of risers which can be dropped in through roof openings without obstruction. The pipework and electrical service risers shall have excellent connectivity to associated basement and rooftop plantrooms as well as department circulation route corridors through which off-site prefabricated combined service modules shall be distributed. The ventilation service risers shall have excellent connectivity between AHU plantrooms and department floors served. Level 2 AHU plantroom shall have numerous slab penetrations to allow ductwork to be distributed serving the theatres and other areas adjacent and below. Refer to HK RHSC/DCN Plant and Riser Strategy Schedule and Architect Feasibility Layouts.

BREEAM Excellent Approach

BREEAM scoring previously undertaken for the RHSC only scheme has been revisited and based on a proposed separately located “energy centre” building for the combined new RHSC/DCN building the predicted scoring will remain largely the same. There is potential to reconsider the credits avail-

able for Pollution credit – Pol 4: NOx emissions from heating source, i.e. The opportunity to specify new low NOx burners increases the potential credits that can be achieved here, however this credit in isolation will not significantly improve previous scoring predictions.

As per the RHSC scheme, this means it can be easily demonstrated how the design team propose to achieve a mid-range BREEAM Very Good rating (between 55% - 70%) based on the credits they anticipate being achieved. As was being considered for the RHSC only scheme, the client and design team shall examine the list of targeted credits under review on the BREEAM ‘shopping list’ to establish how best to achieve BREEAM Excellent ensuring the best facility for patient care with pragmatic and strategic decision making.

Lift strategy

At this stage it is too early to prepare a full lift traffic study and therefore we have allowed for the following lifts based on the previous solution;

- 3 dedicated patient lifts – 33 person 2500kg
- 3 FM lifts travelling between basement and level 5 – 33 person 2500kg
- 1 FM lift linking the delivery yard, basement and kitchens on first floor – 33 person 2500kg
- 5 passenger lifts (3 for the RHSC and 2 for the DCN) – 13 person 1000kg

The patient bed lift provision has increased from 2 to 3 to allow for the additional DCN traffic and link to the helipad on the roof. The general FM lift provision has not increased since the last solution on the assumption that the footprint if the building has not increased and the FM lifts are evenly distributed throughout the building, although an additional FM lift has been added to provide a link between the basement, loading bay and kitchen.

Acoustics

The basis of the Acoustics design solutions will largely be as defined in the previous RHSC scheme (Ref OBC Acoustic Design Report AAC/209592-60/R02 – Issue Rev A).

The introduction of the helipad means that the ventilation strategy would have to be reviewed in order to determine whether spaces could have windows open. It is likely that sealed windows and mechanical ventilation would be required to maintain target internal noise levels. It is also suggested that the client be advised that derogation from HTM08-01 internal noise levels will be required to cover the periods when the helipad is in use. The helicopter noise study would extend to the existing hospital facility and surrounding area including residential neighbours. It also suggested that potential vibration from helipad use is considered especially if any vibration sensitive equipment will be used within the building.

SECTION 4: BUILDING SERVICES

The introduction of the service yard relatively close to noise sensitive neighbours would require a study of the impact of deliveries. It is recommended that no wards or other noise sensitive spaces overlook the service yard. It may be necessary to limit delivery times to those of a working day, ie Mon-Fri 0900-1730. It may also be necessary to install a noise barrier at the service yard boundary to reduce delivery and compactor noise levels at noise sensitive neighbours. The location of the compactor will have to be carefully considered to minimise potential noise impact on neighbours and the proposed development itself.

The proposed location of the energy centre relatively close to noise sensitive neighbours would require a detailed study. It is likely that the building fabric would have to be quite substantial in order to provide the required noise breakout limiting performance. Any atmospheric ventilation will likely require acoustic louvers.

Fire Strategy

The building is to be designed and built to meet the functional requirements of the Building (Scotland) Regulations, 2004, Fire (Scotland) Act, 2005, and the Fire Safety (Scotland) Regulations, 2006. These requirements are with regard to life safety only, therefore, other considerations such as property protection are outside the scope of the fire strategy.

Protected Fire Fighting Stairs

There are currently 5 stairs provided within the building, one of which is open within the Ozone atrium whilst four are enclosed in long (120 minute) fire resistant construction. Each of the enclosed stairs will be a fire fighting stair as the building is more than 18m in height.

Each fire fighting stair is provided with dry water mains, ventilation, lobby protection and a fire fighting / bed evacuation lift.

Street Design

The hospital street should be 3m clear width at all points with department entrances, stairs and lifts separated by fire resisting doors.

There should be a maximum of 64m between stair cores and 64m to the final exit from each stair at ground floor.

Means of Escape

The means of escape strategy is based on progressive horizontal evacuation using the hospital street as appropriate. This approach assumes the evacuation of only one compartment at a time and is therefore dependent on appropriate management intervention during a fire emergency. In other words, staff management of alarm response and the ongoing provision of egress training is a key component of this fire strategy.

Compartmentation

Each hospital department and the hospital street form separate fire compartment of medium (60 minute) duration. The fire alarm and suppression system are coordinated with the department and sub compartment boundaries which give clear direction to staff regarding the fire location. The structural fire protection is of long (120 minute) fire resistance. This fire resistance rating is also applicable to all floors. The Ozone will be separated from all adjoining accommodation by long (120 minute) fire resistance.

Fire Hydrants

Fire Hydrants shall be positioned around the new building adjacent to each fire service vehicle parking area serving the dry mains.

SECTION 4: BUILDING SERVICES**Dry Risers / Mains**

Dry risers/mains shall be provided to each protected stair and also to the street. There will be an outlet point adjacent to each department entrance.

Fire Service Vehicle Access

Access routes suitable for fire service vehicles will be provided to within 18m of each dry mains inlet point. Dry mains inlet points will be located on the external façade of the building at each of the protected stair or street entry points.

Turning circles will be provided where vehicle access routes are more than 20m in a single direction.

Stairwell Smoke Vent AOVs

Each of the four protected stairs shall be provided with remotely operated opening ventilators. These will allow fire service control from ground and top access levels of each stair. Each vent shall provide 1m² Of free area for ventilation.

Ozone Smoke Vent AOVs

Smoke ventilation requirements to the ozone will need to be calculated as part of the detailed design stage. Potentially, areas on the ground floor, open to the Ozone atrium will need to be provided with mechanical smoke extract.

Basement Smoke Vent AOVs

The basement will be ventilated to achieve 2.5% of the floor area if using a natural system or 10 air changes per hour using a mechanical system. Each sub compartmented room will meet this performance specification.

Automatic Fire Suppression System

A life safety category sprinkler system shall be provided to all areas of the building. Sprinklers shall be provided with tanked storage and pumps to provide Ordinary Hazard Group I protection.

Automatic Fire Detection and Alarm System

The automatic fire detection and alarm system will be provided to an L1 standard of coverage and operate on a double knock basis. On activation of one automatic fire detector a pre alarm warning will be sent to staff within the local compartment and will also initiate an investigation period. After a pre determined time period for investigation or if any other detector activates an alarm signal will sound and the compartment will be evacuated.

Helipad

The helipad will be served by one of the 4 fire fighting stairs. Other details are as described in Civil & Structural engineering section of this report.

External Fire Spread

Based on the previous scheme the risk of external fire spread should be sufficiently limited due to the provision of compartment floors, sprinklers and good separation distance between buildings i.e. approx 20-25m to closest building. This will be assessed as part of the detailed design stage.

SECTION 5: CONSTRUCTION METHODOLOGY

The combined RHSC and DCN with its own autonomous energy centre will have a larger building mass and occupy a larger overall footprint than the stand alone RHSC building design. However, the organisation, management and execution of the works will remain in keeping with the strategy set out in the construction methodology for the stand alone scheme.

The site logistics proposals would similarly follow the same strategy as the stand alone RHSC. The reduced construction space for site traffic, materials storage, loading bays and office accommodation will provide an increased challenge; however, this can be accommodated by utilising additional traffic management, just-in-time deliveries and increased stacking of the site accommodation.

The increased height of the building will alter the method of installing the external wall cladding/finishes as the taller building is now beyond the reach of scissor lifts. However, this can be addressed by utilising traditional scaffolding or mast climbers.

The primary change with the combined RHSC/DCN design is that the building now has substantial departments extending over Little France Crescent; DCN Acute Care (ground floor), DCN Theatres (first floor), DCN Out-patients (second floor) and RHSC A&E (ground floor). Full construction access to Little France Crescent is dependent on the new bus terminus and the bus link road being complete with

the stopping up order for Little France Crescent being in place. As this work is unlikely to be completed ahead of the RHSC/DCN construction work commencing then the east part of the new building will require phased construction. Although this is not dissimilar to the phased construction of the previous stand alone scheme this now affects four substantial departments over three floors rather than one department solely on the ground floor. Ideally, the bus terminus and link road should be completed as early as practicable and preferably within 6 months of RHSC/DCN construction commencement. Should this not be achievable and to safeguard the RHSC completion date then it may be prudent to have a phased completion, with DCN being completed during the commissioning period of RHSC.

The rectangular shape of the combined RHSC/DCN scheme means that the cranes are no longer conveniently located in the courtyards. The eastern most crane may need to temporarily penetrate the floors and roof of the building with infill's being progressed on crane removal. Although the site could potentially be covered with four cranes, the best solution is to use five cranes. The fifth crane at the east end of the site would be solely dedicated to the works over Little France Crescent allowing the DCN to 'catch up' once the stopping up order is in place.

As a consequence of the building having to move north to provide the regulatory environmental requirement of 40m from the energy centre chimney to the RHSC/DCN building the full extent of the previous Scottish Water drainage diversion is unlikely to be required, a considerably reduced diversion scheme will be adequate.

In addition, provision of the autonomous energy centre will bring the control of utility supplies within our own gift reducing risk.

SECTION 6: CLINICAL DESIGN STRATEGY

This document sets out the key clinical design criteria that NHS Lothian (NHSL) re-provision projects have defined for the new hospital for children and young people (RHSC), and a new adult department for clinical neurosciences (DCN).

The design team should refer to the NHSL Design Quality Framework. The new facility will be a modern, landmark hospital which will be an asset to the future service provision. The design should be enduring and take account of the history, culture and physical requirements of a renowned centre of excellence.

The RHSC provides local and regional acute inpatient and outpatient paediatric and young people's services to the South East of Scotland and Tayside as well as a number of national specialty services.

The DCN provides specialist neurology and neurosurgery assessment and treatment for adults from the South and South-east of Scotland.

The functional brief for the new hospital includes inpatient beds, outpatient clinics, rehabilitation, emergency care, mental health inpatient services, operating theatres, radiology and physiology departments and associated support functions.

The services brief for the new hospital is that it will stand separate from the RIE in terms of soft and hard facilities management, including energy provision, gases and loading bay.

Effective services rely on close adjacencies between related specialities and disciplines. Routes between departments should minimise travel time and distances for patients and staff in order to maximise clinical safety and efficiency. As well as relationships within RHSC and DCN, it is essential to provide links with the RIE A&E, theatres and critical care departments.

SECTION 7: BENEFITS ANALYSIS

As part of the design process, the Project Team have undertaken a benefits analysis of the feasibility scheme, looking at various strengths and challenges involved.

The following bullet points are a summary of some of the key issues raised during this process.

STRENGTHS

- Site accommodates all of the departmental areas, additional car parking, energy centre, FM yard and helipad.
- Close adjacency of DCN and RHSC Acute services to RIE Accident & Emergency Services
- In general effective RHSC & DCN Horizontal & Vertical adjacencies.
- Adjacencies of OPD's/Therapies/other clinical support areas
- Patient Bed Lifts (3)/Passenger Lifts(5)/FM Lifts (4)/Fire Escape Stairwells (4) distribution and placement. Effective distribution model.
- Provision of functional helipad with direct access via lift to RHSC and adult services
- Creates opportunities for shared functions & facilities.
- Access to Intra-Operative MRI for RHSC.
- Reduced impact on RIE services provided through existing service provider
- Stand alone building for RHSC and DCN mean that disruption to continued services in RIE is minimised.
- Central regen kitchen will offer improved service to DCN inpatients
- Soft spaces within building (e.g. offices) can be used as future expansion space for both RHSC and DCN.
- CHP power generation and heat recovered can be directly applied for the exclusive benefit of the combined new facility
- Autonomous Power incomer and resilient standby power (generators) plant and systems provided are exclusive to the new combined facility and offer improved safeguarding of accidental severance of supply.
- Autonomous Heating Plant and MTHW pipework provision at new energy centre are exclusive to the new combined facility and offer improved safeguarding of accidental severance of supply.
- No need for the requirement to provide Hydraulic Break Heat Station Plantroom within basement from ERI MTHW to RHSC MTHW through provision of autonomous energy centre associated with combined facility.
- Efficiencies of combined facility shall manifest in better utilisation of all plant and support services, for example theatres, lifts etc.
- Service ramp access direct to basement can provide route for delivery and removal of services plant located within basement.
- More control over BREEAM scoring credits in relation to pollution sources and waste control.

SECTION 7: BENEFITS ANALYSIS**CHALLENGES**

- Pressure on floor area and adjacencies demands a deep plan solution for the lower floors which will restrict ability to provide natural light to some areas.
- Patient access to OPD's on second floor.
- DCN staff visitor and Inpatient access to shop and non-patient catering
- DCN Adult Service divorced from RIE orthopaedic & critical care services
- Restricted landscape amenity space for ground floor services.
- Access to mortuary within RIE.
- Autonomous Utility supplies (power, gas, water, hydrant, oxygen) need to be provided.
- New Energy Centre Heating Plant, Oil Storage, Flue Mast and Flues provided at additional cost and space requirement.
- New Primary and Tertiary Oxygen (VIE) compound required and due to site space constraints, second VIE compound for Tertiary supply cannot be facilitated, therefore additional space required within the facility to accommodate 3 No. Oxygen bottle manifold rooms.
- Noise and pollution sources located closer to new combined facility through need to provide autonomous heat and power.
- Requirement to relocate mobile MRI scanner serving RIE
- Breach of CEC's sky-line planning policy.
- Residual CEC and A&DS issues regarding increased massing and height of building.
- Increased complexity of construction operations due to building massing and height.
- Enlarged interface area with RIE which will require a phased construction over Little France Crescent and removal of the rotunda.

SECTION 8: SUPPORTING INFORMATION

Summary schedule of areas

Stacking diagram

Adjacency diagrams

Scaled layout diagrams

Typical sections

Communication strategy diagram

Site Layout

Thoughts on landscape strategy

Massing studies

Schedule of accommodation

Facility	Department	Net Internal	With Circulation, Planning & Engineering	With Plant & Comms**
RHSC A1 - A&E / Assessment Ward	A1 - Emergency Department	820.5	1,189.7	
	A2 - Medical Paediatric Acute Assessment and Admissions (28 beds)	757.0	1,044.7	
	A3 - Med PAA / Emergency Shared	112.0	154.6	
	A4 - Adult Link	50.0	72.5	
RHSC A1 - A&E / Assessment Ward Total		1,739.5	2,461.4	
RHSC B1 - Critical Care / HDU / Neonatal Surgery	B1 - PICU and HDU's - 24 Beds	1,164.5	1,630.0	
RHSC B1 - Critical Care / HDU / Neonatal Surgery Total		1,164.5	1,630.0	
RHSC C1 - InPatient Pathway / Ward Care	C1.1 - Medical (16 Beds) /Trans Care (4 beds)/Adolescent (3 beds)	674.5	930.8	
	C1.2 - Surgical (22 Beds) /Adolescent (7 beds)	725.5	1,001.2	
	C1.3 - Neuroscience (12 Beds)	529.5	730.7	
	C1.4 - Medical/Surgical/Neuroscience (Shared Support)	64.5	89.0	
	C1.5 - Special Feeds Unit	46.0	63.5	
	C2 - Transitional Care	-	-	
	C3 - Haematology / Oncology Ward (7 x Paed IPs, 4 x DC beds plus 2 chairs, 3 x Adolescent beds and 3 x IP/DC beds)	712.5	983.3	
	C4 - Adolescent Inpatient Facility - 10 Beds	36.0	49.7	
	C5 - Neurophysiology	157.5	212.6	
C6 - Sleep Lab	86.0	118.7		
C7 - School	128.0	172.8		
C8 - Shared Support	83.0	112.1		
RHSC C1 - InPatient Pathway / Ward Care Total		3,243.0	4,464.3	
RHSC D1 - OutPatient Departments / Medical Day Care	D1 - Main Outpatients Department	132.5	178.9	
	D1 - Main Outpatients Department - general	46.0	62.1	
	D1 - Main Outpatients Department - suite A Ortho	278.0	375.3	
	D1 - Main Outpatients Department - suite B ENT (adj Audiology)	164.0	221.4	
	D1 - Main Outpatients Department - suite C (adj ophth & cardio resp)	231.5	312.5	
	D1 - Main Outpatients Department - suite D	184.0	248.4	
	D10 - Plastics Dressing Clinic	43.0	59.3	
	D2 - Cardiology & Respiratory (adj suite C)	162.5	219.4	
	D3 - Orthoptics (adj suite C)	118.5	160.0	
	D4 - Audiology (adj suite B)	191.0	257.9	
	D5 - Paediatric Dentistry	134.0	180.9	
	D6 - Therapies	863.8	1,166.1	
	D7 - Social Work	83.0	108.9	
D8 - Medical Day Care Unit (5 beds)	287.4	396.6		
D9 - OPD/Ther/Pharm shared (G floor)	48.0	66.2		
RHSC D1 - OutPatient Departments / Medical Day Care Total		2,967.2	4,013.8	

Schedule of accommodation

Facility	Department	Net Internal	With Circulation, Planning & Engineering	With Plant & Comms**
RHSC E1 - Theatres / Anaesthetics / Day Surgery	E1 - Operating Theatres/Surgical Day Case Unit	1,722.8	2,498.1	
	E2 - Acute Surgical Admissions Area (12 beds)	369.5	509.9	
RHSC E1 - Theatres / Anaesthetics / Day Surgery Total		2,092.3	3,008.0	
RHSC F1 - Child and Adolescent Mental Health (CAMHS)	F1 - Child & Adolescent Mental Health Services (12 inpatient beds)	1,019.5	1,376.3	
RHSC F1 - Child and Adolescent Mental Health (CAMHS) Total		1,019.5	1,376.3	
RHSC G1 - Clinical Support	G1 - Radiology	960.5	1,392.7	
	G2 - Pharmacy	122.0	164.6	
	G3 - Medical Photography	57.5	77.6	
	G4 - Equipment Library	60.0	78.0	
RHSC G1 - Clinical Support Total		1,200.0	1,713.0	
RHSC H1 - Academic	H1 - Child Life & Health	459.5	597.4	
	H2 - Clinical Research Facility	244.0	317.2	
	H3 - Clinical Education Suite	253.5	329.6	
RHSC H1 - Academic Total		957.0	1,244.1	
RHSC I1 - Office/Admin Support Services	I1 - Consultant, CNS & Secy Office Accommodation	-	-	
	I1a - Offices Medical Wing	445.0	578.5	
	I1b - Offices Surgical Wing	387.0	503.1	
	I1c - Offices Plastic Dressing Clinic Wing	183.5	238.6	
	I1d - Offices Management Wing	201.0	261.3	
	I2 - Child & Adolescent Mental Health Services Administration	35.0	45.5	
	I3 - Community Paediatrics	-	-	
	I4 - Community Childrens Nursing	55.0	71.5	
	I5 - Health Records Workspace	75.0	96.0	
	I6 - Health Records Store	257.0	329.0	
	I7 - Shared Support	140.0	182.0	
RHSC I1 - Office/Admin Support Services Total		1,778.5	2,305.4	
RHSC J1 - Facilities/Infrastructure Support Services	J1 - Main Entrance - Public Spaces	181.0	231.7	
	J2 - Main Kitchen	300.0	384.0	
	J3 - Coffee Rooms	-	-	
	J4 - e-Health Infrastructure	40.0	51.2	
	J5 - Domestic Services	50.0	64.0	
	J6 - Materials Management	85.5	109.4	
	J7 - Central Staff Changing Accommodation	222.0	284.2	
	J8 - Estates	-	-	
	J9 - Bed Store	114.0	145.9	
	J10 - Hard FM***	150.0	187.5	
RHSC J1 - Facilities/Infrastructure Support Services Total		1,142.5	1,457.9	
RHSC K1 - Patient/Family Support	K1 - Bereavement Suite	45.5	59.2	
	K2 - Spiritual & Pastoral Care	73.0	94.9	
	K3 - On-Call Suite	72.5	92.8	

Schedule of accommodation

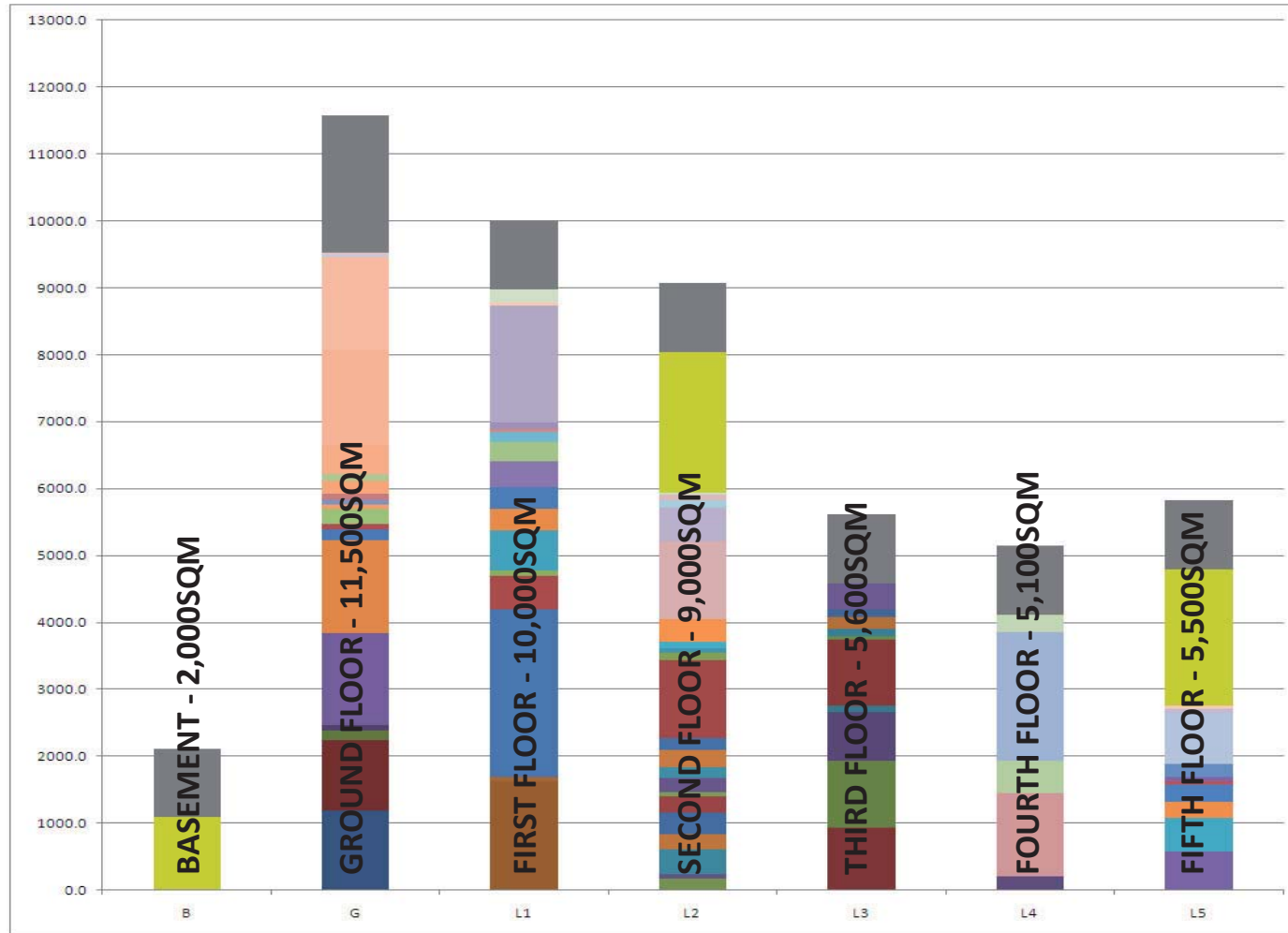
Facility	Department	Net Internal	With Circulation, Planning & Engineering	With Plant & Comms**
RHSC K1 - Patient/Family Support Total		191.0	246.9	
RHSC L1 - FAMILY HOTEL	L1 - Family Support	339.5	435.2	
	L2 - Family Hotel	-	-	
	L3 - Family Hotel - RM	955.0	1,241.5	
	L4 - Family Hotel - CS	371.5	483.0	
RHSC L1 - FAMILY HOTEL Total		1,666.0	2,159.6	
DCN Inpatient Wards	DCN Acute Care	1,026.50	1416.57	
	Inpatients	1,421.50	1919.03	
	Critical Care (Located in RIE)	-	-	
DCN Inpatient Wards total		2,448.00	3335.6	
DCN Operating Theatres	Operating Theatres	1310	1742.3	
DCN Operating Theatres total		1310	1742.3	
DCN Radiology	Neuroradiology	1035	1398.2	
DCN Radiology total		1035	1398.2	
DCN Outpatient Departments	Outpatient Suites	836.5	1162.74	
	Neurophysiology	196	260.68	
	Therapies	383	509.39	
	Programmed Investigations Unit	78	107.64	
DCN Outpatient Departments total		1493.5	2040.45	
DCN Office/Admin Support Services	Consultant/Secy/Clerical Offices	573	762.09	
	Medical Records - Storage	65	76.7	
	Medical Records - Office	30	39.9	
	Seminar/Meeting Rooms	48	63.84	
DCN Office/Admin Support Services total		716	942.53	
DCN Facilities/Infrastructure Support Services	Coffee Rooms	81.5	108.4	
	E Health	18	23.94	
	Domestic	30	39.9	
	Staff Changing	146	194.18	
DCN Facilities/Infrastructure Support Services total		275.5	366.42	
Combined Plant	Plant*	4,875.0	5,362.5	
Combined Plant Total		4,875.0	5,362.5	
Communication area				8,253.7
Combined Total		31,313.95	41,268.65	49,522.38
Energy Centre				1,008.0

* plant areas based on H&K schedule with omission of vertical risers, elec cupboards, node rooms and IPS rooms which are covered in the existing SoA's. Note that the scheduled areas do not include for external plant such as chillers, fans, VIE, oil and gas bottle storage.

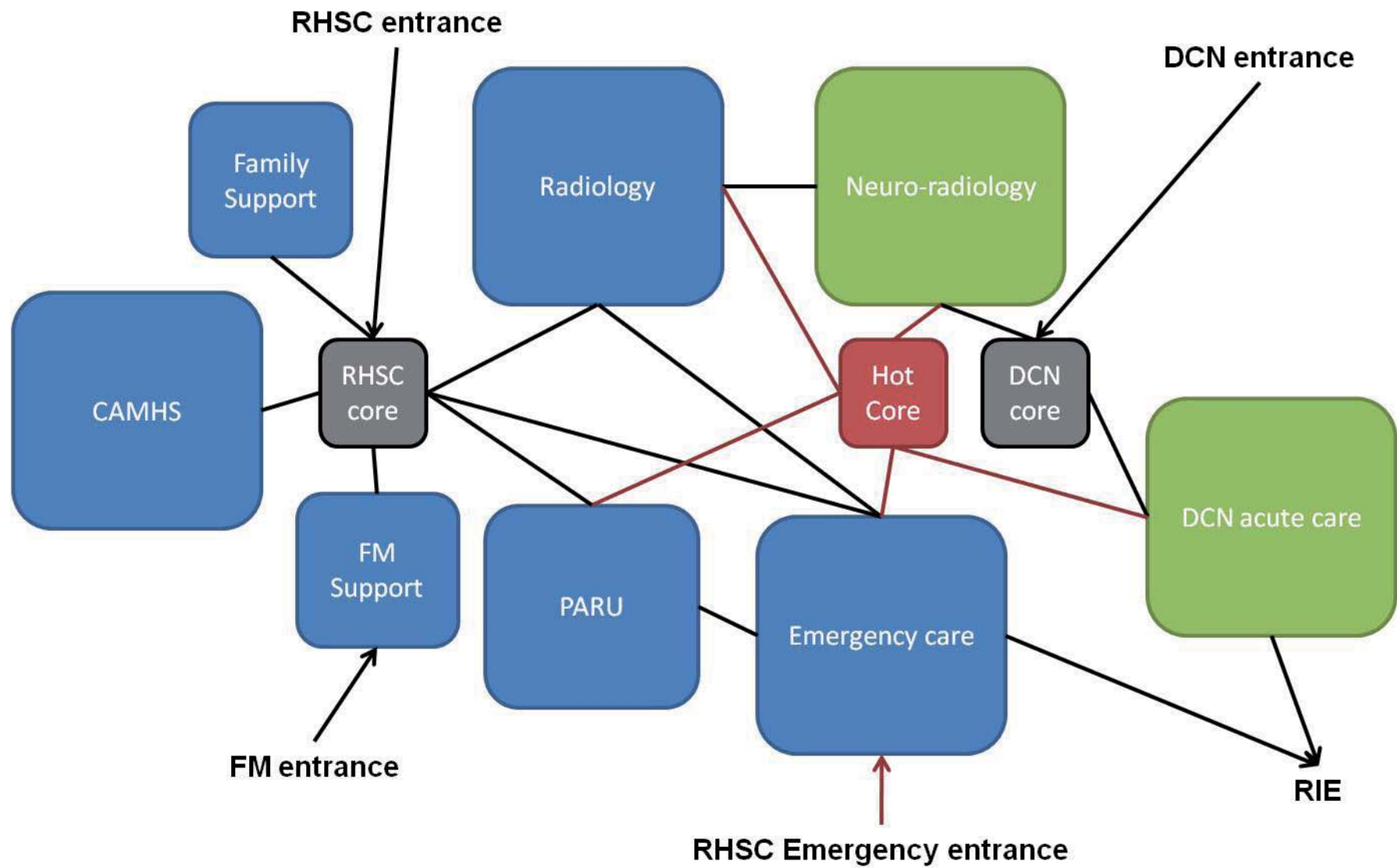
** comms allowance of 20%

*** Hard FM added - figure based on benchmarking against other similar schemes (e.g. FM area of 116sqm at 36,000sqm Caerphilly Hospital)

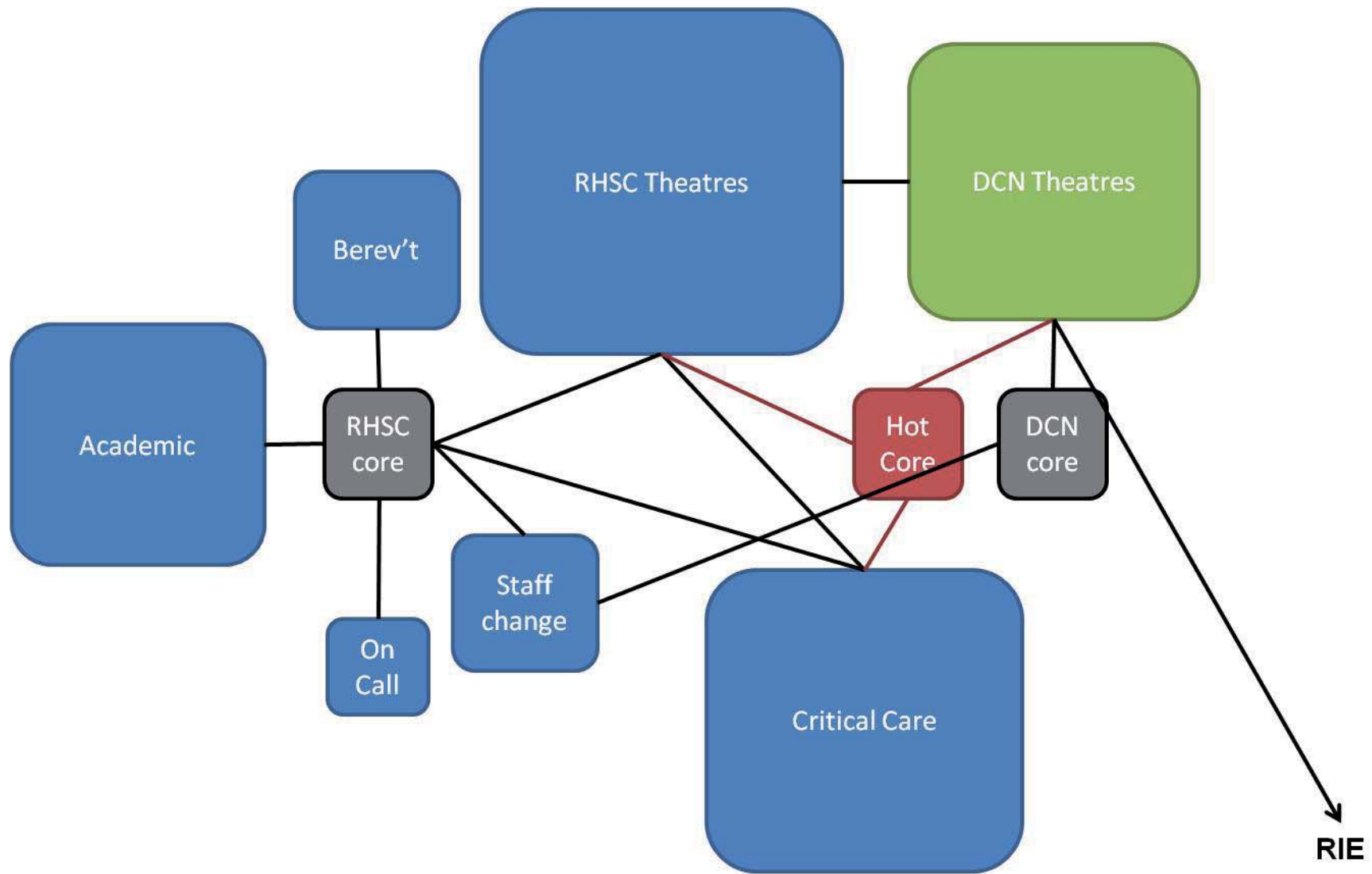
Stacking diagram with approximate floor areas



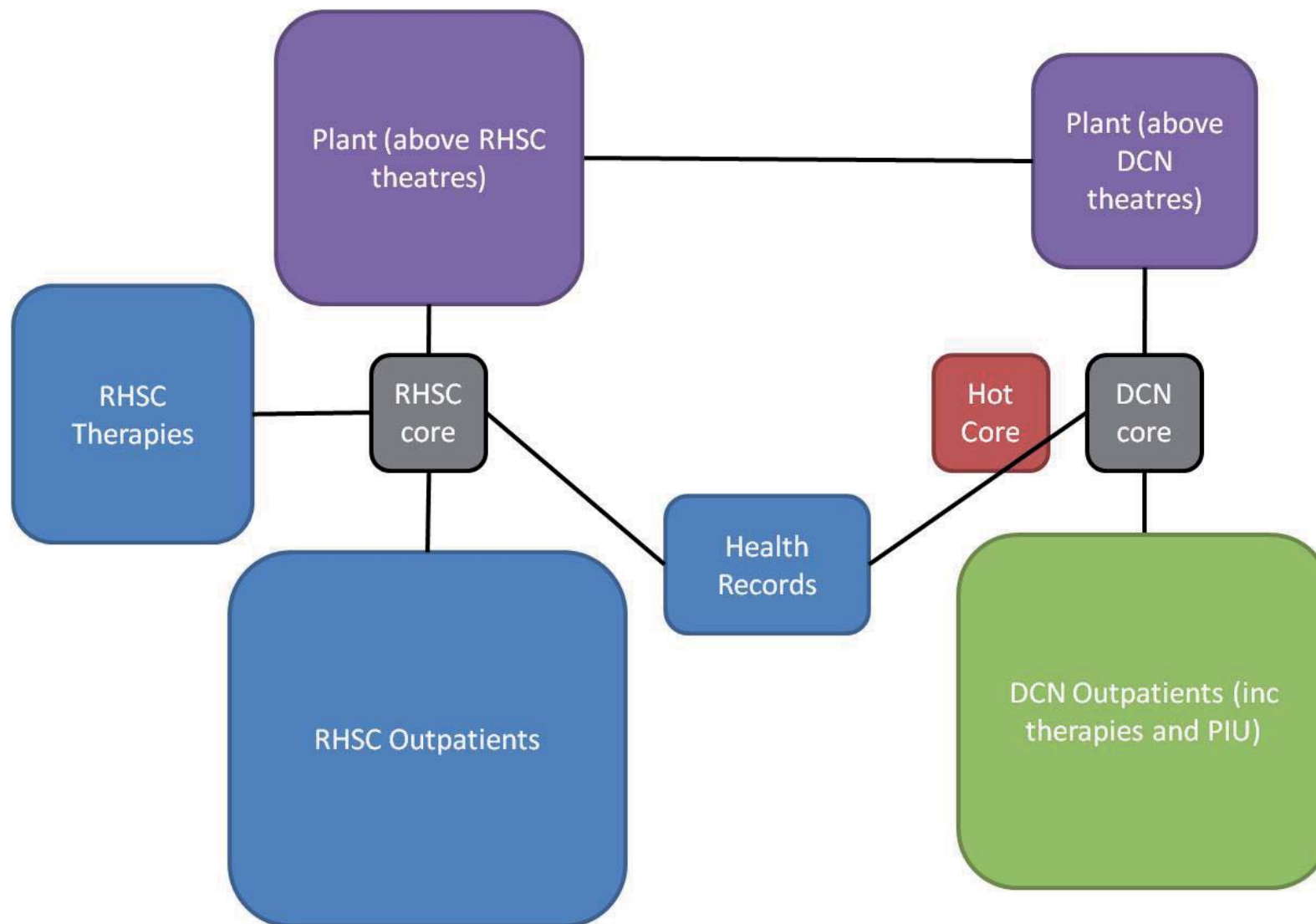
Adjacency Diagram: Ground Floor



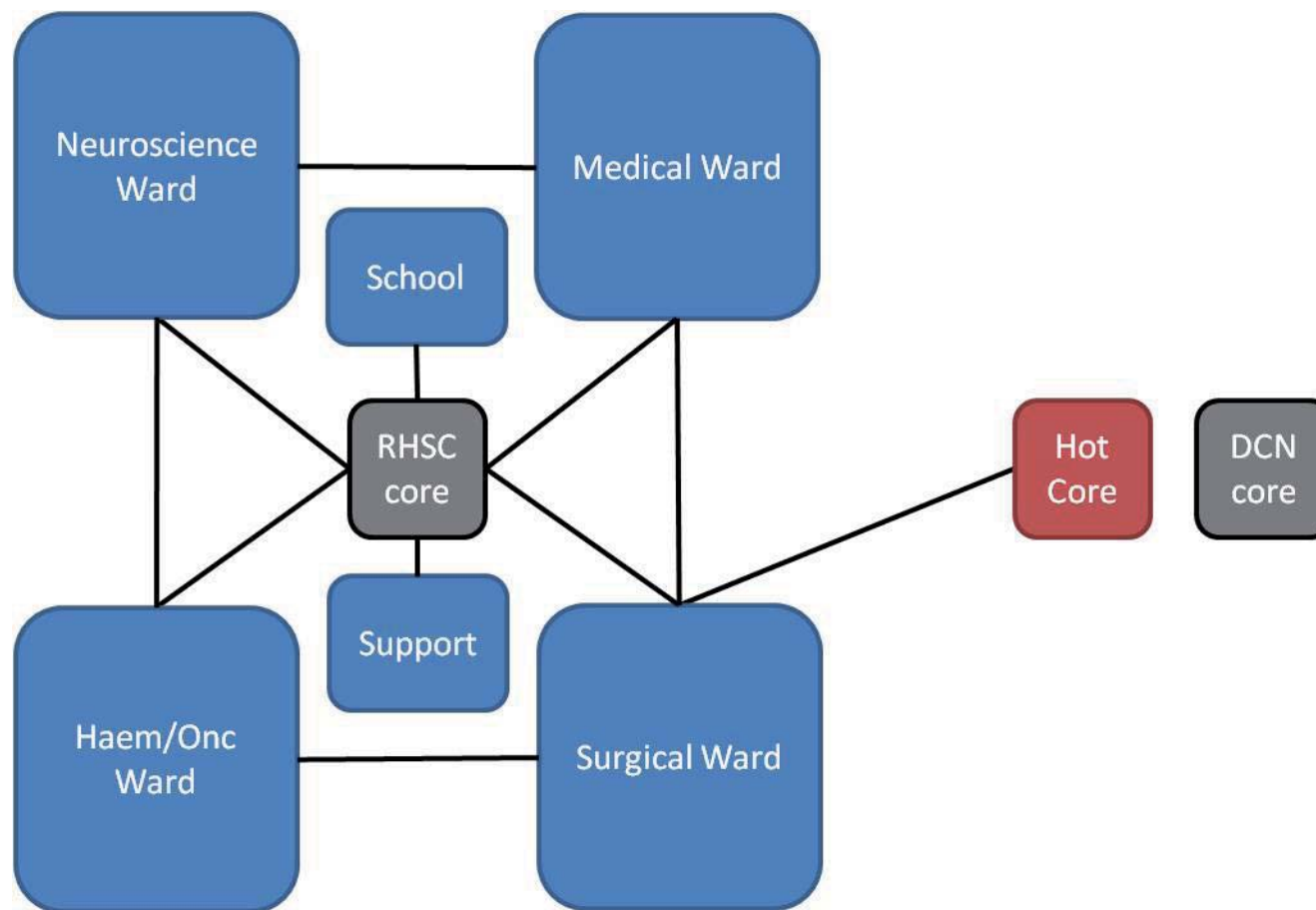
Adjacency Diagram: First Floor



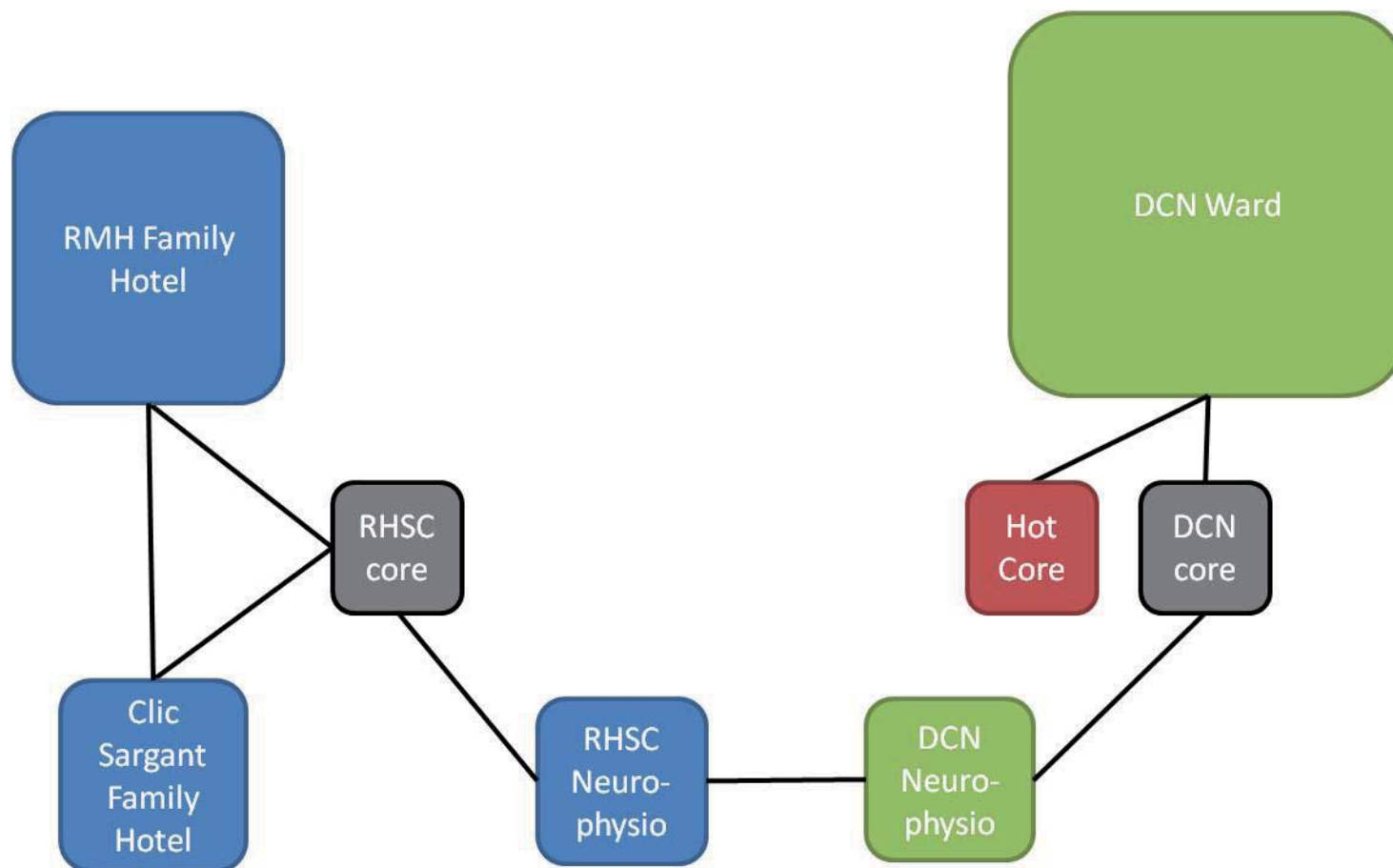
Adjacency Diagram: Second Floor



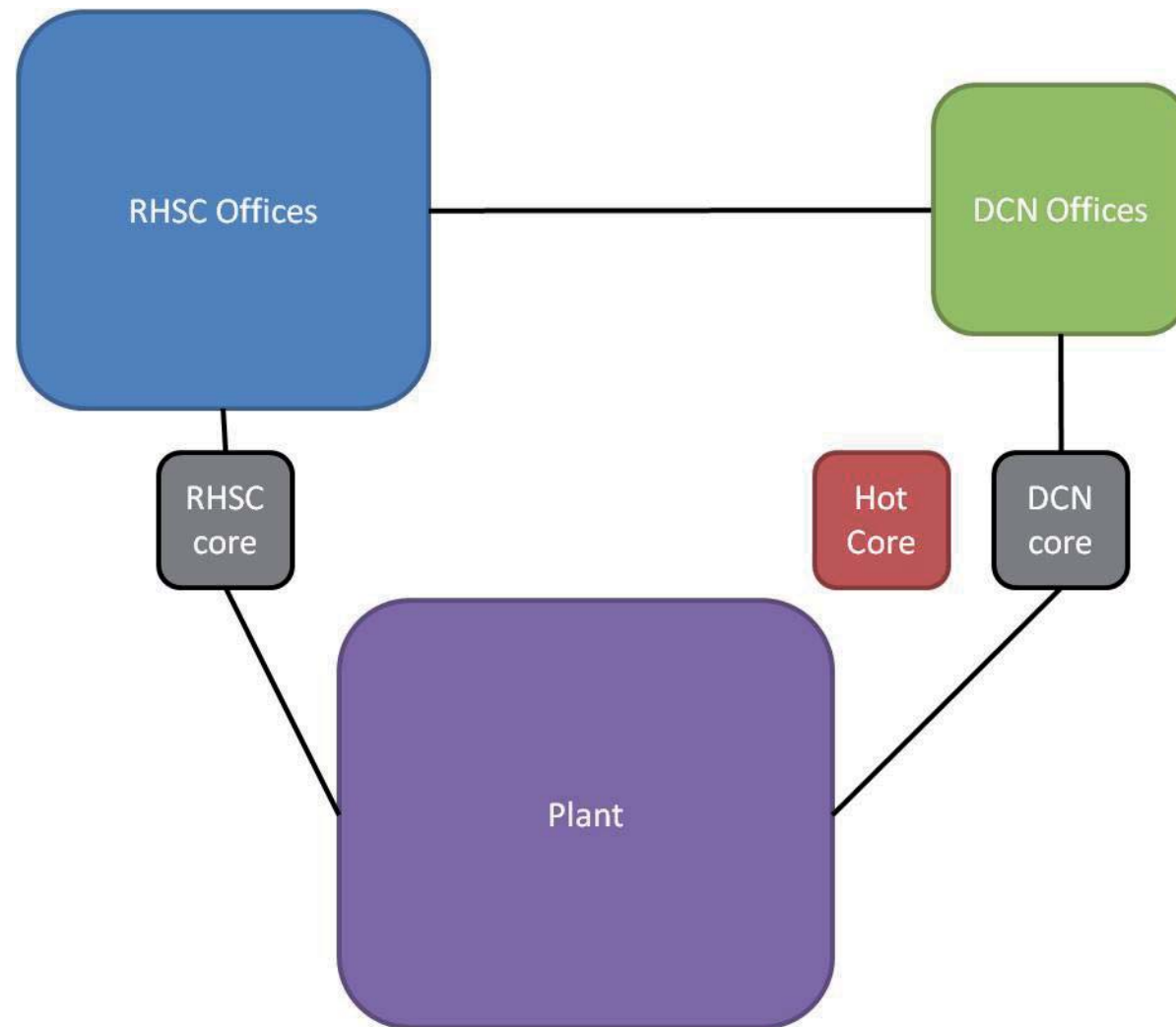
Adjacency Diagram: Third Floor



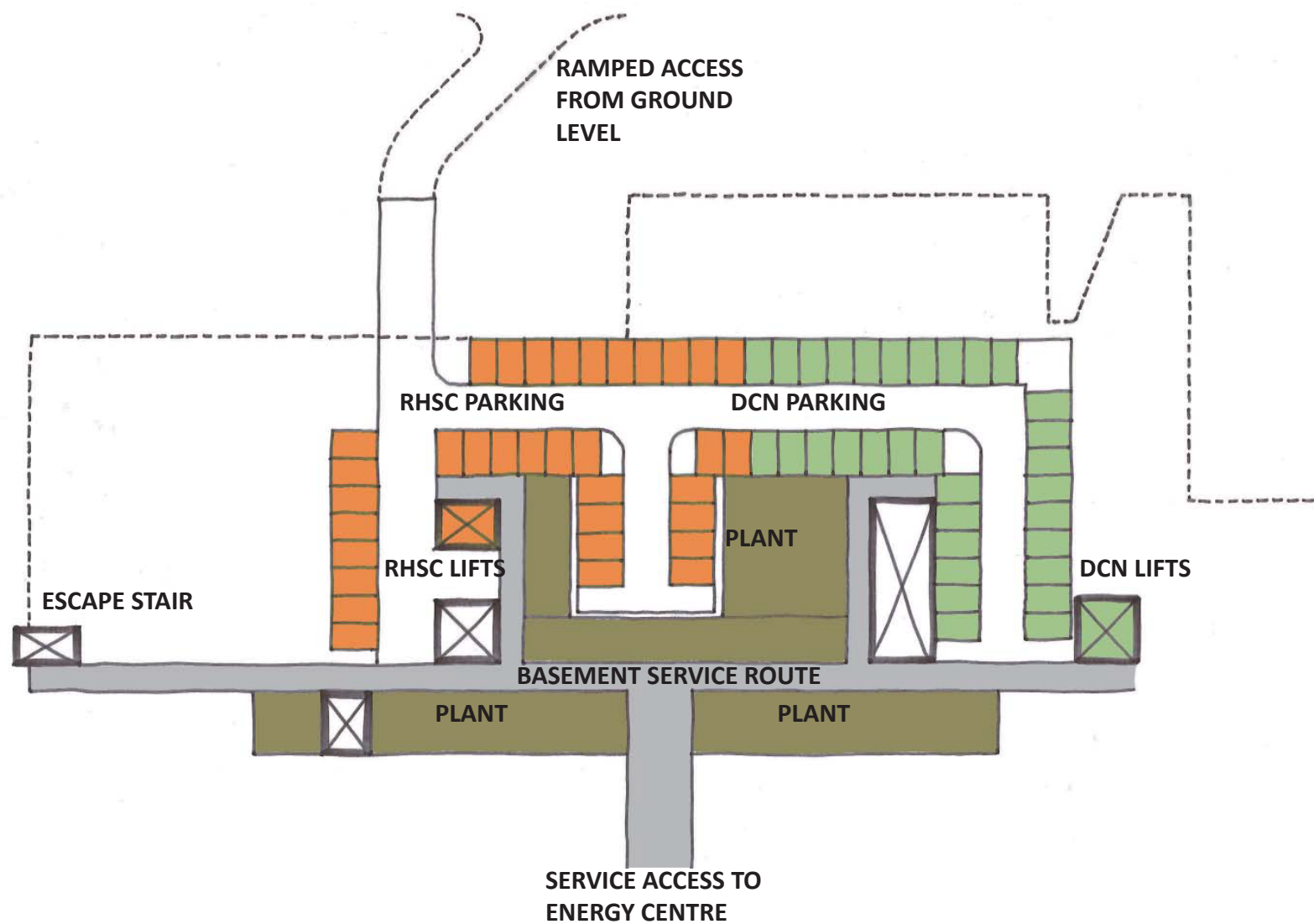
Adjacency Diagram: Fourth Floor



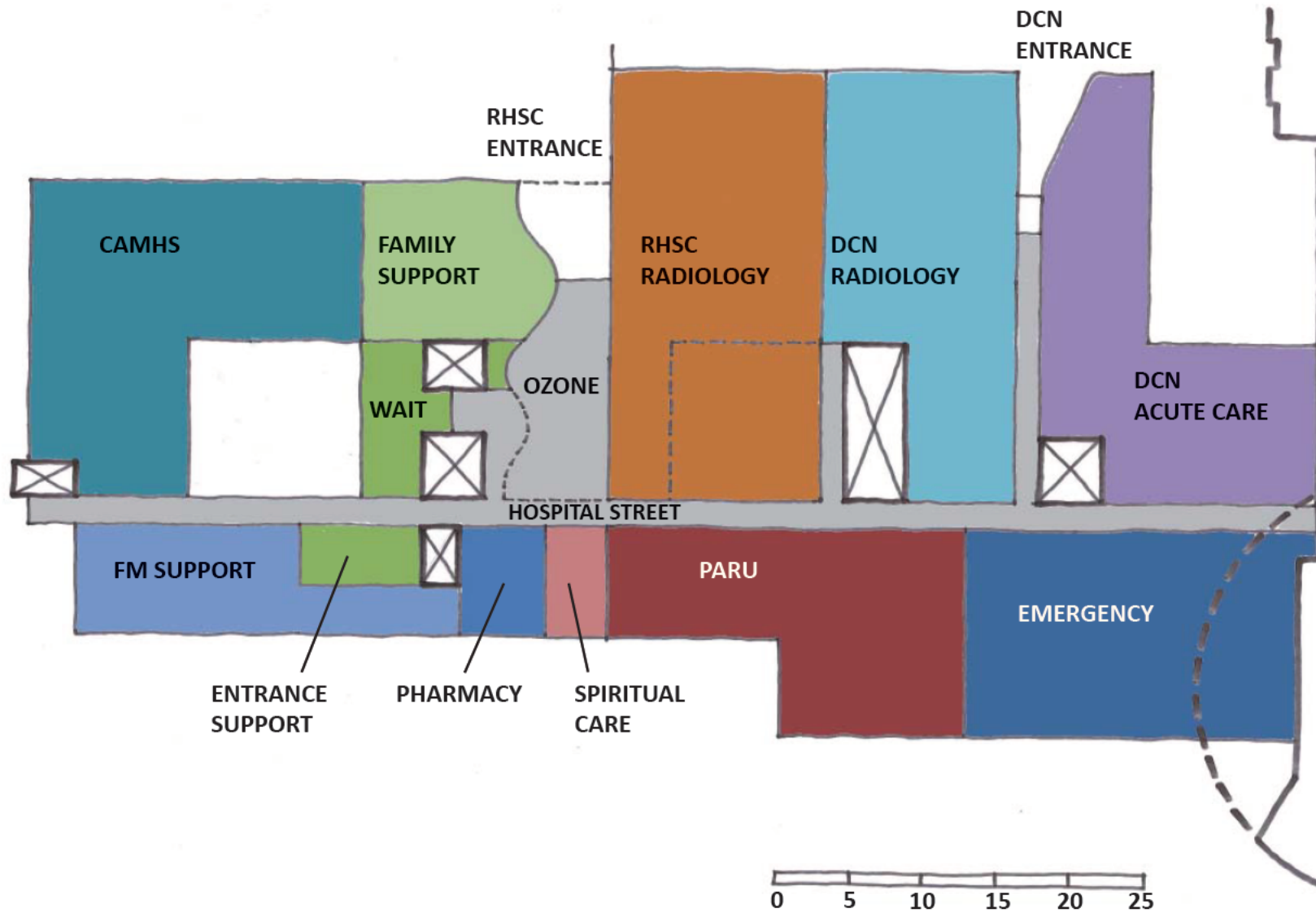
Adjacency Diagram: Fifth Floor



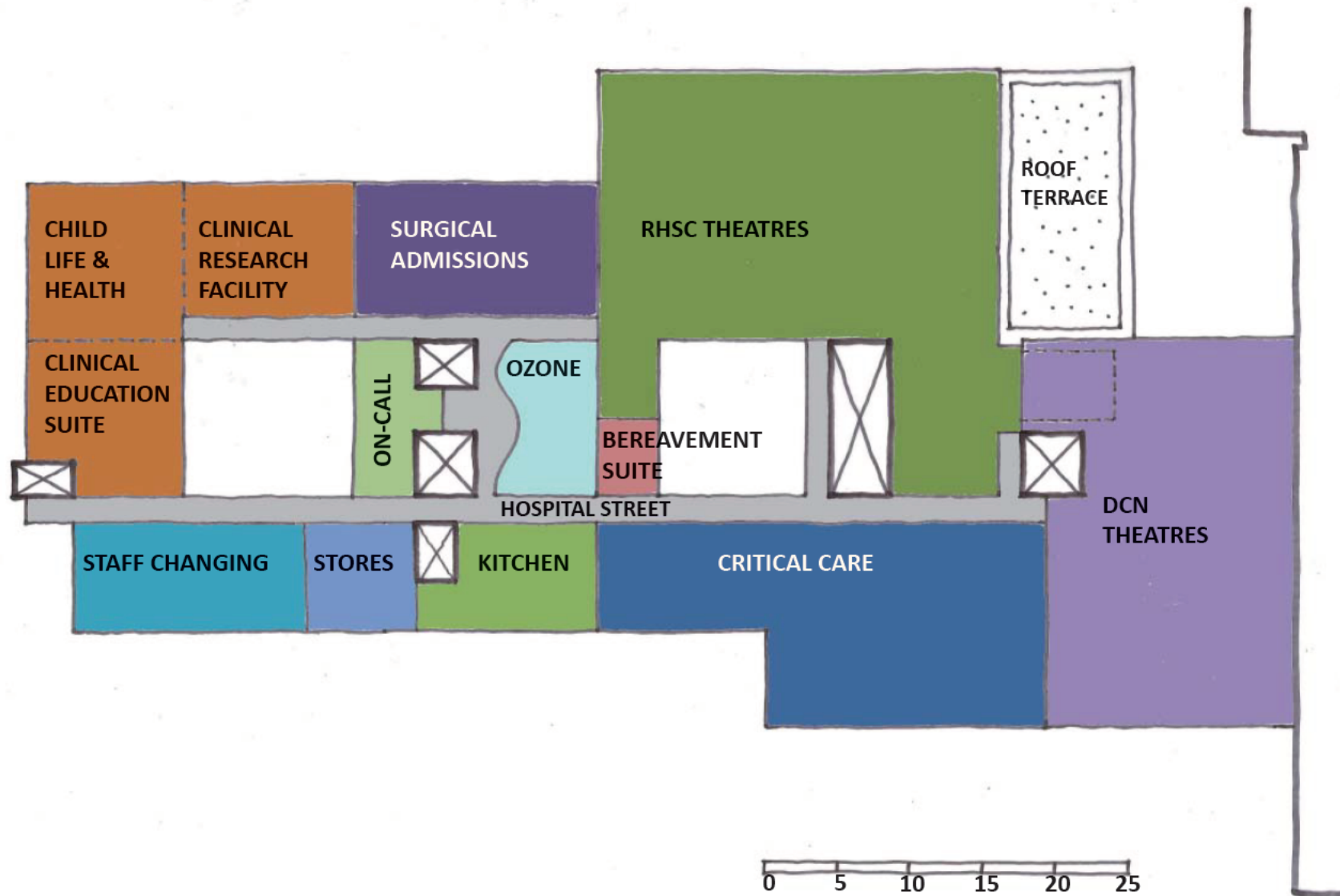
Layout Diagram: Basement



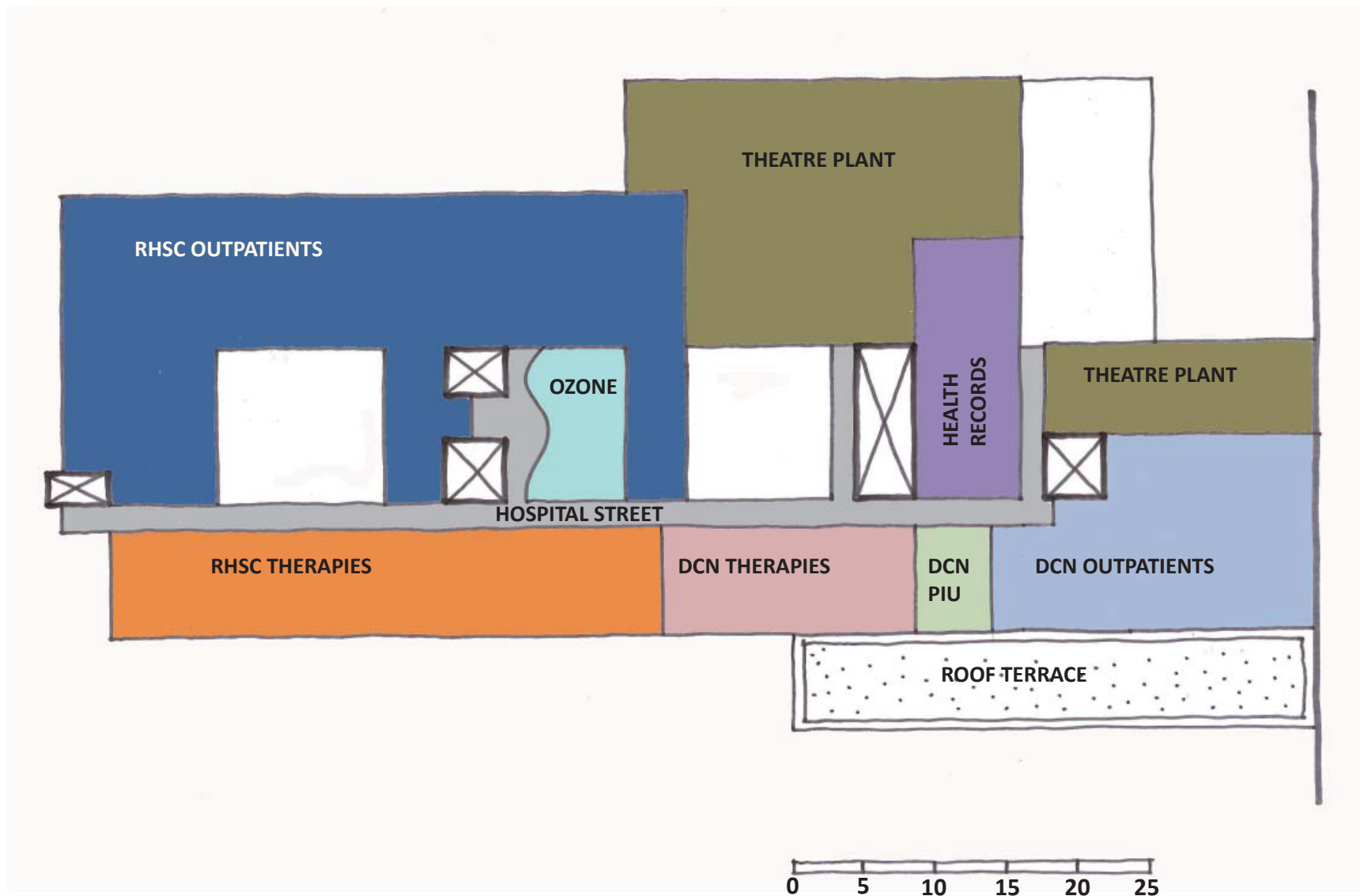
Layout Diagram: Ground Floor



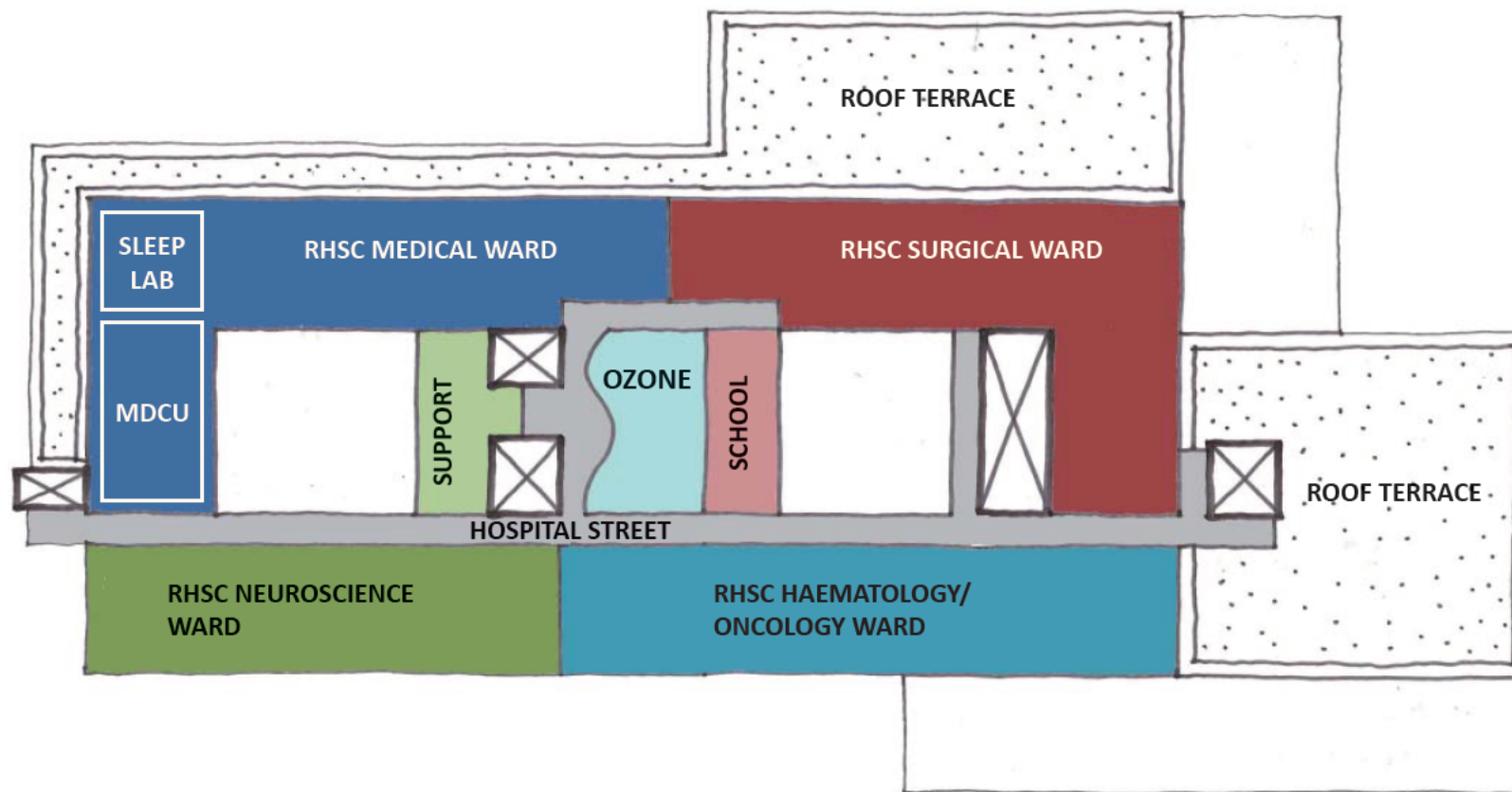
Layout Diagram: First Floor



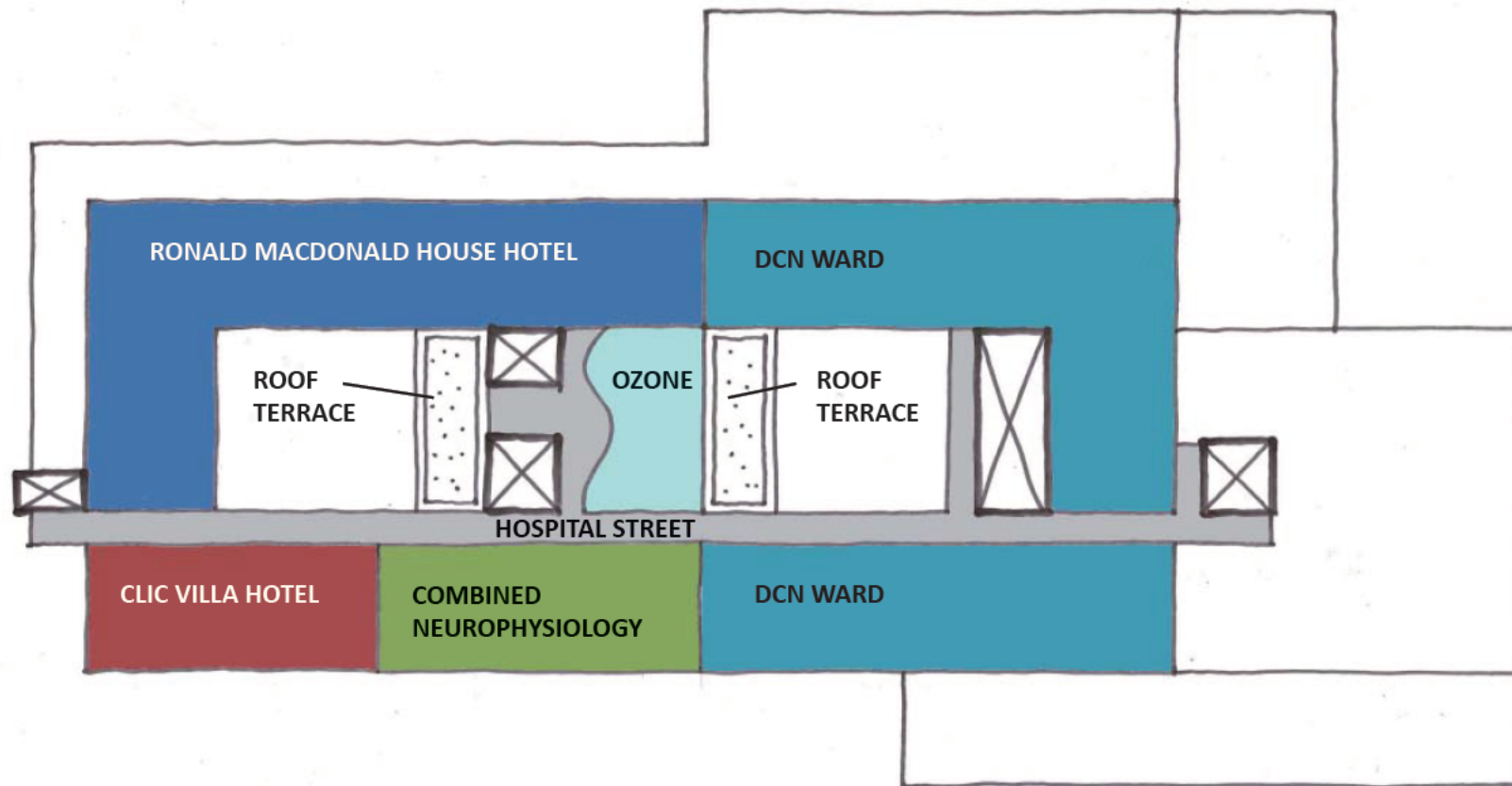
Layout Diagram: Second Floor



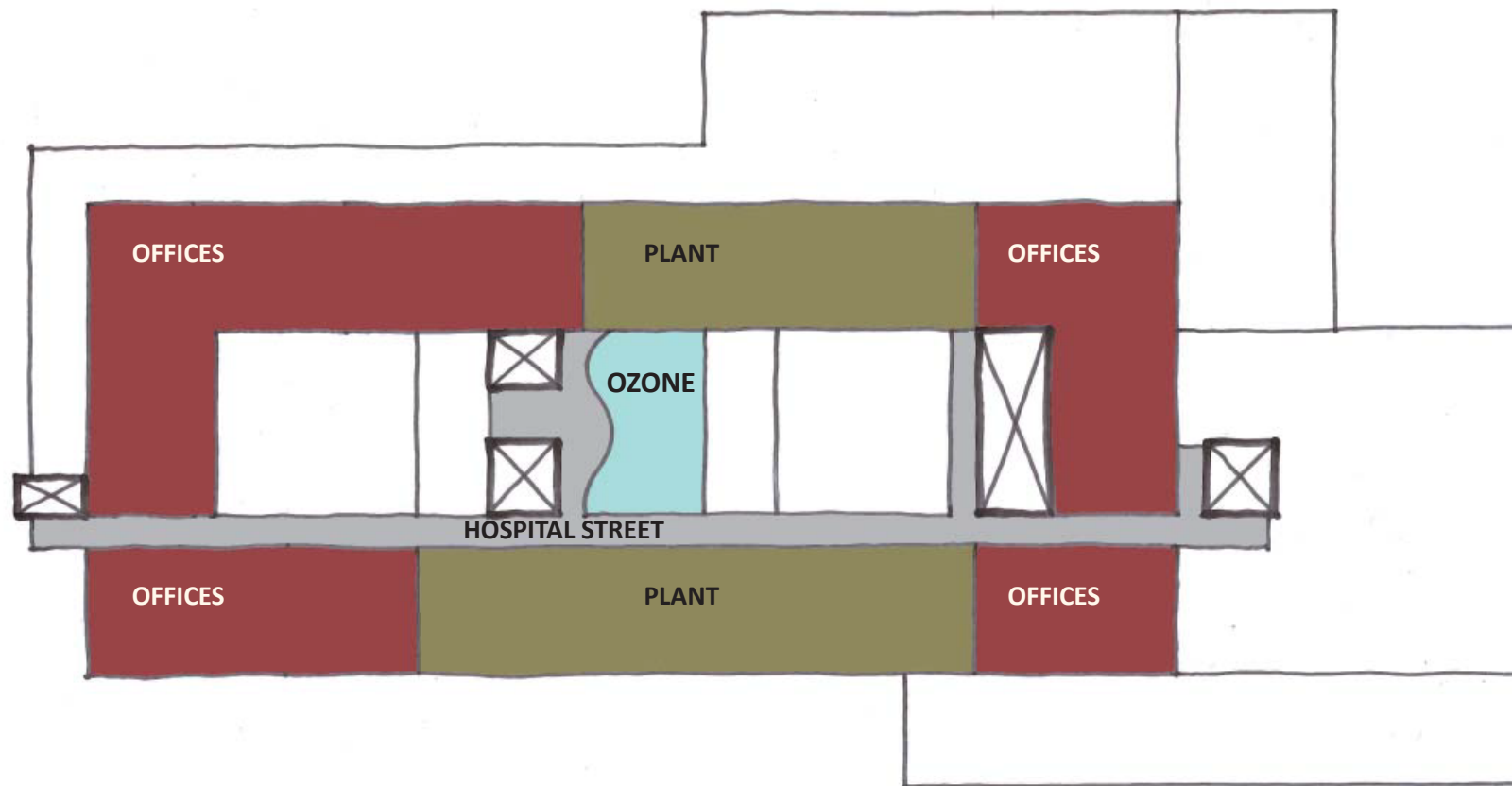
Layout Diagram: Third Floor



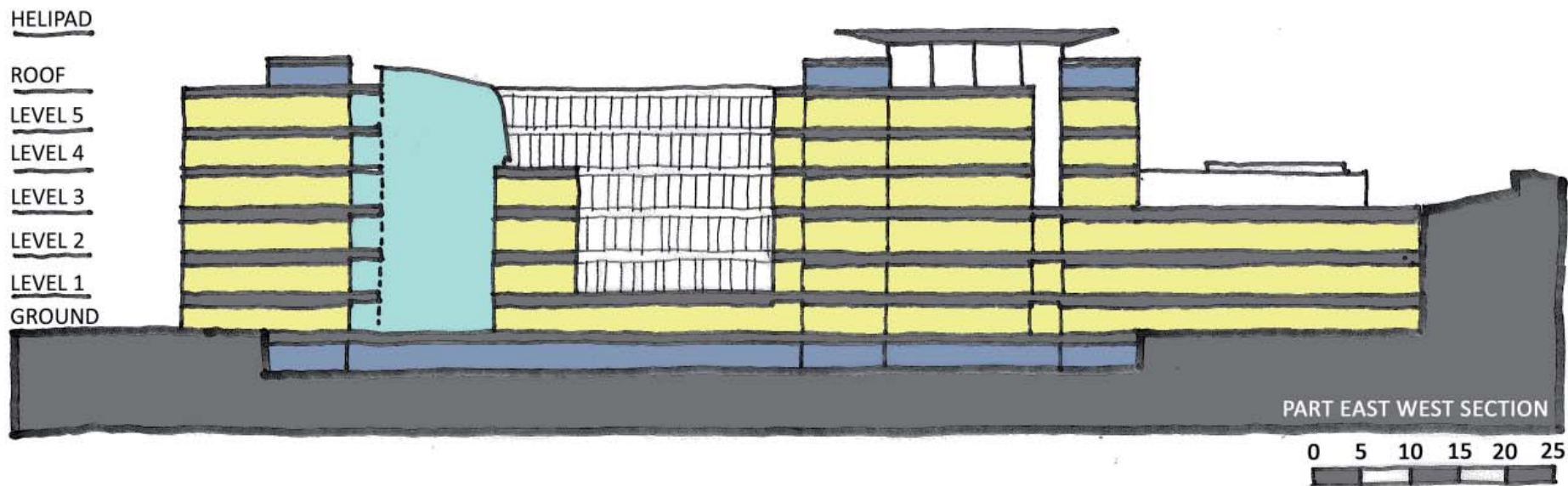
Layout Diagram: Fourth Floor



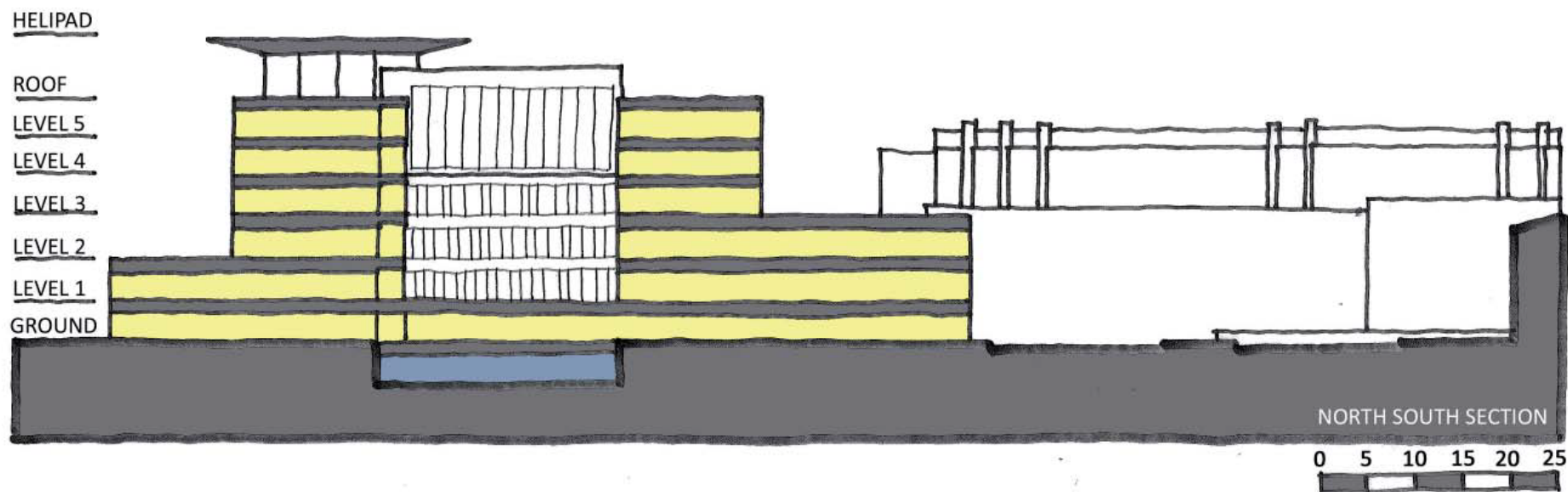
Layout Diagram: Fifth Floor



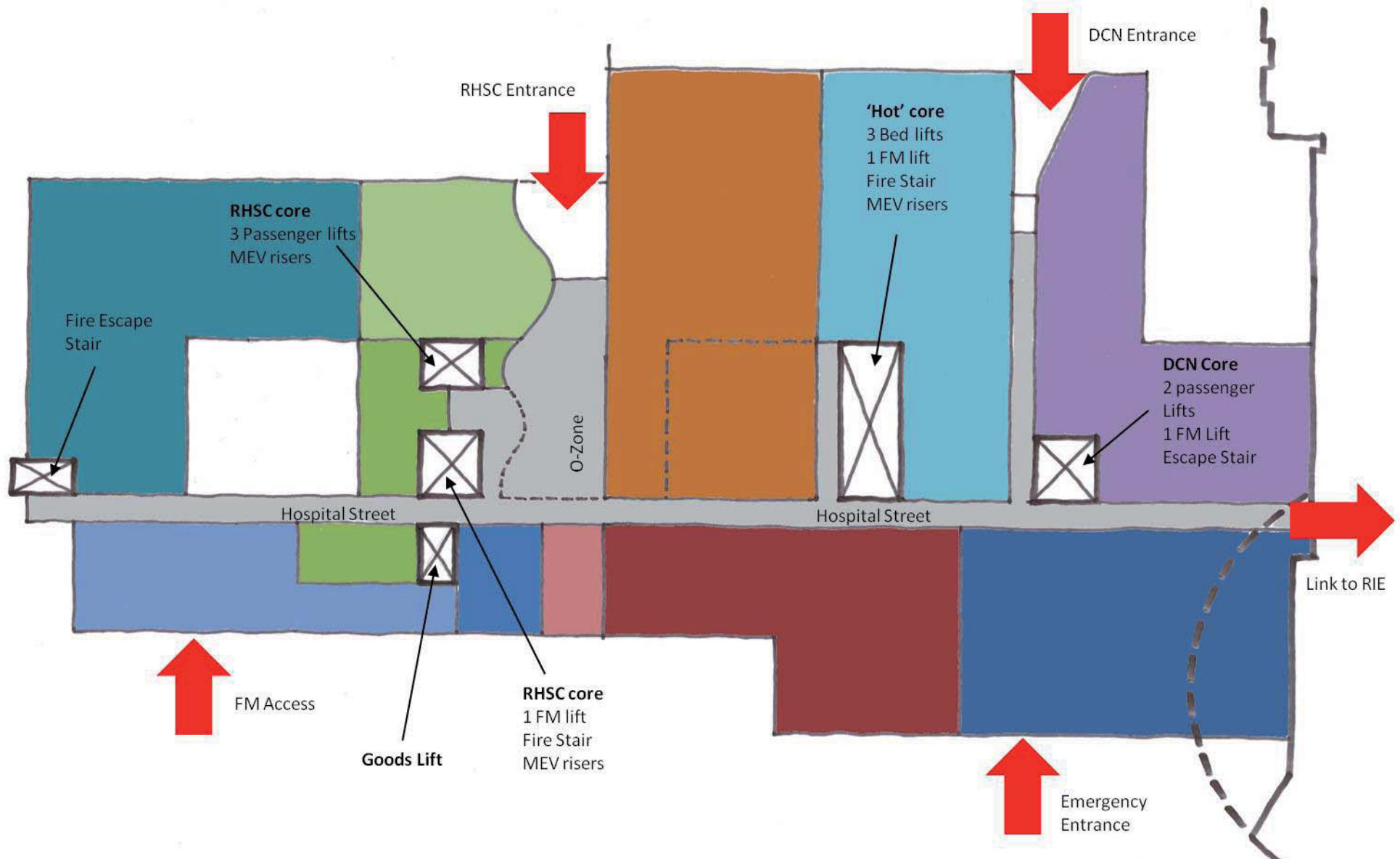
Typical Section - East West

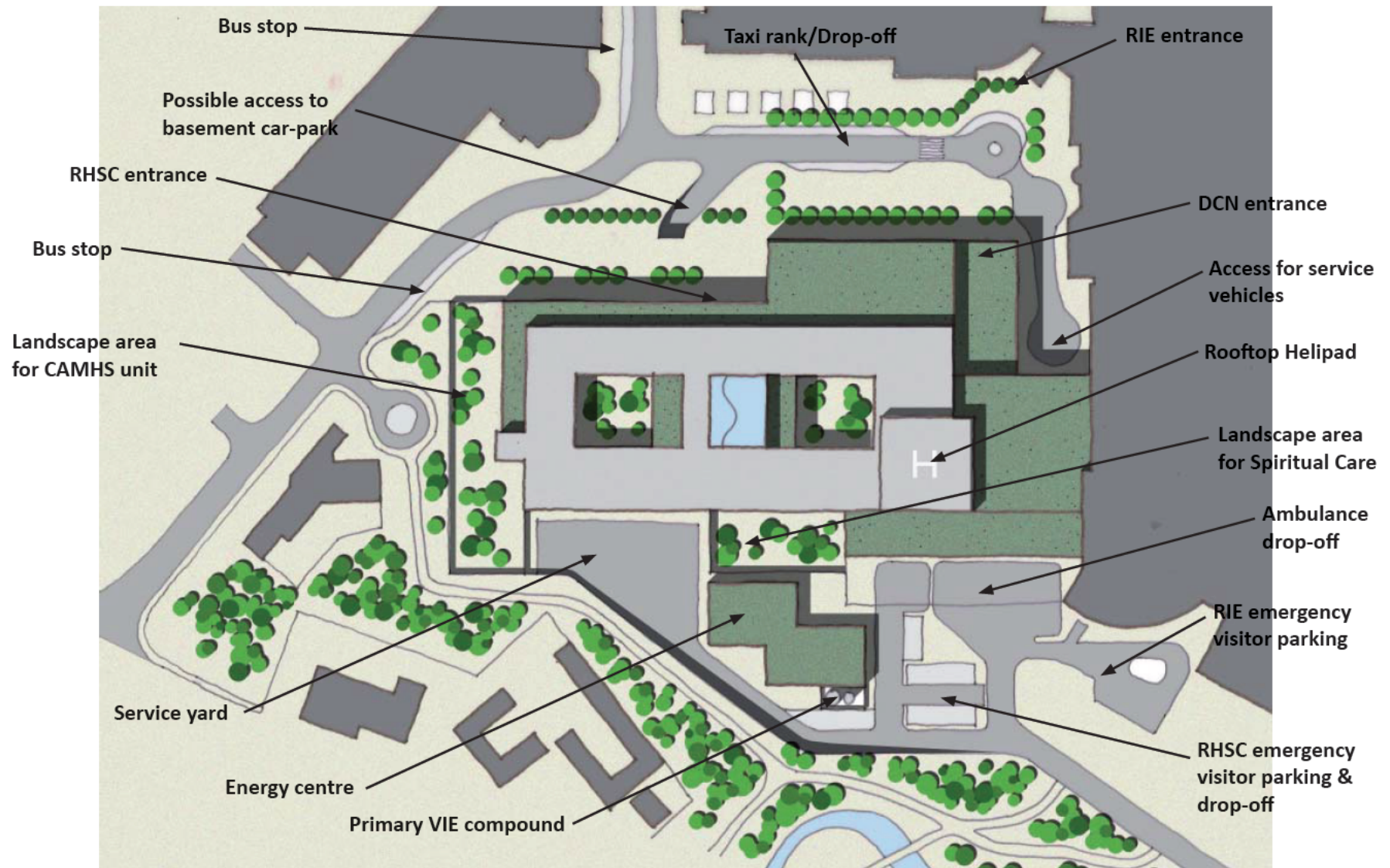


Typical Section - North South



Communication Strategy

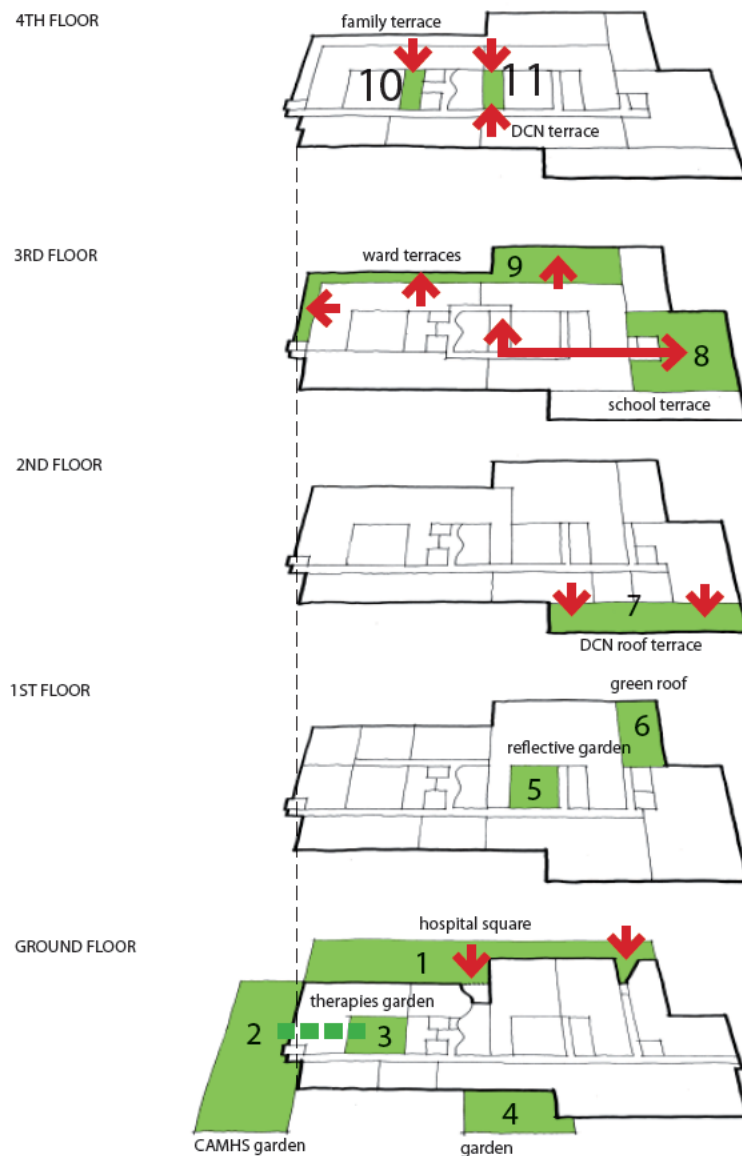




Initial thoughts on landscape

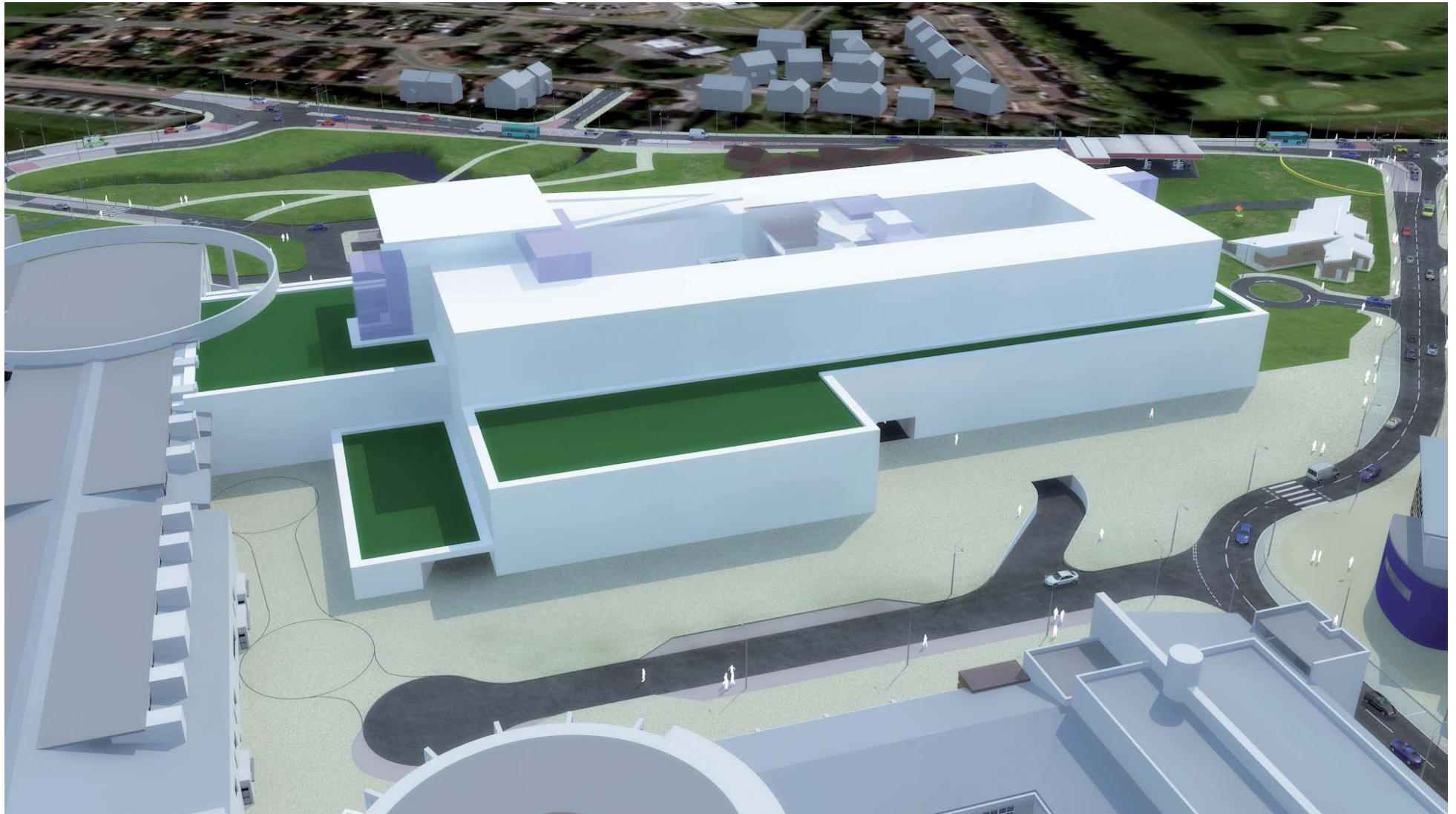


Initial thoughts on landscape



1. **Hospital Square**
 - Legibility
 - Sense of arrival
 - Functional and safe organisation of vehicles and pedestrians
 - Link with nature
2. **CAMHS Garden**
 - Safe and nurturing spaces for CAMHS patients
 - Contact with nature
 - Different scale of spaces for therapy and group work
 - Horticulture therapy spaces
3. **Therapies Garden**
 - Allow for monitoring of patients gross motor skills in formal and informal environment
 - Provide ground floor of the hospital with an informal external play space
 - Link through to CAMHS allows assessment of children's play patterns and play therapy
4. **Garden/play space**
 - Area accessed from ozone for play and relaxation
 - Also to provide screening and relief from the energy centre
5. **Reflective Garden**
 - A captured garden that brings the landscape into the core of the building
 - Staff terrace space away from the day to day stresses of hospital life
 - A green and rich space.
6. **Green Roof**
7. **DCN Roof Terrace**
 - Break out space from DCN therapies spaces.
 - A flexible space for all DCN users.
 - Test track route for assessing motor skills and delivering therapy
8. **School Roof Terrace**
 - Key external space for the school
 - Link with nature
 - Habitat
 - Flexible external learning spaces
9. **Ward Roof Terraces**
 - Simple terrace spaces
 - Sensory planting
 - Ability to wheel beds outside
 - Multiuse spaces
 - Place to escape
10. **Family Roof Terrace**
 - External lounge and relaxation space
 - Social support
 - Dining space
11. **DCN Roof Terrace**
 - External terrace to provide flexible space for access from wards

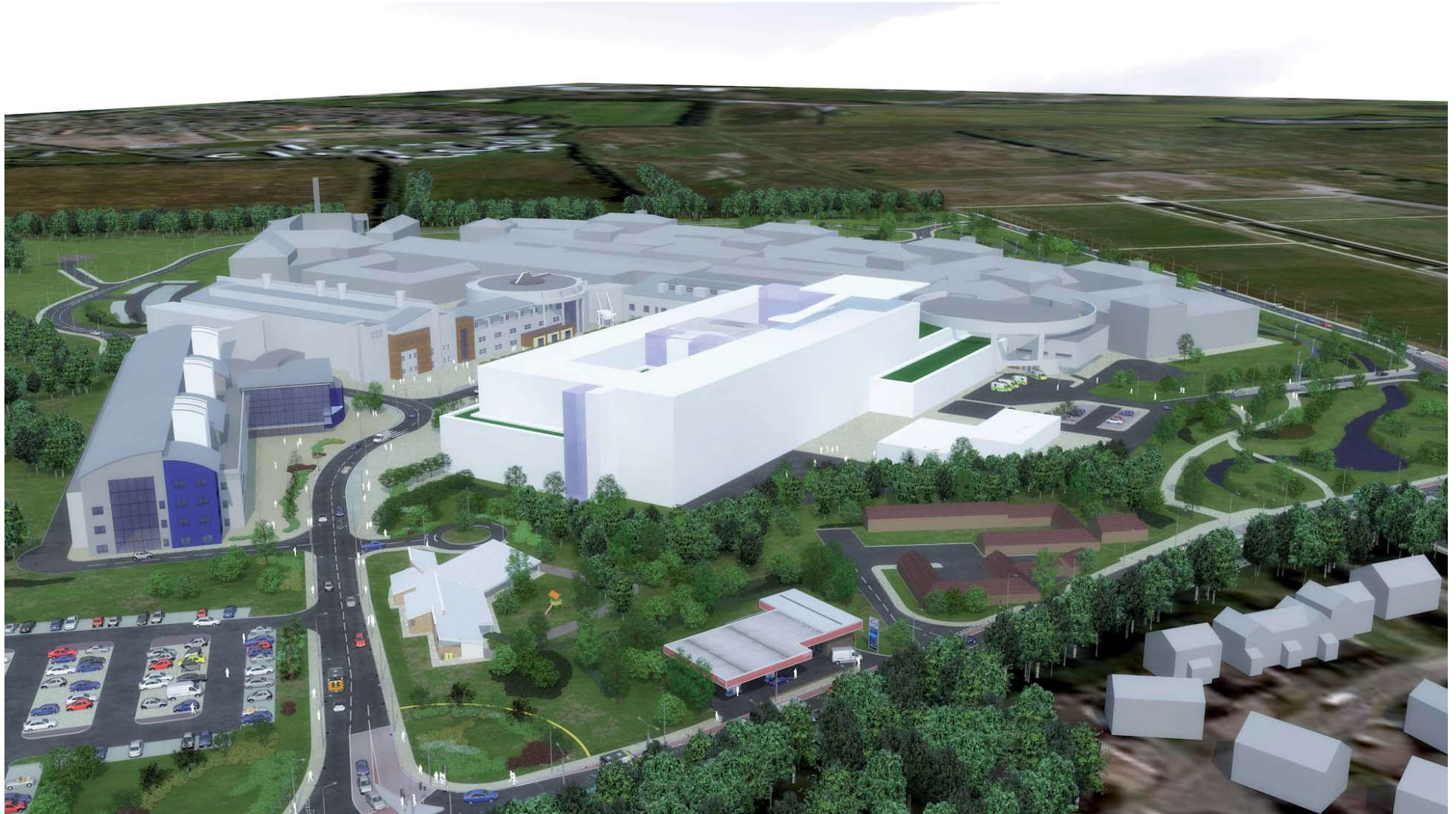
Massing studies: Aerial view from North



Massing studies : View from South along Dalkieth Road



Massing studies: Aerial view from West



APPENDIX 3

FEASIBILITY COST ESTIMATE

COMBINED ROYAL HOSPITAL FOR SICK CHILDREN AND DEPARTMENT OF CLINICAL NEUROSCIENCES BUILDING

at

LITTLE FRANCE, EDINBURGH

for

NHS Lothian

FEASIBILITY COST ESTIMATE





CONTENTS

	<u>ITEM</u>	<u>PAGE</u>
1.0	INTRODUCTION	3
2.0	WORK PACKAGE SUMMARY	5
3.0	COST DETAIL	8



1.0 INTRODUCTION

1.0 INTRODUCTION

- 1.1 The following costs have been prepared in order to illustrate the cost of constructing a combined RHSC and DCN building adjacent to the existing RIE building at Little France, Edinburgh.
- 1.2 This cost estimate has generally been based upon the market tested tender returns received for the stand alone RHSC project.
- 1.3 The Gross Internal Floor area of the combined building has been assessed as being 50,000m² excluding the Energy Centre (36,000m² RHSC, 13,000m² DCN and 1,000m² for FM accommodation)
- 1.4 This Cost Estimate has been prepared on the basis of the layout drawings included within Appendix A.
- 1.5 Construction start date has been assumed as September 2011 with completion being March 2014. Failure to achieve this site start date is likely to incur an additional construction inflation cost of circa 4 - 5% per annum.
- 1.6 This Cost Estimate has included an allowance of 5.25% to account for construction cost inflation.
- 1.7 We specifically highlight the following regarding our cost estimate breakdown
 - a) This cost estimate only includes for work undertaken within the proposed RHSC/DCN site boundary e.g. Potential perimeter road widening works, cycle path enhancements, Little France wayfinding work, clinical upgrades within the RIE building (aseptic suite, pharmacy and laboratory alterations, etc).
 - b) Excludes enabling works costs e.g. diversion of existing services (anticipated to be undertaken by Consort), flood protection enhancement works, etc



2.0 WORK PACKAGE SUMMARY



COMBINED RHSC & DCN BUILDING
LITTLE FRANCE, EDINBURGH
FEASIBILITY COST ESTIMATE

Issued : 20/12/10
Base Date : December 2010
Page No : 6/24

2.0 WORK PACKAGE SUMMARY

The following is a work package summary of costs. Detailed costs follow in section 3.0 of this report.

Work Package	Cost	Percentage	Cost per m ²
	£	%	£/m ²
Bulk Excavation & Piling Platform	1,650,400	1.7	33
Piling	1,878,000	1.9	38
Substructure	4,598,750	4.7	92
Underground Drainage	470,000	0.5	9
Superstructure Frame	7,500,000	7.7	150
Secondary Steel	756,000	0.8	15
Green Roof	341,775	0.3	7
ETFE Roof	304,500	0.3	6
Liquid Applied Roof Finishes	1,296,380	1.3	26
External Rainwater Goods	174,000	0.2	3
Louvres	177,020	0.2	4
Architectural Metalwork	804,650	0.8	16
Fire Protection	200,000	0.2	4
PC Stairs	154,500	0.2	3
External Wall Construction	1,469,745	1.5	29
SFS	527,700	0.5	11
Windows / Curtain Walling	3,916,345	4.0	78
Brick / Blockwork	293,880	0.3	6
Partitions / Dry Lining	2,494,692	2.6	50
Glazed Screens	850,000	0.9	17
IPS & Cubicle Systems	1,400,000	1.4	28
Carried Forward	31,258,337	32.0	625

2.0 WORK PACKAGE SUMMARY (Cont'd)

Work Package	Cost	Percentage	Cost per m ²
	£	%	£/m ²
Brought Forward	31,258,337	32.0	625.2
Bathroom Pods	1,605,000	1.6	32
Joinerwork	2,661,755	2.7	53
External Wall Finishes	345,540	0.4	7
Ceramic Tiling	70,000	0.1	1
Screeding	242,384	0.2	5
Carpet & Vinyl	2,173,500	2.2	43
Suspended Ceilings	1,566,350	1.6	31
Decoration	1,311,450	1.3	26
External Doors	22,900	0.0	0
Fittings & Furnishings	3,200,000	3.3	64
Wall Protection Rails	330,000	0.3	7
Soft Landscaping	110,000	0.1	2
External Works	2,516,720	2.6	50
Feature Entrance Canopy	453,750	0.5	9
External Building Signage	20,000	0.0	0
Mastic	140,000	0.1	3
Testing - Acoustic & Air Pressure	90,000	0.1	2
Lead Lining & Protection	220,000	0.2	4
Wall Panelling	386,875	0.4	8
BWICS	270,000	0.3	5
Folding Partitions	62,900	0.1	1
Carried Forward	49,057,461	50.2	981.1



2.0 WORK PACKAGE SUMMARY (Cont'd)

Work Package	Cost	Percentage	Cost per m ²
	£	%	£/m ²
Brought Forward	49,057,461	50.2	981
Lifts	1,080,000	1.1	22
Mechanical Installations	23,290,000	23.8	466
Electrical Installations	14,350,000	14.7	287
Energy Centre Works	5,907,200	6.0	118
Helipad Works	4,000,000	4.1	80
Sub-total	£ 97,684,661	100.0	£ 1,954
Preliminaries - 12.5%	12,210,583	-	244
Contingencies - 3.3%	3,626,543	-	73
Total Construction Cost	£ 113,521,787	-	£ 2,270
Inflation - 5.25%	5,959,894	-	119
PSCP Design Team Fees - 8.87%	10,598,025	-	212
BAM Fee - 7.1%	8,978,175	-	180
Statutory Fees	350,000		
PSC Fees - 4% (Based on construction cost and inflation)	4,779,267	-	96
VAT - 20% (excluding PSC fees)	27,811,576	-	556
Total Cost	£ 171,998,723	-	£ 3,433

2.0 WORK PACKAGE SUMMARY (Cont'd)

Notes

- Costs include VAT at 20% for the duration of the build
- Costs are current at 3Q10 - inflation to cover construction period is included



3.0 COST DETAIL

3.0 COST DETAIL

Work Package Description	Quantity	Unit	Unit Cost	Item Total	Work Package Total	Comments
BULK EXCAVATION & PILING PLATFORM			£	£	£	
General site preparation						
Site clearance works		item		5,000.00		As RHSC stand alone scheme
Site strip; excavate to reduce levels not exceeding 300 deep; including removal off site		item		145,000.00		As RHSC stand alone scheme
Excavate to piling mat reduce level; including disposal off site	8,400	m ³	26.00	218,400.00		RHSC adjusted for footprint change
Excavate to basement and pile caps, etc; including disposal off site	17,000	m ³	36.00	612,000.00		RHSC adjusted for footprint change
Temporary retention works		item		265,000.00		RHSC adjusted for footprint change
De-watering						
Allowance for well pointing and dewatering		item		215,000.00		RHSC adjusted for footprint change
Piling Mat						
Re used material	2,000	m ³	5.00	10,000.00		As RHSC stand alone scheme
Imported crushed demolition material		m ³		140,000.00		RHSC adjusted for footprint change
Replenishment of piling mat throughout the construction works		m ³		40,000.00		RHSC adjusted for footprint change
WORK PACKAGE TOTAL					1,650,400.00	
PILING						
Piling						
Piling mobilisation		item		110,000.00		As RHSC stand alone scheme
Set up, bore and form 600 diameter piles (average 20m)	748	Nr	2,250.00	1,683,000.00		RHSC adjusted for footprint change
Allowance for pile testing		item		50,000.00		
Provision of pump and siltbuster plant		item		35,000.00		
WORK PACKAGE TOTAL					1,878,000.00	
Carried Forward					3,528,400.00	

3.0 COST DETAIL (Cont'd)

Work Package Description	Quantity	Unit	Unit Cost	Item Total	Work Package Total	Comments
			£	£	£	
Brought Forward					3,528,400.00	
SUBSTRUCTURE						
Floor Slab						
Reinforced floor slab construction; 350 thick concrete slab on 150 thick Type 1 sub-base and 50 thick sand blinding; trowel finish	11,600	m ²	57.00	661,200.00		RHSC adjusted for footprint change
Reinforcement to floor slab	710	t	940.00	667,400.00		Allowance based on 175kg/m3
Proofex damp proof membrane and protection board; to floor slab and foundations	11,600	m ²	52.00	603,200.00		RHSC adjusted for footprint change
Works Associated with Piling						
Cut off tops of piles; prepare exposed reinforcement for tie-in to new reinforcement	748	Nr	60.00	44,880.00		
Lift Pits						
Allowance for constructing lift pits; reinforced concrete	12	Nr	6,000.00	72,000.00		
Pile Caps, etc						
In situ concrete and associated formwork	3,350	m ³	155.00	519,250.00		RHSC adjusted for footprint change
Reinforcement	419	t	940.00	393,860.00		Based on 125kg/m3
Basement/ Core Walls						
Reinforced concrete walls and associated formwork	1,740	m ²	115.00	200,100.00		RHSC adjusted for footprint change
Reinforcement	139	t	940.00	130,660.00		Allowance based on 200kg/m3
Proofex damp proof membrane and protection board and protective skin of blockwork; to basement walls	1,740	m ²	130.00	226,200.00		RHSC adjusted for footprint change
Basement Car Park						
Allowance for 30 Space basement car park		item		<u>1,080,000.00</u>		
WORK PACKAGE TOTAL					4,598,750.00	
UNDERGROUND DRAINAGE						
Supply and install all below ground drainage for foul and surface water system; including all trenching, drains, manholes, backfill, testing, etc		item		<u>470,000.00</u>		RHSC adjusted for footprint change
WORK PACKAGE TOTAL					<u>£ 470,000.00</u>	
Carried Forward					8,597,150.00	

3.0 COST DETAIL (Cont'd)

Work Package Description	Quantity	Unit	Unit Cost	Item Total	Work Package Total	Comments
			£	£	£	
Brought Forward					8,597,150.00	
SUPERSTRUCTURE FRAME						
Concrete Frame						
Post tensioned concrete upper floor and roof slabs; precast concrete columns; in-situ concrete stability/core walls	50,000	m ²	150.00	7,500,000.00		RHSC adjusted in line with GIFA
WORK PACKAGE TOTAL					<u>7,500,000.00</u>	
SECONDARY STEELWORK						
Secondary Steelwork						
Support to ceiling mounted equipment		item		28,000.00		RHSC adjusted in line with GIFA
Support steelwork to support walling fittings, sanitary ware, grab rails and the like		item		175,000.00		RHSC adjusted in line with GIFA
Support steelwork for specialist ceiling track		item		28,000.00		RHSC adjusted in line with GIFA
Support steelwork to heavy door doors, folding partitions, glazed screens and the like		item		63,000.00		RHSC adjusted in line with GIFA
Steelwork support to louvers		item		56,000.00		RHSC adjusted in line with GIFA
Wind posts to block walls		item		21,000.00		RHSC adjusted in line with GIFA
Beams in lift shafts		item		14,000.00		RHSC adjusted in line with GIFA
Feature steelwork within 'Ozone' entrance area		item		56,000.00		RHSC adjusted in line with GIFA
Supports to precast stairs		item		14,000.00		RHSC adjusted in line with GIFA
Supports to man safe systems		item		35,000.00		RHSC adjusted in line with GIFA
Supports to flue stacks		item		14,000.00		RHSC adjusted in line with GIFA
Other supports to services installations		item		112,000.00		RHSC adjusted in line with GIFA
Supports to openings within envelope over 4.5m wide		item		42,000.00		RHSC adjusted in line with GIFA
Supports to external walls at changes in plane		item		42,000.00		RHSC adjusted in line with GIFA
Platforms and steps to access chiller panels		item		14,000.00		RHSC adjusted in line with GIFA
Supports off columns for drainage stacks		item		14,000.00		RHSC adjusted in line with GIFA
Supports for fittings and furnishings		item		28,000.00		RHSC adjusted in line with GIFA
WORK PACKAGE TOTAL					<u>756,000.00</u>	
Carried Forward					16,853,150.00	

3.0 COST DETAIL (Cont'd)

Work Package Description	Quantity	Unit	Unit Cost	Item Total	Work Package Total	Comments
			£	£	£	
Brought Forward					16,853,150.00	
GREEN ROOF						
Roof Coverings						
Green roof coverings laid on roofing build up; complete with pebble margins	4,557	m ²	55.00	250,635.00		Taken to 1st & 3rd floor roofs
PPC metal profile pieces at movement joints, service openings and the like	4,557	m ²	20.00	91,140.00		
WORK PACKAGE TOTAL					341,775.00	
ETFE ROOF						
Roof Coverings						
ETFE roof; barrel vaulted Texlon Thermo Cushion; plan and vertical areas	350	m ²	630.00	220,500.00		
Steel structure to ETFE roof	350	m ²	240.00	84,000.00		
WORK PACKAGE TOTAL					304,500.00	
LIQUID APPLIED ROOF FINISHES						
Roof Coverings						
Waterproof coating to concrete base including upstands	11,600	m ²	33.00	382,800.00		RHSC/DCN building footprint
Expanded polystyrene warm deck insulation	11,600	m ²	35.00	406,000.00		
Stone ballast to roof coverings	11,600	m ²	27.00	313,200.00		
Extra over; precast concrete paving slabs in lieu of ballast	1,740	m ²	12.00	20,880.00		Assumed to 15% of roof area
Sundries						
Coxdome 150 diameter dome rooflight	8	Nr	3,200.00	25,600.00		RHSC adjusted for footprint change
Sunpipes	35	Nr	2,900.00	101,500.00		RHSC adjusted for footprint change
Fall arrest system	11,600	m ²	4.00	46,400.00		RHSC adjusted for footprint change
WORK PACKAGE TOTAL					1,296,380.00	
Carried Forward					18,795,805.00	

3.0 COST DETAIL (Cont'd)

Work Package Description	Quantity	Unit	Unit Cost	Item Total	Work Package Total	Comments
			£	£	£	
Brought Forward					18,795,805.00	
EXTERNAL RAINWATER GOODS						
Roof Drainage						
Syphonic drainage installation	11,600	m ²	15.00	<u>174,000.00</u>		RHSC adjusted for footprint change
WORK PACKAGE TOTAL					174,000.00	
LOUVRES						
Plantroom Louvres						
PPC extruded aluminium louvres and insect mesh	668	m ²	230.00	153,640.00		Taken as 5% of external wall
Extra over; allowance for blanking plates	334	m ²	70.00	<u>23,380.00</u>		Assumed 50% of louvre area
WORK PACKAGE TOTAL					177,020.00	
ARCHITECTURAL METALWORK						
Internal Balustrading and Handrails						
Balustrading and handrails to general stairs		item		200,000.00		
Balustrading and handrails to feature stair		item		60,000.00		
Brass handrail and balustrade to Ozone / central core	208	m	200.00	41,600.00		
General Metalwork						
Mild steel balustrade roof edge protection	1,277	m	150.00	191,550.00		
Balustrading to windows	210	m	150.00	31,500.00		RHSC adjusted in line with GIFA
Allowance for sundry metalwork; riser platforms, step over platforms, ladders, etc		item		280,000.00		RHSC adjusted in line with GIFA
WORK PACKAGE TOTAL					804,650.00	
FIRE PROTECTION						
Fire Protection, Stopping and Collars						
Allowance generally		item		<u>200,000.00</u>		RHSC adjusted in line with GIFA
WORK PACKAGE TOTAL					<u>200,000.00</u>	
Carried Forward					20,151,475.00	

3.0 COST DETAIL (Cont'd)

Work Package Description	Quantity	Unit	Unit Cost	Item Total	Work Package Total	Comments
			£	£	£	
Brought Forward					20,151,475.00	
CONCRETE STAIRS						
Stairs						
Precast concrete stairs and landings (rising 1 building floor)	27	Nr	3,500.00	94,500.00		Supply and install
Feature stair	1	Nr	60,000.00	<u>60,000.00</u>		
WORK PACKAGE TOTAL					154,500.00	
EXTERNAL WALL CONSTRUCTION						
External Walls						
Metal cladding: Qbiss	1,069	m ²	285.00	304,665.00		Taken as 8% of external wall
Flashing to copes and the like	1,110	m	50.00	55,500.00		
Facing brickwork construction; Rothesay	2,806	m ²	70.00	196,420.00		Taken as 21% of external wall
Facing brickwork construction; Feature brick panels	267	m ²	230.00	61,410.00		Taken as 2% of external wall
Rheinzink vertical standing seam cladding panels	535	m ²	240.00	128,400.00		Taken as 4% of external wall
Stone cladding	267	m ²	400.00	106,800.00		Taken as 2% of external wall
Engineering brickwork	531	m ²	50.00	26,550.00		RHSC adjusted in line with external wall area
Sundry masonry items; support channels, wall ties, weep holes, cavity trays, etc		item		150,000.00		RHSC adjusted in line with external wall area
Allowance for building fabric artwork		item		400,000.00		
Allowance for knock out panels for MRI delivery & replacement		item		<u>40,000.00</u>		
WORK PACKAGE TOTAL					1,469,745.00	
STRUCTURAL FRAMING SYSTEM						
SFS						
Inner leaf of external walls	10,554	m ²	50.00	<u>527,700.00</u>		
WORK PACKAGE TOTAL					<u>527,700.00</u>	
Carried Forward					22,303,420.00	



COMBINED RHSC & DCN BUILDING
LITTLE FRANCE, EDINBURGH
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3.0 COST DETAIL (Cont'd)

Work Package Description	Quantity	Unit	Unit Cost	Item Total	Work Package Total	Comments
			£	£	£	
Brought Forward					22,303,420.00	
WINDOWS / CURTAIN WALLING						
Windows						
Polyester powder coated thermally broken aluminium windows incorporating double glazed units Velfac 280 or equal approved	2,743	m ²	440.00	1,206,920.00		Taken as 20% of external wall
Extra over; solar shading to glass	2,057	m ²	25.00	51,425.00		Assumed 75% of window area
Curtain walling to main entrance and courtyard areas	4,430	m ²	600.00	<u>2,658,000.00</u>		
WORK PACKAGE TOTAL					3,916,345.00	
BRICK / BLOCKWORK						
Internal Partitions						
Basement walls; 140 thick	1,179	m ²	40.00	47,160.00		RHSC adjusted for footprint change
Stair/ lift core walls; 140 thick	4,918	m ²	40.00	196,720.00		RHSC adjusted in line with GIFA
Sundry masonry items; expansion joints, joint reinforcement, etc		item		<u>50,000.00</u>		RHSC adjusted in line with GIFA
WORK PACKAGE TOTAL					293,880.00	
PARTITIONS & DRY LINING						
Partitions & dry Lining						
Metal stud partition; 3.6 - 3.9m high	14,955	m	130.00	1,944,150.00		RHSC adjusted in line with GIFA
Internal linings to external walls	10,554	m ²	23.00	242,742.00		
Linings to columns; including access panels	1,026	Nr	300.00	<u>307,800.00</u>		
WORK PACKAGE TOTAL					2,494,692.00	
GLAZED SCREENS						
Glazed Screens						
Timber glazed screens and frameless glazed partitions to office areas		item		<u>850,000.00</u>		RHSC adjusted in line with GIFA
WORK PACKAGE TOTAL					850,000.00	
Carried Forward					<u>29,858,337.00</u>	



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3.0 COST DETAIL (Cont'd)

Work Package Description	Quantity	Unit	Unit Cost	Item Total	Work Package Total	Comments
			£	£	£	
Brought Forward					29,858,337.00	
IPS & CUBICLE SYSTEMS						
Integrated Plumbing Systems						
IPS panels, sanitary ware and toilet/examination rooms		item		<u>1,400,000.00</u>		RHSC adjusted in line with GIFA
WORK PACKAGE TOTAL					1,400,000.00	
BATHROOM PODS						
En-Suite Sanitary Pods						
Standard toilet pods; complete installations	321	Nr	5,000.00	<u>1,605,000.00</u>		RHSC adjusted in line with GIFA
WORK PACKAGE TOTAL					1,605,000.00	
JOINERWORK						
Joinerwork						
Allowance for internal doors and ironmongery	2,254	Nr	900.00	2,028,600.00		RHSC adjusted in line with GIFA
Allowance for ironmongery to doors	2,254	Nr	200.00	450,800.00		RHSC adjusted in line with GIFA
Allowance for door protection	2,254	Nr	35.00	78,890.00		RHSC adjusted in line with GIFA
Skirtings; 100 high	7,483	m ²	5.00	37,415.00		RHSC adjusted in line with GIFA
Miscellaneous joinerwork items, includes cills, facings and the like		item		60,000.00		RHSC adjusted in line with GIFA
Hardwood timber flooring	55	m ²	110.00	<u>6,050.00</u>		As RHSC stand alone scheme
WORK PACKAGE TOTAL					2,661,755.00	
EXTERNAL WALL FINISHES						
External Render						
Permarock self coloured insulated render	5,079	m ²	60.00	304,740.00		Taken as 38% of external wall
Permarock self coloured insulated render; to inner face of parapets	510	m ²	80.00	<u>40,800.00</u>		
WORK PACKAGE TOTAL					<u>345,540.00</u>	
Carried Forward					35,870,632.00	



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3.0 COST DETAIL (Cont'd)

Work Package Description	Quantity	Unit	Unit Cost	Item Total	Work Package Total	Comments
			£	£	£	
Brought Forward					35,870,632.00	
CERAMIC TILING						
Floor Tiling						
Tiles to part of Ozone / main corridors	700	m ²	100.00	<u>70,000.00</u>		
WORK PACKAGE TOTAL					70,000.00	
SCREEDING						
Floor Screeding						
Screed to office areas	2,507	m ²	22.00	55,154.00		RHSC adjusted in line with GIFA
Screed to basement areas with cavity drain dpm	1,512	m ²	65.00	98,280.00		
Screeding to stairs (per flight)	27	Nr	400.00	10,800.00		
Screeding around toilet pods	321	Nr	150.00	48,150.00		
Allowance for sundry screeding elsewhere		item		<u>30,000.00</u>		
WORK PACKAGE TOTAL					242,384.00	
CARPET & VINYL FLOOR FINISHES						
Floor finishes						
Marmoleum flooring	28,900	m ²	30.00	867,000.00		RHSC adjusted in line with GIFA
PVC sheet flooring	4,250	m ²	33.00	140,250.00		RHSC adjusted in line with GIFA
Carpet	9,350	m ²	35.00	327,250.00		RHSC adjusted in line with GIFA
Clean-off zone carpet to entrances		item		32,000.00		Assumed a RHSC cost + 50%
Liquid applied DPM to all soft floor coverings	42,500	m ²	10.00	425,000.00		
Allowance for cover plates and threshold strips		item		325,000.00		RHSC adjusted in line with GIFA
Finish to general staircase (per flight)	27	Nr	1,000.00	27,000.00		
Finish to feature staircase (per flight)	6	Nr	5,000.00	<u>30,000.00</u>		
WORK PACKAGE TOTAL					<u>2,173,500.00</u>	
Carried Forward					38,356,516.00	

3.0 COST DETAIL (Cont'd)

Work Package Description	Quantity	Unit	Unit Cost	Item Total	Work Package Total	Comments
			£	£	£	
Brought Forward					38,356,516.00	
SUSPENDED CEILINGS						
Suspended Ceilings						
Plasterboard ceilings including perimeter trim and access panels	12,150	m ²	26.00	315,900.00		RHSC adjusted in line with GIFA
Echophon Connect suspended ceiling system; with Hygiene Meditec E high density resin bonded glasswool	9,900	m ²	22.00	217,800.00		RHSC adjusted in line with GIFA
Echophon Connect suspended ceiling system; with Gedina E high density resin bonded glasswool	16,200	m ²	23.00	372,600.00		RHSC adjusted in line with GIFA
Echophon Connect suspended ceiling system; with Hygiene performance high density resin bonded glasswool	900	m ²	34.00	30,600.00		RHSC adjusted in line with GIFA
Orcal tegular microperforated steel plank suspended ceiling system	5,850	m ²	35.00	204,750.00		
Ceilings to Ozone areas; Gypotone acoustic panels supported on edge trims grid fixed to perimeter s/w shadow battens	700	m ²	65.00	45,500.00		RHSC adjusted in line with GIFA
Sundries; cavity barriers, collars and access units	45,700	m ²	6.00	274,200.00		RHSC adjusted in line with GIFA
Blind boxes, bulkheads and fire barriers		item		<u>105,000.00</u>		RHSC adjusted in line with GIFA
WORK PACKAGE TOTAL					1,566,350.00	
DECORATION						
Wall Finishes						
Matt emulsion paint to walls	98,000	m ²	5.00	490,000.00		RHSC adjusted in line with GIFA
Special sterile paint to walls	10,500	m ²	1.00	10,500.00		RHSC adjusted in line with GIFA
Ceiling Finishes						
Matt emulsion paint to ceilings	12,150	m ²	5.00	60,750.00		RHSC adjusted in line with GIFA
Floor Finishes						
Floor coating to plantrooms	6,600	m ²	8.00	52,800.00		RHSC adjusted in line with GIFA
Miscellaneous Finishes						
Painting to cills and miscellaneous joinerwork		item		90,000.00		RHSC adjusted in line with GIFA
Ames taping to partitions	146,000	m ²	4.00	584,000.00		RHSC adjusted in line with GIFA
Ames taping to ceilings	5,850	m ²	4.00	<u>23,400.00</u>		RHSC adjusted in line with GIFA
WORK PACKAGE TOTAL					<u>1,311,450.00</u>	
Carried Forward					41,234,316.00	



3.0 COST DETAIL (Cont'd)

Work Package Description	Quantity	Unit	Unit Cost £	Item Total £	Work Package Total £	Comments
Brought Forward					41,234,316.00	
EXTERNAL DOORS						
External doors; steel and aluminium						
Single leaf doors	9	Nr	1,300.00	11,700.00		RHSC adjusted for footprint change
Double leaf doors	7	Nr	1,600.00	<u>11,200.00</u>		RHSC adjusted for footprint change
WORK PACKAGE TOTAL					22,900.00	
FITTINGS & FURNISHINGS						
Group 1 & 2 fittings & furnishings						
Allowance for Group 1 (supply & install) and Group 2 (install only)		item		3,000,000.00		RHSC adjusted in line with GIFA
Internal Artwork						
Allowance for internal artwork		item		<u>200,000.00</u>		
WORK PACKAGE TOTAL					3,200,000.00	
WALL PROTECTION / RAILS						
Wall Protection						
Mid and low height pvc crash rail in public areas, lobbies and core areas		item		<u>330,000.00</u>		RHSC adjusted in line with GIFA
WORK PACKAGE TOTAL					330,000.00	
SOFT LANDSCAPING						
Soft Landscaping						
Allowance for soft landscaping to courtyards, etc		item		<u>110,000.00</u>		As RHSC stand alone scheme
WORK PACKAGE TOTAL					110,000.00	
EXTERNAL WORKS						
Courtyard Areas						
Hard surfacing to courtyards	903	m ²	240.00	216,720.00		2/3rds of RHSC stand alone scheme
Sundry furniture		item		50,000.00		
Roof terrace works, decking and planters, etc		item		250,000.00		RHSC adjusted for footprint change
External Site Works						
Allowance for external site works (building edge to site boundary)		item		<u>2,000,000.00</u>		
WORK PACKAGE TOTAL					<u>2,516,720.00</u>	
Carried Forward					47,413,936.00	



3.0 COST DETAIL (Cont'd)

Work Package Description	Quantity	Unit	Unit Cost £	Item Total £	Work Package Total £	Comments
Brought Forward					47,413,936.00	
CANOPIES & ENTRANCES						
Glazed Canopies and Associated Structure						
Main entrance canopy	400	m ²	600.00	240,000.00		
Solid Canopies and Associated Structure						
Ambulance drop off canopy	325	m ²	350.00	113,750.00		
Sundries						
Allowance for decorative screens at entrances		item		<u>100,000.00</u>		
WORK PACKAGE TOTAL					453,750.00	
EXTERNAL BUILDING SIGNAGE						
External Building Signage						
General directional signage; external		item		<u>20,000.00</u>		
WORK PACKAGE TOTAL					20,000.00	
MASTIC						
Mastic						
Allowance for sundry mastic sealing		item		<u>140,000.00</u>		RHSC adjusted in line with GIFA
WORK PACKAGE TOTAL					140,000.00	
TESTING - ACOUSTIC & AIR PRESSURE						
Acoustic & Air Pressure Testing						
Allowance for testing of complete building		item		<u>90,000.00</u>		RHSC adjusted in line with GIFA
WORK PACKAGE TOTAL					90,000.00	
LEAD LINING & PROTECTION						
Radiation Protection						
Lead linings to X ray rooms and CT areas		item		180,000.00		Assumed at double RHSC cost
Specialist glazing to radiation areas		item		<u>40,000.00</u>		
WORK PACKAGE TOTAL					<u>220,000.00</u>	
Carried Forward					48,337,686.00	


 COMBINED RHSC & DCN BUILDING
 LITTLE FRANCE, EDINBURGH
 FEASIBILITY COST ESTIMATE

 Issued : 20/12/10
 Base Date : December 2010
 Page No : 21/24

3.0 COST DETAIL (Cont'd)

Work Package Description	Quantity	Unit	Unit Cost £	Item Total £	Work Package Total £	Comments
Brought Forward					48,337,686.00	
WALL PANELLING						
Wall Linings						
Watertight and impervious wall cladding for wet areas and kitchens	3,855	m ²	55.00	212,025.00		RHSC adjusted in line with GIFA
Feature wall panelling to Ozone area	500	m ²	140.00	70,000.00		As RHSC stand alone scheme
Artistic wall lining	1,398	m ²	75.00	<u>104,850.00</u>		As RHSC stand alone scheme
WORK PACKAGE TOTAL					386,875.00	
BWICS						
Generally						
Builders work in connection with Mechanical Installations		item		105,000.00		RHSC adjusted in line with GIFA
Builders work in connection with Electrical Installations		item		105,000.00		
Builders work in connection with Lift Installations		item		30,000.00		
Dedicated route associated with quench pipe for MRI facility				30,000.00		
WORK PACKAGE TOTAL					270,000.00	
FOLDING PARTITIONS						
Folding Partitions						
Allowance for folding partitions between seminar rooms	37	m	1,700.00	<u>62,900.00</u>		RHSC adjusted in line with GIFA
WORK PACKAGE TOTAL					62,900.00	
LIFTS INSTALLATIONS						
Lifts						
Goods lifts	1	Nr	40,000.00	40,000.00		
FM lifts	3	Nr	90,000.00	270,000.00		
Passenger lifts	5	Nr	100,000.00	500,000.00		
Bed lifts	3	Nr	90,000.00	<u>270,000.00</u>		
WORK PACKAGE TOTAL					<u>1,080,000.00</u>	
Carried Forward					50,137,461.00	


 COMBINED RHSC & DCN BUILDING
 LITTLE FRANCE, EDINBURGH
 FEASIBILITY COST ESTIMATE

 Issued : 20/12/10
 Base Date : December 2010
 Page No : 22/24

3.0 COST DETAIL (Cont'd)

Work Package Description	Quantity	Unit	Unit Cost	Item Total	Work Package Total	Comments
			£	£	£	
Brought Forward					50,137,461.00	
MECHANICAL INSTALLATIONS						
Mechanical						
Internal soil and waste	50,000	m ²	19.00	950,000.00		RHSC adjusted in line with GIFA
Internal domestic water	50,000	m ²	47.00	2,350,000.00		
Hypochlorite water treatment	50,000	m ²	6.00	300,000.00		
Gas/ oil boiler installation	50,000	m ²	4.00	200,000.00		
Steam generation	50,000	m ²	3.00	150,000.00		
LPHW heating system (radiant panels)	50,000	m ²	59.00	2,950,000.00		
Chilled water cooling system	50,000	m ²	22.00	1,100,000.00		
Pre-fabricated modules and plant skids	50,000	m ²	67.00	3,350,000.00		
Ventilation	50,000	m ²	111.00	5,550,000.00		
IT room cooling systems	50,000	m ²	2.00	100,000.00		
Sprinklers	50,000	m ²	16.00	800,000.00		
Dry risers	50,000	m ²	2.00	100,000.00		
BMS controls	50,000	m ²	65.00	3,250,000.00		
Pneumatic tube	50,000	m ²	3.00	150,000.00		
Medical gases	50,000	m ²	42.00	2,100,000.00		
Commissioning	50,000	m ²	8.00	400,000.00		
Relaxation to spec for Patient Hotel and Admin areas	50,000	m ² (11.00) (550,000.00)		
Additional services for ETFE roof		item		40,000.00		As RHSC stand alone scheme
WORK PACKAGE TOTAL					23,290,000.00	
Carried Forward					73,427,461.00	



3.0 COST DETAIL (Cont'd)

Work Package Description	Quantity	Unit	Unit Cost	Item Total	Work Package Total	Comments
			£	£	£	
Brought Forward					73,427,461.00	
ELECTRICAL INSTALLATIONS						
Electrical						
Switchgear, distribution & submain cabling	50,000	m ²	49.00	2,450,000.00		
UPS	50,000	m ²	11.00	550,000.00		
IPS	50,000	m ²	4.00	200,000.00		
Medical trunking	50,000	m ²	4.00	200,000.00		
Nurse call	50,000	m ²	15.00	750,000.00		
Fire alarm	50,000	m ²	18.00	900,000.00		
Security	50,000	m ²	26.00	1,300,000.00		
Structured cabling	50,000	m ²	22.00	1,100,000.00		
Public address & induction loop	50,000	m ²	6.00	300,000.00		
Containment	50,000	m ²	35.00	1,750,000.00		
Lighting protection & earthing	50,000	m ²	2.00	100,000.00		
Small power	50,000	m ²	44.00	2,200,000.00		
Lighting, emergency lighting, luminaries & lighting control	50,000	m ²	51.00	2,550,000.00		
WORK PACKAGE TOTAL					14,350,000.00	
ENERGY CENTRE WORKS						
Energy Centre						
Stand alone Energy Centre; steel frame, profiled metal wall and roof cladding	1,008	m ²	900.00	907,200.00		
Services; allowance for electrical power supply to RHSC/DCN building, boilers, etc		item		5,000,000.00		
WORK PACKAGE TOTAL					5,907,200.00	
HELIPAD WORKS						
Helipad						
Helipad construction; complete		item		3,000,000.00		
Allowance for amendments to surrounding buildings		item		1,000,000.00		
WORK PACKAGE TOTAL					4,000,000.00	
Carried Forward					97,684,661.00	

3.0 COST DETAIL (Cont'd)

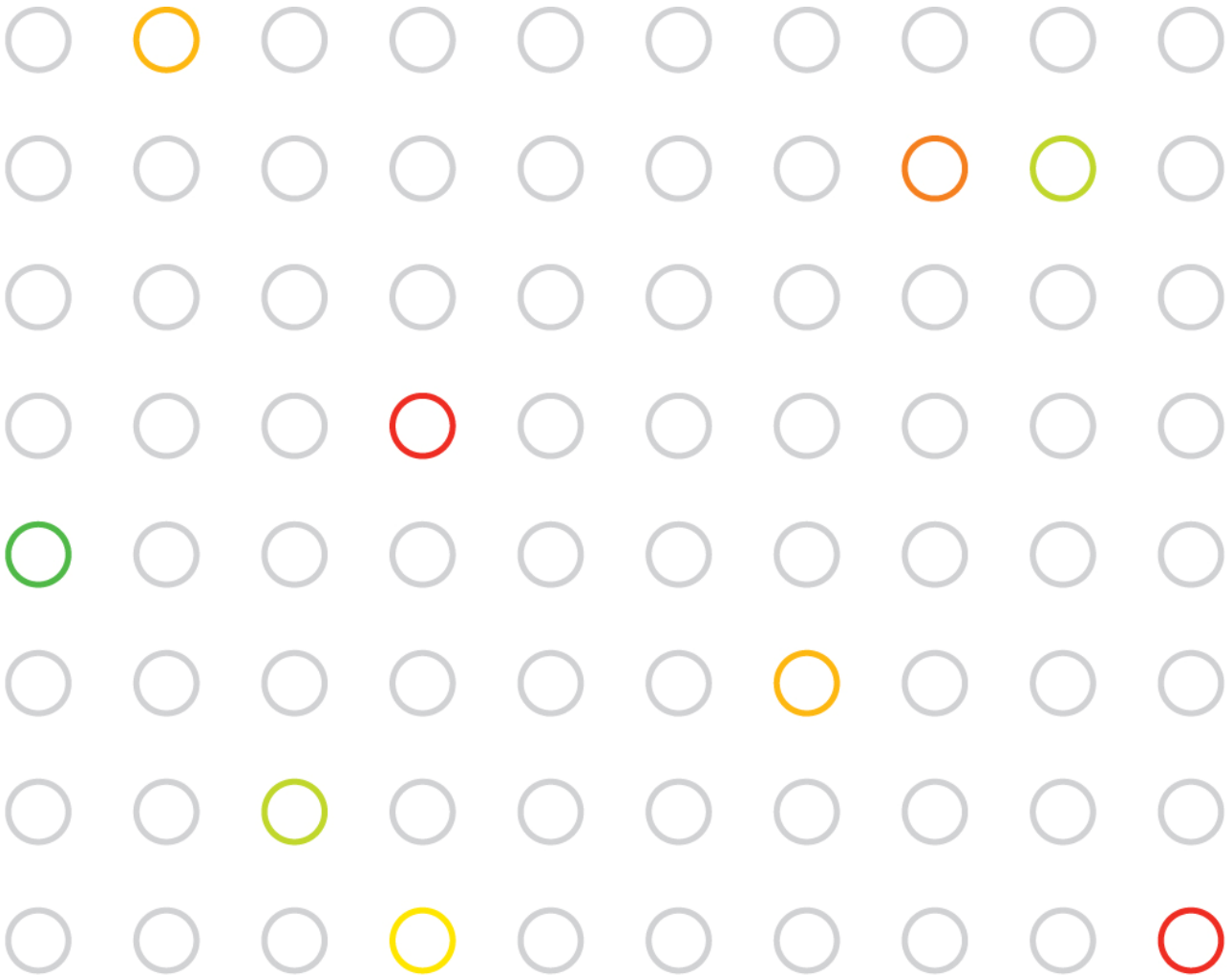
Work Package Description	Quantity	Unit	Unit Cost	Item Total	Work Package Total	Comments
			£	£	£	
Brought Forward PRELIMINARIES					97,684,661.00	
Preliminaries						
Allowance for preliminaries at 12.5%		item		<u>12,210,582.63</u>		
WORK PACKAGE TOTAL					12,210,582.63	
CONTINGENCIES						
Contingencies						
Allowance for contingencies at 3.3%		item		<u>3,626,543.04</u>		
WORK PACKAGE TOTAL					3,626,543.04	
INFLATION						
Inflation						
Allowance for inflation at 5.25%		item		<u>5,959,893.80</u>		
WORK PACKAGE TOTAL					5,959,893.80	
FEES						
PSCP Design Team Fees						
Allowance for PSCP Design Team Fees at 8.87%		item		10,598,025.06		
BAM Fee						
Allowance for BAM Fee at 7.1%		item		8,978,174.54		
Statutory Fees						
Allowance for statutory fees		item		350,000.00		
PSC Fees						
Allowance for PSC Fees at 4%		item		<u>4,779,267.22</u>		
WORK PACKAGE TOTAL					24,705,466.81	
VAT						
VAT						
Allowance for VAT at 20%		item		<u>27,811,576.01</u>		
WORK PACKAGE TOTAL					<u>27,811,576.01</u>	
TOTAL COST						£ 171,998,723.29

Submitted by:

Kenneth Fraser
Partner

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8 December 2010

Iain Graham
Director of Capital Planning and Projects,
Lothian Health Board
Waverley Gate
2-4 Waterloo Place
Edinburgh EH1 3EG

Dear Iain

RHSC/DCN NPD Project

I refer to our meeting on Monday which was a useful introduction to some of the key issues to be addressed in relation to the combined RHSC/DCN NPD project.

As well as providing you with some suggested questions for your lawyers on the existing PSCP framework agreement and its interaction with the new procurement, I thought that it would be helpful to touch on a number of other issues, some of which we discussed on Monday .

1. Project Scope

- 1.1. You confirmed yesterday that NHSL's preferred option for meeting its clinical requirements is an integrated facility incorporating both the RHSC and the DCN in one building. You indicated that a check is being done to ensure that a building to cover both facilities can fit within the envelope of the footprint of the existing design for RHSC , which remains your preferred option, taking account of the constraints of which you are now aware. You also said that this is being looked at with a view to minimising interface / alteration of the existing PFI contract . It would be helpful if you could confirm the timescale for completing that exercise and let me have outline plans/layouts once available together with a note of the assumed constraints (e.g. you mentioned a road stopping up being required) and the likely views of the planners.
- 1.2. The project scope as an NPD and affordability need to be considered together. Affordability is of course a matter between NHSL and SGHD

and no doubt discussions on that front in the context of the development of NHSL's Business Case for the combined project should be taken forward in early course.

- 1.3. By way of illustration and based on nothing more than the £250m figure in the budget statement, a very high level affordability assessment for discussion is included at Annex 1 for a 75,000m² facility and an NPD contract for hard FM only.
- 1.4. You confirmed that NHSL would retain the soft FM in house in line with Scottish Government policy. We are firmly of the view that hard FM and life cycle maintenance services need to be part of the contract to optimise value for money and deliverability.

2. Interface with Existing PFI Contract

- 2.1. We agreed that SFT would start to assemble some of the key issues associated with Consort and the existing PFI contract, for further discussion with the Health Board. We understand these to include resolution of a car park land swap, the potential removal of soft services from the contract, decisions with regard to any potential time extension to the contract and any reconfiguration of the contract required to accommodate the Project. All of these issues potentially do not require to be resolved ahead of the start of the procurement of the new contract, but as discussed, we firmly believe that the land swap does require early resolution and a full agreement with Consort should be pursued as a matter of priority. Proceeding to a procurement of the Project without full Health Board control of the land required could compromise the procurement, especially given the role of Consort as a potential bidder for the Project.
- 2.2. I will separately let you have a note of the key issues which will need to be added to following further discussions with you and colleagues. Meantime, it would be helpful if you could let me have a copy of the Memorandum of Understanding which has been agreed to date.

3. Procurement Options

We discussed a number of options when we met:

- 3.1. Susan confirmed at the meeting that a capital funded route is not an option, given budgetary pressures.
- 3.2. For the reasons we discussed (e.g. scope of the existing procurement and the nature of the project) incorporating the project within the South East hub is not an option.

- 3.3. You mentioned the possibility of retaining the existing PSCP for construction (with a revised scope to include the DCN) , NHSL providing the lifecycle and on going maintenance and seeking to procure financing through an SPV (Option 6). As we said at the meeting, in order for the project not to be classified as a government asset (and hence count against the Scottish Government's capital budget) the requirements of European System of Accounts (ESA 95) need to be met. In short this involves the transfer of construction and one of demand or availability risk to the private sector. We do not see how this proposal would meet those tests, though if you wish to pursue this option we suggest that you take advice from your financial advisor.
- 3.4. Another proposed option was the retention of the existing PSCP for construction (with a revised scope to include the DCN) and the introduction of finance (Option 3) or finance and maintenance/operation (Option 4). We discussed this briefly and ruled both options out given the scope of the original OJEU for the Health Framework.
- 3.5. A further option concerned the retention of the existing PSCP for construction (with a revised scope to include the DCN) which you suggested would involve the PSCP being novated to an SPV which would contract with NHSL to provide the NPD DBFM solution (Option 5). In the first instance we agreed that NHSL would seek advice as to whether it would be legally possible and we attach at Annex 2, for discussion, our suggested questions for your legal advisers in that regard. Given the differences in the underlying construction contracts envisaged in the Health Framework and within an NPD contract structure, our strong view is that a further party would need to be introduced who would take on the risks associated with a D&B contract required for the NPD procurement and subcontract with the PSCP for the Health Framework construction contract (i.e. 'wrap' the Health Framework contract). Beyond the legal issues associated, we believe this could cause commercial issues in receiving strong value for money proposals from the private sector. We would be happy to discuss this further if appropriate.
- 3.6. There is the option of concluding the existing PSCP arrangements and tendering the RHSC/DCN project using a traditional NPD DBFM procurement route. (Option 1) In that case NHSL could provide bidders with an exemplar design to show the adjacencies etc which it has worked through internally including with clinicians to date. NHSL will want to be satisfied from its legal advisers that, as was indicated yesterday, the existing framework arrangements can be concluded without penalty, except for payment for work to date.
- 3.7. As discussed yesterday, Option 1 appears the most likely route, but the other options need to be further considered further, in consultation with

legal advisers along with any options not currently listed. As discussed, this needs to be done as a matter of urgency such that a recommendation can be made to a Committee Meeting on 12th January 2011.

4. Role of SFT

We thought it would be useful to set out what we believe SFT's role to be both in the short term, but also more widely during the procurement process.

- 4.1. Procurement Strategy – SFT can assist the Board in determining the approach that should be taken. In addition SFT could provide ongoing support to the project via representation on the project board.
- 4.2. Market Interface – SFT's role is to coordinate the wider programme of NPD projects and to communicate the opportunity to private sector bidders to encourage a strong market response.
- 4.3. NPD Terms - SFT has a role as the guardian of the commercial position as it relates to the Non Profit Distribution principles contained within the contract. As part of this role we could consider with the Board and its advisers any changes required to the NPD structure ahead of the procurement.
- 4.4. Existing PFI Contract - SFT can assist the Board with the development of a strategy to resolve any outstanding issues and seek the necessary variations to the existing PFI contract with Consort. The negotiation will be for NHSL.
- 4.5. Financing Structure - SFT can support NHSL and its financial advisors in developing the optimal financing structure for the project in order to minimise the financing cost of the project.
- 4.6. Validation – SFT is likely to have a role in project reviews at key stages during the procurement process.

5. Other Issues in Preparing for Procurement

- 5.1. Consideration will be needed at an early stage of how much the design should be progressed in-house and how much in competition through the NPD procurement. There is an opportunity with recent accounting rules changes to undertake more design – especially overall massing, adjacencies and even layouts in-house; with the preferred bidder taking on detailed design for construction. Such a move will involve more design

work ahead of the procurement, but is overall likely to save time to a start on site.

- 5.2. There is likely to be a need to resubmit the Business Case to SGHD. SFT does not have a part in the Business Case process, but suggests that efficiency, functionality and affordability should be the focus. Any VfM comparison with a direct capital built option will need to be cognisant of the lack of capital availability and therefore we suggest this should curtail the level of time and cost incurred in pursuing this alternative.
- 5.3. The treatment of surplus land / facilities whether inside, or outside the scope of the project will have to be considered.
- 5.4. Energy and utilities will need careful consideration in the NPD contract, and the interface with the existing PFI and I will pick that point up in the note of issues on the existing contract.
- 5.5. There will need to be a warming of the market to this as an NPD project. Key concerns of the market are likely to be demonstration of a firm scope, commitment of affordability and the interface with both the existing PFI contract and the work carried out under the Health Framework. Once a resolution of these points is agreed (but not necessarily delivered) a round of soft market testing would be advisable.

6. Programme & Resourcing

- 6.1. A dedicated project team will be needed in NHS Lothian to take forward the project. Given the move towards a large revenue funded project involving private capital and the complexity of the interface issues with the existing PFI contract, we would strongly recommend that individuals are found who have the necessary skills and have experience of PPP procurement. As discussed, NHS Lothian will need appropriate advisory support – financial, technical and legal to bring forward a complex NPD procurement. I know that you are looking at existing framework arrangements. SFT is in the early stages of the establishment of a NPD programme wide advisory framework to support those procuring bodies who wish to participate. This is likely to take until the early summer 2011 to put in place.
- 6.2. The programme to procurement will be highly dependent on the speed with which NHS Lothian can appoint both a project team and advisers. Both of these should be pursued as a matter of priority in parallel with identification of the preferred scope and procurement route and further discussions with Consort. Assuming that design is progressed in-house (or by PSCP) ahead of the procurement for a combined facility (rather than as part of the procurement process) and that a well resourced project team and advisers are already in place, then we believe a procurement period (from OJEU to financial close) of 12 months is achievable.

However getting to the point of OJEU with all these areas addressed is likely to take about 6 months.

I hope that the above is helpful in setting out a number of the issues to be addressed. I suggest that a further meeting is convened as soon as possible to consider and progress these issues.

Yours sincerely

Donna Stevenson

Associate Director
d/l: [REDACTED]

Cc: Susan Goldsmith

Norman Kinnear

Annex 1 - Affordability Example

Facility size:		75,000	m ²
Capital cost:		£3,350	per m ²
Capital Cost:		£251,250,000	
Development Cost		£5,000,000	sum
Value Financed:		£256,250,000	
Finance Rate:		8%	
Contract Period:		30	years
Annual Finance		£21,697,000	
Hard FM	£25	per m ² p.a.	1,875,000
Life Cycle	£15	per m ² p.a.	1,125,000
Insurance	£5	per m ² p.a.	375,000
Utilities	£6	per m ² p.a.	Exc
SPV Costs	£50,000	sum	50,000 sum
Unitary Charge			£25,122,000
percent of capex per year:			10.0%

Annex 2: Questions for NHSL’s legal advisers

A. PSCP Framework Agreements and the NPD DBFM Procurement

A potential procurement route which has been identified involves the retention of the existing PSCP for construction (with a revised scope to include the DCN) which would involve the PSCP being novated to an SPV (or an interposed contractor), selected following a procurement of an NPD DBFM solution. This would involve the SPV which would contract with NHSL effectively “wrapping” the construction risk inherent in the contractual documentation for the NPD project which would reflect SoPC 4 as amended by NPD principles to the extent that they are greater than those inherent in the existing PSCP arrangements

NHSL’s legal advisers should be asked to advise on the following issues.

1. Is the scope of the existing Health Framework procurement sufficient legally to allow the subsequent extension to include the DCN as well as the RHSC?
2. Would the existing Health Framework contract permit (in a manner which is legally compliant, including as to the procurement rules) the novation by NHSL of the contractual arrangements to an SPV (or an interposed contractor), to be employed by NHSL under NPD DBFM documentation? Would this require the consent of the other parties to the existing arrangements?
3. Could a compliant procurement be run for the NPD DBFM which contains an obligation on the winning bidder to accept a novation of the existing PSCP arrangements, bearing in mind the obligation to treat bidders equally and without discrimination? Would this legal position change if one of the bidders was party directly to the PSCP arrangements?
4. If the advice on issues 1 to 3 is that a legally compliant procurement could be pursued then the following questions should be addressed:
 - 4.1. What would be the key commercial provisions, risks and liabilities in respect of which the building contract under the Health Framework would differ from a building contract which would typically be concluded for an NPD DBFM contract, bearing in mind financiers’ requirements?
 - 4.2. Would the rights available to the SPV under the existing PSCP arrangements provide a basis for it to operate a “wrap” of the existing PSCP arrangements?
 - 4.3. Do NHSL’s adviser foresee any other legal issues with the potential procurement route?

B Conclusion of Framework Agreements

NHSL's legal advisers should be asked to advise on the following issues.

1. Is NHSL entitled to conclude the existing PSC framework arrangements at will, either before or at the end of the current stage?
2. If so
 - 2.1. what is the notice period?
 - 2.2. Is the sole liability to pay for the work done to the date of termination?
 - 2.3. If not what are the heads of cost?
 - 2.4. How are the costs referred to in 2.2 or 2.3 calculated?
3. On and after conclusion of the contracts what is the extent of the intellectual property rights under and pursuant to the subject matter of the contracts, including as to the right to grant rights to third parties without cost to NHSL?

C. A Stand Alone NPD DBFM Procurement

A further procurement option being considered is using to some degree the design work carried out under the Health Framework, but as part of a new NPD DBFM procurement without any further contractual relationship with the Health Framework contract. From a purely legal perspective (including procurement law) is there any barrier to doing this given :

- 3.1 the proximity and required interface with the existing PFI contract. Note that it is the intention to have in place an agreement with the existing PFI project company to split out the land from that contract on which it is intended to build the new facilities. Interface is likely to include corridor links and utilities sourcing.
- 3.2 the role of a potential bidder for the new contract as PSCP in the development of the design for the RHSC?

BACKGROUND NOTE FOR PQ S30-12372

36.5% real terms cut in capital funding mean that not all planned projects can proceed on planned timescales or using public capital. Within health, the net capital budget is £488.2m for 2011-12 and contains provision for the New South Glasgow Hospitals Project (£178.3m), legal commitments of circa £200m and maintenance/replacement programmes of circa £110m. Whilst the projected costs of the RHSC project are projected to be £169.4m with £37.2m falling due in 2011-12, the main element of spend is £85m in 2012-13. This spike in expenditure is set against a background where after all of the actions already taken by the Scottish Government there is still an over commitment of circa £450m on the 2012-13 capital budget to be resolved. There is therefore no headroom to absorb such a large commitment without a radical reprioritisation of the whole capital budget.

NHS Lothian are in procurement for the RHSC and have appointed a Principal Supply Chain Partner (PSCP), BAM Construction, from the NHS National Framework "Frameworks Scotland" to deliver a final design proposal to support a Full Business Case for the RHSC. No construction contract has been signed and the PSCP will be paid for design development work undertaken. It is not clear what the implications of this decision will be for BAM Construction and its' supply chain members. Given the stage of detailed design we would propose that design development is completed and the design could be novated under an NPD procurement.

There is likely to be criticism over a delay in the project and the impact on the Principal Supply Chain Partner. There is also likely to be staff side concern regarding the extension of private finance on the ERI site. There may also be a negative reaction from charitable organisations who support the project and are fund raising to support the new building. In responding to these issues the use of revenue finance, and revenue support for unitary payments will give certainty over the delivery of the project and existing health policy is that Soft FM is excluded from NPD type projects. NHS Lothian are already pursuing a revenue finance solution for the Department of Clinical Neurosciences as a variation to the exiting PFI contract at Royal Infirmary of Edinburgh.

SUPPLEMENTARY Q&A

Q - The use of revenue finance will delay the delivery of the Royal Hospital for Sick Children?

A - Delay on the delivery of the Sick Kids will be minimised by NHS Lothian preparing for procurement as quickly as possible and by receiving support from the Scottish Futures Trust

Q – How long will the project be delayed?

A – The delay may be approximately a year.

Q – Why was public funding secured for the New South Glasgow Hospitals Project but not for the Sick Children’s Hospital in Edinburgh?

A - The business case for the New South Glasgow Hospitals Project demonstrates that public capital represented better value for money through public capital (by £118.86m for PFI and £105.47m for NPD).

We wish to progress the Sick Kids in Edinburgh as quickly as possible and can do this most effectively through NPD.

Q- Does NPD not provide less value for money?

A - Given reductions in public capital NPD is the best way of maintaining investment, jobs and economic growth.

For the first time Scotland has a clear and sustainable approach to NPD investment, to ensure affordability over the medium to long term. We are setting an additional 1% of future revenue budgets to support £2.5 billion of new capital investment.

Q - Why have you allowed NHS Lothian to waste the time, effort and costs they have incurred in bringing the project this far?

A – The work undertaken by the Health Board and the Contractor through the NHS Scotland National Framework “Frameworks Scotland” will not be wasted as it will form part of the procurement process that follows.

The Contractor and other supply chain members who have worked with the Board will be appropriately paid for the work they have undertaken.

Q – Will the use of PPP not result in soft facilities management staff being transferred to the private sector as with the Royal Infirmary.

A There is no change to our policy that Soft FM is excluded from NPD type of projects.

Q - Why did you not better protect health spending in Scotland?

A - In the current spending review period we have invested £1.676 billion in health capital, a

19.9% increase on the previous three year period.

Excluding the £20m additional funding provided to support pandemic flu in 2010-11 the reduction in the net capital budget of £69.5m matches the consequential impact of the Department of Health Capital reduction.

Contact Name: Norman Kinnear
Ext: [REDACTED]



SCOTTISH CAPITAL INVESTMENT MANUAL

Business Case Guide



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1 FOREWORD

NHSScotland invests over £0.5bn each year on new or replacement assets such as land, buildings, equipment and facilities. With the increasing demand for infrastructure investment, and recognising the lasting impact that such investment decisions have, it is essential that we make the right investment choices and that we clearly demonstrate and deliver value for money for the taxpayer.

Furthermore, the Scottish Government has set an ambitious agenda for the public sector to contribute to the achievement of sustainable development. There is a clear need for NHSScotland to play its part in this by maximising the efficient use of its resources. With well-understood links between people's health and the natural and built environments that surround them, it's not just what is built that is important, but where, how, and with which materials. The construction process and, subsequently how we manage our buildings and estate over their lifetime, have a fundamental influence on Scotland's health outcomes.

The emphasis on the 'economic case' in this business case process is not simply concerned with the financial consequences of an investment decision but also non-financial aspects. Making the right investment decisions therefore requires us to identify and act in support of the Scottish Government's range of Strategic Outcomes from the outset, and throughout the entire construction and management process. In that Strategic context sustainability principles are embedded within the Scottish Capital Investment Manual (SCIM).

It should be recognised by anyone involved in planning, designing and delivering NHSScotland's healthcare estate that there is, at the present time (at the start of the Frameworks Scotland arrangements) an unprecedented opportunity and a need both to ensure and to demand sustainable healthcare buildings. Framework Scotland therefore is and should be one of the primary vehicles for delivering sustainability in the construction, management and maintenance of the healthcare estate. Delivering design quality and sustainability through the Framework will require a consistent approach with this SCIM guidance, alongside the application of and proper attention to AEDET and BREEAM Healthcare requirements at outline business case (OBC) and post-construction evaluation stages. Additionally,

an assessment of design quality at IA, OBC and FBC stages is now part of the SGHD Business Case process, the purpose of which is to ensure that the outcomes of development projects meet the Government's objectives and expectations for public investment. The aim of mapping design into the Business Case process is to support the implementation of the [Policy on Design Quality for NHSScotland](#) by improving the level of design quality achieved across NHSScotland and, ultimately, the outcomes achieved by doing so.

The above approach is entirely consistent with the five Strategic Outcomes of the Scottish Government. The Scottish Government's vision is for a Scotland that is: Wealthier and Fairer; Smarter; Healthier; Safer and Stronger, and Greener. There are 15 national outcomes and 45 supporting indicators associated with these 5 objectives, many of which have direct or indirect links to Scotland's health. There are clear links, influences and opportunities between these and the NHSScotland's role with respect to the built environment.

Announcing their approach to the 'Greener Scotland' strategic objective, Ministers called for the Scottish Government and its partners, including the National Health Service, to work to become advocates and exemplars of good practice in environmental issues. They acknowledged the good work already being done throughout the public sector but called for more, stressing the need to cut energy and water use, reduce waste, reduce travel emissions and support biodiversity. Within the 'Healthier Lives' national outcome, the need was identified for the Scottish Government to "work with NHSScotland...to deliver the full range of healthcare services" and for NHSScotland to maximise its productivity.

A good business case brings together the evidence to support an NHS Board in their decision making and provides assurance to other stakeholders, including the public and Scottish Ministers, around the basis for such decisions and the robustness of the evidence and processes that underpin such key decisions.

The scale of individual projects across NHSScotland varies significantly. Much of the focus is often given to large scale investments or service redesigns but business cases are equally important to support the effective delivery of smaller

projects, given the collective or cumulative effect they have.

This point can be well illustrated by the current focus on carbon dioxide (CO₂) reductions. Clearly, investments and budget decisions need to be in line with government policy. With the Climate Change Bill being progressed in Scotland in its final stages, there are clear signals from the Scottish Government that CO₂ reduction is one of the top political and environmental priorities.

A further clear signal of the importance of carbon reductions, if one was needed, is the Scottish Government's Carbon Assessment Project, which aims to account for the carbon implications (and value) of carbon in the decision-making process (the Budget Spending Review). Whilst the findings will not be known for some time, the implications are that all public sector budget planners should be tracking both the carbon and financial implications of their organisation's policy and operational decisions. This is reinforced with the likely imminent introduction of the Carbon Reduction Commitment (CRC), where carbon will have a financial value and will be traded by those captured by the scheme, including, as proposed at present, a significant number of NHS Scotland sites. In the CRC, there will be significant financial penalties for bodies which under-perform in reducing their CO₂ emissions.

The common factor linking small and large developments is that the business case process must involve close scrutiny of all relevant financial and non-financial aspects of a proposed project to ensure that the best possible solution is selected for a given set of circumstances.

This mandatory guidance provides, as part of the SCIM, a systematic and objective approach to all stages of the business case process that sits alongside – and complements – HM Treasury's Green Book guidance on option appraisal.

The Scottish Government is confident that its use will not only help enhance the quality and consistency of public sector business cases but will also increase the value for money and sustainability achieved as a result.

The publication of this Business Case Guide will assist all NHSScotland bodies in producing their business cases. It will, if applied properly and consistently, help reduce the cost and reliance on consultant support that is often applied by helping to build internal capacity and expertise.

Almost more importantly, the guidance will help anyone involved in the governance or oversight of a project to understand the work necessary to genuinely prove a case for investment. This will enable a business case to become what it should be – not a bureaucratic necessity in order to obtain approvals, but a document demonstrating evidence-based decision-making. This Guide will act as an invaluable support to developing the contents and purpose of a good-quality business case.

Frameworks Scotland – Engaging a Principal Supply Chain Partner and the Business Case process

Frameworks Scotland affords the opportunity for NHSScotland Clients to enter into contract with Principal Supply Chain Partners (PSCPs) for specific schemes from IA Stage and with an option to appoint for wider strategic inputs for non-individual project specific activities prior to IA Stage – ie Stage 1 as defined in the Business Case Guide.

It is anticipated that most PSCPs will enter into contract with NHSScotland Clients at the commencement of OBC stage. The Scheme Contract Template (see below) for Frameworks Scotland projects, however, has provision for contractual activities to commence from IA Stage to encourage earlier inputs where particularly required on projects.

For a PSCP to provide whole programme strategic support in Stage 1 Phase 1a as defined in the Business Case Guide, a separate Contract would be required as the Template Contract only has provision for use on individual projects (schemes) from IA Stage.

Frameworks Scotland – Scheme Contract Template

The Scheme Contract Template (NEC3, Option C) is a comprehensive and bespoke template with process driven contract activities relevant to Frameworks Scotland. The Template also provides guidance on how to complete the Contract for each of the four stages (IA, OBC, FBC and Construction).

The Contract templates contain detailed procedures for dealing with project processes including managing risks and change. As the basis for scheme development is one of collaborative inputs which comprehensively deal with risk management then this may have a bearing on how optimism bias for example is dealt with during the relevant stages of a project.

The Contract has provision for the NHSScotland client to terminate – either at the conclusion of each stage or during stages if there is good reason (as defined in the Contract) to do so. There are model forms within the Contract Appendices for Approvals to Proceed from one stage to the next.

The Scheme Contract is used in the formulation of the Stage 4 (construction and delivery process) Target Price. This should in turn be based upon a substantially complete design, a detailed programme and a confirmed set of deliverables (Works Information). The Target Price should be agreed as part of the FBC process. In line with p104 where there is commentary on the “final” business case for updating the FBC post procurement, this mechanism could afford the CPAMP the opportunity to refine the Target Price prior to approval to proceed to construction.

The Target Price agreement is based on what is referred to as an Activity Schedule. This is a programme related price list of key activities/ items of work representing the amount of the Target Price.

The template contract also includes supplementary sections dealing with Works and Site Information. These documents are continually developed in collaboration up to agreement of the Target Price and effectively define the scope of the works, including the Business Case related activities which should be undertaken. There are checklists for guidance together with clear referencing for these to be “reviewed in relation to the Scottish Capital Investment Manual (SCIM).”

The Works Information Template in outlining the relevant Business Case Activities also indicates requirements to undertake BREEAM Health and AEDET reviews and evaluations at relevant stages of scheme development. The Template also indicates that at Stage 3 – FBC – the design should be at RIBA Stage E – Detailed design.

2 INTRODUCTION

This guidance consolidates other reference sources and takes the business case author through the entire process – from IA, OBC and FBC. The guide is accompanied by a set of templates, prepared following many years of practical experience within a wide range of public sector organisations. It covers the content, presentation and structure of the business case and the standards which need to be applied.

This guidance **must** be read in conjunction with the Treasury Green Book and other guides within the SCIM. It should also be read in conjunction with the 'Sustainable Buildings Guide', and 'A Sustainable Development Strategy for NHSScotland', soon to be published by Health Facilities Scotland (HFS). The latter focuses on a range of 6 interrelated social, environmental and economic opportunities (priority action areas) to enhance the contribution of the health sector to sustainable development. These include transport; procurement; facilities management; employment and skills; community engagement, and new build and refurbishment. The forthcoming Sustainable Buildings Guide provides practical detail on the actions NHSScotland Bodies can take to enhancing the sustainability of the construction and management of the healthcare estate. That guide is being developed to map onto the SCIM process.

All projects submitted to the SGHD Capital Investment Group for approval are now subject to an assessment of design quality and functionality, including technical and sustainability standards. This Design Assessment will take place at the Initial Agreement, Outline Business Case and Full Business Case stages of approval.

The Scottish Government Health Directorates' purpose in developing and implementing this process is to ensure that the outcomes of development projects meet the Government's objectives and expectations for public investment. The aim of mapping design into the Business Case process is to support the implementation of this Policy by improving the level of design quality achieved across NHSScotland and, ultimately, the outcomes achieved by doing so.

To assist NHS Boards in utilising good design to achieve the best outcomes from their development projects, Boards are required to develop and produce a Design Statement prior to the submission of their Initial Agreement. The Design Statement is the first control document produced for a project and should be consistent with the Board's overall vision contained within the strategic Design Action Plan.

Additional guidance on Design Assessment and the Business Case process has been added to the [Scottish Capital Investment Manual Supporting Guidance section](#). The guidance also includes advice on the preparation of the Design Statement.

Our aims

We have prepared this publication and its accompanying templates with the following aims and VFM principles in mind:

- First – **economy** – to reduce the costs and timescales associated with the production of business cases
- Second – **efficiency** – to increase the throughput of worthwhile schemes at their key review and approval stages
- Third – **effectiveness** – to improve the quality of proposed schemes, both in terms of their scoping, planning, procurement, implementation and evaluation; and their structure and presentation
- Fourth – **sustainability** - to ensure a holistic view is taken, accounting for and harmonising environmental, social and economic costs, benefits, impacts and opportunities. There are many opportunities and imperatives to address effectively the range of sustainability priorities in the 10 steps and 35 actions of the SCIM process and business case below.

3 WHO SHOULD READ THIS PUBLICATION?

Business Cases are a mandatory part of the planning, approval, procurement and delivery of investments within NHSScotland. The 'Five Case Model' is the Office of Government Commerce's (OGC) recommended standard for the preparation of business cases and is used extensively within central government departments and their agencies. It is referenced by HM Treasury in the latest version of the Green Book and recommended by the Department of Health in England, the NHS in Wales and now NHSScotland.

This guide provides an overview of:

- the business case **philosophy**
- the **product** – the Five Case Model
- the recommended **process** – based on many years of practical experience

It should, therefore, be read by key personnel involved in the development of these schemes. These include:

- Senior Responsible Owners (SROs), Programme/ Project Directors and Project Managers, with responsibility for the successful and sustainable delivery of schemes
- Directors of Finance, Procurement and Planning, with responsibility for the forward planning and sustainability of operational aspects of schemes
- Members of the NHS Boards (Chairman, non-executives, the CEO and other directors), with strategic responsibility for approving the scheme through the life span of its development and delivery

- Staff in NHS Boards with responsibility for the implementation, monitoring and reporting of environmental management and sustainable development performance, including the board-level champion and Environmental Management Representatives.

This guidance is provided in accordance with HM Treasury's Green Book (a Guide to Investment Appraisal in the Public Sector) and is part of the SCIM.

This guidance should be read in conjunction with the templates for the development of Initial Agreements (IAs), Outline Business Cases (OBCs) and Full Business Cases (FBCs) using the Five Case Model.

4 WHY IS THE BUSINESS CASE IMPORTANT?

Much has been written about this.

The fact is that too often, too many strategies, programmes and projects in the public sector fail to achieve their objectives and deliver anticipated benefits because the key phases of the investment have been inadequately scoped and planned and the associated risks have not been taken into account.

The business case is so important because it is the planning and management tool which enables stakeholders, customers and delivery personnel to ascertain that schemes:

- are supported by a robust **case for change** that provides strategic synergy – the ‘strategic case’
- optimise **value for money** – the ‘economic case’
- are **commercially viable** – the ‘commercial case’
- are **financially affordable** – the ‘financial case’
- are **achievable** – the ‘management case’

The business case is **not** simply a vehicle for gaining approval for a scheme. Irrespective of whether approval is required, the above components need to be satisfied for all public sector schemes. The development of the business case takes place over time, and sequentially in relation to the above five key components. It is assumed that the ‘sustainability case’ is embedded in the each of the above 5 cases. At each iteration, further detail is provided, resulting in the production of the IA; the OBC and finally the FBC.

5 OVERVIEW OF THE BUSINESS CASE DEVELOPMENT

Introduction

The development of a scheme **must** be grounded in terms of a strategy or business plan. We refer to this as Phase 1. Phase 1 and the subsequent two phases which relate to the development of the business case over its lifespan (IA, OBC and FBC) are presented in sequence within this Guide.

They total 10 main steps, with 35 supporting actions described in the main text and summarised in section 11. *Diagram 1* provides a graphical visualisation of the business case development process.

Background

The process is iterative. Thus, as the business case is developed, it is always necessary to review previous steps in order to verify the continued efficacy of work undertaken in the earlier phases.

The process is also flexible – the quantity and depth of the work undertaken needs to be tailored to suit the requirements of the individual scheme. Finally, we have shown how the process maps onto the OGC Gateway Process, which is now mandated for all programmes and projects within NHSScotland over £5m that are high risk/ mission critical.

Phase 1 – Determining the Strategic Context and Preparing the Initial Agreement (IA)

This is part of the business planning stage, where the position of the proposed programme/ project is established in relation to the overall organisational and/ or service strategy.

This phase maps onto the preparation of the 'project initiation document' (PID) in relation to PRINCE 2 project methodology and onto the OGC Gateway 0 – strategic fit.

The preparation of an Initial Agreement should be considered where the definition of the project in relation to the programme and overarching strategy is unclear or uncertain.

This is the scoping stage of the investment. The purpose of the IA is to confirm the strategic context of the investment(s); to make a robust case for change; and to provide stakeholders and customers with an early indication of the proposed way forward (not the preferred option), having identified and undertaken SWOT analysis on a wide range of available options, together with indicative costs.

This phase maps onto OGC Gateway 1 – business justification.

Phase 2 – Preparing the Outline Business Case (OBC)

This is the detailed planning phase of the investment.

The purpose of the OBC is to revisit the IA in more detail and to identify a preferred option which demonstrably optimises value for money and emphasises sustainability. It also sets out the likely deal; demonstrates its affordability; and details the supporting procurement strategy, together with management arrangements for the successful rollout of the scheme.

This phase maps onto OGC Gateway 2 – procurement strategy.

The project moves into its procurement phase following approval to proceed.

Note - Where there is a significant movement in cost 10% [excluding inflation] a revised OBC is required.

Phase 3 – Preparing the Full Business Case (FBC)

This takes place within the procurement phase of the project, following detailed negotiations with potential service providers/suppliers prior to the formal signing of contracts and the procurement of goods and services. The purpose of the FBC is to revisit the OBC and record the findings of the subsequent procurement. It also sets out the recommendation for an affordable solution which continues to optimise VFM and sustainability considerations, and includes detailed arrangements for the successful delivery of goods and implementation of services from the recommended supplier.

This phase maps onto OGC Gateway 3 – investment decision.

Following FBC Approval

Following FBC approval it is important to note that the business case continues to play a major role in the life span of the project. This includes:

- internal and external audit
- operational management – the risk management register
- OGC Gate 5 (benefits realisation) – the benefits register
- post project evaluation
- Public Records Act and Freedom of Information (Scotland) Act.

Overview

With each phase there are a number of different steps, which are shown below:

Stage 1 – Business Planning and Scoping

Phase 1a – Determining the strategic context

Step 1: Ascertaining strategic fit

Gateway Review Stage

Gate 0: Strategic fit

Phase 1b - Preparing the Initial Agreement

Step 2: Making the case for change

Step 3: Exploring the preferred way forward

Gate 1: Business justification

Stage 2 – Planning

Phase 2 – Preparing the Outline Business Case (OBC)

Step 4: Determining potential VFM and approach to sustainability issues

Step 5: Preparing for the potential deal

Step 6: Ascertaining affordability and funding requirement

Step 7: Planning for successful delivery

Gateway Review Stage

Gate 2: procurement strategy

Stage 3 – Procurement

Phase 3 – Preparing the Full Business Case (FBC)

Step 8: Procuring the VFM solution

Step 9: Contracting for the deal

Step 10: Ensuring successful delivery

Gateway Review Stage

Gate 3: Investment decision

Stage 4 – Implementation

Gateway Review Stage

Gate 4: 'Go Live'

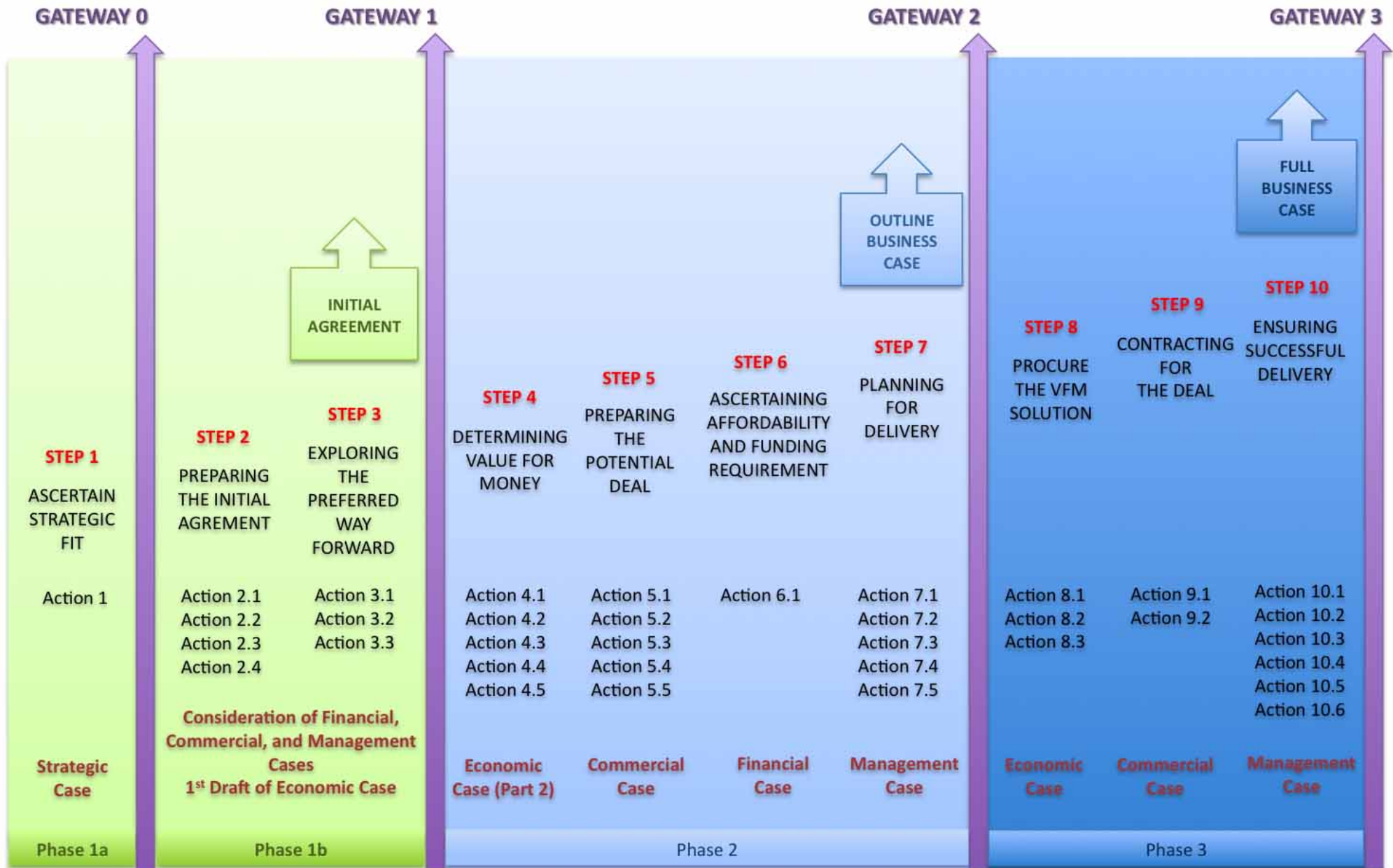
Stage 5 – Evaluation

Gateway Review Stage

Gate 5: benefits realisation

***Diagram 1* provides a graphical visualisation of the business case development process.**

Diagram of Business Case Guide showing key phases and steps, review points, Business Cases stages and 5 Case Model requirements



6 RESPONSIBILITY FOR PRODUCING THE BUSINESS CASE

The 'ownership' and responsibility for the infrastructure investment planning process rests with the NHSScotland body developing or leading the development of the programme/ project in question.

Issues of governance are dealt with in the SCIM [Programme and Project Organisation Guide](#). For significant investments NHSScotland Bodies should appoint a Senior Responsible Owner (SRO) for the project's direction at Board level, as also recommended by the OGC Gateway Process. The process should also involve the NHSS Body's board-level environmental or sustainability champion, a key role promoted in the Environmental Management Policy Action Plan (2008).

Under no circumstances should responsibility for the direction and the production of the business case be 'outsourced' to external consultants. However, external consultants may be of invaluable assistance and their use should be considered where the necessary skills and resources are not available in house.

Similarly, the production of the business case should not be regarded as an adjunct to the project manager's role, and a hurdle to jump for approval purposes. Instead, it must be viewed as a fundamental part of the overall business planning process, which requires advice and guidance from the business managers, users and technicians involved in the scheme.

7 A SYSTEMATIC APPROACH TO THE DEVELOPMENT OF THE BUSINESS CASE

The need for the project is often perceived as being 'obvious'. However, a project should never be taken forward without asking why it is needed in relation to:

- Other projects in the programme investment portfolio
- Other programmes within the overall strategy
- A sound understanding of the sustainability implications

A strategic review is required if the answers to these three points are not readily apparent. This is particularly important in the context of the OGC Gateway Process (Gate 0) which, in some cases, has found that whilst a project may be worthwhile, it could best be rolled out as part of another project or programme due to related synergies and holistic fit.

The action required within this step is shown in context below:

Stages	Development Process	Deliverables
Phase 1	Determine the strategic context	
Step 1/Action 1	Ascertain strategic fit	Strategic context
Output	Strategic Context for Initial Agreement	
Outcome	Strategic fit	
Review Point	Gateway 0 – Strategic Fit	

Strategies, Programmes and Projects

Strategies, programmes and projects are all components of the business planning process, which together provide the structured framework for defining and implementing change within the organisation, either at national, regional or local level.

Strategies focus on the vision, mission and long-term goals of the organisation. **Programmes** provide the vehicle for implementing business strategies and investment initiatives through the management of a portfolio of **projects** that provide organisations with the capability to achieve benefits that are of strategic and operational importance.

The above approach is entirely consistent with the five Strategic Outcomes of the Scottish Government. The Scottish Government's vision is for a Scotland that is: Wealthier and Fairer; Smarter; Healthier; Safer and Stronger, and Greener. There are 15 national outcomes and 45 supporting indicators associated with these 5 objectives, many of which have direct or indirect links to Scotland's health. There are clear links, influences and opportunities between these and the NHSScotland's role with respect to the built environment.

If revising or developing new strategies and programmes, NHSScotland Bodies should be aware of their responsibilities under the Environmental Assessment (Scotland) Act 2005, in relation to the possible need for Strategic Environmental Assessment (SEA) of their plans, programmes or strategies. It should be noted SEA is not used for project-level interventions, which may require Environmental Impact Assessment (EIA) procedures. Guidance may be sought from planning staff within the relevant local authority.

It is important to recognise that strategies incorporate a number of programmes, which will individually be made up of a number of projects, each of which requires a business case.

The business strategies, programmes and projects within an organisation must all be aligned and the 'critical path' understood in terms of timescales and deliverables. This is shown below:

Component	Time Horizon	Deliverables
Strategy	Long-term	Goals – on-going
Programmes	Medium-term	Outcomes – benefits
Project Blocks	Short-term	Outputs – building

It is important that all large programmes and projects have discrete end dates and recognised programme and project management methodologies in place for their successful delivery, and that they apply the appropriate level of environmental impact scrutiny.

Strategic reviews

The general purpose of the strategic review is to revisit the 'accepted' answers to the following questions:

- where are we now?
- where do we want to be?
- how will we get there?

This involves:

- reviewing the strategies, programmes and portfolios of projects in place within the organisation to make sure that they fit together in terms of their scope, milestones, timescales and desired outcomes

- validating that the programmes and projects are well structured, organised and funded; and that they have the required competencies and capabilities in place
- making sure that effective performance management, measurement and monitoring is in place and in particular that:
 - **the projects have defined benefits and outputs**
 - **ownership of the delivery of benefits remains with the programme manager**
 - **outputs of the project remain consistent with changing aims and objectives**
 - **targets and achieved benefits are measured, reported and communicated**
 - **costs are closely monitored and managed; forecast costs and benefits are frequently reviewed; management data is 'fit for purpose'; and sufficient controls are in place to ensure accuracy.**

The above should include effective and appropriate sustainability considerations.

All NHSScotland business cases (whether they are required to be approved by SGHD or not) should clearly and explicitly demonstrate that equality and diversity issues have been appropriately considered and that where required Equality Impact Assessments have been carried out.

Phase 1 - Business Planning and Scoping

Step 1 – Ascertaining Strategic Fit

Initial Agreement

Overview

The purpose of the Initial agreement (IA) is firstly to establish the case for change and the need for investment; and secondly, to provide a suggested way forward for the scheme for the early approval of management. Consequently, it provides the 'initial agreement to proceed' with the scheme.

It is important that the 'preferred way forward' within the IA is not confused with the 'preferred option' which emerges from the OBC. The preferred way forward provides management with a recommended direction of travel, following the initial assessment of the long list upon completion of the IA. The preferred option is the recommended VFM choice, following the detailed appraisal of the short list upon completion of the OBC.

IA's are good practice for the following key reasons:

- they provide an early opportunity for the organisation and key external stakeholders to consider a programme/ project and influence its direction
- they provide a basis for better decision making through reaching agreement from the outset about key issues for the options
- they prevent too much effort being put into projects which should not proceed

Step 2 – Making the Case for Change

Introduction

This part of the business case defines the rest of the case, as it describes the organisation in which the proposed investment will take place and identifies the objectives from the key strategic drivers.

The main actions within this step are set out below:

Stages	Development Process	Deliverables
Phase 1	Preparing the Initial Agreement (IA)	Strategic case
Step 2	Making the case for change	
Action 2.1	Agree Strategic Context	
Action 2.2	Determine investment objectives, existing arrangements and business needs	
Action 2.3	Determine potential business scope and key service requirements	
Action 2.4	Determine benefits, risks constraints and dependencies	

Action 2.1 – Agree Strategic Context

This section of the IA provides an overview of the organisation and, in terms of the proposed investment, demonstrates business fit and synergy with other parts of the organisation's business strategies.

Organisational overview

This part of the IA provides a brief profile of the organisation, together with a statement of what it is seeking to achieve and the nature and level of resources currently at its disposal. The key areas of interest will include:

- the mission of the organisation
- its strategic vision, goals, business aims and service objectives
- its current activities and services, including key stakeholders and customers
- its organisational structure, staff complement, business turnover and geographical position
- its existing financial and funding arrangements.

Much of this information may be gleaned from annual reports. However, it is important to provide a snapshot of the organisation, given the fast pace of change within the public sector. Sources of information relevant to sustainable development should be referred to, as they set a direction of travel in respect of performance and priority issues, e.g. HDL(2006)21; 'Choosing our future'; Better Health Better Care.

Existing Business Strategies

This part of the IA explains how the proposed investment fits within, supports and promotes the agreed strategy and work programme of which the project is an integral part. In doing so, it explains how the proposed scheme helps to achieve the business goals, strategic aims and plans of the organisation. Explicit reference to Local Delivery Plan objectives and the impact of the proposed project on relevant HEAT targets should be explicit.

All relevant strategies should be referenced including those at national, regional and local levels. Importantly, these strategies will highlight the high level policy aims (strategic aims) and business goals of the organization from which the objectives for the investment will flow.

Direct linkages are required to the five Strategic Outcomes of the Scottish Government. The Scottish Government's vision is for a Scotland that is: Wealthier and Fairer; Smarter; Healthier; Safer and Stronger, and Greener. There are 15 national outcomes and 45 supporting indicators associated with these 5 objectives, many of which have direct or indirect links to Scotland's health.

At local level explicit links to Local Delivery Plans, HEAT Targets and agreed Asset Management Strategies should be clear and explicit. Much of this information should be available from existing documentation prepared at departmental and organisational levels and the outcome of deliberations at Phase 0 – determining the strategic context.

Action 2.2 – Determine investment objectives, existing arrangements and business needs

A robust case for change requires a thorough understanding of what the organisation is seeking to achieve (the investment objectives); what is currently happening (existing arrangements) and the associated problems (business needs). Analysing a project in this way helps to provide a compelling case for investment, as opposed to it simply being 'a good thing to do'. Sustainability implications are relevant to and should be considered for all three of the above aspects. Requirements and opportunities exist to improve building design and lifetime performance, e.g. through using the AEDET and BREEAM Healthcare methodologies, and robustly pursuing or adopting the appropriate rating for the project in question.

Investment objectives

This stage is probably the most important stage of all, and possibly the most underrated. It is concerned with defining the investment objectives for the project in terms of the desired outcomes and 'where we want to be', within the context of phase 0/ step 1 (determining the strategic context/ strategic fit).

The investment objectives for the project must clearly relate to the underlying policies, strategies and business plans of the organisation. They should also be made SMART – specific, measurable, achievable, relevant, and time-constrained – to help facilitate the subsequent generation of options and provide the foundation for post-implementation review and evaluation.

Business cases that do not include SMART objectives and baseline data against which planned improvements/ benefits can be assessed will not be approved by the SGHD Capital Investment Group.

Investment objectives should:

- be customer focused and distinguishable from the means of provision
- focus on what needs to be achieved rather than the potential solution

It is also important that investment objectives are not so narrowly defined that they exclude important options, or so broad that they cause unnecessary work at the option appraisal stage.

The setting of robust investment objectives is an iterative process as subsequent appraisal (step 3, action 7) may change them. In practice, they will generally be predicated on the need to:

- provide further **economies** in the provision of an existing service
- improve business **effectiveness** and service quality in terms of the required outcomes

- improve **efficiencies** in the throughput of services
- meet statutory requirements and obligations meet policy changes
- deliver new business and operational targets

Procuring an asset or service, or putting in place a scheme is never an investment objective in itself. It is what an organisation is seeking to achieve in terms of measurable returns on the investment that is important, e.g. seeking to maximise energy efficiency and best practice to reduce CO₂ emissions, and in doing so reduce lifetime revenue or running costs, and the financial burdens (recurring revenue costs) likely to be associated with poor performance under the Carbon Reduction Commitment.

Sustainability Objectives

All new build above £2m are required to obtain a BREEAM Healthcare/ or equivalent 'Excellent' rating; all refurbishments above £2m to obtain a 'Very Good' rating. If the capital costs are less than £2m, projects should undertake a BREEAM pre-assessment to establish whether BREEAM is a viable option.

Design Quality Objectives

All projects should use the Achieving Excellence Design Evaluation Tool (AEDET) to assess design quality. Ideally an initial AEDET assessment should be conducted on existing facilities to articulate shortcomings and identify the key design objectives/ issues that require to be addressed in the options to be developed. When considering the preferred option as part of the OBC, an AEDET assessment workshop should be held within the NHSScotland body, followed up with a workshop involving the PSCP to ensure that key design objectives are embedded and addressed as the project develops.

Existing arrangements

Within the parameters of the scope determined by the project's investment objectives, this stage sets out the status quo. In other words, it looks at the existing arrangements and explains how services are currently organised, provided and supplied. It also includes details about stakeholders, customers and associated throughput and turnover. In doing so, it provides a snapshot of 'where we are now' and consequently the basis for the 'do nothing' option.

Business needs

Having fully understood the existing arrangements for the service, this stage pinpoints the 'business gap'. In other words, the difference between 'where we want to be' (as suggested by the investment objectives) and 'where we are now' (in terms of existing arrangements for the service). This highlights the problems, difficulties and inadequacies associated with the status quo. This analysis should take into account existing and future changes in the demand for services, and the location for their delivery, especially in light of dispersed service delivery, and the effects, e.g. travel and transport implications, these may have. In most cases, it will be necessary to include:

- confirmation of the continued need for business operations, including supporting evidence
- projections of the nature and level of demand for future services
- deficiencies in current provision
- summary of user requirements, clearly distinguishing between the current and future.

A useful technique for populating this section of the business case is to complete the following template for each of the investment objectives:

Investment objective	What we are seeking to achieve?
Existing arrangement	The status quo
Business need	The problems associated with the status quo

Action 2.3 – Determine potential business scope and key service requirements

This stage highlights the potential scope of the project and the services required to satisfy the identified business needs and gaps.

Potential Business Scope

This action ascertains the scope of the project from the standpoint of the business, in terms of affected business areas, functionality and organisation. This is an extremely important action as it effectively sets out the boundaries, or limitations, of the project – only options within this scope will be assessed within the economic case. If the scope is left open or vague at this stage, the result will lead to ‘scope creep’ and additional cost at the procurement phase.

Resultant Service Requirements

Within the chosen scope for the project, this stage highlights the required services, which in turn will form the basis of the 'statement of needs' (SON) or 'statement of service requirements' (SSR) for the project. In practice, it is beneficial to assess the potential scope and the associated service requirements in terms of a continuum of business needs, ranging from 'core' minimum requirement) to 'core plus desirable' (intermediate requirement) to 'core plus desirable plus optional' (maximum requirement).

At this stage, core denotes 'the things that we **must** have'; desirable 'the things that we are **prepared to consider** on a cost/benefit basis'; and optional 'the things we that we **might** accept' providing they are exceptionally low cost. Sustainability priorities should typically fall into the first, 'core' category, as they should have been justified environmentally, socially and economically.

The table below can be used to record business needs at each level:

	Minimum	Intermediate	Maximum
Potential business scope			
Key service requirements			

Action 2.4 – Determine benefits, risks, constraints and dependencies

On the basis that the required services are put in place, this stage captures the key benefits and risks associated with the proposed investment. It also highlights the constraints and dependencies associated with the scheme. Alongside the key investment objectives for the project, these aspects provide a basis for selecting and evaluating options in the next stages.

Class	Relative value	Relative timescale	Benefits criteria
Strategic (business related)	High	Long-term	Qualitative Indirect/ direct Non-cash releasing
Operational (management related)	Medium	Medium-term	Qualitative and quantitative Direct Cash-releasing Non-cash releasing
Job (task related)	Low	Short-term	Quantitative Direct Cash-releasing Non-cash releasing

The benefits – both direct and indirect to the organisation – should be captured for each investment objective against the relevant criteria. This helps to:

- indicate the relative value, or weight, of each investment objective. This is essential later for the ranking, weighting and scoring of the non-financial benefits and dis- benefits
- pin point the main beneficiaries of the scheme – both those within the organisation (direct) and those elsewhere in the public service (indirect). This recognises that occasionally those investing the most financially might not always be the main beneficiaries of the scheme
- ascertain whether the benefits are economic (non-cash releasing) or financial (cash releasing); measurable, but not in cash terms; or simply qualitative

All categories will subsequently need evaluating.

Main risks

The main risks associated with the project and the proposed 'counter measures' should be identified at this stage. The emphasis should be on the 20% of risks which will account for 80% risk value. These risks will fall into the following key categories:

Risk categories	Description
Business risks	These are the strategic risks which remain (100%) with the public sector organisation regardless of the sourcing method for the proposed investment. They include political risks.
Service risks	These are the risks associated with the design, build, financing and operational phases of the proposed investment. Dependant on procurement route they can be shared with business partners and service providers.
External environmental risks	These risks affect all organisations regardless of whether they are public or private sector. They include secondary legislation and general inflation.

Note: Optimism bias also needs to be considered at this stage – see step 4,

Constraints

The parameters within which the investment must be delivered should be considered. This may entail acting in accordance with a Government policy, directive or initiative, and on occasion within an 'affordability envelope' (if it has been made explicit) for the scheme.

The constraints are imposed on the project and must be managed from the outset. However, in the case of 'affordability', it should generally be assumed that further funds will always be made available where the preferred option offers significantly improved value for money (VFM). It should also be noted that 'greener' buildings are not necessarily more expensive, in fact often the opposite. What is true is that late changes or 'bolt-ons' do tend to be costly (and generally less effective), so the principle should be to integrate sustainability criteria in from the outset, to maximize the benefits and long term opportunities, efficiencies and savings.

Dependencies

Any actions or developments required of others should be considered if the ultimate success of the project is dependent upon them. This could entail the successful delivery of the outputs associated with another project in the overall programme of which the investment is an integral part. A useful technique for populating this section of the business case is to build upon the earlier recommended template for each investment objective (step 2, action 3) as follows:

Stage 1	
Investment Objective	What are we seeking to achieve
Existing Arrangement	The Status Quo
Business Need	The problems associated with the status
Stage 2	
Potential Scope	What we need to put in place to overcome these problems
Potential Benefits	The benefits we would accrue as a result
Potential Risks	The potential risks which might arise
Potential Constraints	The limitations we face
Potential Dependencies	The things that must be in place and/or managed elsewhere

Checklist for step 2

There should now be:

- clear SMART investment objectives for the project
- a clear understanding of the existing arrangements
- a clear exposition of the business needs
- clear strategy for consideration of design quality and sustainability
- a clear understanding of the potential scope for the project and/or procurement
- a clear statement of the associated benefits, risks, constraints and dependencies for the project.

Output for step 2

The first draft of the Initial Agreement has now been completed.

Step 3 – Exploring the way forward

Introduction

This is the technical core of the business case and is a fundamental chapter as it provides a robust and transparent basis for demonstrating VFM throughout the business case process. Section 2.3 of the [Option Appraisal Guide](#) provides detailed guidance.

Having determined the strategic context for the project (phase 0/ step1) and established a robust case for change (phase 1/ step 2), this stage of the planning process focuses on the main choices (or options) available for delivering the required services, with a view to formulating a preferred way forward for the subsequent approval of management.

Importantly, it should be noted that an early indication of the possible, or preferred, way forward could avoid considerable unnecessary work being undertaken at the OBC stage.

Although we are now in the territory of the 'economic case', other sustainability considerations should be analysed and ascertained as outlined below, so that the earlier sustainability considerations are carried through and capitalized on effectively.

The main actions within this step are shown below:

Stages	Development Process	Deliverables
Phase 1 – Scoping	Preparing the Initial Agreement (IA)	Strategic Case
Step 2	Making the case for change	
Step 3	Exploring the preferred way forward	Economic Case – Part 1
Action 3.1	Agree critical success factors (CSFs)	
Action 3.2	Determine long list options and SWOT analysis	
Action 3.3	Recommend a preferred way forward	Including Outline commercial, financial and management cases
Output	Initial Agreement (IA)	
Review Point	Gateway 1: Business Justification	

Action 3.1 – Agree critical success factors for the investment

By definition, CSFs are the attributes essential to the successful delivery of the scheme, against which the available options are assessed. Alongside the assessment against CSFs is the assessment of how well the options meet the scheme's investment objectives and benefits criteria.

CSFs will invariably differ from project to project, both in content and relative importance; but the key point is that they must be crucial (not desirable) and set at a level which does not exclude important options.

As a starting point, projects could consider the following, which are predicated upon the 'Five Case Model':

Key CSFs	Broad Description
Strategic fit and business needs	<p>How well the option:</p> <ul style="list-style-type: none"> • meets agreed investment objectives, related business needs and service requirements • provides holistic fit and synergy with other strategies, programmes and projects.
Potential VFM	<p>How well the option:</p> <ul style="list-style-type: none"> • maximises the return on the required investment (benefits optimisation) in terms of economic, efficiency, effectiveness and sustainability • minimises associated risks.
Potential achievability	<p>How well the option:</p> <ul style="list-style-type: none"> • is likely to be delivered in view of the organisation's ability to assimilate, adapt and respond to the required level of change • matches the level of available skills which are required for successful delivery.
Supply-side capacity and capability	<p>How well the option:</p> <ul style="list-style-type: none"> • matches the ability of the service providers to deliver the required level of services and business functionality • appeals to the supply-side.
Potential affordability	<p>How well the option:</p> <ul style="list-style-type: none"> • meets the sourcing policy of the organization and likely availability of funding • matches other funding constraints.

Action 3.2 – Determine the long list options and undertake SWOT analysis

The purpose of this action is to identify as wide a range as possible of options that meet the investment objectives, potential scope and benefits criteria identified in step 2. It also involves looking at the associated strengths, weaknesses, opportunities and threats.

The Treasury's Green Book suggests in the order of a dozen main options in the first instance. This is known as the 'long list'. Best practice suggests that these options should be generated by working parties (brainstorming exercises) comprised of senior managers (business input), stakeholders and customers (user input) and specialists (technical input).

As a matter of principle, it is important to include an option which will act as the baseline for VFM. This may either be the 'status quo', 'do nothing' or 'do minimum', depending on which is the most realistic option in the circumstances.

Options may sometimes appear to be ruled out for legal, financial or political reasons. In such cases, undue time, effort and expense should not be expended on appraising these options. However, it is equally important to ensure that the constraints in question have not been imposed artificially.

Creating options: HM Treasury Green Book

For creating the long list of options, the Green Book suggests:

- research existing reports and consult widely with practitioners and experts to gather the set of data and information relevant to the objectives and scope of the problem
- analyse the data to understand significant dependencies, priorities, incentives and other drivers from the research
- identify best practice solutions, including international examples, if appropriate consider the full range of issues likely to affect the objective

identify the full range of policy instruments or projects that may be used to meet the objectives. This may span different sorts or scales of intervention; regulatory (or deregulatory) solutions may be compared with self-regulatory, spending or tax options develop and consider radical options. These may not become part of the formal appraisal but can be helpful to test the parameters of feasible solutions. Well-run brainstorming sessions can help to generate such a range of ideas.

- varying time and scale
- options to rent, build or purchase
- changing the combination of capital and recurrent expenditure
- refurbishing existing facilities or leasing and buying new ones
- co-operating with other parts of Government and the public sector
- changing locations or sites
- co-locating or sharing facilities with other agencies
- using IT to improve delivery, as part of wider organisational change
- transferring service provision to another body, or improving partnership arrangements
- varying the balance between outsourcing and providing services (or retaining expertise in-house)
- engaging the voluntary sector
- regulation, including private sector self regulation and voluntary action
- different standards of compliance procedures for different groups (for example, large and small businesses)
- varying quality targets
- different degrees of compulsion, accreditation and monitoring and inspection regimes, including voluntary codes, approved codes of practice or Government regulation
- action at regional, national or international level (for example, European wide)
- better implementation of existing measures or initiatives
- information campaigns
- deregulation and non-intervention changes that will be permanent in the foreseeable future, or initiatives with specified time horizons.

Initial consideration of the potential for private sector involvement should also be considered – see step 4, action10.

Use of the options framework: Long List

The options framework provides a simple and straightforward approach to the identification and assessment of a broad range of relevant options (the long list) for investment. It has been tested thoroughly in a wide range of public sector schemes and proven to be particularly useful in getting senior management signed-up and committed to the preferred – or indicative – way forward early on in the business planning process.

The following table sets out an approach for identifying options for the long list using a number of ‘categories of choice’ formulated around the who, the what, the when, the where and the how. Sustainability issues should be considered in each, but possibly with particular emphasis or opportunity in the scoping and service solution options below.

Category of Choice	Brief Description
Scoping options	In relation to the proposed scheme, 'the what in terms of coverage' (for example, levels of functionality; geographic coverage; population/user base; organisation etc).
Service solution options	In relation to the preferred scoping option, 'the what in terms of the how' (for example, potential solutions and answers, use of technologies etc).
Service delivery options	In relation to the preferred service solution, 'the what in terms of the who' for service delivery (for example, in-house; NPD etc).
Implementation options	In relation to the preferred method of service delivery, 'the what in terms of the when' for the rollout and delivery of the scheme (for example, big bang, phased, modular delivery etc).
Funding options	In relation to the preferred method of implementation, 'the what in terms of the funding'. For example, the use of capital v revenue; private v public finance (see action10, the use of PPPs/PFI); national v local funding etc.

To use the options framework, the following actions should be taken:

- identify the options within the first category of choice (scope)
- assess how well each option meets the evaluation criteria (investment objectives and CSFs)
- decide whether each option is 'out', 'in' or a 'maybe'. In other words, whether it should be discounted immediately; or carried forward, either as the preferred choice in the category or a possibility for consideration
- consider the options for the delivery of the preferred choice (scope) in relation to the next category of choice (service solution)
- repeat the process for all other categories of choice.

At each stage it is helpful to record the results in a table – for example, for scoping options it could look like this:

Reference to:	Option 1.1	Option 1.2	Option 1.3	Option 1.4
Description of option:	Do nothing	Minimum	Intermediate	Maximum
Investment Objectives				
	X	?	Y	Y
	X	?	Y	Y
	X	?	Y	Y
	?	?	Y	Y
	X	?	Y	Y
Critical Success Factors				
Business Need	X	?	Y	Y
Strategic Fit	X	X	Y	Y
Benefits Optimisation	X	?	Y	?
Potential Achievability	Y	Y	?	?
Supply-side Capacity and Capability	Y	Y	Y	?
Potential Affordability	X	Y	?	X
Summary	Discounted	Possible	Preferred	Discount

Drafting the long list

It is essential to be even handed when considering options in the long list and to record all the relevant facts and details. It is therefore recommended that the following headings are used when appraising options.

Heading	Rationale
Description	Full details of the option under consideration – this may be with reference to a category of choice under investigation within the options framework.
Main Advantages	In relation to the investment objectives, benefits criteria and critical success factors for the scheme.
Main Disadvantages	As for advantages above.
Conclusions	Overall assessment, indicating whether the option is the preferred choice, or should be carried forward for further assessment in the short list; or discounted and discarded.

Action 3.3 – Recommend a preferred way forward (not a preferred option)

This stage recommends a potential way forward, for the approval of management, based on the appraisal of the main options (long list) for the successful delivery of the scheme. In practice, this will consist of a 'direction of travel' for the delivery of the scheme, supported by a limited number of attractive/ possible options – known as the 'short list' – for further evaluation in the OBC.

This evaluation process at the IA stage is important to ensure that there is a robust set of options to be fully evaluated and appraised at OBC stage. This also reduces the potential of too much work being done at OBC on a longer list of options, some of which may be discounted on the basis of assessment against key benefits/evaluation criteria established for the project. In the context of either Frameworks Scotland or the hub initiative this could avoid a great deal of work done by a PSCP or hub partner and their supply chain (at significant cost).

Short-listed options

In accordance with the Treasury Green Book, the IA must outline a minimum of three short-listed options for further examination at the OBC stage.

These must include:

- the 'do nothing'; status quo; or 'do minimum' option, which provides the benchmark for VFM throughout the appraisal process
- the 'reference project' or publicly funded preferred option. In Scottish Government value for money guidance this is also referred to as the Conventionally Procured Assessment Model (CPAM)
- another option – possibly predicated on a 'more' or 'less' ambitious version of the reference project.

Indicative costs and delivery arrangements

Indicative prices for each of the above short-listed options should be provided at IA stage, along with an overview of the financial, commercial and management arrangements for the successful delivery of the proposed scheme. Given the early stage of development this may be expressed as a range of costs.

Importantly, some allowance for 'optimism bias' should be made in the indicative prices – see the section on optimism bias in step 4, action 12.

Use of the options framework: Shortlist

The results of the assessment of the long list may be used to help generate the shortlist options as follows:

Category of Choice	Option 1	Option 2	Option 3	Option 4
Scoping	Discount	Preferred	c/f – less	c/f – more
Service Solution	c/f – more	Discount	Preferred	c/f – less
Service Delivery	c/f – less	c/f – more	Discount	Preferred
Implementation	Preferred	c/f – less	c/f – more	Discount
Funding	Discount	Preferred	c/f – less	c/f – more

Note: this table is populated by taking the results from each stage of the options framework – for example, the scoping results shown here come from the summary shown earlier in this section.

The following actions should be taken:

- to construct our reference project from the preferred choices in each category – i.e. an amalgamation of option 1 for implementation, option 2 for scope and funding and so on
- to construct a more ambitious reference project from either some or all of the 'c/f – more scope, faster implementation etc' recommendations
- to construct a less ambitious reference project from either some or all of the 'c/f – less scope, slower implementation etc' recommendations.

The short list must also include the 'do nothing' or 'status quo' options.

It should be noted that the reference project is essentially the preferred way forward given that it is predicated upon the best assessment at this stage of the possible scope, service solution, method of service delivery, implementation and funding, following SWOT analysis of the available options in each category of choice. Moreover, it has been arrived at logically and systematically.

A brief outline reference to the other cases

A brief outline reference to other elements of the Five Case Model is required at this point in the IA – in other words include an outline of the:

- **Commercial Case**

Assessment of possible procurement methodologies explored including NPD for new build projects in excess of £20m where not covered by arrangements under the hub initiative.

- **Financial Case**

- A statement of the organisation's financial situation
- Resources available for the project, including assessment of the resource
- holder's ability to provide support
- Capital and revenue constraints
- Statements of strategic (or in principle) support from the stakeholders

- **Management Case**

- Who is involved in the project, both inside and outside of the organisation, including users, commissioners and other key stakeholders
- Achievability of the project, taking into account the organisation's readiness and resources
- How the project is to be managed
- Other key managerial considerations, including: Change Management, Training, Evaluation and Timetable
- Nature of further work needed to develop management proposals

Checklist for step 3

There should now be:

- a clear understanding of the project's critical success factors (CSFs)
- a long list of 10 to 12 options , which have been subjected to SWOT analysis
- an emerging preferred way forward
- a shortlist of 3 to 4 options with indicative costs for full evaluation in the OBC
- an outline consideration of the financial, commercial and management cases for the project.

Output of step 3

The first draft of the economic case (as far as the long list and proposed short list) has now been completed.

OUTPUT OF PHASE 1 AND GATEWAY REVIEW PROCESS

The IA has now been completed. A Gateway 1 or Health Check 1 for the business justification stage should now be considered for the project, prior to the formal submission of the IA to the approving authority for agreement (if required).

OUTCOMES FROM THE IA

IA's are good practice. They lay the basis for better decision making through reaching agreement from the outset on the case for investment and the key issues in the choices. IA's also prevent too much effort being expended on projects that should not proceed.

Management recommendations will focus on either:

- abandoning the project, because it is considered unaffordable, too ambitious, or too high risk in relation to the expected benefits
- modifying the project
- undertaking a pilot exercise to test out the assumptions and to inform an eventual decision
- going ahead with the project more or less as originally conceived with a set of recommendations on how to proceed, including agreement or adjustment to the proposed short list.

Stage 2 – Planning

Phase 2: Preparing the Outline Business Case (OBC)

Overview

The purpose of the Outline Business Case (OBC) is to:

- identify the option which optimises value for money (VFM) and overall sustainability
- prepare the scheme for procurement
- put in place the necessary funding and management arrangements for the successful delivery of the scheme

The preparation of the OBC is a mandatory part of the business case development process for projects in excess of £5m.

Step 4 – Determining Potential VFM

Introduction

This is the investment (or 'option') appraisal phase of the project, where the potential VFM of the scheme is determined in relation to the various options for delivery, in accordance with the tools and techniques devised by HM Treasury for use by public sector organisations.

Distinguishing between Service options and procurement

It is important to stress that these options are the service options possible to achieve the project objectives not procurement options. The basis of procurement will be carried out once the preferred service option has been identified.

In assessing possible procurement options the presumption will be that extant guidance on the use of NPD arrangements will be used to assess whether that is an option to be explored further. If public capital is to be used then, dependant on the size/ scope of the project, either Frameworks Scotland or, where the procuring body is part of the hub initiative, the hub initiative will be the presumed methods of delivery.

It is important to note the duty of Best Value placed on public services, and within that, the need to contribute to sustainable development. As noted at the outset, VFM does not necessarily equate to lowest cost, but best value, taking monetary cost into account with a range of social, health and environmental costs, benefits and risks.

Whilst bringing together a variety of information on costs, benefits and risks means option appraisal aids decision making, it should not be seen as unequivocally providing the 'right' answer. The goal is 'optimal' – in other words, the option we are looking for is the one which best balances the costs in relation to the benefits and risks.

The main actions within Step 4 are shown below:

Stages	Development Process	Deliverables
Phase 2 – planning	Preparing the Outline Business Case (OBC)	
Step 4	Determining potential VFM	Economic case – part 2
Action 4.1	Revisit IA and determine short list, including the Reference Project (outline CPAM)	
Action 4.2	Prepare the economic appraisals for short-listed options	
Action 4.3	Undertake benefits appraisal	
Action 4.4	Undertake risk assessment/appraisal	
Action 4.5	Select preferred option and undertake sensitivity analysis	

Action 4.1 – Revisit the IA and determine the short list

This action is concerned with:

- revisiting the case for change (contained within the strategic case of the IA)
- reviewing the efficacy of the preferred way forward and options recommended (contained in the economic case within the IA) – bearing in mind that the key place for options appraisal is the OBC and that only a preferred way forward (to be tested) has been agreed.

Revisiting the strategic case

The case for change should be reviewed, because:

- management's approval of the IA may have been conditional on some changes and adjustments to the case
- the early opportunity for the organisation and key external stakeholders to consider the project may have influenced its subsequent direction
- some time may have elapsed between IA approval and the commencement of the OBC
- other elements of the scheme may have changed.

All changes made to the underlying assumptions in the IA should be noted within the opening section to the strategic case in the OBC.

Reviewing the economic case

The early work on the long list and the preferred way forward will need reviewing and refining.

The recommended short list contained in the IA should be tested against the following 'long list to short list' criteria:

- do any of the options fail to deliver the investment objectives and CSFs for the project?
- do any of the options appear unlikely to deliver sufficient benefits, bearing in mind that the intention is 'to invest to save' and to deliver a positive net present value (NPV)?
- are any options clearly impractical or unfeasible – for example, the technology or land is not available?
- is any option clearly inferior to another, because it has greater costs, lower benefits, or unacceptable environmental or social risks or costs?
- do any of the options violate any of the constraints – for example, are any clearly unaffordable?
- are any of the options sufficiently similar to allow a single representative option to be selected for detailed analysis?
- are any of the options clearly too risky?

All changes made to the underlying assumptions in the IA should be noted within the opening section to the economic case in the OBC.

Action 4.2 – prepare the economic appraisals for short-listed options

This action is concerned with:

- estimating the costs for the economic appraisals
- estimating the benefits for the economic appraisals
- presenting the economic appraisals.

Estimating the costs and benefits for the economic appraisals

This section contains essential guidance on:

- HM Treasury Green Book principles
- the key differences between economic and financial appraisals
- relevant costs to include in the economic appraisals
- estimating benefits for the economic appraisals
- adjustments required to estimates of costs and benefits.

HM Treasury Green Book principles

The Treasury Green Book sets out rules that should be followed for the treatment of costs and benefits:

- the relevant costs and benefits to government, the public sector and society of all the (short-listed) options should be valued and the net benefit and costs calculated. 'Relevant' in this instance means all those costs and benefits that can be affected by the decision at hand
- the costs and benefits should normally be extended to cover the useful lifetime of the assets; or the contractual period for the purchase of the service outputs and outcomes
- the costs and benefits should be based on market prices and reflect the best alternative uses (the 'opportunity cost') that the goods, assets and services could be put to

- the wider social and environmental costs – for which there is no market price – should also be taken into account
- the sources and assumptions underlying each cost and benefit line in the economic appraisals must be explained in full within an accompanying appendix
- all cost estimates must be stated in the same base year at a common price level. The base year should be the same for all options. The base year is defined as 'year 0'.

Economic and financial appraisals

Many practitioners confuse the appraisals for the economic case with those for the financial case at this stage. Economic appraisals have a 'macro' perspective and focus on VFM analysis; whereas financial appraisals have a 'micro' perspective and focus on affordability. The key differences can be summarised as follows:

Economic Appraisals	Financial Appraisals
Focus: <ul style="list-style-type: none"> • VFM – net present value/cost (NPV/NPC) 	Focus: <ul style="list-style-type: none"> • affordability – cash flow
Coverage: <ul style="list-style-type: none"> • wide coverage – Government and Society ('UK Ltd') 	Coverage: <ul style="list-style-type: none"> • relevant organisation(s)
Relevant standards: <ul style="list-style-type: none"> • HM Treasury Green Book Rules • Discount rate (3.5%) applied 	Relevant standards: <ul style="list-style-type: none"> • organisational accounting rules and standing orders
Analysis: <ul style="list-style-type: none"> • constant (real) prices • includes opportunity cost • includes indirect and attributable costs – 'costs of others' • includes all quantifiable costs, benefits and risks • includes environmental costs • excludes all Exchequer 'transfer' payments – for example, VAT • excludes general inflation • excludes sunk costs • excludes depreciation and capital charges. 	Analysis: <ul style="list-style-type: none"> • current (nominal) prices • benefits – cash releasing only • includes transfer payments (for example, VAT) • includes inflation • includes depreciation and capital charges.

Relevant costs for the economic appraisals

The following provides an overview of the costs which should be included in the economic appraisals:

- **Capital costs:** these include the opportunity cost of existing assets such as land and can broadly be broken down into: land and property; construction and refurbishment costs; professional fees; equipment (furniture, fittings, lighting and wiring); and the cost of technology. Assets may require replacement, refurbishment or upgrading over the lifetime of the appraisal period. These 'life-cycle' costs should also be included.
- **Revenue costs:** these are the running costs and are at least as important as capital costs. In fact, they will greatly exceed the initial capital cost over the lifetime of the asset. They must be included but it should not be assumed that they will remain unchanged for the baseline option over time. The assessment of revenue costs must:
 - assume that the running costs of each option will normally be different; distinguish between them and explain the differences between options;
 - include all the running costs (e.g. fuel costs and security, and implications of the CRC should be factored in); and
 - state the assumptions made (for example, about service performance, efficiency savings and real cost trends).
- **Fixed, variable, semi-variable and step costs:** these should be distinguished between within the economic appraisals and their relationships explained in full.
 - fixed costs remain constant over a wide range of activities for a specified period of time – for example, the building
 - variable costs vary according to the volume of activity – for example, training costs

- semi-variable costs include both fixed and variable components – for example, a combination of fixed maintenance costs and variable call-out charges
- step costs for a pre-determined level of activity that eventually rise by a given amount – for example, the need for a new call centre after a certain volume of calls
- **Opportunity costs:** these must be explored in full. In relation to land and manpower, they should be assessed against the most valuable alternative use rather than current use. Full time equivalents (FTE) costs should be used to estimate the costs of employees' time to the employer and must include all costs in addition to basic pay – for example, pensions, national insurance and allowances etc.
- **Sunk costs:** these are amounts that have already been spent and cannot be recovered – they should be noted in the case and excluded from the economic appraisals. However, it may be necessary to include the opportunity cost of continuing to pay for associated goods and services on some occasions.
- **Full economic costs:** the full costs (direct, indirect and attributable) of each option, rather than its net cost in relation to the baseline proposal must be shown. This means 'bottom up' costing, which provides a better understanding of the cost differences between options and is more transparent.
- **Attributable costs:** these include the opportunity cost of staff time in relation to the implementation of the investment. These costs are likely to be significant in relation to business change and business re-engineering programmes.

- **Organisational development:** these costs can form a significant proportion of the overall costs. They should not be underestimated, because if insufficient resources are allocated to developing staff and changing working practices, the full benefits of the project will not be achieved.
- **Avoided costs:** these should either be included as a cost in the 'do nothing' option or as a cash benefit in the other option(s).
- **Contingent liabilities:** commitments to future expenditure if certain events occur should be included in the economic appraisals. For example, the cancellation costs for which a public sector body may be liable if it prematurely cancels a contract. Note that although redundancy costs are transfer payments, they can occasionally fall into this category. In such cases, the advice of an economist should be sought on the wider social and economic consequences of these payments.

Estimating benefits for the economic appraisals

The purpose of valuing benefits is to ascertain whether an option's benefits are worth its costs, and to allow alternative options to be compared systematically in terms of their net benefits or costs.

Benefits identification

The 'golden rule' is that all benefits must be quantified (in £s) prudently, wherever possible; and that the economic appraisals should take these into account from the perspective of society and the public and private sectors, as well as the organisation.

The benefits for investments typically fall into four main categories:

- **Cash releasing benefits (CRB):** these benefits reduce the costs of organisations in such a way that the resources can be re-allocated

elsewhere. This typically means that an entire resource is no longer needed for the task for which it was previously used. This can be staff or materials.

- **Financial but non-cash-releasing benefits (non-CRB):** this usually involves reducing the time that a particular resource takes to do a particular task; but not sufficiently to re-allocate that resource to a totally different area of work.
- **Quantifiable benefits (QB):** these benefits can be quantified, but not easily in financial terms – for example, ‘reduced travelling time for customers’. The extent to which QBs are measured will depend on their significance. However, as a general rule every effort should be made to quantify benefits financially wherever possible.
- **Non-quantifiable (non-QB):** these are the qualitative benefits, which are of value to the public sector but cannot be quantified. For example, an increase in staff morale as a consequence of less form filling, protecting biodiversity and enhancing access to green space for patients, staff and visitors. Whilst these benefits directly can be difficult to quantify their associated impacts often can be – e.g. evidence that patient recovery times can be quicker when they have views of or access to green space.

All the financial benefits – cash releasing and non-cash releasing – must be accounted for in the discounted cash flows to derive the net present value (NPV) in the economic appraisals. However, only the cash releasing savings relevant to the organisation(s) should be accounted for in the financial appraisals – see step 6 (ascertaining affordability and funding).

Weighting and scoring techniques should be used to evaluate the non-financial benefits – both quantifiable and qualitative.

Real or estimated market prices

Real or estimated prices provide the first point of reference for the valuation of benefits and there are few cases where valuing at market prices is not suitable. However, if the market is dominated by monopoly suppliers or is significantly distorted by taxes or subsidies, a number of approaches have been developed to value non-marketed goods. These include:

- revealed preference approach (i.e. inferring a price from consumer behaviour)
- willingness to pay (i.e. inputting a price by means of carefully constructed questionnaires and interviews to indicate how much people are prepared to pay to consume a particular output – for example, improved access to services or savings in time, or to avoid undesirable outcomes). The values obtained from this approach will vary between individuals, depending on their income, socio-economic status and personal circumstances.

Adjustments required to the values of costs and benefits

While developing the 'base case' (i.e. the best estimate of how much a proposal will cost in economic terms), adjustments may be required to take account of 'distributional impacts' and 'relative price changes'. All adjustments should be shown separately and clearly stated in supporting tables of data.

Distributional analysis

This takes into account the 'diminishing marginal utility of additional consumption', which basically means that a proposal may have differing impacts according to age, gender, ethnic group, health, skill or location. These effects should be explicitly stated and quantified (in £s), given that an extra £ will provide more benefit to someone 'who is deprived' than to someone 'who is well-off'.

Applying a distributional adjustment requires detailed information about the affected population. A detailed explanation is needed when this adjustment is required but not made.

Relative price changes

The costs and benefits presented in the economic appraisals should be expressed in 'real terms' or 'constant prices', as opposed to current or nominal prices. The effect of future inflation on the general price level should therefore be removed by deflating prices by the relevant deflator – for example, the Bank of England's annual inflation target.

Where particular prices are expected to increase at significantly higher or lower rates than general inflation, the relative price change should be calculated and factored into the economic appraisals.

Presenting the economic appraisals

Following the identification and measurement of the costs and benefits for each option, it should now be possible to estimate the net present value (NPV) for each option, using the appropriate discount rate – the preferred method of investment appraisal within the public sector.

This section is concerned with compiling the economic appraisals for the short listed options – including the 'do nothing' or 'do minimum' in their most basic format. Guidance is given on the following:

- methods for investment appraisal
- discounting in the public sector
- calculating the NPV
- the equivalent annual cost (EAC)
- required rates of return and pricing rules
- the treatment of NPD schemes, if applicable
- tax differentials.

Methods for investment appraisal

There are two main schools of thought for evaluating the performance of an investment project, namely the 'accounting method' and 'economics method'.

The accounting method focuses on liquidity/pay back period and profitability (see the financial case – step 6/ action 19); whereas the economics method focuses on wealth maximisation, cash flows, resource allocation and considerations of risk and uncertainty.

The two main economics methods are NPV and the internal rate of return (see 'required rates of return and pricing rules' below).

The recommended approach within the public sector is to calculate the NPV which is the sum of **discounted** costs and benefits.

Discounting in the Public Sector

Discounting is a technique used to compare the costs and benefits that occur in different time periods. It must not be confused with inflation and is based on the premise that 'a pound today is worth more than a pound tomorrow'. Consequently, people prefer to receive goods and services today, rather than tomorrow. This is known as the 'time preference' and for society as a whole, as 'the social time preference'.

The discount rate used in public sector projects – or the 'test discount rate' as it is often referred to – is stipulated by HM Treasury. It is currently set at 3.5% in real terms, which reflects the opportunity cost of public sector capital and the social rate of time preference.

The following table shows how the present value (PV) of £1,000 declines in future years with the 3.5% discount rate.

Present values and the 3.5% discount										
Time (yrs)	0	1	2	3	4	5	6	7	8	9
PV(£)	1.000	966	934	902	871	842	814	786	759	734

Long term discount rates

Sometimes other rates are applicable – for example, where the appraisal of a proposal depends materially on the discounting of effects in the very long-term. For costs and benefits accruing over more than 30 years, the Treasury Green Book suggests:

Discount rates for long-term proposals						
Period of Years	0-30	31-75	76-125	126-200	201-300	301+
PV(£)	1.000	966	934	902	871	842

When undertaking sensitivity analysis (see action 13), the impact of changing the discount rate should be analysed in the same way as for other parameters in the proposal.

Calculating the NPV

The following case study shows how the NPV is calculated:

Case Study

Alternative projects, A and B, are both expected to improve the quality of a public sector organisation's work and reduce staff costs. The base case of each option is being estimated.

Option A requires £10 million in initial capital expenditure to realise benefits of £2.5 million per annum for the following four years - £2 million in reduced staff costs and £0.5 million in quality improvements.

Option B requires £5 million in initial capital expenditure to realise benefits of £1.5 million per annum for the following four years - £1 million in reduced staff costs and £0.5 million in quality improvements.

Year - £ million	0	1	2	3	4	NPV
Discount factor	1	0.96	0.93	0.90	0.87	
		62	35	19	14	
Option A						
Costs	-10	0	0	0	0	
Benefits	0	2.50	2.50	2.50	2.50	
NPV	-10	2.42	2.33	2.25	2.18	- £0.82
Option B						
Costs	-5	0	0	0	0	
Benefits	0	1.50	1.50	1.50	1.50	
NPV	-5	1.45	1.40	1.35	1.31	£0.51

Project B yields a positive NPV of £0.51 million compared with a negative NPV of £0.82 million for project A and zero for the implicit do minimum or do nothing alternative. Therefore Project B is preferable.

The Equivalent Annual Cost (EAC)

In option appraisal, the appropriate time period over which the discounting should be undertaken is the assumed life of the asset or service period. However, if the options under consideration have different life spans, this needs to be reflected in the calculations to enable consistent and valid comparisons to be undertaken.

By annualising the discounted costs of the assets or service contract periods over their respective life spans and comparing these equivalent annual payments, the effects of the different life spans can be accommodated.

To compute the EAC, the following steps are required:

- set out the phased pattern of capital and revenue payments for the option
- discount the total and sum to calculate the NPV of the option
- apply the appropriate EAC to the NPV – for detailed guidance on calculating

EACs refer to HM Treasury's Green Book which includes a worked example

Required rates of return and pricing rules

Some public sector organisations operate in a 'pseudo' market place or sell goods and services commercially, including to other public sector bodies. These activities may be controlled by requiring prices to be set to provide a required rate of return on the capital employed by the activity as a whole. Generally, public sector policy sets charges for goods and services sold commercially at market prices, and recovers full costs for monopoly services, including the cost of capital.

Assessing the use of NPD

Detailed guidance is provided in Section 1 of the SCIM [NPD manual](#) on the testing of NPD. The tools and techniques for assessing whether NPD is appropriate for exploration/ testing and the scope of services are also provided as Appendices 2 and 3 of the [NPD manual](#).

Guidance regarding the Conventionally Procured Assessment Model and Scottish Government VFM Guidance is contained within Section 3 of the SCIM [NPD manual](#).

Tax differentials

The adjustment of market prices for taxes in economic appraisals is appropriate where it may make a material difference to the decision. In practice, it should be relatively rare that adjustments are required, because similar tax regimes usually apply to different options. However, the tax differential should be taken into account when comparing a publicly financed option to a privately financed option, in order to avoid distorting the outcome.

For detailed guidance on any of the above concepts and approaches, please refer to the SCIM [Option Appraisal Guide](#).

Action 4.3 – Undertake benefits appraisal

Benefits which can be quantified financially (in £s) should be included in the economic appraisals and subject to cost benefit analysis (CBA). However, in many investment proposals some benefits are not amenable to monetary values – for example, the ‘future proofing’ of the organisation; improvements in staff morale and customer relations; flexibility and improved accuracy.

A method in common use within option appraisal is to weight and score the non-financial benefits for each option. This is preferable to simply ranking the benefits, as placing them in their order of priority does not in itself provide any objective assessment of how the incidence of these benefits varies from option to option.

Weighting and scoring of benefits

Weighting and scoring provides a technique for comparing and ranking options in terms of their associated non-financial benefits. It should be undertaken as follows:

- exclude all financial benefits, whether cash-releasing or non-cash releasing
- group the quantifiable (non-financial) and qualitative benefits according to their relevant investment objective, and/or other benefit criterion for the scheme as a whole
- select an expert and representative team to weight and score the benefits for each short-listed option
- give a weight (0 to 100) to each of the investment objectives and/or benefit criteria
- give a score (1 to 10) to each option for how well it delivers the benefits associated with each investment objective or benefit criterion
- multiply the weights and scores to provide a total weighted score for each option
- rank the options in terms of benefit delivery and identify the preferred option on the basis of the highest score.

Baseline benefits levels

It is important to try and distinguish between the benefits derived from each option and the benefits which would be derived anyway. The total benefits of the 'do nothing' option is the baseline for comparison of the benefits of the other options. The benefits of doing nothing (even if there are none) must, therefore, be assessed in the same way as the other options.

Recording the results

The process and the reasoning behind the scores and weightings must be documented clearly to demonstrate that a robust analysis has been carried out. Again, it is important to recognise that the assigned weights and the scores given to options are value judgments. In order to assign weights and scores, negotiation and compromise needs to take place. It is the number of people involved in the process and their expertise that lends credibility to these value judgments. It is, therefore, worth spending some time choosing a representative 'benefits team' which should include stakeholders, customers (users), and business and technical representatives. The people involved should be named as part of the recording process.

Case Study

The benefit criteria (attributes), weights and scores for the OBC in support of an NHS accommodation scheme are shown below. It uses a score out of 10 according to how well each of the options match-up to the benefit criteria. These scores are then multiplied by the pre-agreed weightings to give a total score for each option.

Benefit Criteria	Weight	Do Nothing		Option B		Option C	
		Score	Weight x score	Score	Weight x score	Score	Weight x score
Quality of clinical care	30	0	0	0	0	7	210
Patient accessibility	15	0	0	1	15	4	60
Flexibility of accommodation	20	0	0	4	80	6	120
Quality of hotel services	20	0	0	5	100	4	80
Disruption to services	15	0	0	0	0	3	45
Total	100		0		195		515

Detailed guidance on benefits is provided in Steps 5 & 7 of the SCIM [Option Appraisal Guide](#).

Action 4.4 – Undertake risk assessment and appraisal

The Treasury Green Book and departmental manuals have always required public sector organisations to undertake a risk assessment of the short listed options. However, until fairly recently, business cases rarely quantified the risks associated with each option.

Consequently, it is recommended that the service risks associated with a significant scheme should be measured and quantified (in £s) as early as possible and that as a minimum requirement:

- allowance for 'optimism bias' should be applied at all stages
- service risks should be quantified (in £s) at the OBC and FBC stages
- the weighting and scoring of risks should be confined to the initial assessment of options at the IA stage; and thereafter to relatively low investments (in terms of £s) at OBC and FBC stages.

Optimism Bias

Within both the public and private sectors, there is a demonstrated and systematic tendency for project appraisers to be overly optimistic. This is a worldwide phenomenon, whereby appraisers tend to overstate benefits, and understate timings and costs, both capital and operational.

To redress this tendency, appraisers are now required to make explicit adjustments for this bias. These will take the form of increasing estimates of the costs and decreasing and delaying the receipt of estimated benefits. Sensitivity analysis should be used to test assumptions about operating costs and expected benefits.

Adjusting for optimism provides a better estimate earlier on of key project parameters. Enforcing these adjustments for optimism bias is designed to complement, rather than replace, existing good practice in terms of calculating project specific risk. It is also designed to encourage more accurate costing. Accordingly adjustments for optimism bias may be reduced as more reliable estimates of relevant costs are built up and project specific risk work is undertaken.

Adjustments should be empirically based – for example, using data from past projects or similar projects elsewhere, and adjusted for the unique characteristics of the project.

Specific guidance has been produced by the Department for Health including templates for the calculation of the upper bound and mitigation factors. These can be accessed at:

http://www.dh.gov.uk/en/ProcurementAndProposals/PublicPrivatePartnership/PrivateFinanceInitiative/ChangesToTreasuryGreenBook/DH_4067488

These templates should be used in all business cases with templates completed for each of the shortlisted options assessed. Advice on the completion of these templates is available from SGHD Analytical Services Division.

Guidance for generic projects

The definitions of project types are as follows:

- **standard building projects** – these involve the construction of buildings which do not require special design considerations (i.e. most accommodation projects – for example, offices, living accommodation, general hospitals, prisons, and airport terminal buildings)
- **non-standard building projects** – these involve the construction of buildings requiring special design considerations due to space constraints, complicated site characteristics, specialist innovative buildings or unusual output specifications (i.e. specialist/innovative buildings – for example, specialist hospitals, innovative prisons, high technology facilities and other unique buildings or refurbishment projects)
- **standard civil engineering projects** – these involve the construction of facilities, in addition to buildings not requiring special design considerations – for example, most new roads and some utility projects
- **non-standard civil engineering projects** – these involve the construction of facilities, in addition to buildings requiring special design considerations due to space constraints or unusual output specifications – for example, innovative rail, road, utility projects, or upgrade and extension projects
- **equipment and development projects** – these are concerned with the provision of equipment and/or development of software and systems (i.e. manufactured equipment, information and communication technology development projects or leading edge projects)
- **outsourcing projects** – these are concerned with the provision of hard and soft facilities management services – for example, information and communication technology services, facilities management and maintenance projects.

Applying adjustments for optimism bias

The table below provides adjustment percentages for these generic project categories that should be used in the absence of more robust evidence. It has been prepared from the results of a study by Mott MacDonald into the size and causes of cost and time over-runs in past projects.

Project Type	Optimism Bias (%)			
	Works Duration		Capital Expenditure	
	Upper	Lower	Upper	Lower
Standard buildings	4	1	24	2
Non-standard buildings	39	2	51	4
Standard civil engineering	20	1	44	3
Non-standard civil engineering	25	3	66	6
Equipment/development	54	10	200	10
Outsourcing	n/a	n/a	41*	0*

* the optimism bias for outsourcing projects is measured for operating expenditure.

Recommended steps

Project managers should apply the steps set out below to derive the appropriate adjustment factor to use for their projects:

Step 1 – decide which project type to use

Careful consideration needs to be given to the characteristics of a project when determining its project type. By way of guidance, a project is considered 'non-standard' if it satisfies any of the following conditions:

- it is innovative
- it has mostly unique characteristics
- construction involves a high degree of complexity and/or difficulty.

A project which includes several project types (for example, an element of standard building, non-standard building, standard civil engineering, outsourcing and equipment/development) should be considered as a 'programme' with five 'projects' for assessment purposes.

Step 2 – always start with the upper limit

Use the appropriate upper bound value for optimism bias (see above table), as the starting value for calculating the level of optimism bias.

Step 3 – consider whether the optimism bias factor can be reduced

Reduce the upper bound level for optimism bias according to the extent to which the contributory factors have been managed.

The extent to which these contributory factors are mitigated can be reflected in a mitigation factor. The mitigation factor has a value between 0.0 and 1.0. Where 0.0 means that contributory factors are not mitigated at all, 1.0 means all contributory factors in a particular area are fully mitigated and values between 0.0 and 1.0 represent partial mitigation.

Optimism bias should be reduced in proportion to the amount that each factor has been mitigated. Ideally, the optimism bias for a project should be reduced to its lower bound before contract award. This assumes that the cost of mitigation is less than the cost of managing any residual risks.

Step 4 – apply the optimism bias factor

The present value of the capital costs should be multiplied by the optimism bias factor. The result should then be added to the total net present cost (or NPC) to provide the base case. The base case, as defined in the Green Book, is the best estimate of how much a proposal will cost in economic terms, allowing for risk and optimism.

Step 5 – Review the optimism bias adjustment

Clear and tangible evidence of the mitigation of contributory factors must be observed, and should be verified independently, before reductions in optimism bias are made. Procedures for this include the Gateway Review process.

Presenting the results

Following these steps will provide an optimism bias adjustment that can be used to provide a better estimate of the base case. Sensitivity testing should be used to consider uncertainties around the adjustment for optimism bias. 'Switching values' (see below – action 13) should be shown where appropriate. If the adjustment for optimism is shown as a separate piece of analysis, sensitivity analysis should be used to show the range of potential outcomes, not just the single optimism bias adjustment.

Reducing optimism bias

Project appraisers should review all the contributory factors that lead to a cost and time over-run, as identified by the research. The main strategies for reducing the bias are:

- full identification of stakeholder requirements (including consultation)
- accurate costing
- project and risk management

The lower bound values represent the optimism bias level to aim for in projects with effective risk management by the time of contract award.

Case study

The capital costs of a non-standard civil engineering project are estimated to be £50m NPC in a IA. No detailed risk analysis work has taken place at this stage, although significant costing work has been undertaken.

The project team reports to the project board and applies an optimism bias adjustment of 66% showing that, for the scope of the work required, the total cost may increase by £33m to £83m in total. This is based on consultants' evidence and experience from comparable civil engineering projects at a similar stage in the appraisal process.

As this potential cost is unaffordable, the chief executive requests reductions in the overall scope of the project, and more detailed work for the OBC. As the project progresses, more costs and specific risks are identified explicitly, despite the reduced cost. For the FBC the optimism bias adjustment is reduced until there remains only a general contingency of 6% for unspecified risks.

Without applying optimism bias adjustments, a false expectation would have been created that a larger project could be delivered at a lower cost.

Operating costs and benefits

Optimism bias should still be considered for operating costs and benefits. If there is no evidence to support adjustments to operating costs or benefits, appraisers should use sensitivity analysis to check switching values (see below – action 13). This should help to answer key questions such as:

- by how much can we allow benefits to fall short of expectations, if the proposal is to remain worthwhile? How likely is this?
- by how much can operating costs increase, if the proposal is to remain worthwhile? How likely is this to happen?
- what will be the impact on benefits if operating costs are constrained?

Risk identification and measurement

There is always likely to be some difference between what is expected and what eventually happens, because of biases unwittingly inherent in the appraisal, and the risks and uncertainties that materialise during the design, build, and operational phases of the project. As a result, risk management strategies should be adopted for the appraisal and implementation of large policies, programmes or projects and the principles applied to smaller proposals. This is because things can always go better than expected ('upside risk') as well as worse ('downside risk').

It is important to develop a risk register from the very beginning of the project (see management case). From then on the risk register should be updated and reviewed regularly and used on a consistent basis as the source for:

- identifying the main business and service risks (in the strategic case section)
- quantifying and appraising the business and service risks (in the economic case section)
- apportioning and transferring service risks (in the commercial case section)
- mitigating and managing risks over the entire life cycle of the project/scheme including those associated with sustainability.

Risk identification

There are a number of techniques which may be used to identify the risks associated with projects. These techniques can be applied to any type of project. Three commonly used methods are:

General types of risk

Risks fall into three main categories: business, service and external. Business related risks remain with the public sector and can never be transferred. Service related risks occur in the design, build and operational phases of a project and may be shared between the public and private sectors. External environmental risks relate to society and impact on the economy as a whole.

The generic types of risk that are likely to be encountered within these categories are set out in broad terms below:

Generic Risks	Description
Business Risk	The risk that the organisation cannot meet its business imperatives.
Reputational Risk	The risk that there will be an undermining of customer's/medias perception of the organisation's ability to fulfil its business requirements – for example, adverse publicity concerning an operational problem.
Service Risk	The risk that the service is not fit for purpose.
Design Risk	The risk that design cannot deliver the services to the required quality standards.
Planning Risk	The risk that the implementation of a project fails to adhere to the terms of the planning permission or that detailed planning cannot be obtained; or, if obtained, can only be implemented at costs greater than the original budget.

Build Risk	The risk that the construction of physical assets is not completed on time, to budget and to specification.
Project Intelligence Risk	The risk that the quality of initial intelligence (for example, preliminary site investigation) will impact on the likelihood of unforeseen problems occurring.
Decant Risk	The risk arising in accommodation projects relating to the need to decant staff/clients from one site to another.
Environmental Risk	The risk that the nature of the project has a major impact on its adjacent area and there is a strong likelihood of objection from the general public.
Procurement Risk	The risk that can arise from the contractual arrangements between two parties – for example, the capabilities of the contractor / when a dispute occurs.
Operational Risk	The risk that operating costs vary from budget and that performance standards slip or that a service cannot be provided.
Availability and Performance Risk	The risk that the quantum of service provided is less than that required under the contract.
Demand Risk	The risk that the demand for a service does not match the levels planned, projected or assumed. As the demand for a service may be partially controllable by the public body concerned, the risk to the public sector may be less than perceived by the private sector.
Volume Risk	The risk that actual usage of the service varies from the levels forecast.
Occupancy Risk	The risk that a property will remain untenanted – a form of demand risk.

Maintenance Risk	The risk that the costs of keeping the assets in good condition vary from budget.
Technology Risk	The risk that changes in technology result in services being provided using sub-optimal technical solutions.
Funding Risk	The risk that the availability of funding leads to delays and reductions in scope as a result of reduced monies.
Residual Value Risk	The risk relating to the uncertainty of the values of physical assets at the end of the contract period.
External Environment Risks	The risks faced by society as a whole.
Economic Risk	The risk that project outcomes are sensitive to economic influences – for example, where actual inflation differs from assumed inflation rates.
Legislative Risk	The risk that legislative change increases costs. This can be divided into secondary legislative risk (for example, changes to corporate taxes) and primary legislative risk (for example, specific changes which affect a particular project).
Policy Risk	The risk of changes in policy direction leading to unforeseen change. Again, this can either be general to all or specific to a particular project.

Risk quantification

It is good practice to add a 'risk premium' to provide the full expected value of the base case and alternative options. As explained, in the early stages of an appraisal, this risk premium may be encompassed by a general uplift to a project's NPV to offset and adjust for undue optimism. But as the appraisal proceeds, more specific risks will be identified, thus reducing the more general optimism bias.

An 'expected value' provides a single value for the expected impact of all risks. It is calculated by multiplying the likelihood of the risk occurring (probability) by the size of the outcome (impact) as quantified in financial terms, and summing the results for all risks and outcomes. It is therefore best used when both the likelihood and outcome can be estimated reasonably well.

Single point probability analysis

At its most basic, a risk analysis could consist of an estimate of the cost of each risk occurring, multiplied by a single probability of that risk occurring in a particular year – see the example below.

Case Study	
Single Point Analysis	
Annual cost of service	£2 million
Estimated impact of risk of cost over-run	£200,000
Estimated probability of risk occurring	10%
Estimated value of risk = £200,000 x 10%	£20,000

Multi-point probability analysis

For any risk, a range of possible outcomes is more likely. An output probability distribution provides a more complete picture of the possible outcomes and recognises that some of these outcomes are more likely to occur than others. An 'expected outcome' is the average of all possible outcomes, taking into account their different probabilities. An example is given below:

Case Study

Expected costs of a construction project using multi point analysis.

It is estimated that a particular facility will cost £50m to build. The expected costs associated with construction cost uncertainties have been calculated as follows:

Possible Cost (£m)	Difference from estimated cost (£m)	Estimated probability of the event occurring	Risk Value (£m)
45	-5	0.1	-0.5
50	0	0.6	0
55	+5	0.1	+0.5
60	+10	0.1	+1.0
65	+15	0.1	+1.5

The most likely outcome is that of no extra cost, as this outcome has the highest probability (60%). However, the expected outcome – the sum of each possible outcome multiplied by its probability – is an additional cost of £2.5 million. This needs to be calculated in NPV terms, taking into account the time period over which the risk occurs.

Decision trees

Decision trees can be useful in this context. They are graphical representations useful in assessing situations where the probabilities of particular events occurring depend on previous events, and can be used to calculate expected outcomes in more complex situations. For example, the likelihood of a particular volume of traffic using a road in the future might depend on movements in the oil price. Different scenarios can be analysed in this way.

Monte Carlo and Latin Hypercube

There are a variety of packages available that take the analysis of risk a step further, using probability distribution.

Monte Carlo analysis is a risk modelling technique that presents both the range as well as the expected value of the collective impact of various risks. It is useful when there are many variables with significant uncertainties. However, expert advice is required to ensure it is applied properly, especially when risks are not independent of each other.

Latin Hypercube is a recent development in sampling theory, designed to reproduce accurately the input distribution through sampling using fewer iterations compared with the Monte Carlo approach.

Risk weighting and scoring

The weighting and scoring of risk is similar to the approach for evaluating the non-financial benefits. It should be undertaken as follows:

- exclude all the risks which can be measured financially
- select an expert and representative team to weight and score the risks for each short-listed option
- assess the impact of each risk (high, medium, low) and score (0 to 10)
- assess the likelihood of the risk occurring (high, medium, low) and score (0 to 10)
- calculate the expected score for each risk by multiplying the impact and likelihood scores
- rank the options in terms of their risk and identify the preferred option on the basis of the highest score.

The full involvement of stakeholders and customers (users) is very important when evaluating non-financial risks.

Action 4.5 – select preferred option and undertake sensitivity analysis

This action is concerned with identifying the preferred option for delivering the scheme and with testing its robustness through sensitivity analysis.

Identifying the preferred option

If the required analyses have been undertaken rigorously, selecting the preferred option should be a reasonably straightforward step in the decision making process. The business case should present the information succinctly and clearly to help senior management reach the decision. The following format should be completed for each option:

Option	Undiscounted £	Discounted £
Capital Revenue		
Sub-total		
Cost of risk		
Total cost / NCP		
- Cash releasing benefits		
- Non-cash releasing benefits		
Net present value (NPV)		
Benefits (non-financial) score		
Risk (non-financial) score		

The values of costs, benefits and risks are not always comparable, because some benefits and risks are non-quantifiable. Therefore, where an option has higher benefits, the investing organisation needs to decide whether these benefits justify a higher net present cost and higher risk. If the additional benefits are not sufficient to justify the additional costs and risks, a lower cost and risk option should be selected.

Often a choice will remain between high cost/high benefit options and low cost/low benefit options. In these circumstances, the organisation's senior managers and stakeholders must decide to what extent the higher benefits are worth paying for. The final choice of the preferred option lies with senior management and their stakeholders, drawing on professional advice.

Sensitivity analysis

An expected value is a useful starting point for undertaking the impact of risk between different options. But however well risks are identified and analysed, the future is inherently uncertain. So it is also essential to consider how future uncertainties can affect the options.

Sensitivity analysis is fundamental to appraisal. It is used to test the vulnerability of options to unavoidable future uncertainties and to test the robustness of the ranking of the options. It involves testing the ranking of the options by changing some of the key assumptions. However, spurious accuracy should be avoided and it is essential to consider how the conclusions may alter, given the likely range of values that key variables may take. Therefore, the need for sensitivity analysis should always be considered and dispensed with only in exceptional circumstances.

In itself, sensitivity analysis may not change the preferred option. However, if small changes in the assumptions alter the ranking, it is an indication that the investment process should proceed cautiously, because it has non-robust elements in it. This means that a more detailed analysis and testing of the costs, benefits and risks of some of the options should be considered.

Sensitivity analysis should be undertaken in two stages:

- optimistic and pessimistic scenario analysis
- switching values.

Scenario analysis

Scenarios are useful in considering how options may be affected by future uncertainty. Scenarios should be chosen to draw attention to the major technical, economic and political uncertainties on which the success of the proposal depends.

Careful consideration should be given before running the scenario analysis to the choice of circumstances, as sensitivity analysis does not simply involve changing costs, benefits and risks by an arbitrary 10 or 20%; but rather by the values that represent the most likely increases (or decreases) in cost etc. for documented reasons.

Scenario analysis may take the form of asking simple 'what if' questions for small and medium size investments and extend to creating detailed models of 'future states of the world' for major programmes and projects. The expected NPV is then calculated for each scenario.

Switching values

This technique highlights the point at which the choice of the preferred option would switch to another option due to any uncertain costs and/ or benefits.

The calculation of switching values is carried out by showing other options in relation to the preferred option using percentages (the preferred option is zero). This indicates by how much a variable would have to fall (if it is a benefit) or rise (if it is a cost) to make it not worth undertaking the preferred option. In other words how much variables would have to change for the preferred option to be 'dislodged'. This should be considered a crucial input to the decision as to whether a proposal should proceed. It therefore needs to be a prominent part of the appraisal.

Take as an example, a situation where the capital costs of the preferred option are £10,000, those of option 1 are £5,000 and option 2 £15,000. The costs of the preferred option would therefore have to decrease by 50% to equate to option 1 and increase by 50% to equate to option 2. As 50% either way shows that there is a high level of sensitivity, further investigation using scenario planning is worthwhile.

If the results for the scenario analysis are similar to the switching values, further work is required on the options to determine their robustness. Where appropriate, the sensitivity analysis of the economic appraisal findings should include the following:

Category	Assumptions and Estimates
Costs and benefits £	Capital costs
	Lifecycle costs
	Costs of core services
	Costs of non-core services
	Benefits valued in monetary terms
Qualitative benefits	Weights
	Scores
Timing	Delays in the project

More specifically, examples of variables that are likely to be both inherently uncertain and fundamental to an appraisal are:

- the growth of real wages
- forecast revenues
- demand
- prices
- assumptions about the transfer of risk

A prior understanding of how costs fall into fixed, step, variable and semi-variable categories can help in understanding the sensitivity of the total costs of proposals.

Final selection of the preferred option

If a full cost benefit analysis has been undertaken, the best option is likely to be the one with the highest risk adjusted NPV. To the extent that all costs, benefits and risks have been valued robustly, this guideline can be applied with more certainty.

In cost effectiveness analysis, the option with the lowest net present cost should be the preferred option, again assuming that the cost estimates are as accurate and reliable as possible.

If there is an affordability ceiling (constraint) then the combination of proposals should be selected that optimises the value of benefits. The ratio of the NPV to the expenditure falling within the constraint can be a useful guide to developing the best combination of proposals. However, in most cases, it should not be assumed too readily that additional monies will **not** be made available to fund the proposal which offers demonstrably better VFM.

In practice, other factors will also affect the selection of the preferred option – in particular, consideration of the unvalued costs (if any), non-financial benefits and risks. However, as the scores are not expressed in monetary terms, judgment is required to compare the results of weighting and scoring with the cost benefit or cost effectiveness analysis. The two analyses should complement each other and may indicate that further analysis is required before the final decision can be reached. Fully involving stakeholders is very important in making judgments between financial and non-financial effects.

The results for each short-listed option should be shown as follows:

Evaluation Results	Option 1 Do Minimum	Option 2 CPAM	Option 3 CPAM – more ambitious	Option 4 CPAM – less ambitious
Economic appraisals				
Non-financial benefits appraisal				
Non-financial risk appraisal				
Overall ranking				

Other methods – pay back period and internal rate of return

The 'pay back period' is sometimes put forward as a decision criterion. But pay back ignores the difference in values over time and the wider impacts of the proposal. These drawbacks mean it should not generally be used as a decision criterion.

Similarly the 'internal rate of return' should be avoided as the decision criterion. Whilst it is very similar to NPV as a criterion, there are some circumstances in which it will provide different, and incorrect, answers. For example, IRR can rank projects that are mutually exclusive differently from NPV.

Both methods may, however, prove useful in assessing the financial – as opposed to economic – impact of the preferred option: see financial case (step 6).

Checklist for step 4

There should now be a clear understanding of the preferred option, which is supported and evidenced by:

- a revisited and updated OBC long list
- a revisited and updated OBC short list
- economic appraisals (NPVs) for the short-listed options – risk adjusted (in £s) and applying optimism bias
- assessments of both the non-financial risks and benefits
- an assessment of the uncertainties (sensitivity analysis)
- a detailed description of the preferred option

Output for step 4

The first draft of the OBC economic case has now been completed.

Step 5 – Preparing for the potential contract

Introduction

This represents a departure from the past inasmuch as the commercials for the potential scheme have too often been left for detailed consideration until after the approval of the OBC, prior to the commencement of the procurement process.

The advent of Gateway 2 (procurement strategy) following the production of the OBC has reinforced the need to prepare for the potential deal at this stage.

The main actions within this step are as follows:

Stages	Development Process	Deliverables
Phase 2 – Planning	Preparing the Outline Business Case (OBC)	
Step 4	Determining potential value for money (VFM)	Economic case – Part 2
Step 5	Preparing for the potential deal	Commercial Case
Action 5.1	Determine procurement strategy	
Action 5.2	Determine service streams and required outputs	
Action 5.3	Outline potential risk apportionment	
Action 5.4	Outline potential payment mechanisms	
Action 5.5	Ascertain contractual issues and accountancy treatment	

Action 5.1 Determine procurement strategy

The procurement strategy focuses on how best the required services and outputs can be procured. Strategic considerations typically range from whether the organisation should act as a single entity, or procure collaboratively with others, to the method of procurement to be adopted dependent on the need to consult with the supply-side.

The key point is that public sector organisations should act in compliance with the government agreement (WTO) and the EU consolidated public sector procurement directive (2004) which foster 'open markets' and the pursuit of VFM through the competitive process.

The procurement phase is one of the greatest opportunities for ensuring the early sustainability objectives are delivered. A useful reference is 'Procuring the future' (2006), arising from the work of the Sustainable Procurement Task Force. A similar guide or action plan for Scotland is being produced currently.

Collaborative procurements

These strategic and ad hoc arrangements (at national, departmental/sector and local level) offer significant flexibility and potential VFM (through economies of scale) and a considerable reduction in procurement costs (through pre-competition) – as a result, they should be considered at the outset.

Procurement methodologies

A recognised procurement methodology should be used. The approach depends on what is being procured (build, IT etc) and is based on accredited standards for the sector.

The case for use of NPD will be tested for new build projects in excess of £20m. For acute construction projects and all refurbishment projects in excess of £1m (not suitable for NPD) Frameworks Scotland is the assumed default procurement route. Where this is not the case justification should be provided.

For new build community based projects where an NHSScotland body is part of the hub initiative for community based new build projects where the NHSScotland, the hub initiative is the assumed default route.

For projects less than £1m local tendering is assumed.

EU rules and regulations

The relevant Scottish Government procurement regulations must be applied. Guidance can be sourced at:

<http://www.scotland.gov.uk/Topics/Government/Procurement/policy>

Official Journal of the European Union (OJEU)

It is obligatory to advertise procurements above the thresholds set out in the OJEU. Below these thresholds, procurements may be advertised in Government Opportunities and/or Contax Weekly and other trade periodicals, national and local newspapers as the purchaser deems necessary.

The use of a Periodic Indicative Notice (PIN) should also be considered.

Open, restricted and negotiated procedures

Contracts have been awarded traditionally under one of three procedures: open, restricted and negotiated. The key differences are as follows:

- under the open procedure there is no pre-qualification stage and any number of contractors can respond to the OJEU notice
- under the restricted procedure the client can confine discussions to a sample of those suppliers who have responded to the OJEU notice. However, this discussion is limited to issues of clarification rather than meaningful negotiation
- under the negotiated procedure the client is allowed to pre-qualify bidders and to conduct limited negotiations with those who satisfy the project requirements. Until recently this approach was used for most significant procurements

Competitive dialogue procedure (2004/18/EC)

There is now a new procedure for complex projects, where there is a need for the contracting authorities to discuss all aspects of the proposed contract with candidates. This is the 'competitive dialogue procedure' introduced in the public sector procurement directive (2004/18/EC), implemented in the Public Contracts Regulations (SI 2006/5) with effect from 31 January 2006.

The main features under this procedure are:

- dialogue is allowed with selected suppliers to identify and define solutions to meet the needs and requirements of the contracting authority
- the award is made on the most economically advantageous tender criteria
- dialogue may be conducted in successive stages, with the aim of reducing the number of solutions/bidders
- there are explicit rules on post-tender discussion

Such dialogue was never possible under the open and restricted procedures.

There is now a presumption that the negotiated procedure will be used only in limited circumstances and that the competitive dialogue approach will apply to significant and complex public sector procurements requiring dialogue with the supply-side during procurement.

Selection of a preferred bidder

If a preferred bidder is to be selected during the procurement phase, then a full explanation must be provided with the supporting rationale. This should also set out how the VFM imperative will be maintained throughout the continued negotiation phase of the procurement.

Procurement plan – proposed implementation timescales

The procurement timetable must be shown together with the proposed timetable for the implementation of the potential deal. This applies to all ‘procedures’. In the case of the competitive dialogue procedure (2004/18/EC) the following information is required:

Stage	Duration	Planned end - date
OJEU notice		
Pre-qualification questionnaire (PQQ)		
Select participants		
Invitation to participate in dialogue		
Dialogue phase (including number of solutions and bidders)		
Final tenders		
Evaluation of tenders (including clarification, specification and fine tuning)		
Selection of preferred bidder and notification to PB and other bidders (commence 10 day standstill)		
PB clarification and confirmation of commitment		
Award of contract		
Desired receipt of services – phased as required		

Draft OJEU Notice

The draft OJEU notice must be attached to the OBC – if applicable. This must have been reviewed and approved by legal and procurement experts.

Evaluation criteria

The evaluation criteria for the various stages of the procurement should also be attached. There is a legal requirement to have agreed these prior to the formal commencement of the procurement. Again, this should have been reviewed and approved by legal and procurement experts.

Action 5.2 - Determine service streams and required outputs

The purpose of this action is to capture the scope and content of the potential deal. Generally, there are a number of fundamental principles to bear in mind:

- as far as possible, requirements must be specified in terms of the desired outcomes and outputs to be produced. Therefore, the focus should not generally be on the processes which produce them or the inputs and technologies required
- the quality attributes of the services and outputs required and the performance measures against which they will be assessed must be specified
- the deal must allow scope for the prospective service providers to suggest innovative ways of meeting the service requirements, including proposals which may require rethinking the business processes in place within the procuring organisation.

Services and required outputs

This section should summarise briefly the required services and outputs and the potential implementation timescales required.

Consideration should be given to capturing most, if not all, of the following details:

- the business areas affected by the procurement
- the business environment and related activities
- the business objectives relevant to the procurement
- the scope of the procurement
- the required service streams
- the specification of required outputs
- the requirements to be met, including: essential outputs, phases, performance measures, and quality attributes
- design quality and sustainability requirements
- the stakeholders and customers for the outputs
- the possibilities for the procurement – including options for variation in the existing and future scope for services
- the future – potential developments and further phases required.

Implementation timescales

This section should outline key milestones for delivery of the related services and outputs by the potential service provider. The focus here is on the deal to be negotiated and not on the procurement and project plans per se.

Where possible, more detailed information about the requirements should, be annexed to the OBC – for example, the statement of service requirements and the statement of needs (or ‘output based specification’).

Action 5.3 Outline potential risk apportionment

The purpose of this action is to consider how the risks (design, build funding and operational) may be apportioned between the public and private sectors. This is important in all forms of procurement when considering risk allocation/ sharing to ensure the successful delivery of the scheme.

The governing principle is that risk should be allocated to the party best able to manage it, subject to the relative cost. Therefore, the optimal allocation of risk, rather than the maximising of risk transfer is the prime objective; and it is vital that the best solution is found. This action provides the starting point.

Guiding principles

The principles that should underpin this action are:

- the degree to which risk may be transferred depends on the specific proposal under consideration
- successful negotiation of risk transfer requires a clear understanding by the procuring authority of the risks presented by a proposal, the broad impact that these risks may have on the service provider's incentives and financing costs (cost drivers) and the degree to which risk transfer offers VFM – hence the need to identify and cost individual risks
- where the private sector has clear ownership, responsibility and control, it should be encouraged to take all of those risks it can manage more effectively than the procuring authority. If the public sector body seeks to reserve many of the responsibilities and controls that go hand-in-hand with service delivery and yet still seeks to transfer significant risk, there is a grave danger that the private sector will increase its prices
- appropriate transfer of risk generates incentives for the private sector to supply timely, cost effective and more innovative solutions. As a general rule, the public sector should consider transferring risk to the private sector when the service provider is better able to influence the outcome than the procuring authority.

A risk allocation table (or 'risk transfer matrix') should be incorporated in this section (see below for an example format). This should illustrate the % of risk being borne. Ideally you should use percentages – however, if this is not feasible at this stage, use ticks. Aspects of sustainability itself are directly relevant to a number of the categories below. It is of such importance that it merits its own category, but it should be considered specifically at a number of the 'phases' below (e.g. 1-9).

Risk Category	Potential Allocation		
	Public	Private	Shared
1. Design risk			
2. Construction and development risk			
3. Transition 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. Other project risks			
14. Sustainability risks			

Action 5.4 - Outline potential payment mechanisms

This action considers and records how we intend to make payment over the life span of the contract. This is particularly relevant but not exclusive to NPD schemes.

Importantly, it considers how we intend to 'incentivise' our service provider to continue to provide VFM over time, and helps us deal with the inevitable business and service change encountered in the longer-term. It also explains how we intend to 'tie down' the risks identified and allocated in the previous action within the payment, or charging, mechanism for the potential deal.

The payment mechanism is the formula against which payment for the contracted services will be made. The underlying aim of the payment mechanism and pricing structure is to reflect the optimum balance between risk and return in the contract. As a general principle, the approach should be to relate the payment to the delivery of service outputs and the performance of the service provider.

If it is properly constructed, the payment mechanism will incentivise the service provider to deliver services in accordance with the business imperatives of the public sector in the following phases of the service:

- the pre-delivery phase – up to the acceptable delivery of the service and commencement of the payment stream
- the operational phase – following acceptable delivery of the service up to the close of the primary contractual period
- the extension phase – post primary contract period

The pre-delivery phase

Two charging mechanisms are important in the pre-delivery design and build phases – fixed price/costs and payment on the delivery of agreed outputs.

Fixed price/costs

The service provider must be given an incentive to deliver services to time, specification and cost. This element involves a fixed price for the delivery of 'agreed outputs' within a fixed timetable, with appropriate remedies in place for delays and cost over-runs.

Payment on the delivery of agreed outputs

This element links payment to the delivery of key service outputs and does not commence until the contracted services come on stream, as agreed.

These payments may be staggered against the delivery of key outputs within the overall implementation plan for the complete service. However, the guiding principle is that a revenue stream to the service provider should only commence when an off-setting benefit stream is realised on the part of the public sector.

Ultimately, a service that fails to perform could result in termination of all the payment streams and, in extreme circumstances, pass the rights to the underpinning assets for the service to the public sector.

The operational phase

A number of mechanisms are relevant here – each is discussed below.

Availability payment

This element links a proportion of the payment stream to the availability of the service. For example, the contract could stipulate that the service must be available for a minimum of 95% of the time between contracted hours.

In such instances, the procuring authority will need to negotiate service level agreements (SLAs), which outline the availability criteria. In some cases, it may be appropriate to treat availability as a threshold which releases a payment stream based on a combination of other factors – for example, performance or throughput of service.

Failure on the part of the service provider to meet the agreed availability criteria should lead to reduced payments and, ultimately, to cessation of the service.

Performance payment

This element links a proportion of the payment mechanism to the performance of the service. Linking payments to specified performance targets helps to ensure that the service provider continues to deliver the agreed outputs throughout the life span of the service.

Transaction/volume payment

This element links a proportion of the payment mechanism to the achievement of business benefit – for example, the number of transactions or volume of business provided.

Linking payment to the productivity or usage of the service in this way gives the service provider the incentive to optimise the level of productivity and to invest further in the underlying infrastructure, if increased levels of productivity are required.

Incentive payment

This element of the payment mechanism is linked to potential improvements in the overall performance of the public sector's business processes; and encourages the service provider to deliver new ways of working and additional benefits that can be shared by both parties.

Cost of change

This element of the payment mechanism seeks to minimise the cost of change by encouraging the service provider to build flexible and adaptable solutions in the first instance.

The cost of change represents a major risk to the public sector and should be mitigated through the contractual obligation to benchmark and market test the contracted services at regular intervals.

If it is not possible to agree exact prices for anticipated changes at some future time, the process for agreeing the cost of change should be established at the outset.

Third party revenues

This element of the payment mechanism gives the service provider the incentive to develop and exploit alternative revenue streams and new business, wherever possible without prejudice to the standing of the public sector.

The price for core services will be reduced and overall VFM improved, if the scope for these potential revenue streams has been recognised and agreed, in principle, at the outset.

The extension phase

Technological obsolescence

During the operational phase, the service provider is delivering the service for an agreed revenue stream and will naturally invest in alternative ways of working and new technologies if this allows overall costs to reduce and profit margins to improve.

Two contractual devices can be employed to encourage the service provider to consistently upgrade the core technology. First, various upgrades can be included in the initial price to ensure that the infrastructure underpinning the service is kept up-to-date; and second, a proportion of the service provider's initial recoverable investment could be deferred – with agreement – until the end of the contractual period.

An important sustainability consideration here relates to energy consumption and efficiency. Where possible, upgrading or investments in core technology should consider both the energy efficiency of any equipment (and seek to use the most efficient, to maximise energy and CO₂ savings over the life of the equipment), and the embodied energy they contain (the latter influenced by component materials, manufacturing processes and source location).

Contract currencies

Contract currencies are the variable measures that make the payment mechanism meaningful and effective in the service contract – for example, the number of complaints received; the proportion of users of the service requiring assistance etc.

The aim should be to choose contract currencies which demonstrate productivity and performance. In other words, comparative measures which provide service providers with the incentive to improve – a reduced payment for under performance and enhanced payments for performing in excess of the minimum requirement specified in the contract.

Action 5.5 Ascertain contractual issues and accountancy treatment

This action outlines the contractual arrangements for the procurement, including the use of a particular contract, the key contractual issues for the deal and its accountancy treatment and personnel implications (if any).

Use of contract

The standard form of contract to be used **must** be stated.

For Frameworks Scotland procurements standard contractual documentation should be used. For NPD procurement the SGHD Standard Form Project Agreement should be utilised. With regard to the sustainability related matters the Sustainable Procurement Task Force guidance and action plan (2006) should be referred to.

Key contractual issues

Contract management arrangements and key contractual issues should be considered and recorded in the OBC. These will vary from deal to deal but in most instances the principle areas of the contract may be categorised and appraised as follows:

- the duration of the contract and any break clauses
- the service provider's and procuring authority's respective roles and responsibilities in relation to the proposed deal
- the payment – or charging – mechanism, including prices, tariffs, incentive payments etc
- change control (for new requirements and updated services)
- the organisation's remedies in the event of failure on the part of the service provider to deliver the contracted services – on time, to specification and price etc.
- the treatment of intellectual property rights
- compliance with appropriate regulations etc
- the operational and contract administration elements of the terms and conditions of service
- arrangements for the resolution of disputes and disagreements between the parties
- the agreed allocation of risk

- any options at the end of the contract

Accountancy treatment

This section should provide details of the intended accountancy treatment for the potential deal, by stating on whose balance sheet – public or private sector, or both – the assets underpinning the service will be accounted for; and the relevant accountancy standard(s).

Personnel implications

Public sector organisations are legally and morally obliged to involve their staff and their representatives in a process of continuous dialogue during significant projects involving considerable internal change. This also represents best practice in terms of human resources policies, and is likely to result in more sustainable outcomes from both a staff and community perspective.

Consequently, the OBC should state explicitly whether there are any personnel implications to the scheme. In particular:

- whether the Transfer of Undertakings (Protection of Employment) Regulations 1981 (TUPE) will apply, directly or indirectly
- details of any terms regarding subsequent transfers at market testing intervals (if these apply)
- descriptions of terms regarding Trade Union recognition (if these apply)
- details of requirements for broadly comparable pensions for staff upon transfer (if these apply)
- (within the public sector) that codes of practice are in place for the well being and management of staff. The OBC should confirm that these have been adhered to (if applicable)

Checklist for step 5

There should now be a clear understanding of:

the procurement strategy, including the proposed procurement methodology and the use of EC/WTO procurement processes

the scope of the potential deal and required services

implementation timescales for the proposed deal

the supporting payment (or charging) mechanism

the (recognised) contract being proposed for use and key contractual issues, including TUPE (if applicable)

a draft OJEU notice and statement of requirements (to support the above)

Output for step 5

The first draft of the commercial case has now been completed.

Step 6 – Ascertaining affordability and funding requirement

Introduction

The purpose of this step is to ascertain the affordability and funding requirements of the preferred option, in relation to the other short-listed options; and to demonstrate that the recommended deal is affordable.

In practice, this involves determining:

- the financial profile of each of the short-listed options
- the impact of the proposed deal – its capital and revenue consequences – on the organisation's prices (if any), income and expenditure account and balance sheet

The main action within this step is shown below:

Stages	Development Process	Deliverables
Phase 2 – planning	Preparing the Outline Business Case (OBC)	
Step 4	Determining potential VFM	Economic case – part 2
Step 5	Preparing for the potential deal	Commercial case
Step 6	Ascertaining affordability and funding requirements	Financial case
Action 6.1	Prepare financial model and financial appraisals	

Focus of the financial appraisals

Many practitioners of investment appraisal confuse the financial appraisals with the economic appraisals. The economic case focuses on VFM, taking into account resource costs and benefits. In contrast, the financial case focuses on 'affordability' of the options appraised in the economic case, with particular emphasis on the preferred option. Sustainability is important to both the economic and financial cases. The fundamental question is not what sustainability will cost, but what not doing it will or not delivering it. By definition, being unsustainable, at whatever level, will have some economic, social, environmental or health consequences or costs, and indicates sub-optimal use of resources.

The costs and benefits appraised in the financial case reflect an accountancy-based perspective. Consequently, both the resource and non-resource costs and benefits are factored into the analysis. For example, whereas we exclude VAT and capital charges (including depreciation) from the economic appraisals, these costs must be included in the financial analysis, because they have a direct bearing on the affordability of the options under consideration.

The key differences between economic and financial appraisals can be summarised as follows:

Economic Appraisals	Financial Appraisals
<p>Focus:</p> <p>VFM – net present value/cost (NPV/NPC).</p>	<p>Focus:</p> <p>Affordability – cash flow.</p>
<p>Coverage:</p> <p>Wide coverage – Government and society ('UK Ltd').</p>	<p>Coverage:</p> <p>Relevant organisation(s).</p>
<p>Relevant standards:</p> <p>HM Treasury Green Book rules. Discount rate (3.5%) applied.</p>	<p>Relevant standards:</p> <p>Organisational accounting rules and standing orders.</p>
<p>Analysis:</p> <ul style="list-style-type: none"> • Constant (real) prices • Includes opportunity cost • Includes indirect and attributable costs – costs of others • Includes all quantifiable costs, benefits and risks • Includes environmental costs • Excludes all Exchequer 'transfer' payments – for example 'VAT' • Excludes general inflation • Excludes sunk costs • Excludes depreciation and capital charges 	<p>Analysis:</p> <ul style="list-style-type: none"> • Current (nominal) prices • Benefits – cash releasing only • Includes transfer payments – for example, VAT • Includes inflations • Includes depreciation and capital charges

The following financial statements are required for all projects:

- **a budget statement**, which should be based on resource accounting and budgeting (RAB) principles, and show the resource costs over the life time of the proposal. For strategic initiatives, the budget will often comprise the forecast RAB financial statements of the whole organisation over a number of years
- **a cash flow statement**, which should show the cash which will be spent on the lead option, if it goes ahead. The existing spend (if any) and the additional spend should be shown separately
- **a funding statement**, which should show which internal departments, partners and external organisations will provide the resources required. Where external funding is required, a written statement of support from the project's stakeholders or commissioners is needed

The above should include the contingencies (in £s) necessary to ensure that there is sufficient financial cover for risks and uncertainties.

Financial modelling

For larger, more significant and complex schemes, a financial model of the proposed investment needs to be constructed. In its early stages this comprises of a best 'guesstimate' of the likely impact and outcomes of the proposed deal. However, the model should be revised as new and better information becomes available.

Specialist advice should be sought from accountants and other expert advisers. The organisation's Director of Finance should play a lead role in building and maintaining the model. If external management consultants are appointed to undertake this work, the structure of and inputs to the model still need to be vetted by the senior responsible owner and the director of finance.

The minimum requirements for most projects are as follows:

Minimum requirements for a financial model

- recording a description of the model and the associated methodology
- agreeing and recording the underlying assumptions (for example, interest rates, inflation, taxation, capital charges, depreciation etc.)
- detailing the proposed funding structure
- preparing the inputs schedules (financial costs, cash-releasing benefits and risk contingencies)
- preparing the projected 'profit and loss'
- preparing balance sheet projections
- undertaking cash flow projections
- preparing funding schedules
- calculating project returns for the different elements of financing
- preparing supporting schedules – i.e. for loans, fixed assets, taxation, and payments.

Capital and revenue requirements

Following on from the modelling exercise, a statement showing the capital and revenue requirements for the recommended deal should be prepared.

This should set out:

- the capital and revenue consequences of the preferred option over the life span of the service and/or contract period
- how this compares with the original capital ceiling for the scheme (if any)
- any shortfall in capital and revenue requirements (the 'funding gap')

This statement should also indicate that the NHSScotland body has made the necessary capital and revenue provision within its' agreed financial plans to support the ongoing costs of the project. The minimum requirement is as follows:

Summary of financial appraisal

£ xxx	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
	£	£	£	£	£	£	£	£
Preferred Option:								
Capital								
Revenue								
Total								
Funded by:								
Existing								
Additional								
Total								

Demonstration will be required that the organisation is committing the necessary resources to adequately maintain the new/ refurbished facility

Net effect on prices

It may also be necessary to assess the implementation impact of the proposed deal on any prices that the organisation has to charge for its services. Costs will have to be covered by income year by year and the organisation must be confident that existing customers will continue to contract for services, or that new purchasers will secure additional contracts.

In considering the impact on prices, capital charges must also be considered. Capital charges are significant when considering the affordability of a development and they must be included in year by year financial projections, together with Revenue Resource Limit (RRL) allocations, running costs and any contract from any service purchasers.

The benefits that the proposed deal will deliver and the prices that the organisation will charge as a result will also have an impact on competitiveness. Organisations therefore also need to compare and benchmark the prices and quality levels of comparable services offered by other providers.

The effect on prices should be analysed in enough detail for purchasers to see clearly how the scheme will impact on them. This means considering the impact on:

- the organisation's prices as a whole
- the prices for individual services
- the price of specific contracts

In general, public sector investments are difficult to justify if they lead to an increase in prices for the organisation's services.

Impact on the income and expenditure account

The impact of the project on the organisation's income and expenditure should be assessed. Both the current position and the likely outcome should be fully recorded in the OBC by a qualified accountant who understands the project and the organisation's business.

Impact on the balance sheet

The impact of the project on the organisation's balance sheet should also be assessed. Both the current position and the likely outcome should be fully recorded in the OBC by a qualified accountant who understands the project and the organisation's business.

Where significant assets are an integral part of the investment, their accounting treatment will need to be examined (see commercial case). This will require an independent opinion from the organisation's auditors.

Stakeholder(s)/support

Affordability issues are one of the main reasons for delay at the point at which business cases are submitted for approval.

It is unlikely that an OBC will be successful unless consultation has been held along the way between the organisation seeking investment for the improved services and its stakeholders and other NHSScotland/ public sector organisations commissioning services. NHSScotland policy on consultation and engagement is clear. Business cases must contain specific and explicit statements confirming that such requirements have been fully satisfied.

It is crucial to the overall process that agreement, in principle, is obtained from the NHSScotland bodies involved in the programme/ project. This should be in written form and included in the annex to the OBC. An indication of what this should cover is shown below.

Issues to cover in a letter of commissioner(s) support

A typical letter should:

- demonstrate that all participant bodies have been actively involved in developing the scheme through its various stages
- confirm acceptance of the strategic aims and investment objectives of the scheme, its functional content, size and services
- confirm that the financial costs of the scheme can be contained within the agreed and available budget and a willingness and ability to pay for the services at the specified contribution level (capital and/ or revenue)
- state the margins of leeway beyond which support must be re-validated
- demonstrate that suitable contingency arrangements are in place to address any current or unforeseen affordability pressures
- be provided by the appropriate individual(s) within the organisation – usually the chief executive officer.

Issues to cover in a letter of commissioner(s) support

A typical letter should:

- demonstrate that all participant bodies have been actively involved in developing the scheme through its various stages
- confirm acceptance of the strategic aims and investment objectives of the scheme, its functional content, size and services
- confirm that the financial costs of the scheme can be contained within the agreed and available budget and a willingness and ability to pay for the services at the specified contribution level (capital and/ or revenue)
- state the margins of leeway beyond which support must be re-validated
- demonstrate that suitable contingency arrangements are in place to address any current or unforeseen affordability pressures
- be provided by the appropriate individual(s) within the organisation – usually the chief executive officer

Assessing affordability

Assessing affordability requires sound judgment of the organisation's business and requires that:

- the balance sheet has been correctly organised and properly accounts for current assets, current liabilities, long-term liabilities and capital;
- the necessary allowance has been made for risks; and
- the financial consequences are set within the agreed Financial Plan

Various techniques can be used by public sector organisations to help judge affordability. The risks and uncertainties will vary from project to project, but some key questions to consider are:

- would the project be affordable if capital costs were to be 10% higher than expected?
- what if the expected savings were to fall by 10%?
- what circumstances might cause saving targets to be breached?
- what if income to the organisation were to be reduced by 5% or more?
- is there a robust strategy in place to guard against these outcomes?

Pay back period

Finally, there is the pay back period. As implied by the term, this method measures the rate at which the financial benefits from the investment 'pays back' the initial investment costs. In general, projects with a short pay back period are preferable to those with long pay back periods.

Closing affordability gaps

Affordability problems are most likely to occur in the early years of the project – i.e. in the construction and development phase. Benefits are unlikely to be realised in large measure during this phase to offset the costs of the investment.

However, during the operational phase benefits can be expected to build up gradually, until they reach the point where the net impact on operating costs and prices to purchasers is negative. Getting key sustainability aspects right in terms of efficient building design (e.g. reducing energy consumption through high performance design, build quality and materials choices) can influence the financial case and reduce the running costs over the lifetime of the building. However, other aspects must be factored in effectively too, including, e.g. new costs such as the financial impacts of the CRC.

If the affordability analysis reveals the preferred option is unaffordable, there are a number of potential remedies including one or more of the following:

- phasing the implementation of the preferred option differently
- adopting a different design solution
- altering the scope of the preferred option – for example, its functional content or the quantity and quality of the services offered
- finding additional sources of funding – for example, disposal of surplus assets (if available), further revenue support from the commissioners of the organisation's services
- considering different ways of financing the project – for example, private finance, operating and financial leases
- negotiating more competitive or flexible prices from the service provider(s)
- finding other ways of reducing the costs and/or increasing cash releasing savings
- allowing the service provider to create additional revenue streams and new business and sharing in the resultant revenue streams

Checklist for step 6

- There should now be clear understanding of:
- the capital and revenue implications of the preferred option and deal
- the impact on the income and expenditure account and the organisation's charges for services (if applicable)
- the impact on the budget, other sources of available funding and any shortfalls
- the impact on the balance sheet

There should also be written evidence of commissioner and stakeholder support.

Output for step 6

The first draft of the financial case has now been completed.

Step 7 – Planning for successful delivery**Introduction**

The perfect deal, offering optimum VFM, can end up being an unmitigated disaster unless the management arrangements are thought through early on in the scoping and planning process. This step is concerned primarily with putting in place all the arrangements that are required to ensure the successful delivery of the scheme and to guard against these causes of project failure.

The following actions are required to complete this step successfully:

Stages	Development Process	Deliverables
Phase 2 – planning	Preparing the Outline Business Case (OBC)	
Step 4	Determining potential VFM	Economic case – part 2
Step 5	Preparing for the potential deal	Commercial case
Step 6	Ascertaining affordability and funding requirement	Financial case
Step 7	Planning for successful delivery	Management case
Action 7.1	Plan project management – strategy, framework and outline plans	
Action 7.2	Plan change management – strategy, framework and outline plans	
Action 7.3	Plan benefits realisation – strategy, framework and outline plans	
Action 7.4	Plan risk management – strategy, framework and outline plans	
Action 7.5	Plan post project evaluation – strategy framework and outline plans	
Output	Outline Business Case	
Outcome	Planned procurement for VFM solution	
Review Point	Gateway 2: procurement strategy	

Action 7.1 - Plan project management – strategy, framework and outline plans

This action is concerned with putting in place the strategy, framework and outline plans required for successful delivery using a robust project management methodology to guide the project through a controlled, well managed and visible set of activities to achieve the desired results and benefits.

Project management strategy

The strategy of most organisations for the successful delivery of projects is to embrace the principles of programme management and adopt a project methodology which is based on its perceived standards of best practice and quality management principles.

The OGC has developed extensive guidance on programme management. This should be used by all public sector organisations, in the absence of their own approved departmental methodologies.

Project management: PRINCE 2

The recommended project methodology within the public sector is **PRINCE - Projects IN Controlled Environment**, which is now the de facto standard in use within the United Kingdom.

PRINCE 2 covers the project life cycle from start-up to closure. It provides a number of mechanisms and reporting arrangements to ensure project planning and monitoring are carried out rigorously. It is based on the following key principles and should be used on all occasions:

- a project is a finite process with definite start and end dates
- a project always needs to be managed in order to be successful (by a suitably qualified practitioner)
- for genuine commitment to the project, all parties must be clear about why the project is needed, what it is designed to deliver, how the outcomes are to be achieved, and a clear definition of roles and responsibilities.

For the project to embed and deliver a sustainable outcome, the Project Board and Team will need to have a sound understanding of sustainability principles and how they affect the project.

Project framework

The project framework refers to the organisation of the project.

This section should summarise:

- the project's structure
- its reporting arrangements in relation to its over-arching programme
- any other management and governance arrangements
- its key roles and responsibilities
- its appointed personnel (together with copies of their curriculum vitas)
- any vacancies (together with a description of how individuals will be recruited to fill them)

Much of the above information should typically be captured in a diagram of the organisation within the OBC.

Importantly, PRINCE2 mandates that the project board must represent three broad interests. These include:

- a senior business role to represent the organisational interests
- a senior user role to represent the end users' or customers' interests
- a senior technician to cover the 'technical' aspects, including supply-side considerations

In addition, best practice demands that stakeholder interests are also represented.

Appointment of the senior responsible owner (SRO)

Finally, in compliance with the OGC Gateway Review Process and/or more local arrangements for 'health checks', a 'champion' or senior responsible owner should be appointed. This person should not be the programme director or project manager for the scheme; or indeed any one with day-to-day involvement with the scheme. Rather the SRO should be the business sponsor for the programme or project with the ultimate responsibility, at board level, for the delivery of business benefits.

Project Plan

The project plan is the document which describes how, when and by whom a specific milestone or set of targets will be achieved. It is the detailed analysis of how identified targets, milestones, deliverables and products will be delivered to timescales, costs and quality.

The most up-to-date version of the project plan should be summarised within the OBC and address the following:

- the deliverables (or products) to be produced
- the activities required to deliver them
- the activities required to validate the quality of the deliverables
- the resources and time needed for all activities and any need for people with specific capabilities and competencies
- the dependencies between activities and any associated constraints
- when activities will occur
- the points at which progress will be monitored, controlled and reviewed – this includes delivery and approval of the business case and the undertaking of Gateway reviews/ health checks.

Project plans are typically illustrated by means of Gantt charts.

Use of external advisers

This is to be encouraged where the necessary skills and capabilities are in short supply; especially in the case of large, significant, complex and novel schemes.

Specialist advice will generally be brigaded within four key categories in the project plan: financial, legal, technical and project management. The OBC should indicate how and when this advice will be utilised along with expected costs.

Action 7.2 - Plan change management – strategy, framework and outline plans

This action is concerned with putting in place the strategy, framework and outline plans required for successful delivery of change.

Most investments involve some degree of change. This can range from elements of service improvement through to major change predicated on business process re-engineering. Even where change is not ostensibly the primary driver for investment (as in the case of a replacement service) every effort should be taken to seize the opportunity for improvement on the basis of invest to save and deriving a net present value for the project.

The change required (and expected) needs to be managed and embraced by the individuals within the organisation(s); hence the need for a change management strategy (linked to benefits realisation); a change management framework (to manage the change) and an outline plan (to explain what will be delivered and when in terms of underlying activities).

Change Management Strategy

The main aim here is to assess the potential impact of the proposed change on the culture, systems, processes and people working within the investing organisation.

Various management strategies can be adopted for implementing change, depending on the degree and pace of change required. In terms of degree, the required change may range from the introduction of greater automation through to the re-configuration of services or the complete transformation of a business function in another scenario. In terms of pace, the change may be 'big bang' or incremental depending on the strategic driver for change in the first instance and the ability of the organisation to cope in the second.

The organisation's choice of change management strategy should be set out in full, together with its underpinning communication and development (training) strategies.

Change Management Framework

In some cases, responsibility for delivery of the service change may be under the control of the project management board and be a key sub-set of its activities. However, in the case of major organisational and business change this is unlikely to be the case, and the project itself may form part of a larger and longer-term change management programme. In these instances, the organisational structure and personnel required to direct, manage, implement and evaluate the change should be set out together with the main roles and responsibilities of key personnel, and their relationship to the project board.

The details required in support of the project management framework (see above) are relevant here.

Change Management Plans

Where there are significant change management programmes, an outline of the change management plan should be set out together with the communication and developmental deliverables (for example, training products) required for the implementation phase. It is important that this indicates how all relevant personnel within the organisation, including human resources and staff representatives, have contributed or been involved to date. The details required in support of the project management plan (see above) are relevant here.

Action 7.3 - Plan benefits realisation – strategy, framework and outline plans

This action is concerned with putting in place the management arrangements required to ensure that the project delivers its anticipated benefit, or required 'rate of return'. Far too little attention has been paid to this key aspect in the past – as a result, benefits claimed in the economic case have not actually been realised and/or monitored through post project evaluation.

It is important to note that the focus has now changed with the advent of the Gateway Review/ Health Check 5 Review (benefits realisation) and the increasing interest of the Audit Scotland.

Benefits Realisation Strategy

The benefits realisation strategy should set out arrangements for the identification of potential benefits, their planning, modelling and tracking. It should also include a framework that assigns responsibilities for the actual realisation of those benefits throughout the key phases of the project.

Benefits Realisation Framework

The ultimate responsibility for the delivery of benefits rests with the SRO for the project, who must ensure that the management arrangements for their realisation in the implementation and operational phase of the project are outlined in some detail at the OBC stage.

Benefits Register

At OBC stage, projects should capture the benefits already outlined for the project (see economic case) within a benefits register. This register should also indicate how those benefits are to be realised. The following information should be captured for each benefit.

Benefits Register	
Benefits number	(unique within the register)
Benefit type	(benefit category)
Description	
Service feature	(what aspect of the project will give rise to the benefit – to facilitate monitoring)
Potential dis-benefits	
Activities required	(to secure benefit)
Responsible officer	
Performance measure	
Target improvement	(expected level of change)
Full-year value	
Timescale	

Action 7.4 Plan risk management – strategy, framework and outline plans

This action is concerned with putting in place arrangements for the on-going management of risk during the key phases of the project.

Risk management is a structured approach to identifying, assessing and controlling risks that emerge during the course of the policy, programme or project lifecycle. Its purpose is to support better decision making through understanding the risks inherent in a proposal and their likely impact.

Effective risk management helps the achievement of wider aims, such as:

- effective change management
- the efficient use of resources
- better project management
- minimising waste and fraud
- supporting innovation

Risk Management Strategy

Strategies for the active and effective management of risk involve:

- identifying possible risk in advance and putting mechanisms in place to minimise the likelihood of them materialising with adverse effects
- having processes in place to monitor risks, and access to reliable, up-to-date information about risks
- the right balance of control to mitigate against the adverse consequences of the risks, if they should materialise
- decision-making processes supported by a framework of risk analysis and evaluation

At the level of individual policies, programmes and projects, risk management strategies should be adopted in a way that is appropriate to their scale.

Risk Mitigation

Recognised methods for the mitigation of risk throughout the life span of the policy, programme or project include:

- **Early consultation:** Experience suggests that costs tend to increase as more requirements are identified. Early consultation will help to identify what those needs are and how they might be addressed
- **Avoidance of irreversible decisions:** Where lead options involve irreversibility, a full assessment of the costs should include the possibility of delay, allowing more time for investigating alternative ways to achieve the objectives
- **Pilot studies:** Acquiring more information about risks affecting a project through pilot studies allows steps to be taken to mitigate either the adverse consequences of bad outcomes, or to increase the benefits of good outcomes
- **Design flexibility:** Where future demand and relative price are uncertain, it may be worth choosing a flexible design adaptable to future changes, rather than a design suited to only one particular outcome. For example, different types of fuel can be used to fire a dual fired boiler, depending on the future relative price of alternative fuels. Breaking a project into stages, with successive review points at which the project could be stopped or changed can also increase
- **Precautionary principle:** Precautionary action can be taken to mitigate a perceived risk. The precautionary principle states that because some outcomes are so bad, even though they may be very unlikely, precautionary action is justified. In cases where such risks have been identified, they should be drawn to the attention of senior management and expert advice sought

- **Procurement/contractual:** Risk can be contractually transferred to other parties and maintained through good contractual relationships, both informal and formal – see commercial case
- **Making less use of leading edge technology:** If complex technology is involved, alternative, simpler methods should be considered, especially if these reduce risk considerably whilst providing many of the same benefits
- **Reinstate, or develop different options:** Following the risk analysis, the appraiser may want to re-instate options, or to develop alternative ones that are either less inherently risky or deal with the risks more efficiently
- **Abandon the proposal:** Finally, the proposal may be so risky that whatever mitigation is considered, it has to be abandoned

By reducing risks in these ways, the expected costs of a proposal are lowered or the expected benefits increased. As can be seen, benefit and risk are simply two sides of the same coin and successful management depends on the effective identification, management and mitigation of risk.

Risk Management Framework

Public sector organisations should foster a pragmatic approach to risk management at all levels. This involves:

- establishing a risk management framework, within which risks are identified and managed
- senior management support, ownership and leadership of risk management policies
- clear communication of organisational risk management policies to all staff
- fully embedding risk management into business processes and ensuring it is applied consistently

These actions should help establish an organisational culture that supports well thought out risk-taking and innovation.

The arrangements for the management of risk should be outlined, together with the respective roles and responsibilities and reporting lines of the posts concerned. These should be made clear in relation to the overall project management arrangements.

Risk Register

The plans for the management of associated risks should be encapsulated within the risk register for the project, which lists all the identified risks and the results of their analysis and evaluation. Information on the status of the risk is also included.

The risk register should be continuously updated and reviewed throughout the course of a project and at this stage in its development cover all phases of the project, with particular focus on the related project management and procurement risks for the scheme. The information that a risk register should contain for each risk is set out below:

Risk Register	
Risk number	(unique within the register)
Risk type	
Author	(who raised it)
Date identified	
Date last updated	
Description	(of risk)
Likelihood	
Interdependencies	(between risks)
Expected impact	
Bearer of risk	
Countermeasures	
Risk status	(action status)

Additional guidance on risk is contained within Step 6 of the SCIM [Option Appraisal Manual](#) or more general guidance may be obtained from the Office of Government Commerce (OGC) at:

http://www.ogc.gov.uk/guidance_management_of_risk_4441.asp

Action 7.5 Plan post project evaluation – strategy, framework and outline plans

As noted in the context of benefits realisation, this very important stage of the project has been much neglected in the past to the extent that for many projects it was not known whether they had delivered anticipated benefits and expected returns. Neither was it possible to pass lessons learnt on to others. One of the sustainability aspects or initiatives where post-project evaluation is key relates to the application of the requirements of BREEAM Healthcare, appropriate to the BREEAM rating sought. Valuable lessons may be learned where the relative environmental and social benefits delivered can be tracked in accordance with details on their relative costs.

The SCIM Post [Project Evaluation Manual](#) provides detailed guidance on this subject.

Project Evaluation Strategy

The purpose of post project evaluation (PPE) is twofold:

- first, to improve project appraisal at all stages of a project from preparation of the business case through to the design, management and implementation of the scheme. This is often referred to as the **'Post Project Evaluation'** (PPE) and is typically carried out six months after completion.
- second, a longer term assessment to appraise whether the project has delivered its anticipated improvements and benefits. This is often referred to as the **'Post Occupancy Evaluation'** (POE) and can be carried out approximately 2-5 years after completion depending on the nature of the project. The key advantage of POE's is the opportunity to achieve improvements in the ways future buildings will support operational objectives.

This section of the OBC should set out the organisation's strategy for both aspects of PPE. In particular, it should make clear:

- whether the PPE and POE are to be undertaken jointly or separately, depending on the nature of the project.
- the OGC Gateways and Health Checks review process adopted in accordance with accepted, recommended and prevailing best practice.

PPE Framework

This section should outline management arrangements for ensuring that PPE will take place, bearing in mind that this is a key responsibility of the SRO.

PPE Plans

This section should set out the expected timing(s) for PPE arrangements. These should be incorporated in the project management plans, with a named individual responsible for their execution.

Checklist for step 7

There should now be clear understanding of:

- the project management arrangements
- the change management arrangements
- the benefits realisation arrangements, including an attached benefits register
- the risk management arrangements, including an attached risk register
- the post project evaluation arrangements

Output of Step 7

The first draft of the management case has now been completed, bearing in mind that proposals for contract management have been addressed within the commercial case at this point in time.

Output of phase 2 and Gateway Review Process

The OBC has now been completed and the bulk of the business case preparation work undertaken.

A Gateway 2 or Health Check 2 for the procurement strategy stage should now be considered for the project, prior to the formal submission of the OBC to the approving authority for agreement.

Outcomes from the OBC

The NHS Board and, subject to the organisation's delegated limit, the SGHD, will now decide whether the project should move on to the next stage – procurement phase.

Stage 3 – Procurement

Phase 3: Preparing the Full Business Case (FBC)

Overview

The preparation of the Full Business Case (FBC) is a mandatory part of the business case development process, which is completed following procurement of the scheme – but prior to contract signature – in most public sector organisations.

The purpose of the FBC is to:

- identify the ‘market place opportunity’ which offers optimum VFM
- set out the negotiated commercial and contractual arrangements for the deal
- demonstrate that it is ‘unequivocally’ affordable
- put in place the detailed management arrangements for the successful delivery of the scheme

Two points should be noted:

- first, if the OBC has been prepared in accordance with the guidance set out earlier and the procurement run in accordance with accepted and established best practice, much of the work involved in developing the FBC will simply focus on updating the OBC and documenting the outcomes of the procurement rather than starting from scratch
- second, in some instances the FBC is still completed prior to the commencement of the procurement and is, in effect, a second (updated) version of the OBC. In such situations, the business case still requires updating post procurement, as discussed. In these situations, it is often referred to as the final (rather than full) business case

Step 8 – Procuring the VFM solution

Introduction

This step involves revisiting the case for change made in the OBC; making any necessary adjustments to the Conventional Procurement Assessment Model (CPAM); and presenting the outcomes of the formal procurement process.

The main actions are set out below:

Stages	Development Process	Deliverables
Phase 3 – procurement	Preparing the Full Business Case (FBC)	
Step 8	Procuring the VFM Solution	Economic case
Action 8.1	Revisit the case for change	
Action 8.2	Revisit the OBC options, including the CPAM	
Action 8.3	Detail procurement process and evaluation of final tenders (in £s)	

Action 8.1 – Revisit the case for change

This action revisits the rationale for the investment made in the strategic case, since some aspects of the case for change may have altered since the OBC was approved, due to evolving business needs, service changes and the passage of time.

Updating the strategic case

The same structure should be used as for the OBC.

The minimum requirement at this stage is to note within the FBC that the case for investment remains as set out in the OBC; and that the resultant scope and underlying assumptions have not altered.

However, some changes are likely. These should be recorded in full – particularly with reference to:

- the strategic context for the scheme
- the agreed investment objectives
- business needs
- the earlier scope and service requirements
- the benefits
- the risks
- the dependencies
- the constraints

If the changes are major, the effects may require following up throughout the entire case. Otherwise, this part of the case should confirm the views expressed at the OBC stage.

Clear support from the organisation's commissioners and other key stakeholders must be forthcoming at this stage – see OBC guidance for details of what this should cover.

Action 8.2 – Revisit the OBC options, including the Conventional Procurement Assessment Model

This action is concerned with revisiting the OBC economic case and updating the outline CPAM (or the 'reference project').

Revisiting the OBC options

Even if the strategic drivers for the project have not changed sufficiently to make alterations to the preferred option necessary, the FBC must demonstrate that the conclusions of the economic appraisal in the OBC remain valid. The analysis from the OBC stage should be updated and presented in the FBC.

Since approval of the OBC, new information affecting the ranking of the options may have become available. For example:

- the relative rankings may have changed as a result of supplier side prices and other costs
- the expected benefits of the OBC preferred option may be lower, or the anticipated benefits of another option higher, which may change the previous ranking of the options
- the level of uncertainty in a high risk option may have reduced making it more attractive
- changes within the strategic context, and consequently to the deal, may have led to significant changes in the preferred option

If any of the key assumptions have altered, the FBC must demonstrate that the recommended option following procurement continues to:

- offer better VFM than the 'do nothing' or 'do minimum' options, so that the case for change and procurement remains robust
- offer better VFM than the other available options, including the original preferred option, on the basis of service providers' offerings.

Revisit the sustainability case, to ensure that the OBC was sufficiently comprehensive in its treatment of the sustainability issues, and that none of these have changed significantly with the passage of time.

Revisiting the procurement method

The FBC must also demonstrate that the project is still being procured by the most appropriate method.

At the OBC stage different methods of funding and procurement were examined. If the OBC considered that a form of private finance was deliverable and potentially offered better VFM than conventional funding, a privately financed option will have been pursued. At the FBC stage, private finance offers from service providers must be compared to the outline CPAM taken forward as the preferred option at the OBC stage and to the 'do minimum'.

The principles of the economic appraisal are the same as those used to identify the preferred option at the OBC stage.

The Conventionally Procured Assessment Model (CPAM)

The CPAM is simply the risk-adjusted, discounted economic model for the preferred option. Where the project is publicly funded this is straightforward although the CPAM will need refining in the light of knowledge gained from the procurement and reflect the final scope and configuration of the project. Where a PPP (NPD) procurement is being pursued the CPAM is designed so as to enable 'a like for like' comparison of the cost of providing services in-house with the service providers' solutions on an outsourced, or privately financed basis.

The revisions to the CPAM should not mimic any design, engineering or operational attributes offered by service providers during the procurement phase; but rather be adjusted to ensure that the scope of the outputs required remains consistent.

It should not be necessary to adjust the 'do minimum' option at this stage.

Detailed guidance on the CPAM is contained within Chapter 3 of [Section 3 of the SCIM PPP Guide](#).

Risk adjustment

The minimum requirement at this stage is to revisit the 'cost of risk' retained under the outline CPAM in the economic case of the OBC. This should also be done for the risk values for the 'do nothing', status quo or 'do minimum' options, depending on which was carried forward as the benchmark for VFM in the short-listed options appraisal (see step 4).

If these options were not risk quantified at OBC stage, but simply adjusted to reflect optimism bias, the associated risks should now be identified and quantified in full, as shown at step 4.

The aim at FBC is to reduce the level of optimism bias to the absolute minimum. This is generally advised to be in the order of 2% for a standard capital scheme at FBC stage – see the earlier section on optimism bias (step 4, action 13).

Action 8.3 – Detail the procurement process and the evaluation of final tenders

This action is concerned with updating the economic case to record a full summary of the procurement process. This will include the resultant selection of service providers (including the preferred bidder – if appointed); and the formal appraisal of their proposals, leading to the selection of the preferred and recommended choice.

The Procurement Process

The content of this section should reflect the procurement strategy, route and evaluation criteria set out in the OBC. Any changes should be explained. It should list the service providers who expressed interest at the pre-qualification stage and the reasons for their rejection, where applicable. It should also record the reasons for carrying forward and rejecting potential service providers from the long list to the short list stage.

The Selection of the Preferred Service Provider

The basis on which the preferred bidder (if applicable) was selected should be recorded, together with any arrangements for the ongoing attainment of VFM.

FBC Economic Appraisals

The economic appraisals **must** be prepared in accordance with the principles outlined at the OBC stage for:

- each of the potential service providers' offers at final tender stage
- the CPAM (if applicable)
- any in-house options
- the 'do nothing' or 'do minimum' – whichever has been adopted as the benchmark for VFM

Importantly, in addition to service providers' costs, any 'attributable' costs falling to the organisation or any other public sector organisation must be accounted for and the 'full cost' shown for each option over the contract period and life span of the investment.

Taking into account any adjustments made as a result of the earlier action 26, the non-financial benefits and the non-financial risks should be assessed for each of the above options, and subject to sensitivity analysis, as prescribed at the OBC stage. The resultant preferred choice should be recommended for the approval of management in the FBC.

Post FBC Approval Prior To Contract Signature

Finally, the FBC must be re-submitted for re-approval if the costs or benefits vary by more than 10% post FBC approval, or if the contract terms, for whatever reason, vary significantly from those agreed.

Checklist for Step 8

There should now be clear understanding of:

- any alterations to the strategic context and the case for change
- the entire procurement process and service providers' offers
- how the selection of the preferred service provider was made on the basis of an updated CPAM (if applicable) and the investment appraisals, including the SCIM Option Appraisal Guide, Generic Economic Model, Optimism Bias models which all apply HM Treasury Green Book rules

Output of Step 8

The strategic and economic cases have now been revisited, updated and completed in respect of the FBC.

Step 9 – Contracting for the deal

Introduction

The purpose of this step is to explain the negotiated deal and the financial consequences to the organisation post contract. The main actions are set out below:

Stages	Development Process	Deliverables
Phase 3 – procurement	Preparing the Full Business Case (FBC)	
Step 8	Procuring the VFM Solution	Economic case
Step 9	Contracting for the deal	

Action 9.1 Set out the negotiated deal and contractual arrangements

This action provides a detailed overview of the deal that has been negotiated between the public sector organisation and the preferred choice of service provider arising as a consequence of the procurement and FBC economic appraisal. In essence, this is the commercial transaction that management and the approving authority are being requested to sign-up to.

Content

The standard headings for the commercial case should be used to explain:

- the service streams and outputs which are being contracted for
- the implementation timescales which have been agreed for their delivery
- the allocation of risk negotiated between the public sector organisation and preferred service provider
- the underpinning method of payment for these services and outputs, including the premiums for risk transfer
- the type of contract used and the key contractual issues. Where not standard a copy of the proposed contract should be attached to the FBC, together with a copy of the published OJEU notice. In the case of PPP (NPD) procurements, the contract form should be compliant with SGHD Standard Project Agreement but a schedule of any changes agreed by SGHD should be included in the FBC

- the accountancy treatment of the negotiated deal, with confirmation from the organisation's external auditors, as appropriate
- a detailed explanation of any personnel implications (for example, TUPE) and how they are being managed

Action 9.2 – Set out the financial implications of the deal

The purpose of this action is to explain in detail the financial implications to the organisation of the negotiated deal.

Content

The standard headings for the financial case should be used to explain:

- the capital and revenue implications of the resultant deal, including any financial costs falling to the organisation. Such costs should fully consider IFRS implications.
- the net effect on the organisation's charges (prices) – if any
- the impact on the organisation's income and expenditure account and balance sheet – duly confirmed by the external auditor
- the overall affordability and funding arrangements for the deal, including (written) confirmation from the other organisation's and other key stakeholders and any contingency arrangements for over spends

Checklist for step 9

There should now be a clear understanding of the financial implications of the proposed deal, both in terms of the organisation's contractual obligations and associated spend in support of the required services.

Output of step 9

The commercial and financial cases have now been revisited, updated and completed in respect of the FBC.

Step 10 – Ensuring Successful Delivery

Introduction

In the finalisation processes outlined below, actions 30-35 should all contain clear outcomes and governance arrangements to ensure the sustainability priorities will be delivered. The main actions within this step are as follows:

Stages	Development Process	Deliverables
Phase 3 – Procurement	Preparing the Full Business Case (FBC)	
Step 8	Procuring the VFM solution	Economic Case
Step 9	Contracting for the Deal	Commercial Case
Step 10	Ensuring successful delivery	Management Case
Action 10.1	Finalise project management arrangements and plans	
Action 10.2	Finalise change management arrangements and plans	
Action 10.3	Finalise benefits realisation arrangements and plans	
Action 10.4	Finalise risk management arrangements and plans	
Action 10.5	Finalise contract management arrangements and plans	
Action 10.6	Finalise post project evaluation arrangements and plans	
Output:	Full Business Case	
Outcome:	Recommended Service Solution	
Review Point:	Gateway 3 (<i>investment decision</i>)	

Action 10.1 – Finalise Project Management Arrangements and Plans

This action revisits and updates the project management arrangements shown in the OBC. The focus now shifts from the procurement phase to the detailed arrangements in support of the design, build and implementation phases. Importantly, any necessary arrangements for the operational phase of the project (post implementation) should not be overlooked, including post project evaluation (PPE).

Content

The project management strategy should be revisited and updated, as required.

The existing framework (project structure, reporting lines, roles and responsibilities) should be shown, together with named individuals, any vacancies and plans for any future changes.

The latest version of the project plan should be attached to the FBC. This must reflect the implementation timescales agreed with the service provider for the delivery of the negotiated services and be signed off by the stakeholders and customers (end users) for the services.

Action 10.2 Finalise Change Management Arrangements & Plans

This action revisits and updates the change management arrangements shown in the OBC.

Content

The change management strategy should be revisited and updated, as required.

The existing framework (project structure, reporting lines, roles and responsibilities) should be shown, together with named individuals, any vacancies and any plans for future changes.

The latest version of the change management plan should be attached to the FBC. This must reflect the specific training and developmental needs of key groups of personnel and any required communication arrangements. It should be signed off by the stakeholders for the services and indicate customer (end-user) involvement.

Action 10.3 – Finalise Benefits Realisation Arrangements & Plans

This action revisits and updates the benefits realisation arrangements shown in the OBC.

Content

The strategy for the realisation of benefits during the key phases of the project should be revisited and re-affirmed within the FBC.

The existing framework (project structure, reporting lines, roles and responsibilities) should be shown, together with named individuals, any vacancies and any plans for future changes.

The 'sustainability case' needs to be revisited at this point to ensure objectives are being met. This should incorporate the 6 main aspects of the Good Corporate Citizenship model, DQIs (design quality indicators) within BREEAM Healthcare.

The Benefits Register

The organisation's plan for the ongoing management and delivery of benefits should be encapsulated within the benefits register, which must be completed in full and attached to the FBC. It should cover all the benefits – financial, non-financial and qualitative – identified during the implementation and operational phases of the project.

The 'owner' of the benefits register should be named and his/ her reporting line(s) identified to the senior responsible owner (SRO) – who is ultimately responsible for their delivery. It should also be confirmed that the benefits register will be reviewed regularly and form part of the standing agenda at all future project management board meetings.

Action 10.4 – Finalise Risk Management Arrangements & Plans

This action revisits and updates the risk management arrangements shown in the OBC.

Content

The strategy for the management of risks during the key phases of the project should be revisited and re-affirmed within the FBC.

The existing framework (project structure, reporting lines, roles and responsibilities) should be shown, together with named individuals, any vacancies and any plans for future changes.

The Risk Register

The organisation's plan for the ongoing mitigation and management of risk should be encapsulated within the risk register, which must be completed in full and attached to the FBC. The register should cover all the business and service risks identified during the design, build, implementation, operational and re-procurement phase (if applicable) of the project.

The 'owner' of the risk register should be named and his/ her reporting line(s) identified. It should also be confirmed that the risk register will be reviewed regularly and form part of the standing agenda at all future project management board and/or risk management board meetings.

Contingency Plan

Finally, the organisation should provide details of its contingency plan(s) in the event of the non-delivery of the contracted services to the required level of performance and availability at some unspecified future point in time.

Action 10.5 Finalise Contract Management Arrangements & Plans

This action considers both the formal and informal arrangements which need to be in place to successfully manage the contract change.

Contract Change

The more mundane contract management arrangements will have been covered in the contract and indicated in the commercial case (see contractual arrangements). These largely take care of the day-to-day management of the service – performance; availability; minor changes; the escalation procedure for difficulties etc.

However, over the life span of the service contract it is likely that there will be some significant changes given that it is in the nature of an organisation to change, particularly if the organisation is a successful one. (In fact the most successful organisations are those which adapt to changing circumstances; or in anticipation of changing circumstances).

In accordance, with the 'partnering' principle, the organisation should consider its strategy for managing future, as yet unknown, contractual change. Prevailing best practice suggests regular one-to-one meetings between senior managers in both the customer and supplier organisation and dealing with change within the context of a 'shared vision'. This should help to manage uncertainty on both counts and to reduce eventual cost.

The organisation should consider who will adopt this role over the life span of the contract and plan accordingly. Any arrangements should be noted in the FBC.

Action 10.6 – Finalise Post Project Evaluation Arrangements & Plans

This action revisits and updates the post project evaluation arrangements shown in the OBC.

Content

The FBC should record:

- the arrangements for future OGC Gateway Reviews and organisational Health Checks (if applicable) at Gate 3 (investment decision); Gate 4 ('go live'/ readiness for service) and Gate 5 (benefits realisation). Ideally, Gate 3 should take place prior to the formal submission of the FBC to the approving authority
- the arrangements for PPE. First, the project evaluation, which should be undertaken as soon as possible after the implementation of the service to capture lessons learnt. Second the arrangements for reviewing how well the service is running and delivering its anticipated benefits, typically within 6 to 12 months after the commencement of live running, and periodically thereafter depending upon benefits delivery

The arrangements for OGC Gateways / Health Checks and PPE should be included in the project management plan.

Checklist for step 10

There should now be a precise understanding of:

- how the project will be managed
- how change within the organisation will be implemented
- how the benefits will be realised
- how the business and service risks will be mitigated and managed
- how major contract change will be handled over the longer term
- how the project will be reviewed periodically
- what the contingency plans are in the event of service failure

Output of step 10

The management case has now been revisited, updated and completed in respect of the FBC.

Output of phase 3 and Gateway Review Process

The FBC has now been completed. A Gateway 3 or Health Check 3 for the investment decision point should now be considered for the project, prior to the formal submission of the FBC to the approving authority for agreement.

Outcome from the FBC

All parties should now be content for the project to proceed to contract signature, providing the above work has been completed satisfactorily and the resultant scheme is affordable.

In the case of PPP and Framework Scotland procurements an FBC addendum should be submitted outlining key movements between the FBC approval and contract signature.

In all other cases the FBC must be re-submitted for re-approval if the costs or benefits vary by more than 5% (capital value) or 10% (revenue value) post FBC approval, or the contract terms, for whatever reason, vary significantly from those agreed.

8 THE USE OF WORKSHOPS FOR THE DEVELOPMENT OF THE BUSINESS CASE

Introduction

Experience demonstrates that the business case is best developed through a number of workshops involving key stakeholders, customers and users, at the critical phases of its development. This adds immeasurably to the robustness of the case and, consequently, to the approval and successful delivery of the scheme.

The number of workshops required will depend on the complexity of the project. In most instances they are required to 'close-off' the following aspects:

- developing the case for change
- assessing the options
- developing the reference project / outline Conventional Procurement Assessment Model (CPAM)
- developing the deal
- determining the deliver arrangements
- assessing the potential service providers and solutions

Workshop 5 is generally undertaken as part of the procurement process, in conjunction with the organisation's procurement department and so is not included in the detail that follows:

Workshop	Objectives	Key Participants	Outputs
<p>Workshop 1:</p> <p>Determining the case for change and options for service delivery</p> <p>(IA Stage)</p>	<ul style="list-style-type: none"> • To define and agree business needs, potential scope and investment objectives • To define and agree desired outcomes and service outputs • To define and agree the CSF's and benefit criteria for assessing the options • To identify the potential options for service delivery 	<ul style="list-style-type: none"> • Senior Responsible Owner • Board Members • Programme Director • Project Manager • External Stakeholders or Commissioners • Customer and / or User Representatives • Technical Adviser • Financial Adviser • Facilitator 	<ul style="list-style-type: none"> • SMART investment objectives • Business needs and potential scope • CSF's and benefits criteria • Long list of options • Fundamentals of the IA
<p>Workshop 2:</p> <p>Assessing the options</p> <p>(IA / OBC Stage)</p>	<ul style="list-style-type: none"> • To sift the long list and generate the short list • To identify and assess the potential costs, benefits and risks associated with the short-listed options 	<ul style="list-style-type: none"> • External Stakeholders of Commissioners • Director of Finance • Economic Adviser • Customer and / or User Representatives • Project Manager • Facilitator 	<ul style="list-style-type: none"> • Short-listed options with preliminary assessment • Outline benefits realisation plan • Inputs for economic appraisal

<p>Workshop 3:</p> <p>Developing the reference project / outline CPAM</p> <p>(OBC Stage)</p>	<ul style="list-style-type: none"> • To develop the CPAM • To address all relevant issues, including risks, affordability and implementation 	<ul style="list-style-type: none"> • External Stakeholders of Commissioners • Director of Finance • Economic Adviser • Customer and / or User Representatives • Project Manager • Facilitator 	<ul style="list-style-type: none"> • Preliminary CPAM with indicative costs • Fundamentals of the economic and financial cases
<p>Workshop 4:</p> <p>Developing the deal</p> <p>(OBC Stage)</p>	<ul style="list-style-type: none"> • To develop the service specification • To develop the apportionment of risk and underpinning payment mechanisms • To develop the proposed contract 	<ul style="list-style-type: none"> • External Stakeholders of Commissioners • Director of Finance • Economic Adviser • Customer and / or User Representatives • Project Manager • Facilitator 	<ul style="list-style-type: none"> • Preliminary risk allocation matrix (RAM) • Potential Deal • Fundamentals of the commercial case
<p>Workshop 5:</p> <p>Successful delivery arrangements</p> <p>(OBC Stage)</p>	<ul style="list-style-type: none"> • To develop the procurement strategy • To develop the project plan 	<ul style="list-style-type: none"> • External Stakeholders of Commissioners • Director of Finance • Economic Adviser • Customer and / or User Representatives 	<ul style="list-style-type: none"> • Procurement Strategy • Management and delivery arrangements • Post project evaluation arrangements

9 COMMON CAUSES OF PROJECT FAILURE AND THEIR REMEDIES

Introduction

The National Audit Office and the Office of Government Commerce have identified the following common causes of project failure together with questions to be answered in terms of their mitigation.

If any of the answers are unsatisfactory, the scheme should **not** be permitted to proceed to the next stage until the necessary assurances have been obtained.

It is recommended that these issues should be addressed as early as possible and certainly no later than at the following stage in the development of the business case.

Common Cause of Project Failure	Stage	Questions to be answered in full at each stage and revisited thereafter
<p>1.</p> <p>Lack of clear links between the project and the organisation's key strategic priorities, including agreed measures of success.</p>	<p>IA</p>	<ul style="list-style-type: none"> • Do we know how the priority of this project compares and aligns with our other delivery and operational activities? • Have we defined the critical success factors (CSFs) for the project? • Have the CSFs been agreed with the key stakeholders? • Is the project founded on realistic timescales taking into account any statutory lead times, and showing critical dependencies such that any delays can be handled?
	<p>OBC</p>	<ul style="list-style-type: none"> • Are the lessons learnt from relevant projects being applied? • Has an analysis been undertaken of the effects of any slippage in time, cost, scope or quality? In the event of a problem / conflict at least one must be sacrificed.
	<p>FBC</p>	<ul style="list-style-type: none"> • Have the CSF's been agreed with the Service Provider? • Do we have a clear project plan that covers the full period of the planned delivery and all business change required, and indicates the means of benefits realisation?

<p>2.</p> <p>Lack of clear Senior Management and Ministerial ownership and leadership</p>	<p>IA</p>	<ul style="list-style-type: none"> • Does the Project Management Team have a clear view of the inter-dependencies between projects, the benefits, and the criteria against which success will be judged? • If the project traverses organisational boundaries are there clear governance arrangements to ensure sustainable alignment with the business objectives of all organisations involved? • Are all proposed commitments and announcements first checked for delivery implications? • Does the Senior Responsible Owner (SRO) have a suitable track record of deliver? Where necessary, is it being optimised through development and training?
	<p>OBC</p>	<ul style="list-style-type: none"> • Are decisions taken early on, decisively and adhered to, in order to facilitate successful delivery? • Does the project have the necessary approval to proceed from its nominated Minister either directly or through delegated authority to a designated SRO?
	<p>FBC</p>	<ul style="list-style-type: none"> • Does the SRO have the ability, responsibility and authority to ensure that the business change and business benefits are delivered?

<p>3.</p> <p>Lack of Effective Engagement</p>	<p>IA</p>	<ul style="list-style-type: none"> • Have we identified the right stakeholders? • Have we, as intelligent customers, identified the rationale for doing so (for example, the why, the what, the who, the where, the when and the how)? • Have we secured a common understanding and agreement of stakeholders' requirements? • Does the business case take account of the views of stakeholders, including customers / users?
	<p>OBC</p>	<ul style="list-style-type: none"> • Do we understand how we will manage stakeholders (for example, ensure buy-in, overcome resistance to change, allocate risk to the party best able to manage it)? • Has sufficient account been taken of the subsisting organisation culture?
	<p>FBC</p>	<ul style="list-style-type: none"> • Whilst ensuring that there is clear accountability, how can we resolve any conflicting priorities?
<p>4.</p> <p>Lack of Skills and proven approach to Project Management and risk Management</p>	<p>IA</p>	<ul style="list-style-type: none"> • Is there a skilled and experienced project team with clearly defined roles and responsibilities? If not, is there access to expertise, which can benefit those fulfilling the requisite roles?
	<p>OBC</p>	<ul style="list-style-type: none"> • Are the major risks identified, weighted and treated by the SRO, the director, and project manager and/or the project team? • Has sufficient resource, financial and otherwise, been allocated to the project, including an allowance for risk? • Do we have adequate approaches for

		<p>estimating, monitoring and controlling the total amount of expenditure on projects?</p> <ul style="list-style-type: none"> • Are the governance arrangements robust enough to ensure that 'bad news' is not filtered out of progress reports to senior managers? • If external consultants are used, are they accountable and committed to help ensure the successful and timely delivery?
	FBC	<ul style="list-style-type: none"> • Do we have effective systems for measuring and tracking the realisation of benefits in the business case?
<p>5.</p> <p>Too little attention to breaking development and implementation into manageable steps</p>	OBC	<ul style="list-style-type: none"> • Has the approach been tested to ensure that it is not 'big bang' (for example, IT enabled projects)? • Has sufficient time been built in to allow for planning applications in property and construction projects etc. • Have we done our best to keep deliver timescales short so that change during development is avoided? • Have enough review points been built in so that the project can be stopped if changing circumstances mean that the business benefits are no longer achievable or no longer represent value for money (VFM)

	FBC	<ul style="list-style-type: none"> • Is there a business continuity plan in the event of the project delivering late or failing to deliver at all?
<p>6.</p> <p>Evaluation of proposals driven by initial price rather than long-term value for money (especially securing delivery of business benefits)</p>	OBC	<ul style="list-style-type: none"> • Is the evaluation based on whole-life VFM, taking account of capital, maintenance and service costs? • Do we have a proposed evaluation approach that allows us to balance financial factors against quality and security of deliver? • Does the evaluation approach take account of business criticality and affordability. • Is the evaluation approach business driven?
<p>7.</p> <p>Lack of understanding of, and contact with the supply industry at senior levels in the organisation</p>	OBC	<ul style="list-style-type: none"> • Have we tested that the supply industry understands our approach and agrees that it is achievable? • Have we checked that the project will attract sufficient competitive interest? • Are Senior Management sufficiently engaged with the industry to be able to assess supply side risks? • Do we have a clear strategy for engaging with the industry or are we making sourcing decisions on a piecemeal basis? • Are there processes in place to ensure that all parties have a clear understanding of their roles and responsibilities, and a shared understanding of desired outcomes, key terms and deadlines?

		<ul style="list-style-type: none"> Do we understand the dynamics of the industry to determine whether our acquisition requirements can be met, given potentially competing pressures in other sectors of the economy?
	FBC	<ul style="list-style-type: none"> Have we asked suppliers to state any assumptions that they are making against their proposals?
<p>8.</p> <p>Lack of effective project team integration between clients, the supplier team and the supply chain</p>	OBC	<ul style="list-style-type: none"> Has a market evaluation been undertaken to test market responsiveness to the requirements being sought? Are the procurement routes that allow integration of the project team being used? Is there early supplier involvement to help determine and validate what outputs and outcomes are being sought for the project?
	FBC	<ul style="list-style-type: none"> Has a shared risk register been established? Have arrangements for sharing efficiency gains throughout the supply team been established?

10 BUSINESS CASE CONTENT & STRUCTURE

A business case is developed over time, in conjunction with the scoping, planning and procurement phases of the solution.

There are three key stages in its development, which constitute milestones when approval may be required to proceed further. During its infancy, the key deliverable is the IA; in its adolescence, the OBC; and finally, when the solution has reached maturity, the FBC.

This document provides a template from which to develop your case in each phase.

Initial Agreement (IA)	Outline Business Case (OBC)	Full Business Case (FBC)
<p>(Phase 1: Initial Scoping)</p> <p>Primary Purpose:</p> <p>1. To establish the case for change and strategic fit with other programmes 2. To indicate the way forward in terms of a preferred way forward.</p>	<p>(Phase 2: Planning) Prior to OJEU (pre-procurement)</p> <p>Primary Purpose:</p> <p>3. To identify a preferred option. 4. To assess potential VFM, affordability and achievability.</p>	<p>(Phase 3: Selection of Solution / Procurement) Following competition (pre-contract)</p> <p>Primary Purpose:</p> <p>5. To select the service solution. 6. To finalise post procurement arrangements.</p>
STRUCTURE & CONTENT OF DOCUMENT		
Executive Summary	Executive Summary	Executive Summary
The Strategic Case		
<p>Strategic context Overview of the strategic context – National and Local as relates to development</p>	<p>Strategic context Update as required</p>	<p>Strategic context Update as required</p>
<p>Organisational Overview Snapshot of the organisation: purpose, structure & environment etc.</p>	<p>Organisational Overview Update as required.</p>	<p>Organisational Overview Update as required.</p>
<p>Business Strategy & Aims Existing and future business plans, including any relevant national initiatives and stakeholders / customers for services.</p>	<p>Business Strategy & Aims Update as required.</p>	<p>Business Strategy & Aims Update as required.</p>
<p>Other Organisational Strategies For example, IS . IT; HR Existing and future plans. Strategic needs</p>	<p>Other Organisational Strategies Update as required.</p>	<p>Other Organisational Strategies Update as required.</p>
<p>Investment Objectives Key Objectives for proposed investments.</p>	<p>Investment Objectives Investment objectives ranked in order of priority and made SMART.</p>	<p>Investment Objectives Update as required.</p>

Existing Arrangements (if any) Snapshot of current service arrangements.	Existing Arrangements (if any) Update as required.	Existing Arrangements (if any) Update as required.
Business Needs – Current & Future Service gaps to be filled.	Business Needs – Current & Future Update as required.	Business Needs – Current & Future Update as required.
Potential Scope & Service Requirements Business scope and high level service outputs.	Desired Scope & Service Requirements Detailed description of business scope and high level service outputs / requirements.	Agreed Scope & Service Requirements Update as required.
Benefits Criteria Main benefits by key stakeholder groups.	Benefits Criteria Main benefits by stakeholder groups – ranked in order of importance and / or weight.	Benefits Criteria Update as required.
Strategic Risks Key business, service and external risks, together with outline mitigation and management arrangements.	Strategic Risks Update as required, including specific proposals for mitigation and management.	Strategic Risks Update as required.
Constraints & Dependencies Internal & External.	Constraints & Dependencies Update as required.	Constraints & Dependencies Update as required.
The Economic Case		
Critical success Factors (CSFs) Weighted and ranked in order of importance.	Critical success Factors (CSFs) Update as required.	Critical success Factors (CSFs) Update as required.
Main Business Options Long list for SWOT analysis including 'do nothing' or 'do minimum' options.	Main Business Options Revisit and update, as required, including options not identified earlier.	Main Business Options Summary of OBC conclusion.
Preferred Way Forward Conclusion from initial assessment using options framework.	Preferred Way Forward Revisit and update, as required.	Preferred Way Forward Summary of OBC conclusion.
Short-listed Options Recommended options for OBC analysis; including 'do nothing' or 'do minimum' and reference project (if applicable).	Short-listed Options Detailed description of short-listed options including 'do nothing' or 'do minimum' and outline Conventional Procurement Assessment Model (CPAM).	Short-listed Options Detailed description of short-listed options including 'do nothing' or 'do minimum', the CPAM and the procurement process

Outline Commercial Case High level assessment of possible deal and supply-side interest.	NPC/NPV Findings Results of economic appraisals for each option, including cost of risk retained.	NCP/NVP Findings Results of economic appraisals for each option, including cost of risk retained.
Outline Financial Case High level assessment of affordability.	Benefits Appraisal Results of ranking, weighting and scoring the qualitative benefits for each short-listed option.	Benefits Appraisal Results of ranking, weighting and scoring the qualitative benefits for each short-listed option, including service providers' solutions.
Outline Project Management Case High level assessment of achievability.	Risk Assessment Full assessment of risks retained under each short-listed option, including costing of DBFO risks where applicable.	Risk Assessment Full assessment of risks retained under each short-listed option, including costing of DBFO risks where applicable.
Recommended Way Forward	Sensitivity Analysis Results of sensitivity analysis undertaken for short-listed options.	Sensitivity Analysis Results of sensitivity analysis undertaken for short-listed options.
	Preferred Option Recommended option following above analysis.	Preferred Option Recommended option following above analysis.
The Commercial Case		
	For Possible Deal: Potential Scope & Services Potential Risk Allocation Potential Charging Mechanisms Potential Key Contractual Arrangements Potential Personnel Implications Potential Implementation Timescales Potential Accountancy Treatment	For Recommended Deal: Agreed Scope & Services Agreed Risk Allocation Agreed Charging Mechanisms Agreed Key Contractual Arrangements Agreed Personnel Implications Agreed Implementation Timescales Agreed Accountancy Treatment

The Financial Case		
	For Possible Deal:	For Recommended Deal:
	Potential Capital Requirement	Capital Requirement
	Potential Net Effect on Prices	Net Effect on Prices
	Potential Impact on Balance Sheet	Impact on Balance Sheet
	Potential Impact on Income & Expenditure Account	Impact on Income & Expenditure Account
	Overall Affordability	Overall Affordability
The Management Case		
	Procurement Strategy Intended method of procurement, including use of: • EC/GATT regulations • Evaluation criteria • Selection of preferred bidder.	The results of the procurement process are assessed within the economic case at this stage.
	Outline Arrangements For: Project Management Change Management Benefits Realisation Risk Management Post Project Evaluation	Agreed Arrangements For: Project Management Change Management Benefits Realisation Risk Management Contract Management Post Project Evaluation Contingency plans
Appendices		
1. Strategic Plans / Organisational / Business Strategies (as appropriate).	1. Economic Appraisals including detailed NPV analysis, optimism bias etc.	1. Economic Appraisals including detailed NPV analysis, optimism bias etc.
2. Strategic Business Plans - SOP.	2. Financial Appraisals.	2. Financial Appraisals.
3. Risk Potential Assessment.	3. Non-financials – Risk & Benefits Registers.	3. Non-financials – Risk & Benefits Registers.
	4. Risk Potential Assessment.	4. Risk Potential Assessment.

	5. Letter of Commissioner / Stakeholder Support.	5. Letter of Commissioner / Stakeholder Support.
	6. Draft OJEU Notice (where applicable).	6. Proposed Contract and OJEU Notice (where applicable).
	7. Strategic Business Plans.	7. Strategic Business Plans.
		8. Agreed Project / Change Management Plans

11 THE SYSTEMATIC APPROACH TO THE PREPARATION OF THE BUSINESS CASE – OVERVIEW OF STEPS & ACTION FOR IA, OBC & FBC PHASES

Stages	Development Process	Deliverables
Phase 1a	Determining the Strategic Context	
Step 1 / Action 1	Ascertain Strategic Fit	Strategic Context
Output	Strategic Context for Initial Agreement (IA)	
Outcome	Strategic Fit	
Review Point	Gateway 0 – Strategic Fit	
Phase 1b – Scoping	Preparing the Initial Agreement (AI)	Strategic Case
Step 2	Making the Case for Change	
Action 2.1	Agree Strategic Context	
Action 2.2	Determine investment objectives, existing arrangements & business needs	
Action 2.3	Determine potential business scope and service requirements	
Action 2.4	Determine benefits, risks, constraints and dependencies	

Step 3	Exploring the Preferred Way Forward	Economic Case – Part 1
Action 3.1	Agree critical success factors (CSFs)	
Action 3.2	Determine long list options and SWOT analysis	
Action 3.3	Recommended preferred way forward	Outline commercial, financial and management cases
Output	Initial Agreement (IA)	
Outcome	Robust case for change	
Review Point	Gateway 1 – Business Justification	
Phase 2 – Planning	Preparing the Outline Business Case (OBC)	
Step 4	Determining Value for Money (VFM)	
Action 4.1	Revisit IA and determine short-list including reference project (outline CPAM)	
Action 4.2	Prepare the economic appraisals for short-listed options	
Action 4.3	Undertake benefits appraisal	
Action 4.4	Undertake risk assessment / appraisal	
Action 4.5	Select preferred option and undertake sensitivity analysis	

Step 5	Preparing for the Potential Deal	Commercial Case
Action 5.1	Determine procurement strategy	
Action 5.2	Determine service streams and required outputs	
Action 5.3	Outline potential risk apportionment	
Action 5.4	Outline potential payment mechanisms	
Action 5.5	Ascertain contractual issues and accountancy treatment	
Step 6	Ascertaining Affordability & Funding Requirement	Financial Case
Action 6.1	Prepare financial model and financial appraisals	
Step 7	Planning for Successful Delivery	Management Case
Action 7.1	Plan project management – strategy, framework and outline plans	
Action 7.2	Plan change management – strategy, framework and outline plans	
Action 7.3	Plan benefits realisation – strategy, framework and outline plans	
Action 7.4	Plan risk management – strategy, framework and outline plans	
Action 7.5	Plan post project evaluation – strategy, framework and outline plans	
Output	Outline Business Case	

Outcome	Planned Procurement for VFM Solution	
Review Point	Gateway 2 – Procurement Strategy	
Phase 3 – Procurement	Preparing the Full Business Case (FBC)	
Step 8	Procuring the VFM Solution	Economic Case
Action 8.1	Revisit the case for change	
Action 8.2	Revisit the OBC options, including the CPAM	
Action 8.3	Detail procurement process and evaluation of final tenders (in £s)	
Step 9	Contracting for the Deal	Commercial Case
Action 9.1	Set out the negotiated deal and contractual arrangements	
Action 9.2	Set out the financial implications of the deal	
Step 10	Ensuring Successful Delivery	Management Case
Action 10.1	Finalise project management arrangements and plans	
Action 10.2	Finalise change management	

	arrangements and plans	
Action 10.3	Finalise benefits realisation arrangements and plans	
Action 10.4	Finalise risk management arrangements and plans	
Action 10.5	Finalise contract management arrangements and plans	
Action 10.6	Finalise post project evaluation arrangements and plans	
Output	Full Business Case	
Outcome	Recommended Service provider and solution	
Review Point	Gateway 3 – (Investment Decision)	

GLOSSARY

Additionality	An impact arising from an intervention is additional if it would not have occurred in the absence of the intervention.
Affordability	An assessment of whether the proposals can be paid for in terms of cash flows and resource costs – see financial case.
Appraisal	The process of defining objectives, examining options and weighing up costs, benefits, risks and uncertainties of those options before a decision is made.
Assessments	Either an appraisal or an evaluation (or both).
Base Case	The best estimate of how much a proposal will cost in economic terms, including an allowance for risk and optimism.
Business Case	A management vehicle for scoping and planning the proposal and documenting the outcome. Often a requirement of the approval process.
Capital Expenditure	Expenditure on durable assets such as land, buildings and equipment.
Contingency	An allowance of cash or resources to cover unforeseen circumstances.

Cost Benefit Analysis (CBA)	Analysis which quantifies in monetary terms as many of the costs of a proposal as feasible (financials), including items for which the market does not provide a satisfactory measure of economic value (non-financials).
Cost Effectiveness Analysis (CEA)	Analysis that compares the cost of alternative ways of producing the same or similar outputs.
Conventionally Procured Assessment Model (CPAM)	<p>The risk adjusted discounted economic model for the preferred option identified in the option appraisal process.</p> <p>Where private finance is being utilised it is a hypothetical risk-adjusted costing by the public sector as a supplier to an output specification which is compared with the bids produced by prospective service providers.</p>
Discounting	A method used to convert future costs or benefits to present values using a discount rate.
Discounted Cash Flow (DCF)	A technique for appraising investments. It reflects the principle that the value to an investor of a sum of money depends on when it is received.
Discount Rate	The annual percentage rate at which the present value of a £, or other unit of account, is assumed to fall away through time.
Do Minimum Option	An option where the public sector takes the minimum amount of action necessary.

Do Nothing Option	The cost of the status quo, often used as a benchmark for VFM.
Economic Appraisal	See appraisal. This specifically takes into account the economic costs. Also used as a general term to cover cost benefit analysis (CBA).
Economy	A measure of the extent to which the costs associated with a project, programme or policy are reduced.
Effectiveness	A measure of the extent to which a project, programme or policy achieves its desired outcomes / outputs.
Efficiency	A measure of the extent to which a project, programme or policy's associated throughputs are increased.
Equivalent Annual Cost (EAC)	The constant annual costs which are equivalent (same present value) to a project's actual costs.
Evaluation	Retrospective analysis of a project, programme or policy to assess how successful (or otherwise) it has been, and to learn lessons for future improvement.
Expected Value	The weighted average of all possible values of a variable, where the weights are the probabilities (in %s).
Five Case Model	A systematic framework for the development and the presentation of the business case over time (SOC, OBC & FBC).

Internal Rate of Return	The discount rate that would give a project a present value of zero.
Market Value	The price at which a commodity can be bought or sold, determined by the interaction of buyers and sellers in a market.
Monte Carlo Analysis	A technique that allows assessment of the consequences of simultaneous uncertainty about key inputs, taking account of correlation between these inputs.
Net Present Cost (NPC)	The discounted value of a stream of future costs.
Net Present Value (NPV)	The discounted value of a stream of either future costs or benefits. The NPV is used to describe the difference between the present value of a stream of costs (NPC) and a stream of benefits.
Opportunity Cost	The value of the most valuable alternative uses or the cost of something in terms of an opportunity forgone.
Optimism Bias	The demonstrated systematic tendency for appraisers to be over-optimistic about key project parameters, including capital costs, works duration and benefits realisation.
Option Appraisal	The process of defining objectives, examining options and weighing up the costs, benefits, risks and uncertainties of those options before a decision is made.
Options Framework	A systematic framework for the development of options.

PFI	The Private Finance Initiative.
PPP	Public Private Partnerships
Required Rate of Return	A target average rate of return for a public sector trading body, usually expressed as a return on the current cost value of total capital employed.
Risk	The likelihood (measured by probability) that a particular event will occur.
Sensitivity Analysis	Analysis of the effects on an appraisal of varying the projected values of important variables.
Switching Values	The point at which the choice of the preferred option would switch to another option due to any uncertain costs and / or benefits.
Transfer Payment	A payment for which no goods or services are received in return.
Uncertainty	A scenario within which it is impossible to attach probabilities to the range of possible outcomes.
Weighting & Scoring	An appraisal technique for the assessment of qualitative costs, risks and benefits.
Willingness to Pay	The amount that someone is willing to receive or accept to give up a good or service.

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From: [Sansbury, Jackie](#)
To: [Kinnear N \(Norman\)](#)
Cc: [Goldsmith, Susan](#); [Graham, Iain](#); [Currie, Brian](#)
Subject: DCN
Date: 11 January 2011 12:07:47
Attachments: [RHSC DCN Update Dec 2010 v8.doc](#)

Norman hi, thanks for the chat earlier on today. I just thought it would be helpful to confirm what we discussed given Susan asnd I are taking a paper to F and PR tomorrow re the above.

The position of NHS Lothian regarding DCN is that in Nov 2009 NHS Lothian approved an OBC for DCN identifying a joint build with RHSC funded through capital as our preferred option. At that time Mike asked us by email not to submit the business chase to CIG, indicating there was no capital available.

The joint build remains our preferred option clinically but you have advised that in order for us to proceed we must now redo the financial modelling demonstrating the costs under NPD (joint build with RHSC) and PFI (at the end of the wrad arc) with some sort of alteration to the PFI contract.

This will not only delay the project due to the requirement to complete the modelling but on reflection this will also require some funding support from you for advisors as the posts can no longer be capitalised. I do know however Susan has already written to Mike re financial support for advisors.

You agreed to run this past Mike so I could report your position on this at the meeting tomorrow. I am very grateful for your continued support. I also attach the f and pr paper for your info.

Best wishes

Jackie <<RHSC DCN Update Dec 2010 v8.doc>>

Jackie Sansbury

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LOTHIAN NHS BOARD

Finance & Performance Review Committee
12 January 2011

Director of Finance & Chief Operating Officer

ROYAL HOSPITAL FOR SICK CHILDREN & DEPARTMENT OF CLINICAL NEUROSCIENCES REPROVISION PROJECT UPDATE

1. Purpose of the Report

- 1.1. The purpose of this report is to provide the Finance & Performance Review Committee with an overview of the progress made over recent weeks to review the Royal Hospital for Sick Children (RHSC) and Department of Clinical Neurosciences (DCN) reprovision projects, following the Scottish Government announcement on 17 November 2010 that these projects would be funded under the Non Profit Distributing (NPD) model.

2. Recommendation

- 2.1. The Committee is invited to:

- Approve the (previously agreed) preferred option for a combined facility for the Department of Clinical Neurosciences and Royal Hospital for Sick Children.
- Approve progressing with a detailed reference design for a combined project as a key component of the NPD procurement route utilising either the current Framework Contract with BAM or by procuring the design team through the Office of Government Commerce (OGC) procurement solution.
- Note that a recommendation based on legal advice for procuring the Reference Design will be available for Committee members at the meeting.
- Approve the commencement of a tender process to appoint advisors (technical, legal and financial) in addition to the advisory assistance provided by SFT.
- Note that the initial estimate of the cost of advisors is £10m and we have written to SGHD for confirmation of financial support for this.
- Note the agreed action with Consort to urgently conclude the land transactions with Consort
- Note we are awaiting a response from Scottish Government Health Directorates and Health Facilities Scotland regarding indemnifying us from any costs that arise from the termination of the Frameworks Scotland contract for RHSC.

- Note that the proposed structure of the project team and a more detailed assessment of additional advisor costs will be brought back to the Committee in February.

3. Summary of the Issues

- 3.1 The Scottish Government Draft Budget published on 17 November 2010 set out proposals to take forward a number of capital infrastructure developments across Scotland using a 'revenue funded' model. This is largely indicative of the significant reduction in the level of public capital available across Scotland
- 3.2 Both the RHSC and DCN projects were specifically highlighted as projects to be procured under the revised funding model, of a Non Profit Distributing (NPD) organisation.
 "The new pipeline of NPD investment will help support key projects across core public services, including:
- Health projects, the Royal Sick Children's Hospital and Department of Clinical Neurosciences in Edinburgh (c£250m)"
- 3.3 This has brought a number of significant challenges, as well as complex legal, technical and procurement issues, given the existing relationships with our key commercial partners: BAM, as Principal Supply Chain Partner under Frameworks Scotland; and Consort Healthcare, as the PFI provider on the Little France site with a legal right to the land under the structure of the existing Project Agreement. Further details on progress are set out in the sections below.

4. Background on NPD

- 4.1. An NPD (Non Profit Distributing) project is a distinct type of Public Private Partnership (PPP). Under an NPDM (Non Profit Distributing Model) or NPDO (Non Profit Distributing Organisation), a private company limited by shares is established (the Special Purpose Vehicle or SPV) to enter into a design, build, finance and maintenance contract with the public sector body. There is private sector participation and expertise to deliver public sector infrastructure, but unlike traditional Private Finance Initiative (PFI) Projects, the organisation's profits cannot be distributed in the usual way and must be reinvested by the organisation. The model aims to retain the benefits of revenue finance such as optimal risk allocation between the public and private sector partners and performance based payments, while removing the potential for excessive profits.
- 4.2. To date, there is only one NPD project underway in NHS Scotland – a mental health development in NHS Tayside. Dialogue is already underway with colleagues in NHS Tayside, in particular to highlight any 'lessons learned'.

4.3. The key features of the current NPD model are:

- Traditional benefits of PPP with regard to risk transfer
- There is a fixed or capped return to investors
- Greater stakeholder involvement in governance through the appointment of a Public Interest Director and Stakeholder Director¹ onto the SPV; although it is always the intention that the private sector carry the majority of votes
- There is no dividend bearing equity funding
- Debt funding is c. 90/10 senior/junior split
- Refinancing can only be instigated by the Public Interest Director, although there is often a moratorium period, within which time a junior debt refinancing cannot be 'forced'²
- Any profit made is returned to stakeholders rather than shareholders; this return is made in the form of a donation to charity, or back to the client.

4.4. The Scottish Futures Trust (SFT) is to take a central role in the capital infrastructure programme across Scotland, and will provide advice and guidance on all NPD projects, of which a pipeline of projects is now anticipated. One of the key matters to be clarified is the explicit roles and responsibilities of SFT and the distinct Board appointed technical, legal and / or financial advisors.

5. Progress to Date

5.1. Immediately following the Budget announcement contact was made with Scottish Futures Trust by the Director of Finance and a meeting took place with the Chief Executive of SFT on the 23 November 2010.

5.2. Since then a number of meetings have been held with representatives from the Scottish Government Health Finance Directorate and SFT, as well as ongoing dialogue with our current legal advisors MacRoberts and Health Facilities Scotland (HFS) as managers of Framework Scotland. One of the key reports is the preliminary legal opinion obtained from MacRoberts which, at the time of writing, is being reviewed by HFS advisers.

5.3. The Business Case for the DCN development, approved by the Board in the November 2009 recommended the preferred and best clinical option as a combined build with RHSC. This has been reaffirmed by the outcome of a

¹ The Stakeholder Director on the only existing NDP Project in NHS Scotland (Tayside Mental Health Developments) is the NHS Board Director of Finance

² Tayside Mental Health Development has 10 year moratorium

non financial benefits appraisal undertaken on 16th December 2010. The total weighted scores for the benefits each option would deliver are summarised below.

	OPTION 1	OPTION 2	OPTION 3
	New build extension and some existing RIE	Embedded into current RIE, no new build	Joint build with new RHSC
Total weighted scores:	286.5	190.1	372.4

This is consistent (in relative terms) with the previous non-financial benefits appraisal undertaken in September 2009, for options 1 (420.8) and 3 (324.2), option 2 was not included at that time.

5.4 The Key Benefits/Objectives of the combined development over other Options were set out as follows;

- (i) Minimal disruption to RIE clinical services during enabling works, construction and commissioning stages.
- (ii) Greater certainty for delivery within expected operational timescales for West of Scotland Neurosciences (Paediatric and Other).
- (iii) Less disruption to RIE Infrastructure during construction.
- (iv) Ability to provide a more energy efficient facility and working environment.

5.5 Our current Professional Services Consultants and Principal Supply Chain Partner managed under Framework Scotland conditions have completed initial feasibility work around the single development in "Car Park B" of a combined Royal Hospital for Sick Children and Department of Clinical Neurosciences. This study reported on 24 December and concluded that whilst in principle this proposed development is feasible, there are challenges when compared against the previous standalone RHSC on Car Park B at Little France. However, in addition to meeting the clinical objectives included in the non-financial option appraisal, summarised above, the new procurement of a combined build also avoids the procurement challenge and value for money risks inherent with works only delivered through Consort as part of the RIE, without competitive test.

5.6 Work has now started on the approved new car park on the BioQuarter Plots 14-16 (designated now as car park F) and Consort have been engaged to deliver the enabling works at Car Park B and F. Although separately appointed, both are being constructed by Balfour Beatty Construction. The weather had delayed the physical start on site for car park F. The programme and scope of enabling works in and around car park B will also be amended

to accommodate an anticipated revision to the footprint and services for a combined building.

- 5.7 The land transaction remains to be concluded but is agreed in principle with Consort. The legal teams are currently agreeing the terms of a “like for like” swap, and the definition of the site (for a combined build) is being agreed with Consort. It is planned to achieve an exchange of missives by the end of March with the conclusion of sale taking place following independent valuation of Car Park F once construction is complete. In parallel Consort are in discussion with their funders to secure their sign off. The clear advice from SFT is that the next formal stage of the project procurement cannot proceed until the leasehold interest is renounced by Consort in exchange for the new interest in Car Park F i.e. the land transaction is concluded.

6. Procurement Options

- 6.1 We have an objective to minimise both the delay to the programme (also the Cabinet Secretary’s aspiration) and the abortive and on-going costs; to ensure operational effectiveness going forward, and also to manage the overall site consistent with the aims of the BioQuarter development.
- 6.2. To achieve this, we have explored the procurement options with both SFT and SGHD, for a NPD model to deliver RHSC and DCN with our ideal being to have utilised the existing design team to complete the design process, build on the market testing of packages already undertaken and construct the new building (option 2, below).
- 6.3 A series of queries on the options, were posed to our legal and technical teams. The output limited the options as follows:

Option 1

HUB

This has been ruled out as a delivery mechanism following discussions with SFT. It has no attractions other than lead time for procurement.

Option 2

Utilising the PSCP and Framework Scotland with NPD (Finance and / or Lifecycle and Operational services) wrapped around / onto the contract:

This option essentially “novates” the BAM contract to a newly procured SPV which would then deliver the construction. However, the advice received indicates that the variance between the NEC3 (Frameworks Scotland form of

contract) and the NPD design and build form of contract is too significant. It would require a considerable period of time to restructure or create a new vehicle to transfer the risks, address termination terms and associated costs to an NPD form. This route is untested and also carries a risk of accounting complications regarding design and construction risk transfer, of a procurement challenge and demonstrating value for money.

Option 3

Continue to work through the Framework Contract to complete a “Reference Design” for the combined build for an open SPV procurement to pick up and then deliver construction, operation, etc:

This has the attraction of market testing the NPD and has emerged as the “balanced” answer, but within that there are a number of remaining issues.

- Indicative legal advice based on MacRoberts (and their independent review of the Framework Scotland contracts) is that the termination of the PSCP contract and securing the use of the design is not free from doubt. This relates to the ability to secure a clean termination without compensation or adoption of the design through licences out with the Framework. The written legal advice has been taken to Health Facilities Scotland, as the Framework Scotland ‘Host’, for verification. Alternative routes to potentially secure the design team outwith Framework Scotland is also being explored and will be clarified in early January. An update will be provided at the Finance & Performance Review Committee meeting on 12 January.
- Requirement during a competitive dialogue phase and / or pre-financial close to re-engage on design options from bidders will lead to further service pressures on a limited pool of key clinicians. Our view is that a reference design model would assist in mitigating this and it is our intention to take this route, as far as possible.
- In terms of providing a level playing field for the wider marketplace (of which there is expected to be good interest) there are conflicting views around the residual interest position of BAM and the ongoing site interests of Consort. For example, a concluded design could leave BAM with a considerable insight into client requirements over other players. We cannot separate the Architects from BAM as principle supply chain partner unless as part of a separate appointment. In parallel, the option of a separate appointment of the Design Team through the office of Government Commerce Buying Solutions is also being explored.
- The initial high level financial analysis from SFT indicates a revenue cost of circa £25m pa for a larger scale RHSC/ DCN combined development at a capital cost of approximately £250m. It will be important to understand how the value of the revenue stream to support this development will be agreed and a formal request has been submitted to SGHD. It is

understood that greater clarity on financial support will be available around the end of January from SGHD.

- 6.4 A review meeting including SFT, SGHD and MacRoberts to consider options 2 and 3 took place on the 23 December. Following consideration of the issues and advice received to date, it has now been concluded that the recognised route for NPD procure is to take a “reference design” to the market (i.e. option 3). The key outstanding issue is whether this should be developed by extending the BAM Framework contract or by utilising the OGC Framework Contract (which includes the existing design team). Both our lawyers and those of Health Facilities Scotland, who oversee Framework Scotland are due to meet on Monday 10 January and a summary of the position and recommendations will be available for the meeting on the 12 January. Although this decision requires to be made by NHS Lothian as the Statutory Authority it will be important that this is endorsed by SFT and SGHD. It is proposed that if this is to be via the BAM Framework Contract, the additional work (estimated £2m) is offered to BAM on the condition that any right to the design are conceded. The funding will require to be secured with SGHD.
- 6.5 It is worth noting, that for operational effectiveness, having one PPP provider on site, particularly for lifecycle maintenance, hard FM and an extension of service contracts over the whole enlarged site, would reduce the complexity of contract management. However, this cannot prevent meeting the procurement requirements of a level playing field.

7. Timetable implications

- 7.1 Early SFT advice indicates that there could be up to months programme delay with associated costs. We are doing all we can to ensure that any delay is minimised, and believe that the project can be completed by 2015. A key target is to conclude the agreed way forward with the Board in March.
- 7.2 NPD process

The key aspects of the NPD process include:

- **Advertise to the marketplace for Special Purpose Vehicle** – the advice from SFT is to ensure that the robust client output requirements and associated contract information is fully in place prior to advertising and engaging with the private sector. This will require expert input from both in-house staff and external advisers.
- **Soft market testing** – this work will require to be undertaken to meet both project programme and also similar activity underway in the UK to ensure adequate interest in the project and a level playing field for suppliers.

- **Competitive dialogue** – this involves each bidder having the opportunity to discuss the Board’s requirements and their proposals in an intensive and structured manner; requiring suitable resources and time

7.3 We will continue to work with both SFT and SGHD to agree the appropriate procurement approach. However, one of the key pieces of advice from SFT and other parties is to ensure the support of appropriately experienced team and technical advisers at an early stage. This is also essential for the development of the Reference Design. It is our aspiration to progress this immediately but with a likely financial cost over the whole development process of a project of circa £10m for advisors and design (a considerable amount of design work already having been completed and if utilised will reduce additional costs). Confirmation of financial support for this from SGHD is essential, and we have written to them on this issue.

8. Consort Position

8.1 As part of their engagement, Consort have suggested a potential route through the delivery on going of the development through a Joint Venture with Consort Healthcare – including the use of BAM to construct – and an NPD model. They believe that the land under lease gives them a controlling special interest negating the need for open procurement. Consort has agreed to continue to work towards concluding the missives for the land transaction but will also propose developing a proposition for a Joint Venture, by mid January. This will be considered jointly by us, SFT and SGHD. This option will also need to be considered against the potential difficulty of demonstrating value for money for such a large development. However, the priority remains securing the land transaction.

9. Next Steps

9.1 Immediate priorities

- Conclude land transaction with Consort.
- Agree the procurement of the Reference Design.
- Appoint advisors (legal, technical, financial). The project and design team currently engaged through HFS Frameworks for the standalone RHSC have effectively been “stood down” awaiting confirmation of a future role. Inevitably, expertise will be lost to other projects in the early part of 2011 should NHSL not be in a position to re appoint.
- The roles and responsibilities within the project Delivery Team and Project Boards will require to be reviewed. Work on this is now underway to identify the areas for support, taking account of the input of advisors, and the potential availability of funding from SGHD to cover these costs.

- All knowledge and information produced through the standalone RHSC design process is being captured for future use and consists of all design data at point of suspension, technical validation information, briefing data, cost data and construction information.

10. Governance Arrangements

- 10.1 SGHD and SFT have confirmed their willingness to work with the Board's team on developing the business case requirements to minimise the programme but retain the appropriate governance. This will necessitate significantly more ongoing engagement than might normally be the case.

Susan Goldsmith
Director of Finance
5 January 2010

Jackie Sansbury
Chief Operating Officer

LOTHIAN NHS BOARD

Finance & Performance Review Committee
12 January 2011

Director of Finance & Chief Operating Officer

ROYAL HOSPITAL FOR SICK CHILDREN & DEPARTMENT OF CLINICAL NEUROSCIENCES REPROVISION PROJECT UPDATE ADDENDUM: LEGAL ISSUES

1. Purpose of the Report

- 1.1. The purpose of this report is to provide the Finance & Performance Review Committee with further update on the contractual position with BAM, as the existing Principal Supply Chain Partner for the Royal Hospital for Sick Children (RHSC) reprovision projects, under Frameworks Scotland.

2. Recommendation

- 2.1. The Committee is invited to:

- Note the issues considered by both Macroberts, as NHS Lothian legal advisors for the RHSC project, and McLure Naismith as legal advisors to Health Facilities Scotland on the Frameworks Scotland / NEC 3 contract.
- Approve the continuation of Stage 3 of the BAM contract, under Frameworks Scotland, to develop the reference design for the joint facility for the Royal Hospital for Sick Children and Department of Clinical Neurosciences.

3. Summary of the Issues

- 3.1. A meeting was held on 10 January 2011, with representatives from NHS Lothian, Macroberts LLP, Health Facilities Scotland, and McLure Naismith LLP. The purpose of this discussion was to consider the different legal interpretation of the existing contract between NHS Lothian and BAM, in relation to a series of questions posed by the Scottish Futures Trust (SFT) on our behalf:

In relation to the Framework Agreement with BAM:

- 1 *Is NHSL entitled to conclude the existing PSCP framework agreement at will, either before or at the end of the current stage?*
- 2 *If so,*
 - 2.1 *What is the notice period?*
 - 2.2 *Is the sole liability to pay for the work done to the date of termination*
 - 2.3 *If not what are the heads of cost?*
 - 2.4 *How are the costs referred to in 2.2 or 2.3 calculated?*
- 3 *On and after conclusion of the contracts what is the extent of the intellectual property rights under and pursuant to the subject matter of the contracts, including as to the right to grant rights to third parties without cost to NHSL?*

Additional questions:

- 1 *Is the scope of the existing Health Framework procurement sufficient legally to allow the subsequent extension to include the DCN as well as the RHSC?*
 - 2 *Would the existing Health Framework contract permit (in a manner which is legally compliant, including as to the procurement rules) the novation by NHSL of the contractual arrangements to an SPV (or an interposed contractor), to be employed by NHSL under NPD DBFM documentation? Would this require the consent of the other parties to the existing arrangements?*
 - 3 *Can a compliant procurement be run for the NPD DBFM which contains an obligation on the winning bidder to accept novation of the existing PSCP arrangements, bearing in mind the obligation to treat bidders equally and without discrimination? Would this legal position change if one of the bidders was party directly to the PSCP arrangements?*
- 3.2. In summary, the respective legal teams were in agreement of a number of key areas of concern:
- The existing HFS Framework cannot be utilised to procure a Special Purpose Vehicle (SPV) to deliver an NPD Design Build Finance Maintain (DBFM) contract. The magnitude of difference between the two forms of contract is too great.
 - The existing HFS Framework could be utilised (through an extension of the existing 'Stage 3' agreement with BAM) to prepare a reference design appropriate to the requirements for the procurement stage for an SPV. This would require agreement from BAM, to the following significant modifications, before any instruction to proceed is given:

- Eventual Termination Conditions allowing the design to be used for NPD purposes, Intellectual Property Rights and any Termination Compensation agreed in our favour. The stage 3 contract would terminate after completion of the reference design.
- Given the reduced role BAM would perform (they would not be constructors and hence have less need to input as to how they would best build it and procure and cost the packages) a review of their management fee is necessary. The lawyers are not unduly troubled with ‘badging’ the design BAM, however they were of a consensus view that it may be prudent to label it in some other way.
- A suitable Compensation Event would require to be prepared to instruct BAM once and if agreement to Termination Conditions is concluded.

4. Next Steps

- 4.1. There was clear agreement that a meeting should be arranged as soon as possible, between NHS Lothian and BAM to agree the timelines and cost for completion of the joint design and the subsequent termination of the Framework Contract after this stage is concluded. MacRoberts are to prepare a “crib sheet” of relevant point for us to use in these discussions with BAM. Colleagues from both HFS and McClure Naismith offered to review also. It should be noted that HFS are to seek Central Legal Office (CLO) opinion on all of this.
- 4.2. If no agreement can be reached with BAM on this basis, then procurement of a design team to prepare a reference design through another new route would be necessary. Given the scale of this, a mini tender arrangement would be most likely utilising the Office of Government Commerce (OGC) Buying Solutions process. This has implications for the programme, with 2-3 months slippage; and although not yet quantified, there would inevitably be additional costs.
- 4.3. The OGC process would also potentially be the most suitable route to procure an appropriate team of NPD Financial and Technical Advisors which we will need in any case. It would be beneficial if this team were made up of, at least, in part the reference design team.

- 4.4. In terms of Legal Advisors, both the SFT and CLO have offered assistance with this procurement. There is no existing Framework in place that is suitable for these services. However, legal advice does not need to be procured under OJEU, so there may be a relatively expedient solution to this. Any appointment will, of course, need to comply with the Board's Standing Financial Instructions.

Susan Goldsmith
Director of Finance
11 January 2011

Jackie Sansbury
Chief Operating Officer

From: [Donna Stevenson](#)
To: [Andrew Bruce](#)
Subject: RHSC/ DCN
Date: 18 January 2011 16:13:42
Attachments: [image001.jpg](#)

Andrew

As you were not able to attend the whole meeting yesterday, I thought that it might be helpful to summarise the main points and our follow up actions in italics.

1. NHSL is meeting BAM on Wednesday to discuss the production of the reference design on the basis proposed in the update note which was provided to NHSL's committee;
2. Norman outlined the requirements of the OBC (and he has sent on the summary sheet which he talked to as well as his correspondence with Jackie Sansbury): this will draw on the work done on the DCN in 2009 to complete the options analysis to confirm the preferred option of a stand alone RHSC/DCN on the Little France site and establish affordability to NHSL based on a capital project (for comparison purposes as revenue support will only consider contributions to additional costs, consistent with the other projects); and will then consider procurement route and affordability of the scheme, using NPD estimated figures.
3. Norman said that he expected revenue support principles to be agreed by the end of January. You will see that Lynne-Marie circulated yesterday a note on the proposal which has been put to capital and risk across the NPD programme and Paul is considering this: *we can discuss how best to take this forward, bearing in mind SFT's role re vfm.*
4. NHSL is expecting a paper on Consort's JV proposal from Pinsent Mason/King Sturge) and a presentation is being arranged for the end of January when Jackie is back. The proposal seems to be that Consort would take an equity/sub debt stake, as would NHS, (though Iain said that NHSL had not considered that issue). As we said in addition to the significant issues such as vfm, procurement issues and the delay of the land swap, as well as raising expectation on Consort's part, it is difficult to see how this proposal would even save time as it includes only equity input. Iain expects the discussion on the JV to have been completed by mid February and is still aiming for missives by the end of March.
5. Iain is to come back on the governance structure including the Project Board and Project team.
6. Iain is to clarify his issues on SFT's role which he still does not think is clear. He wants me to be on the Project team and referred to as akin to E&Y's advisory role. I said this is not correct and while SFT is devoting considerable resource to this project and I am happy to attend appropriate meetings, SFT's role is distinct from the NHSL team leading the project. Norman confirmed to me today that he is happy to attend weekly meetings on a Friday. *I will speak to Peter about this issue.*
7. Iain still regards Brian as the Project Director and suggested that NHSL are not looking to augment the internal resource with someone with PPP experience. *I will speak to Peter about this issue.*
8. On the value of the project, Brian sent through an addition to the feasibility paper with more exclusions which I have copied to you. I will copy you in on my email to Lynne Marie based on that information. I also asked that NHSL send on a table which categories the estimated costs so that none is missed. Incidentally in the paper of December 2009 which Norman sent on today, at paragraph 8.1, NHSL say that while in one options costs may feed through into a unitary charge variation in the Consort contract, "the overall capital; cost may still score against NHS Lothian's Capital Resource Limit".
9. On programme the latest estimate of NHSL is that the facility would be finished early

2016 with the end of 2015 being the earliest- that is approximately 2 years later than the estimate for a capially funded RHSC. No timetable had been given to NHSL's Board. I said that SFT have been asked to publish a programme for the NPD pipeline by the end of this month.

10. On non patient catering, Brian said that the cost is likely to be £7/10m and Iain said that the project could still go ahead even if Consort so not come forward with a proposal.
11. Iain asked for some input re the appointment of legal advisers and I will speak to him on this issue.

Norman said that a note has gone to John Matheson following yesterday's meeting.

We can speak tomorrow.

Regards

Donna

Donna Stevenson
Associate Director
Scottish Futures Trust

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From: Currie, Brian [REDACTED]
Sent: 17 January 2011 14:56
To: Kinnear, Norman.; Donna Stevenson
Cc: Graham, Iain
Subject: RHSC + DCN Little France - Revised Page - Cost Plan Exclusions

Donna / Norman

Revised page attached as discussed this morning.

Clinical Enabling Works for DCN should be added to the list of exclusions.

Regards

Brian

Brian Currie
Project Director
LUHD - RHSC + DCN Reprovision

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From: [Kinneer N \(Norman\)](#)
To: [Andrew Bruce](#); [Donna Stevenson](#)
Cc: [Baxter M \(Mike\) \(Health\)](#)
Subject: FW: DCN etc
Date: 18 January 2011 13:11:00
Attachments: [RHSCDCN Outline Business Case.doc](#)
[DCN OBC Paper Nov 2009.pdf](#)
Sensitivity: Confidential

Further to yesterday. I thought it might be best if I let you see the exchange we have had with Jackie even although it is not concluded. In addition Mike has finally had a verbal report on the F&PR from Susan Goldsmith and John Matheson has been brought up to speed by us. We hope that a bit more will develop this week. Let me know if you have any questions.

Norman

From: Kinneer N (Norman)
Sent: 14 January 2011 08:51
To: 'Sansbury, Jackie'
Cc: 'Goldsmith, Susan'; 'Graham, Iain'; 'Currie, Brian'; Baxter M (Mike) (Health)
Subject: RE: DCN etc
Sensitivity: Confidential

Jackie, To hopefully make this as clear as possible I have added comments alongside your email - hope it helps!

- 1) When you say you need analysis of siting RHSC at Little France (straight from OBC) and siting of DCN at Little France (straight from OBC revalidated) what exactly are you meaning? Do you mean us to re-present the clinical options appraisals or re do them? I mean re-present and not re-do them. The November 2009 document did this but needs to be in a Business Case than can be released in the same way that all projects are when taken forward. We uncovered the 2009 document after you and I spoke on the phone and it was really helpful.
- 2) You then go on to say accepting analysis demonstrates siting at Little France – then the following options are about an integrated or stand alone. Do you mean these two options then need worked through separately as we discussed? As I tried to say in no 1 answer the 2009 document indicated that NHSL must already have done the appropriate work it is now about bringing them together to enable proper approval from here for the way forward. Once done you will only be doing a single FBC covering both RHSC and DCN. The 2009 document only covered DCN costs but you must have had them both.
 It sounds to me as if we could be , as you say, progressing with the preparation of a document with all this work in it and updating the old costs.
 The next task would presumably be to cost the options for NPD for stand alone children's and joint build , and PFI costing for stand alone DCN. Not as part of this exercise hence reference to keeping procurement aside just now. NPD costing is relevant only to the way forward not option selection.
 The challenge with the last one is that may present a huge amount of work particularly is associated with renegotiation of the contract and if this is not a clinically preferred option it is likely to be wasted work. It will also add time to the process and the Cabinet Secretary was quite clear in her brief of progressing quickly. The issue you raise if I am right is whether there is a re-negotiate option for the whole RIE contract that might result in a better financial outcome. It would be helpful to see what Mike Prior did for you on this but it was our assumption that huge benefits (financial) may not be significant enough to justify the loss of clinical benefits to have a combined RHSC/DCN facility as set out in the 2009 paper. However the 2009 paper did not cover costs other than DCN but we assume they must have existed to inform the DCN "scoring". In addition you make a relevant point re potential timescale implications unless significant benefits were at stake.
- 3)) Do you have a date for release of the VFM guidance of NPD assessment? We anticipate this work being concluded and available by the end of January but don't have a firm date.

By the way how did the meeting go on Tuesday?

Norman

From: Sansbury, Jackie [REDACTED]
Sent: 13 January 2011 14:14
To: Kinnear N (Norman)
Cc: Goldsmith, Susan; Graham, Iain; Currie, Brian; Baxter M (Mike) (Health)
Subject: RE: DCN etc
Sensitivity: Confidential

Norman, Hi , thanks for this. May I ask for some clarification?

1) When you say you need analysis of siting RHSC at Little France (straight from OBC) and siting of DCN at Little France (straight from OBC revalidated) what exactly are you meaning? Do you mean us to re-present the clinical options appraisals or re do them?

2) You then go on to say accepting analysis demonstrates siting at Little France – then the following options are about an integrated or stand alone. Do you mean these two options then need worked through separately as we discussed?

It sounds to me as if we could be , as you say, progressing with the preparation of a document with all this work in it and updating the old costs.

The next task would presumably be to cost the options for NPD for stand alone children's and joint build , and PFI costing for stand alone DCN.

The challenge with the last one is that may present a huge amount of work particularly is associated with renegotiation of the contract and if this is not a clinically preferred option it is likely to be wasted work. It will also add time to the process and the Cabinet Secretary was quite clear in her brief of progressing quickly.

3)) Do you have a date for release of the VFM guidance of NPD assessment?

Thanks very much for your offer to remain involved, we are grateful for your guidance.
Jackie

Jackie Sansbury

Chief Operating Officer
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From: Norman.Kinnear [REDACTED]
Sent: 13 January 2011 12:55
To: Sansbury, Jackie
Cc: Goldsmith, Susan; Graham, Iain; Currie, Brian; Mike.Baxter [REDACTED]
Subject: DCN etc
Importance: High
Sensitivity: Confidential

Jackie, My apologies for not having got back to you sooner. I have discussed this in some detail with Mike Baxter as it is important that there is clarity over what needs to be done and why, but also that as far as possible it can be done in parallel with the many other pieces of work being done and making maximum use of work undertaken on the OBC for

DCN and FBC for RHSC. We have also reviewed what we have previously seen on the integrated RHSC/DCN work in November 2009 which will hopefully help our understanding of what is done next.

In addition it seems clear that working with you and your colleagues, SFT and to an extent HFS will certainly require a get together next week but I would suggest we should pencil in weekly meetings to ensure momentum is maintained. I would be grateful for your thoughts on this and who you would bring along with a view to keeping it to key people only.

We believe the following analysis is therefore essential:

1. Siting of RHSC at Little France (straight from OBC/FBC)
2. Siting of DCN at Little France (straight from November 2009 OBC revalidated)

Accepting analysis demonstrates siting both at Little France then following options assessed are about an integrated build or stand alone (forget how these are being paid for/procured).

3. Financial and non financial analysis of separate/ integrated (flows from work in DCN OBC but will need updated)
4. Preferred option is integrated build
5. How do we deliver and pay for the preferred option

Clearly we all want to take existing analysis where possible and update costs/ strategy where necessary. For example I attach a document which was sent in here for a meeting in November 2009 on DCN. Presumably although it covered DCN only the options refer to its integration with RHSC. Therefore presumably additional information covering both elements existed at that time and will need updated to incorporate current thinking on both RHSC and DCN. Remember this piece of work is about the best financial and non-financial service option not how it should be procured.

It is anticipated that based on the analysis conducted at that time and the updated non financial analysis undertaken before Christmas 2010 the document will show that for DCN the relative cost and loss of benefit, rules out separate DCN and RHSC and therefore the service option is identified as an integrated solution. Once the service option is validated the question is then how to buy it. Given that a £220m+ variation to the existing contract would not be possible legally this would not be examined. SG and SFT are currently re-examining VFM guidance generally to handle how NPD is assessed in business cases and that work will complete shortly. In the interim I would suggest that the focus is pulling together the analysis already undertaken, identifying what detailed work needs to be undertaken and establishing a plan to achieve this. I know you have raised the issue of ongoing engagement with John Matheson in your letter of 21st December and we are happy to assist you in delivering your project and providing advice on the business case requirements.

Given the size of the project and its profile the analysis outlined above will be required to support scrutiny by the SG Infrastructure Investment Board and support agreement of any revenue support in respect of unitary payments for a completed project.

I hope that this process is clearer and given the separation of the preferred service option from how it is ultimately procured will be a more straightforward piece of work. It is also

worth remembering that when a fresh procurement commences the potential bidders will want to review documentation that demonstrates the Board are moving ahead with a robust project.

I am not getting directly involved in the other issue you raised concerning financial support for advisors but I do know it is being considered between John Matheson and Susan Goldsmith.

Hope this is clear but clearly happy to discuss further or address any questions before we move on.

Norman

From: Sansbury, Jackie [REDACTED]
Sent: 11 January 2011 12:07
To: Kinnear N (Norman)
Cc: Goldsmith, Susan; Graham, Iain; Currie, Brian
Subject: DCN

Norman hi, thanks for the chat earlier on today. I just thought it would be helpful to confirm what we discussed given Susan and I are taking a paper to F and PR tomorrow re the above.

The position of NHS Lothian regarding DCN is that in Nov 2009 NHS Lothian approved an OBC for DCN identifying a joint build with RHSC funded through capital as our preferred option. At that time Mike asked us by email not to submit the business case to CIG, indicating there was no capital available.

The joint build remains our preferred option clinically but you have advised that in order for us to proceed we must now redo the financial modelling demonstrating the costs under NPD (joint build with RHSC) and PFI (at the end of the wrap arc) with some sort of alteration to the PFI contract.

This will not only delay the project due to the requirement to complete the modelling but on reflection this will also require some funding support from you for advisors as the posts can no longer be capitalised. I do know however Susan has already written to Mike re financial support for advisors.

You agreed to run this past Mike so I could report your position on this at the meeting tomorrow. I am very grateful for your continued support. I also attach the f and pr paper for your info.

Best wishes

Jackie <<RHSC DCN Update Dec 2010 v8.doc>>

Jackie Sansbury

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NHS Lothian

Meeting with the Director of Finance, Scottish Government Health Directorates
19 November 2009

Director of Strategic Planning and Modernisation, NHS Lothian

OUTLINE BUSINESS CASE CLINICAL NEUROSCIENCES: VISION 2012

1 Purpose of the Report

The purpose of this report is to update the Director of Finance on progress of the *Clinical Neurosciences: Vision 2012* project. The Outline Business Case (OBC) for the project will be submitted to Scottish Government Health Directorates (SGHD) for consideration at the 8 December 2009 Capital Investment Group (CIG).

2 Recommendations

SGHD is invited to:

- a) Note the bed model which suggests an increase of ten beds is required, taking the total to 79 beds for inclusion in the OBC, with 73 being commissioned in 2013 at the opening of the new Department of Clinical Neurosciences;
- b) Note the benchmarking of neurology and neurosurgery and the proposals for service improvement to achieve 75th percentile performance;
- c) Note the outcome of the options appraisal exercises and the preferred option – a joint build with Children's services;
- d) Note NHS Lothian's decision to progress with design of a joint build in advance of OBC approval, and the costs of delaying a decision on the OBC;
- e) Note the current position with partner boards' consideration;
- f) Acknowledge the lack of clarity surrounding the allocation for capital costs in NHS Scotland at present and the requirement for SGHD funding to deliver the project within the required timescales.

3 Bed model and benchmarking

The OBC includes a bed model based on the projected demand for DCN services, which has been shared and discussed with clinical staff, the LUHD Senior Management Team and partner NHS Boards.

The table below highlights the proposed bed numbers.

Area	Total	Nominal Bed Occupancy Level	Notes	Current bed number
NARAU	12	82%		0
Level 1 critical care	15	83%		embedded
Neurology (Level 0)	14	85%		29
Neurosurgery (Level 0)	26	85%		30
Level 2 critical care	6	75%	Cohorted with Level 3 facilities	4
Level 3 critical care	6	75%	Cohorted with Level 2 facilities	6
Total	79	83%		69

Figure 1: Proposed bed model for DCN

The increase from the current 69 beds to 79 takes into account:

- population changes to 2012 (+ 4 beds);
- an increase in day of surgery admissions (- 1 bed);
- the initial 8 hours for assessment and treatment of patients with an acute stroke where thrombolysis, interventional radiology or neurosurgery are indicated (+ 2 beds);
- adult spinal deformity surgery (+ 1 bed NSD funded); and
- the proposal to bring together spinal surgery services from orthopaedics and neurosurgery (+ 4 beds from RIE).

Consideration is still being given to the proposals to bring stroke and spinal surgery activity into this model.

In parallel to the work done by NHS Lothian, healthcare planners 'Tribal' have undertaken a bed modelling exercise taking into account UK best practice and benchmarking with other neuroscience services. Civil Eyes Research (CER) have also provided benchmarking analysis for performance indicators including volumes and types of activity, length of stay, day case rates, multiple admissions and clinical coding. Their findings concluded that:

- a) Overall DCN performs well against comparator sites across the range of indicators assessed by CER.
- b) On the key case-mix adjusted comparison of length of stay, DCN was calculated to be a little better on average than the peer group in both neurology and neurosurgery.
- c) Tribal and CER looked separately at length of stay performance at the 75th percentile and considered that reductions could be made, mostly for emergency activity.
- d) The planned increase in day of surgery admission is already built in to the proposed bed model and such a change would bring elective length of stay up to 75th percentile performance.

- e) Achieving 75th percentile performance could reduce the overall bed requirement from 79 to 73 beds. Note that if such improvements are not achieved, it is calculated that the new DCN would be short of beds on 1 day in every 6.

Work will be progressed for emergency patients including:

- Faster transfer to rehabilitation facilities for patients requiring ongoing care.
- Discussions with other Boards regarding the transfer of patients back to their 'home' hospital once DCN services are no longer required.
- A 'point prevalence' study of patients currently in hospital and the treatment they are receiving.

It is proposed that due to the specialist nature of the services and the uncertainty around the Managed Service Network that the OBC proceed on the basis of building 79 beds but commissioning only 73 in 2013.

These numbers will continue to be reworked until the Full Business Case is submitted next year.

4 Workforce Planning and Partnership

An outline review of future staffing requirements has been undertaken, primarily to help determine likely revenue costs as a result of this reprovision project. The scope of the review included all groups of staff, including: nursing, medical, scientists, allied health professions, management and administrative grades.

The costs to date are based on an increase of ten beds with associated activity in DCN; they would decrease if any of the activity transfers outlined in the bed model above were not agreed.

Partnership have been fully engaged in developing the service model and options in the OBC, and will continue to do so through to FBC and delivery of the project to produce and implement robust workforce and service models.

5 Option appraisal

A non-financial benefits appraisal in December 2008 clearly indicated that Little France was the preferred location for the DCN on the grounds of the quality of service, access for patients and staff, and links with research and education that could be delivered there. Three sub-options on the Little France site have been appraised in full.

Existing contractual arrangements on site include the PFI for the RIE and the Principal Supply Chain Partner appointed for the RHSC Reprovision. These influence the possible financial and procurement routes for each option:

Option	Description	Possible Funding and Procurement Routes
3a	Joint build with the new RHSC on car park B	Treasury-funded only and through the Framework Scotland arrangements already in place for RHSC. An option to construct DCN was included in the PSCP selection process.
3b	Stand-alone build alongside the new RHSC on car park B	1. Treasury-funded and Framework Scotland, or 2. NPD funded and it could be through an additional works order on the existing PFI or through OJEU for new procurement.
3c	Extension of the existing RIE and renovation of some existing space	The only practical solution is an additional works order on the existing PFI, although there may be a risk of procurement challenge.

Figure 2: Options for the location and procurement of DCN at Little France

6 Non-Financial Benefits Appraisal

In appraising the non-financial benefits of each option, building DCN as part of the same project as the new Royal Hospital for Sick Children re-provision came out highest.

The total weighted scores for the benefits each option would deliver are summarised below:-

	Option 3a	Option 3b	Option 3c
	Joint build with new RHSC	Stand-alone new build alongside new RHSC	Extension to the existing RIE
Total weighted scores:	420.8	269.6	324.2

Figure 3: Benefit criteria scores for sub-options 3a – 3c scored in September 2009

This joint build scored highest against all of the relevant benefit criteria, because it delivers:

- the best clinical synergies within DCN for emergency patient pathways between A&E, the Neurosciences Acute Receiving and Assessment Unit, theatres, radiology and critical care;
- the best clinical synergies between adult and paediatric neurosurgery including the opportunity to develop shared theatres with inter-operative MRI;
- economies of scale in combining radiology for RHSC and DCN, with resulting capital benefits and opportunities for workforce development across the specialties;
- economies of scale in combining neurophysiology for RHSC and DCN, with resulting capital benefits and opportunities for workforce development across the specialties;

- least disruption to the 'live' clinical services on the RIE site in the construction and commissioning phases;
- a new DCN for 2013.

7 Financial Option Appraisal

8.1 Capital Costs

The capital costs for the 3 options at Little France are outlined below based on scheduled accommodation and cost plans prepared by Thomson Gray Partnership.

This is a high level assessment of costs for the options, including a reconciliation made with costs prepared by Consort Healthcare for option 3c. As this option is part of the current RIE space, a cost allowance prepared by Thomson Gray is included. This is circa £30m for displacement accommodation which will need to be provided elsewhere.

	Option 3a	Option 3b	Option 3c
Optimism bias included at:	19.20%	19.80%	29.20%
	£'000	£'000	£'000
Capital Costs:	73,765	88,672	118,913

Figure 4: Capital costs for the three project options at Little France

Note: as option 3c is closely linked to the RIE, the overall capital costs may be managed / negotiated as part of the Consort unitary charge payment mechanism. Despite this, the overall capital cost may still score against NHS Lothian's Capital Resource Limit.

8.2 Revenue Costs

The revenue costs and resulting gap for the 3 Little France options are outlined in Figure 5.

In summary, the revenue gap for the preferred option relates largely to:

- an increase of 10 beds in DCN;
- the impact of en-suite single rooms and required circulation space;
- additional theatre capacity;
- additional imaging capacity; and
- capital charges.

This will require an increase to the Financial Plan to cover the net recurring gap of £5.6m and non-recurring funds of up to £1.621m to cover double running and commissioning costs.

Revenue Costs	Option 3a	Option 3b	Option 3c
	£'000	£'000	£'000
Forecast Costs			
Clinical Costs	22,335	22,818	22,818
Facilities Support Costs	2,082	2,189	920
Unitary Charge	-	-	14,179
Capital Charges*	4,684	5,496	1,638
Total Costs	29,101	30,503	39,555
Less: budgets / impact of capital costs			
Current Baseline Budgets	(21,078)	(21,078)	(21,078)
Capital Charges relating to LMERG Equipment*	(622)	(622)	(622)
Capital Charges relating to University Element**	(185)	(185)	(199)
Less: expected national / regional funding			
NSD Funding for Spinal Deformity Bed	(70)	(70)	(70)
Funding from other Boards***	(1,532)	(1,816)	(4,608)
NHS Lothian Net Revenue Gap	5,614	6,732	12,978

**Cost of capital is included within the overall capital charge. No assumption has been made about its discontinuation at this stage until formally advised.*

*** this assumes that capital funding will come from LMERG and the university to support the capital expenditure.*

**** Actual revenue charges may change with the adoption of the East Coast Costing Model however, for the purposes of this business case an indicative split of the capital charges and facilities management costs has been calculated across the regional Boards using DCN. This is based on agreed methodology using Occupied Bed Days shared with Regional Boards.*

Note: capital charges related to the UoE element is largely higher for 3c than other options because of the overall remaining asset life is shorter than the new build options.

Figure 5: Revenue costs for the three project options at Little France

Overall, NHS Lothian will need to manage the capital and revenue positions as part of their financial plan from 2012/13 onwards on the basis of current planning assumptions.

NHS Lothian has made a provision for £3m in the current 5 year plan.

8 The Preferred Option

The preferred option for *Clinical Neurosciences: Vision 2012* is to build a new DCN as part of the same project as the new Royal Hospital for Sick Children re-provision, alongside the Royal Infirmary of Edinburgh at Little France.

This option is ranked highest in the benefits appraisal, the risk assessment, and economic and financial appraisals.

BAM Construction Ltd was appointed as the Principal Supply Chain Partner (PSCP) for the RHSC Re provision project early in 2009, and it is proposed that this contract, and others under Frameworks Scotland for the same project, be expanded to include the scope of *Clinical Neurosciences: Vision 2012*, to deliver option 3a.

9 Capital Costs

The increase from £53m in the Initial Agreement to £74m in the OBC is broken down in Figure 4.

Capital Costs	IA £'000	OBC £'000	Increase £'000
Building costs	46,616	61,547	14,931
Equipment costs	6,317	11,045	4,728
Project Team Costs	0	1,173	1,173
Total	52,934	73,765	20,832

Figure 4: Breakdown of increased costs from IA to OBC

Details of the increased costs are included in Appendix 1, they include:

- A net increase of the gross floor area to include communications space based on RHSC Re provision experience;
- A net increase of the gross floor area to include plant space in the new build, revising the initial assumption that that this could be a part of RIE;
- 11% increase of cost per square metre from 1st quarter 2008 to 2nd quarter 2009 in the OBC.
- Costs identified in RIE site masterplanning not identified at IA stage;
- Cost of BREEAM rating not identified at IA stage;
- Increase in design fees.

10 Funding

Allocation of the capital costs would normally be shared across partner boards in accordance with the proposed level of activity anticipated from NHS Lothian and the partner boards however there is great uncertainty in NHS Scotland at present related to the amount of capital funding available and the method of allocation in future years.

The current capital estimate and profile of capital spend in NHS Lothian means that the project can only be afforded if additional funding is provided by SGHD or the capital programme is reprioritised or supplemented by further receipts.

The projected revenue costs of DCN from 2012/3 have been allocated across partner boards in the same way to give NHS Boards an indication of the likely costs. This has been done separately to the potential outcome of discussions about existing SLAs and the proposed "East Coast Costing Model" being agreed with Directors of Finance.

The Health Boards involved include NHS Borders, Dumfries and Galloway, Fife and Forth Valley. NHS Lothian has shared the OBC with these Boards, and requested that they confirm their approval in principle of the service model and preferred option in advance of the 8 December Capital Investment Group meeting at SGHD. These organisations have all indicated that they would not be in a position to allocate capital funding as a part of their current financial plans, or support an increase in revenue costs unless the project was phased to come on line later than 2013.

11 Impact on RHSC Reprovision

In order to deliver the RHSC project by Spring of 2013, NHS Lothian approved design work with BAM Construction on two possible schemes:

- The preferred option of an integrated DCN and Children and Young People's Hospital; and
- A stand alone RHSC, which recognises a possible adjacent, standalone DCN at some future date.

Schedules of Accommodation have been completed and architectural design has commenced. A comparison with the integrated design is beginning to take shape and the following issues highlight the inefficiencies and cost premium associated with a standalone design:

- Loss of shared facilities (capital and revenue costs)
- Increase in both RHSC + DCN Schedules of Areas
- Additional service tunnels and lifts
- Additional envelope areas
- No adjacent construction compound available
- Restricted access for construction materials delivery and double handling required
- Construction inflation applicable to DCN if built at a future date (a 5.6% increase of £2.8m on the base building cost, excluding VAT and fees, if building in 3rd quarter of 2011 rather than 1st quarter 2010; £650k for every quarter from 3rd quarter 2011 onwards)

The additional design work and construction inflation associated with undertaking the parallel design exercise to calendar year end has been estimated to cost up to £900k. The overall programme impact has been estimated at 4 weeks, giving a completion date of late April 2013. The continuation of this parallel design exercise will be reviewed in late December 2009 pending the anticipated outcome of the DCN OBC.

12 Impact on Health Inequalities

A Rapid Impact Assessment of the service model and preferred option has been carried out and identified no adverse impact on health inequalities.

13 Timescale

It is intended to submit the OBC to SGHD in November for the 8 December Capital Investment Group meeting.

Assuming the preferred option of a joint build with RHSC is approved, then the milestones for RHSC Re provision will be adopted for this project, starting with a joint Full Business Case in August 2010.

Sorrel Cosens

Project Manager, *Clinical Neurosciences: Vision 2012*

19/11/09

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**Appendix 1
TABLE1**

Clinical Neurosciences: Vision 2012 Increase in Capital Costs from IA to OBC

1) CAPITAL COSTS	IA	OBC	INCREASE
Building	46,616,445	61,547,245	14,930,800
Equipment (IA based on 15% of building cost, OBC based on equipment inventory including additional MRI scanner & theatre)	6,317,296	11,045,024	4,727,728
Project Team Costs (not identified at IA stage)	0	1,173,000	1,173,000
OVERALL	52,933,741	73,765,269	20,831,528

2) BREAKDOWN OF INCREASE IN BUILDING COST

Item	Amount	Explanation
Net cost of increase in gross floor area from IA (10,283m ²) to OBC (12,802m ²) at average IA rate per sq m (£2,142)	5,397,281	For gross floor areas at IA & OBC see item A in Floor Area Changes & for average IA rate see item B.
Cost of increase in rate per sq m from IA to OBC (£2,142 at 1 st quarter 2008 to £2,369 at 2 nd quarter 2009)	2,903,635	For average IA and OBC rates see item B in Floor Area changes.
Savings in RHSC resulting from joint build (234.5 m ² plus equipment in theatres, radiology and therapies)	-1,303,260	
Cost included for BREEAM rating not included in IA (5% of net build cost)	1,451,357	
Costs identified from masterplanning not available at IA stage	2,690,000	
Decrease in amount allowed for car parking costs (IA 150 spaces, OBC 50 spaces)	-1,050,000	Car parking requirements reassessed as part of masterplanning.
Optimism Bias - reduction in provision from 26.35% at IA to 19.2% at OBC offset by increase in floor area	221,772	
Reduction in inflation allowance from 18.25% to 7.20% based on BAM programme	-2,607,013	
Increase in cost relating to RIE alterations to upgrade non clinical areas to clinical	870,000	
VAT increase resulting from net cost changes above	1,500,092	
Increase in design team fees resulting from increase in floor area & change in %	1,159,883	
Quantified Risk not allowed for in Initial Agreement	3,697,054	
OVERALL INCREASE IN BUILDING COST	14,930,800	

TABLE 2

Clinical Neurosciences Vision 2012 - Reprovision					
Departmental Schedule Summary Floor Area Changes Compared to OBC					
Department		IA		OBC	Variance
Inpatients		3,157.50		2,485.50	-672.00
Operating Theatres (Note 1)		607.30		1,012.00	404.70
Neuroradiology (2)		854.00		1,235.00	381.00
Outpatients inc PIU (3)		1,265.00		1,423.00	158.00
Offices/Admin Support (4)		796.50		819.00	22.50
Facilities/Infrastructure Support		508.00		342.50	-165.50
Total Net Area		7,188.30		7,317.00	128.70
Add:	% of Net Area		% of Net Area		
Planning	5.00	359.42	5.00	365.85	6.44
Engineering	3.00	215.65	3.00	219.51	3.86
Circulation	26.30	1,894.35	25.90	1,945.53	51.18
Sub-Total		2,469.41		2,530.89	61.48
Total Internal Gross Area		9,657.71		9,847.89	190.18
Communications (calculated on internal gross area) (5)	5.00	482.89	16.00	1,575.66	1,092.78
Plant (calculated on internal gross area) (6)	0.01	142.44	14.00	1,378.70	1,236.26
OVERALL GROSS AREA (A)		10,283.04		12,802.26	2,519.22
Net Building Cost		22,029,749		30,330,395	8,300,646
Rate per m² (B)		2,142.34		2,369.14	

Commercial in confidence

Notes: Explanation Of Main Changes From IA to OBC

1) Operating Theatres

Increase re Day of Surgery Admissions Area	73
Increased theatre size from 40 to 55m ² to comply with latest guidance.	45
Increase in theatres from 2 to 3, additional theatre suite	107
Intra-operative MRI	81
Increase in Recovery re additional theatre plus 2 Recovery rooms	71
Reduction in support areas re sharing with RHSC	-35
Increase re staff facilities	38
Neuropathology area	25
Total	405

2) Neuroradiology

Office space	123	In office accommodation at IA.
Waiting Area	13	IA based on improving existing space.
Reporting space	58	Increase in no of spaces of 4.
Teaching space	16	Increase in no of spaces of 3.
Resource Room/Library	12	
Storage	-24	
Staff Changing	53	
University Staff offices added to Research Scanner space	125	
Total	376	

3) Outpatients

Main OPD - 4 additional Consult & Exam rooms	64
Main OPD - 2 additional Treatment Rooms	32
Main OPD - Waiting Area increase	49
PIU - additional Treatment Room	16
Therapies - 2 additional Treatment Rooms	27
Therapies - 1 additional Consult & Exam room	16
Therapies - Waiting Area	16
Therapies - Storage	24
Neurophysiology - reduction in clinical space re shared facility	-58
Neurophysiology -reduction in office space re shared facility	-33
Total	153

4) Offices/Admin Support

Increase in staff numbers identified through Workforce Planning

5) Communications

Increase in % from 5 to 16 based on experience from RHSC.

6) Plant

Boiler/generator/switchgear generator area allowed for in IA.

IA assumed that this space be provided in RIE. M&E initial design work confirmed that this is not possible.

TABLE 3

DCN Masterplanning Costs	
Item	Amount
Premium for working on existing site	1,000,000
Alteration costs to allow the provision of 10 Critical Care beds	625,000
Existing services upgrades & diversions	1,285,000
New road and footpath infrastructure	150,000
Drainage diversions & new drainage	290,000
Less round sum provision allowed for in IA	-660,000
Total	2,690,000

TABLE 4

DCN Optimism Bias	
Item	Amount
Optimism Bias per IA at 26.35%	6,321,299
Increase in Optimism Bias due to floor area increase @ IA rate	2,779,229
Floor area Optimism Bias @ IA rate	9,100,528
Reduction in optimism bias as a result of reduction in rate to 19.2% for OBC	-2,262,181
Floor area Optimism Bias @ OBC rate	6,838,347
Increase in Optimism Bias due to inclusion of BREEAM provision	322,513
Increase in Optimism Bias due to inclusion of masterplanning costs	612,810
Increase in Optimism Bias due to increase in car parking costs	237,600
Optimism Bias per OBC at 19.8%	8,011,270

TABLE 5

DCN Professional Fees	
Item	Amount
Overall construction cost identified in IA inc inflation & optimism bias	35,842,814
Design team fees per IA at 12%	4,301,138
Statutory fees per IA	200,000
Overall fees per IA	4,501,138
IA construction cost at OBC design team rate of 13% inc statutory fees	4,659,566
Increase in net construction cost, £8,300,646, identified in OBC at OBC rate of 13%	1,079,084
Savings in RHSC resulting from joint build	-169,424
BREEAM cost, £1,451,357, at OBC rate of 13%	188,676
Masterplanning costs, £2,690,000, at OBC rate of 13%	349,700
Decrease in car parking costs, £1,050,000, at OBC rate of 13%	-136,500
Increase in optimism bias, £221,772, at OBC rate of 13%	28,830
Reduction in allowance for inflation, £2,607,013, at OBC rate of 13%	-338,912
Overall fees per OBC	5,661,021

7.2

LOTHIAN NHS BOARD

Board Meeting
26 January 2011

Director of Finance & Chief Operating Officer

ROYAL HOSPITAL FOR SICK CHILDREN & DEPARTMENT OF CLINICAL NEUROSCIENCES REPROVISION PROJECT UPDATE

1. Purpose of the Report

- 1.1. The purpose of this report is to provide the Board with an overview of the progress made over recent weeks to review the Royal Hospital for Sick Children (RHSC) and Department of Clinical Neurosciences (DCN) reprovion projects, following the Scottish Government announcement on 17 November 2010 that these projects would be funded under the Non Profit Distributing (NPD) model.

2. Recommendation

- 2.1. The Board is invited to:

Note the progress made to date with developing a procurement approach for delivering RHSC and DCN, with Scottish Futures Trust, taking account of the new funding route.

- 2.2 Note that the preferred option will be brought to the Board in March for approval.

3. Summary of the Issues

- 3.1 The Scottish Government Draft Budget published on 17 November 2010 set out proposals to take forward a number of capital infrastructure developments across Scotland using a 'revenue funded' model. This is largely indicative of the significant reduction in the level of public capital available across Scotland
- 3.2 The RHSC/DCN project was specifically highlighted as a project to be procured under the revised funding model, of a Non Profit Distributing (NPD) organisation.
"The new pipeline of NPD investment will help support key projects across core public services, including:

- "the Royal Sick Children's Hospital and Department of Clinical Neurosciences in Edinburgh (c£250m)"

3.3 This has brought a number of significant challenges, as well as complex legal, technical and procurement issues, given the existing relationships with our key commercial partners: BAM, as Principal Supply Chain Partner under Frameworks Scotland; and Consort Healthcare, as the PFI provider on the Little France site.

3.4 The Scottish Futures Trust (SFT) is to take a central role in the capital infrastructure programme across Scotland, and will provide advice and guidance on all NPD projects, of which a pipeline of projects is now anticipated. One of the key matters to be clarified is the explicit roles and responsibilities of SFT and the distinct Board appointed technical, legal and / or financial advisors.

4. Progress to Date

4.1. Immediately following the Budget announcement contact was made with SFT by the Director of Finance and a meeting took place with the Chief Executive of SFT on the 23 November 2010.

4.2. Since then a number of meetings have been held with representatives from the Scottish Government Health Finance Directorate and SFT, as well as ongoing dialogue with our current legal advisors MacRoberts and Health Facilities Scotland (HFS) as managers of Framework Scotland.

4.3 We are also in discussion with SGHD regarding the appropriate business case governance and the funding of Advisors.

4.4 Work has now started on the approved new car park on the BioQuarter Plots 14-16 (designated now as car park F) and Consort have been engaged to deliver the enabling works at Car Park B and F. Although separately appointed, both are being constructed by Balfour Beatty Construction. The weather had delayed the physical start on site for car park F. The programme and scope of enabling works in and around car park B will also be amended to accommodate an anticipated revision to the footprint and services for a combined building.

4.5 The land transaction remains to be concluded but is agreed in principle with Consort. The legal teams are currently agreeing the terms of a "like for like" swap, and the definition of the site (for a combined build) is being agreed with Consort. We have advised Consort that we require an exchange of missives by the end of March with the conclusion of sale taking place following independent valuation of Car Park F once construction is complete. In parallel Consort are in discussion with their funders to secure their sign off.

5. Procurement Options

5.1 We have an objective to minimise both the delay to the programme in line with the Cabinet Secretary's stated requirement and any abortive and on-going costs; to ensure operational effectiveness going forward, and also to manage the overall site consistent with the aims of the BioQuarter development.

5.2. To achieve this, we have explored the procurement options with both SFT and SGHD, for a NPD model to deliver the combined RHSC and DCN project with our ideal being to have utilised the existing design work completed to date, build on the market testing of packages already undertaken and construct the new building.

5.3 A range of options has been explored with out legal and technical teams. The conclusion of this will form part of the recommendation on the preferred option for delivery of RHSC and DCN to the Board in March.

6. Timetable implications

6.1 Early advice indicates that there requires to be a re-assessment of the programme. We are doing all we can to ensure that any delay is minimised, and believe that the project can be completed by 2015. A key target is to conclude the agreed way forward with the Board in March.

7 Governance Arrangements

7.1 SGHD and SFT have confirmed their willingness to work with the Board's team on developing the business case requirements to minimise the programme but retain the appropriate governance. This will necessitate significantly more ongoing engagement than might normally be the case.

Susan Goldsmith
Director of Finance
18 January 2010

Jackie Sansbury
Chief Operating Officer

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RHSC/DCN Project discussion – 1 February 2011

In attendance: Jackie Sansbury, Susan Goldsmith, Iain Graham, Mike Baxter, Norman Kinnear and Donna Stevenson

Susan Goldsmith gave an overview of the current position from the Health Board's perspective following F&PR and Health Board meetings. The next Board meeting is scheduled for 23 March for which papers will be required approximately 2 weeks beforehand. Key activities being undertaken is a refreshment of the non-financial appraisal, development of the revised procurement strategy and a financial analysis of the PPP basis of the procurement to identify unitary charge likely, SG commitment to support revenue and elements still coming through LHB's capital programme, taking account of the accounting treatment of payments to be made through the existing RIE contract for national account purposes.

On the revenue position Mike Baxter emphasised the importance of establishing revenue support for the project from other health boards which will use its services. He also explained that proposals were going to be reviewed shortly by Ministers which when concluded will show Board's what additional revenue support will be available to support the NPD PPP procurement. This will cover 100% of the agreed capital cost, 100% of SPC's costs (covering insurance and management fee) and 50% of life cycle costs This should be seen as positive as it will provide a more level playing field between capital and revenue funded projects not seen before. Mike emphasised the importance of minimising the capex and Donna said that there will be a role for SFT in relation to vfm.

Jackie asked for clarification of some of the technical points. It was noted that future Board papers will require to address some of these complex issues as simply as possible to avoid misunderstanding.

Jackie and Susan provided an overview of the Project Organisation and structure and said that Jackie is the Client and Susan will lead the procurement. They agreed to provide a document providing this to ensure a common understanding and to reflect the different roles and responsibilities (eg the distinction between the Project Board and Project Team).

In terms of Project Director there was discussion about the need to ensure that such a complex project procurement is appropriately led and supported. It was acknowledged how strong a role Brian Currie has played but it was acknowledged there is a need to review his position against capability assessment of him and others to identify gaps that require to be filled. It was also explained the structure used in LHB which meant that whoever leads the project can only do so through a Director and not direct to the CEO. It was acknowledged that in considering the way forward the Board needs to ensure that whoever leads in contract negotiation is able to do so swiftly and directly within, for example negotiating meetings, otherwise their position could be undermined. Mike Baxter emphasised how intense the project will become and consequently the time commitment required from those involved. Jackie acknowledged the gap in PPP skills. It was agreed that the Board would also produce a paper that explains how this will be made to work.

The meeting then went on to discuss the negotiation strategy with Consort. It was noted that, in relation to the JV proposal, the Board's legal advice and points made in a document provided that day by SFT were consistent. The proposed meeting would still take place that Friday and the proposal would then be taken to the F&PR committee the following Wednesday on the basis of the legal advice and advice from SFT. Mike Baxter advised that an OBC cannot be considered until the land transaction is concluded. The risks of Consort's position in this regard was noted. Mike Baxter suggested that the Board access advice from DoH (Brian Suanders) re any similar positions in England to ensure consistent approaches are achieved. It would be important to emphasise to Consort the significant commercial opportunity open to them in now being able to bid, along with other interested parties for the NPD PPP project..

The meeting then discussed the design position in terms of work done and required before procurement commences. The ongoing work from BAM through Framework Scotland remains possible to add in DCN aspects. However there are a range of risks around timescale etc. Donna Stevenson said that while SFT supported the concept of a reference design she was surprised as to the extent of the design development being proposed. She offered assistance from SFT in explaining the approach taken in the recent pilot schools programme. It was also suggested that contact be made with John Cole in Northern Ireland to learn from work done there. Norman Kinnear emphasised that the inclusion of DCN is in many ways a good news story but there may be communication risks around impact upon timescale that needs to be carefully managed. Again the Board agreed that they will need to develop an overview of timescale for sharing with SFT and SGHD prior to it being put before F&PR and the Health Board.

Finally the Board updated where they were with the development of the OBC and agreed to share early drafts. It was also agreed that Mike Prior will need to engage in discussion with SGHD and SFT on certain aspects.

**Royal Hospital For
Sick Children and
Department of Clinical
Neurosciences**

**Advisory Paper 02:
Reference Design
Development**

February 2011

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Advisory Paper 02: Reference Design Development

Issue and Revision Record

Rev	Date	Originator	Checker	Check Ref Completed	Approver	Description
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1 Introduction

The Royal Hospital for Sick Children and Department of Neurosciences Project (the “Project”) has been developed over the past two years under Procurement Scotland arrangements with the intention that the Project would be delivered as a capital funded project. The Project had been developed with a view to the Project commencing construction in Q2 2011. A design has been developed by BAM Construction in conjunction with the user groups and has had full sign off of the proposals. As a result of the Scottish Government Spending Review in November 2010, the Project was confirmed as to be delivered using the Not for Profit Distribution Model (NPD) which from a technical and whole life cost perspective is similar in nature to the PPP model. As part of this decision, the scope of the Project was revised to also include the Department of Clinical Neurosciences.

For the NPD procurement process, a Reference Design is required to be developed on behalf of the Board. The work done to date cannot be used in its current state for the Reference Design since (i) it reflects only part of the Project; (ii) it has a strong D&B emphasis; and (iii) may reflect BAM construction preferences. Therefore further development of the design is required. This further development will be carried out in conjunction with the user groups to get their sign off of the revised design. In absence of any formal guidance, the Board need to decide to what extent the Reference Design will be developed and how it will be used.

This advisory paper reviews the following issues relating to the development of a Reference Design for the Project:

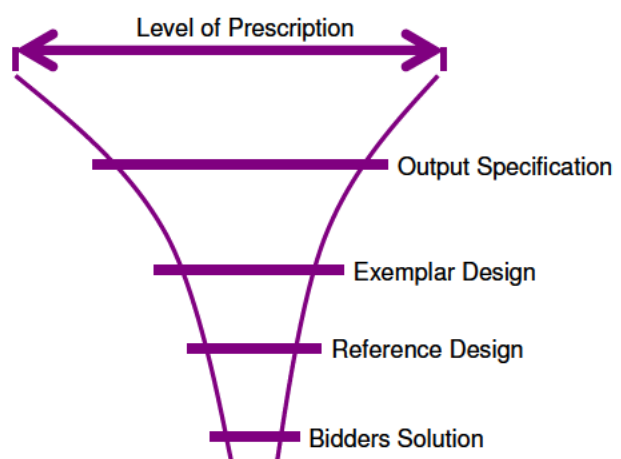
- the historical approach to developing exemplar designs on PPP projects;
- the suggested approach to be adopted for the use of the Reference Design on the Project;
- the level of development of the Reference Design considered to be appropriate for the Project; and
- the procurement status of the Reference Design and extent to which it is mandatory or for information.

For the purposes of this paper, the definition of both an exemplar design and a Reference Design is as set out below:

Exemplar Design – a design developed by the procuring authority that represents one example or solution to the output specification.

Reference Design – a design developed the procuring authority that represents a specific solution to the output specification, the key features (and potentially other areas) of which the procuring authority wish to see in the final design.

Both an Exemplar Design and a Reference Design represent a springboard for the bidders to develop their own designs however the level of prescription and fixity in the case of the Reference Design is greater.



2 Exemplar Design Approach versus Reference Design Approach

A variety of different approaches have been adopted in relation to early design work on PPP projects across the UK.

In England, the standard approach was to develop a robust exemplar design. The reasons for developing an exemplar design included:

- it allows the clinical brief and departmental adjacencies to be tested by practical example;
- it allows the Schedule of Accommodation to be tested by practical example;
- it establishes the impact of the development on the site, taking into account key constraint;
- it establishes a more accurate assessment of costs (on a site specific basis);
- it allows meaningful discussion with planners based on likely form of the scheme and allows outline planning to be obtained;
- it conveys the HSE's requirement by example; and
- it establishes the stakeholder environment and assists the stakeholders to become better acquainted with the environment they are likely to encounter during the bid period.

There was always a competing tension in terms of the level of detail to which the exemplar design was developed to – the competing factors including (i) opportunities for innovation for the bidders; (ii) risk transfer; (iii) confusion for stakeholders around basis of design; (iv) cost certainty for the scheme; and (v) cost of developing the exemplar design.

In Scotland, a high level approach was typically adopted and this exemplar design was then used for indicative purposes only – i.e. to inform the bidders of one possible solution which met the requirements of the project. Therefore, bidders were encouraged to develop their own ideas and different alternatives in response to the output specification rather than just adopt the exemplar design.

However, in Northern Ireland, a more detailed approach has always been adopted which the procuring authority then expected the bidders to adopt and further develop – therefore, in this approach the exemplar design was effectively mandatory and to be used as the baseline for further development.

The initial views of the Board are that on this Project, the Reference Design is to have more status than previously adopted in the past in Scotland (and England) and much more in line with the approach adopted in Northern Ireland. The reasons for this include:

- the amount of design work carried out on the project to date is significant which has required a large amount of input from the user groups. This has resulted in a design (internal) which they are satisfied with and feel incorporates their inputs. While some reworking is required in relation to the addition of the Department of Clinical Neurosciences which requires further input from the user groups, this is marginal compared to the levels of input they would need to have if there were to engage in user consultations with three separate bidders all developing a separate design (with a risk that none of these designs are viewed by the user groups to be as effective as the exemplar/reference design);
- further to the above, the Board wish to retain control over certain elements of the design which they want to see reflected in the final building design – therefore, reflecting these in the Reference Design is considered to be an appropriate way to set out these requirements;

-
- lastly, as a wider issue, this approach should simplify the procurement process which should result in procurement cost and programme savings.

3 Suggested Level of Development

“The Design Development Protocol for PFI schemes” (UK Department of Health publication) has been issued in 2001 and 2004, and was revised as a consultative document in August 2007 to take account of the Competitive Dialogue process. Although it is not yet formally adopted, it is a useful reference document for considering what should be included in the Reference Design which is developed.

From Section 2, five common themes for developing the Reference Design can be summarised as follows:

1. to define the clinical functionality of the design (for definition of clinical functionality see Appendix A);
2. to develop an accurate assessment of the costings (including high impact abnormalities);
3. to obtain outline planning permission;
4. to define client preferences where appropriate; and
5. to provide an examples of a suitable solution to particular element.

In relation to themes 1 and 4, given these are client requirements, the elements of the Reference Design which demonstrate these would be mandatory. In relation to theme 2 (accurate costings), this could be for information only which would then allow the bidders to develop their own proposals and approaches, the result of which could deliver more cost effective solutions. Similarly, in relation to theme 3 (outline planning), these could be for information purposes only to provide the bidders with flexibility as to how to achieve detailed planning permission within the constraints set out in the outline planning permission. Lastly, in relation to theme 5, this would be for information only since illustrating one example of a solution to a particular element.

While making elements of the Reference Design mandatory can impact on the risk transfer achieved, at a high level, this would only really appear relevant to 4 (to the extent these preferences are over and above clinical functionality) since under the standard form Project Agreement the clinical functionality risk sits with the public sector in any event (refer Appendix A). However, this is worth further consideration moving forward.

By considering the factors above in parallel with what is typically provided as part of a Bidders ITSB submission as defined in the “The Design Development Protocol for PFI schemes”, a list of the deliverables for the Reference Design can be developed along with an indication of the reason for its inclusion and status (mandatory or for information). This is set out for discussion in Appendix B.

A key factor determining what is to be designated a Mandatory inclusion in the Reference Design is the level to which NHSL wish to pre-determine the outcomes of the bidding process. The Scottish Futures Trust will also have a view on the level to which the proposals should be proscribed to assist in speeding up the bidding process. Comments are included in the table where decisions are required in regard to the level of proscription. Further, the issue of risk transfer will need to be examined

where non-clinical matters are included as Mandatory in the Reference Design to ensure that NHSL does not become liable for risks that should rest with Project Co..

Further consideration is also required regarding the level of detail included in each of the deliverables for the Reference Design. For instances Room Layouts – are these 1:50 plans only or are they also to include discrete equipment lists, elevations and reflected ceiling plans.

Finally the format of the information to be included in the Reference Design needs to be agreed. For instance are *.dwg CAD format drawings to be issued for the Bidders to use as opposed to *.pdf's? This would be of considerable assistance to Bidders however some companies are reluctant to release information in this format on the basis that it is uncontrolled.

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4 Recommendations

It is recommended that:

- the Board review and comment on the acceptability of the proposals from their perspective;
- a workshop is held between the Board and its advisers to agree the Reference Design deliverables; and
- the agreed Reference Design Deliverables can be shared with BAM to instruct them on the work to be carried out.

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Appendix A Clinical Functionality

The following is the contractual definition of Clinical Functionality from the Scottish Standard Form Health Project Agreement – this is effectively the element of design risk which is passed back to the procuring authority at Financial Close:

(a) *the following matters as shown on the [1:500 scale development control plan]:*

- (i) *the points of access to and within the [development site] and the [buildings];*
- (ii) *the relationship between one or more [buildings] that comprise the [development]; and*
- (iii) *the adjacencies between different Hospital departments [referenced to a drawing number or numbers];*

(b) *the following matters as shown on the [1:200/1:100 scale plans] – (referenced to a list of drawing numbers in Project Co's Proposals for example):*

- (i) *the points of access to and within the [development site] and the [buildings];*
- (ii) *the relationship between one or more [buildings];*
- (iii) *the adjacencies between different Hospital departments; and*
- (iv) *the adjacencies between rooms within the Hospital departments;*

(c) *the quantity, description and areas (in square metres) of those rooms and spaces shown on the [Schedules of Accommodation];*

(d) *the location and relationship of equipment, furniture, fittings and user terminals as shown on the [1:50 loaded room plans] in respect of:*

- (i) *all bed and trolley positions;*
- (ii) *internal room elevations;*
- (iii) *actual ceiling layouts; and*
- (iv) *[other project specific requirements might need to be considered, for example with regard to theatres and imaging departments]; and*

(e) *The location of and the inter-relationships between rooms within a department as shown on [] scale drawings,*

but only insofar as each of the matters listed in (a) to (e) above relation to or affect Clinical Use

Appendix B Suggested Reference Design Deliverables

Deliverable	Included in Reference Design?	Status	Reason for inclusion	Other Comments
Schedules of Accommodation	Yes / No	Mandatory	Clinical Functionality + Costs	These will be prepared by NHSL with modifications made to reflect the Reference Design. They will indicate the basis upon which the Reference Design had been prepared.
Room Data Sheets	Yes / No	Mandatory	Clinical Functionality + Costs	These will be prepared by NHSL with modifications made to reflect the Reference Design. They will indicate the basis upon which the Reference Design had been prepared.
Equipment Schedules	Yes / No	Mandatory	Clinical Functionality + Costs + Risk	These will be prepared by NHSL with modifications made to reflect the Reference Design. They will indicate the basis upon which the Reference Design had been prepared.
Development Control Plan 1:1000/1:500	Yes / No	Mandatory	Clinical Functionality + Costs + Risks + Planning	This should be prepared by NHSL with modifications made to reflect the Reference Design. It will indicate the basis upon which the Reference Design had been prepared. Site Plan layout will depend on floor plate layout. Compliance will be achieved through Bidders complying with key issues on DCP. The DCP could also be used to indicate the interconnections and links to the existing facilities. This would need to tie in with requirements outlined in the Output Specification in relation to the interface with Consort. The DCP could also include the Urban Design and Landscaping Strategy. External

Deliverable	Included in Reference Design?	Status	Reason for inclusion	Other Comments
				Patient movements should also be indicated.
Departmental Layouts 1:500	Yes / No	Mandatory	Clinical Functionality+ Costs + Risks + Planning	This could be supplemented with Patient Flow Diagrams
General Arrangements Plans 1:200	Yes / No	Mandatory	Clinical Functionality + Costs	
General Arrangement Elevations and Sections.	Yes / No	Non-Mandatory	To indicate NHSL Preference + Costs + Planning	Whether or not the elevations and sections are to be made Mandatory or Non-Mandatory will depend on the extent to which NHSL wish to determine the appearance of the Project. This matter needs to be considered in conjunction with the 'design guidance' the Planning Department issue. This may be sufficient to constrain the Bidders to a solution acceptable to NHSL without the need for elevations and sections as part of the Reference Design.
Generic Room Layouts 1:50	Yes / No	Mandatory	Clinical Functionality	Can only be mandatory in respect to equipment and preferred layout. Final layout will be dependant upon overall building layout.
Key Room Layouts 1:50	Yes / No	Mandatory	Clinical Functionality	Can only be mandatory in respect to equipment and preferred layout. Final layout will be dependant upon overall building layout.
Fire Strategy	Yes / No	Non-Mandatory	To provide exemplar design + Costs + Risks	There will be an overarching requirement for Bidders to comply with all statutory and regulatory requirements. The requirements for the Fire Strategy will be included in the D&C Output Spec. Whilst compliance with the Fire Strategy applied in the Reference Design may be Non-Mandatory, the

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Deliverable	Included in Reference Design?	Status	Reason for inclusion	Other Comments
				requirement for Bidders to comply with all statutory and regulatory requirements will be Mandatory.
Interior Design Concepts	Yes? / No	Non-Mandatory	To indicate NHSL preference + Cost	This could be outlined in the D&C Output Spec without inclusion in the Reference Design.
Wayfinding Strategy	Yes? / No	Non-Mandatory	To indicate NHSL preference + Costs	This could be outlined in the D&C Output Spec without inclusion in the Reference Design.
Flexibility and expandability	Yes? / No	Non-Mandatory	To indicate NHSL preference + Costs	This could be outlined in the D&C Output Spec without inclusion in the Reference Design.
Supplies, Storage, Distribution and Waste Management (Soft FM)	Yes / No	Mandatory	Clinical Functionality + Costs	Bidders will have to comply with the Board's prescribed Soft FM strategy. This will also need to be outlined in the D&C Output Spec.
Decontamination	Yes / No			Requirements to be outlined in D&C Output Spec

B-3

Deliverable	Included in Reference Design?	Status	Reason for inclusion	Other Comments
and Control of Infection (HAI-SCRIBE)				
BREEAM	Yes / No ?	N/A	To provide exemplar design + Costs	Requirements to be outlined in D&C Output Spec. There may however be a requirement to make an initial assessment of the BREEAM rating for the Reference Design to inform the Estimated Capex.
Geotechnical Site Investigation	Yes / No ?	N/A	To provide exemplar design + Costs	Requirements to be outlined in D&C Output Spec. Should not be included in Reference Design since Bidders to take Ground Conditions risk?
Decanting, Phasing,	Yes / No	Mandatory	Clinical Functionality + Costs	To demonstrate NHSL's requirements in regard to an occupation strategy.
Traffic Impact Assessment and Traffic Management Plan	Yes / No	Mandatory	Clinical Functionality + Costs + Planning	To demonstrate NHSL's requirements in regard traffic management and parking.
Security Strategy	Yes / No	Mandatory	Operational Requirements + Cost	To be supplemented with requirements outlined in Output Spec.
Construction Strategy	Yes / No			Any restrictions / controls required to be outlined in D&C Output Spec. Should not be included in Reference Design since Bidders to take

Deliverable	Included in Reference Design?	Status	Reason for inclusion	Other Comments
				construction requirements risk?
Arch + Civ/Struct Specifications	Yes/No?	?	To indicate NHSL preference + Costs (if included)	This is entirely dependant upon the level of prescription NHSL wish to impose upon the bidders. Normally guidance would be included in the Output Spec with the Bidders taking the whole risk for specification. However an outline specification of key elements could be included in the Reference Design.
Services Infrastructure Plans 1:1000/1:500	Yes/No	Mandatory	To provide exemplar design + Costs	To be supplemented with requirements outlined in Output Spec. To tie in with the requirements outlined in DCP.
Integration of new and existing services.	Yes/No	Mandatory	To provide exemplar design + Costs	To be supplemented with requirements outlined in Output Spec. To tie in with the requirements outlined in DCP.
M&E Strategy drawings and statements	Yes/No?	?	To indicate NHSL preference + Costs (if included)	This is entirely dependant upon the level of prescription NHSL wish to impose upon the bidders. Normally guidance would be included in the Output Spec with the Bidders taking the whole risk for specification. However outline strategies for key services could be included in the Reference Design particularly for the purposes of costings.
Plant Room layouts.	Yes/No?	?	To indicate NHSL preference +	This is entirely dependant upon the level of prescription NHSL wish to impose upon the bidders. Normally guidance would be included in the Output Spec with the Bidders taking the whole risk for specification. However

Deliverable	Included in Reference Design?	Status	Reason for inclusion	Other Comments
			Costs (if included)	outline layouts could be included in the Reference Design particularly for the purposes of costings.
Fire Strategy Drawings 1:200	Yes? / No	Non-Mandatory	To indicate NHSL preference + Costs	This could be outlined in the D&C Output Spec without inclusion in the Reference Design. To be read in conjunction with statement on Fire Strategy above.
Energy Strategy + Schedules of Power, Heating and Cooling Loads.	Yes / No	Non-Mandatory	To provide exemplar design + Costs	There will be an overarching requirement for Bidders to comply with all statutory and regulatory requirements and requirements outlined in the D&C Output Spec. The information required for the Reference Design is to assist in demonstrating that it complies with NHSL's requirements.
Engineering Design Philosophy	Yes / No	Non-Mandatory	To provide exemplar design + Costs	As above.
Lift Usage Traffic Assessments	Yes / No			This can be covered in the D&C Output Spec.
Life expectancies.	Yes / No			This is normally covered in the D&C Output Spec.
M&E Eng Specifications	Yes/No?	?	To indicate NHSL preference +	This is entirely dependant upon the level of prescription NHSL wish to impose upon the bidders. Normally guidance would be included in the Output Spec with the Bidders taking the whole risk for specification. However an

Deliverable	Included in Reference Design?	Status	Reason for inclusion	Other Comments
			Costs (if included)	outline specification of key elements could be included in the Reference Design and used for the preparation of costings.
Commissioning and Testing	Yes / No			This is normally covered in the D&C Output Spec.
Lighting aesthetics.	Yes / No			This is normally covered in the D&C Output Spec.
ICT strategy	Yes / No			This is normally covered in the D&C Output Spec.

DRAFT

To: Grant Robertson [REDACTED]
From: Donna Stevenson [REDACTED]

Sent: Tue 08/02/2011 2:53:26 PM (UTC)
Subject: RE: RHSC - Reference Design
[RHSC DCN Update extract Reference Design.doc](#)

Grant

Further to my email. NHS Lothian have provided more information as to what it envisages in relation to its reference design (in a draft Committee paper upon which we were asked to comment). The relevant extracts are attached.

As you see the degree of prescription is greater than we have advised, though NHSL is saying the scope is to be finalised and Mike Baxter has issues on cost and timescale. There is a project specific issue concerning the interfaces with the existing RIE and the RIE PFI contract, which I will explain when we meet.

Can we please have a discussion over the next couple of days as to how we take this forward? If that is ok then I will send a meeting request.

Thanks

Donna

From: Donna Stevenson
Sent: 03 February 2011 09:52
To: Peter Reekie; Colin Proctor; Grant Robertson
Subject: FW: RHSC - Note of call with J Cole

Hi

Note of Mike Baxter's call with John Cole re design development; seems that they are intending to take a more advanced design approach than we have been envisaging.

Regards

Donna
Donna Stevenson
Associate Director
Scottish Futures Trust

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www.scottishfuturestrust.org.uk<<http://www.scottishfuturestrust.org.uk>>

[cid:image001.jpg@01CBC388.083F8420]

From: Mike.Baxter [REDACTED]
Sent: 03 February 2011 09:20
To: Norman.Kinnear [REDACTED]
Cc: Donna Stevenson
Subject: RHSC - Note of call with J Cole

FYI
<<F3564502#2.doc>>

Mike Baxter
Deputy Director (Capital and Facilities)
Scottish Government Health Directorates
Tel [REDACTED]
Mob [REDACTED]

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Extract from Draft NHSL Committee Report

3.2 NPD Process

An outline of the processes around the NPD procurement is detailed in Appendix 1. However, one of the key aspects is the depth of design work undertaken in advance or in parallel with the procurement process. There are site specific requirements which necessitate a greater detail of design than would normally be carried out by the public sector in a PPP process (such as planning and interface with the current building at the RIE) to be balanced against the benefit of design work being undertaken by the private sector bidders (e.g. costs met by bidders, innovation of design / cost competition). SFT agreed that the development of a “reference design” is appropriate, given the reduction in bid risk for bidders and retention of design control with NHSL. A review on the detailed extent of this work is ongoing with SFT and SGHD. The issues being considered include the following:

“Traditional” PPP procurement	Reference Design	
Exemplar design undertaken by Board’s technical advisers to Stage C – Concept Design	Detailed design work to Stage D –Design Development (or even into Stage E – Technical design).	
Used as a public sector comparator in Business Case.	Not required in this case as there is not a capital-funded option to consider	
Significant enhancement of feasibility work.	Builds on the work done for RHSC and DCN, but requires redesign for combined building,	
Short (4-6 months) to deliver to OJEU	Longer to deliver to full OJEU (12 months work)	
Limited advertisement prior to the majority of design work	Initial stages of market facing OJEU procurement done in parallel	
Majority of design work undertaken at the cost of the private sector bidder	Cost borne by Board as part of the business case development; however, it is intended that these costs could be reimbursed by the successful NPD bidder and included within the NPD unitary charge. Anticipated savings in time and negotiations. (To be confirmed through further dialogue with SFT and other authorities who have used this process)	
Private sector “innovates” and brings design savings through competition.	Greater fixed points potentially leaving less scope for “innovation” although innovation is brought to project by the use of BAM during Reference Design process.	
Lifecycle costs form part of the negotiations with the bidders	A defined design could potentially give rise to less competitive lifecycle costs	
Project team, clinical leads and support services engaged with extensive design review with each bidder.	Anticipated lower level of Project team, clinical leads and support services engagement bidders.	
Concept Design (inc Report and Approval)	10 weeks	May 2011
Scheme Design (inc Report and Approval)	18 weeks	Aug 2011
Detail Design (inc Report and Approval)	16 weeks	Dec 2011
	44 weeks	

Scope of Reference Design

The reference design will use the high level brief prepared in December 2010 to inform the Feasibility Report commissioned from BAM Construction to test the viability of the existing site (Car Park B) at the RIE to accommodate a combined RHSC and DCN. This includes, but is not limited to:

- Clinical adjacencies, as far as is practical, as established during previous design exercises for both services.
- Current Accommodation Schedules and Operational Requirements for both services.
- Generic room solutions established during standalone RHSC design proposal.
- Introduction of a dedicated Energy Centre, Standby Power Generation and Utilities provision independent of existing RIE infrastructure, as far as is practicable.
- Access solutions and public transportation infrastructure proposals generated during previous standalone RHSC design proposal.
- Recognition of all design commentary and consultations with City of Edinburgh Council Planning and Transportation Departments, Architecture and Design Scotland (A+DS), Scottish Environmental Protection Agency (SEPA), Scottish Water, Edinburgh University and Consort Healthcare Ltd etc.

Whilst the production of this very prescriptive reference design will require more time compared to the standard NPD process it is anticipated that the overall programme will not be duly affected given the compensating effect of a shorter subsequent bidding period.

From: [Martin K \(Kelly\)](#) on behalf of [DG Health & Social Care](#)
To: [Andreana Adamson](#); [Anne Boyle](#); [Calum Campbell](#); [Caron Aird](#); [Cathie Cowan](#); [Cheryl Prentice](#); [Elaine Mead](#); [Elaine Watters](#); [Emma Laughton](#); [Emma McRobert](#); [Fiona Mackenzie](#); [Florence Blackburn](#); [Frances Elliot](#); [George Brechin](#); [Gerald McLaughlin](#); [Gerry Marr](#); [Gordon Jamieson](#); [Hazel Drummond](#); [Ian Crichton](#); [Iris Bishop](#); [James Barbour](#); [Jean Wade](#); [Jill Young](#); [Joanna Kelly](#); [Joanne McLean](#); [John Burns](#); [John Turner](#); [Karen Stiven](#); [Lynn Morrow](#); [Malcolm Wright](#); [Margaret MacWee](#); [Maryanne Morrison](#); [Morag Hood](#); [Pauline Howie](#); [Pheona Horne](#); [Ralph Roberts](#); [Richard Carey](#); [Robert Calderwood](#); [Shivani Tandon](#); [Shona McCulloch](#); [Tim Davison](#); [Valerie Muir](#); [Wai-Yin Hatton](#)
Cc: ["Derek Lindsay"](#); ["carol.gillie"](#); ["craig.marriott"](#); ["cbowring"](#); ["Gall Alan \(NHS Grampian\)"](#); ["Griffin, Douglas"](#); ["malcolm.iredale"](#); ["Laura.ace"](#); ["Susan Goldsmith"](#); ["gerry.o'brier"](#); ["Kenton Nicholas \(Shetland Health Board\)"](#); ["marionfordham"](#); ["jmcdonald"](#); ["fiona.ramsay"](#); ["Belfer Simon \(NHS National Services Scotland\)"](#); ["julie.carte"](#); ["Robert Stewart"](#); ["Caroline Lamb"](#); ["alan.crawford"](#); ["margo.mcgurk"](#); ["McLauchlan Pamela \(Scottish Ambulance Service\)"](#); ["Robertson Hazel \(State Hospitals Board for Scotland\)"](#); [Baxter M \(Mike\) \(Health\)](#); [Matheson J \(John\)](#); [Waugh I \(Ian\)](#)
Subject: Revenue Finance guidance issued to NHSScotland - 22 March 2011
Date: 22 March 2011 17:34:55
Attachments: [F3676318.pdf](#)
[20110316 SFT Role on revenue funded projects.doc](#)

To: NHS Board Chief Executives

CC: NHS Board Directors of Finance

Scottish Government Funding Conditions For Delivering Projects Through the Non Profit Distributing Model

Please find attached letter from Derek Feeley, Acting Director General Health & Social Care and Chief Executive of NHS Scotland:

Kelly

Kelly Martin
Office of DG Health and Social Care
The Scottish Government
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Acting Director-General Health & Social Care and
Chief Executive NHS Scotland
Derek Feeley



T: [REDACTED] F: [REDACTED]
E: dghsc@[REDACTED]

To: NHS Board Chief Executives

CC: NHS Board Directors of Finance

22 March 2011

Dear Colleagues

SCOTTISH GOVERNMENT FUNDING CONDITIONS FOR DELIVERING PROJECTS THROUGH THE NON PROFIT DISTRIBUTING MODEL

In the document 'Scotland's Spending Plans and Draft Budget 2011-12' published on 17 November 2010 the Scottish Government set out its commitment to deliver a £2.5 billion programme of revenue financed investment through the Non Profit Distributing (NPD) model. The programme comprises priority projects across the transport, health, education and lifelong learning sectors.

The Scottish Government has agreed that a range of projects are to be funded through the NPD model and hub revenue financed models. Subject to meeting the guidance and funding conditions set out in this letter, appropriate revenue funding will be provided to procuring bodies to support delivery of those projects identified.

This letter sets out the key conditions and guidance for procuring bodies in the development and delivery of their projects, in relation to:

1. the anticipated scope, construction and building operating costs for the project;
2. the capacity and governance structures which the procuring body must put in place in order to deliver the project effectively;
3. requirements in terms of business cases and value for money assessment;
4. funding of preparatory and development costs; and
5. Scottish Government support for elements of the unitary charge.

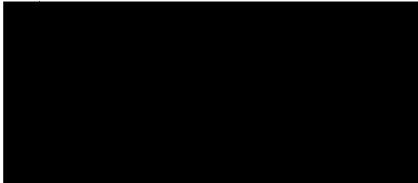
The relevant guidance and conditions for the development of projects are set out in the annexes below. As project owner, a procuring body is required to comply in full with the conditions and guidance set out in this letter in order to be eligible to receive revenue support for agreed projects. The final decision on the provision and level of unitary charge support for the project will be made by Scottish Ministers, subject to confirmation from both

the procuring body and the Scottish Government that the project concerned is affordable and offers value for money.

The programme is being supported by the Scottish Futures Trust (SFT). SFT provides a valuable centre of expertise and advice on the development, funding, structuring, procurement and management of these projects. Procuring bodies are therefore asked to work closely with SFT throughout the development of the project. SFT's approval will be required at specific points, as detailed in section 2 and 5 of the attached guidance, in order for the project to proceed to delivery. A table outlining the forms of support which SFT can provide to procuring bodies is enclosed in a separate annex. A point of contact within SFT will be assigned for each project in due course.

I would be grateful for your indication at the earliest opportunity that you will work within the conditions and guidance set out in this letter. I will of course be happy to discuss any aspect of this offer if you would find that helpful.

Yours sincerely



DEREK FEELEY

1. Anticipated scope, construction and building operating costs for the project

Conditions

- a) Revenue support will be provided to the procuring body from the Scottish Government up to an agreed level based on the agreed project scope, using the standard form NPD / hub DBFM contract developed by SFT.
- b) Derogations which relate to the underlying principles of the standard form NPD / hub DBFM contract, as noted below, will require sign off from Scottish Ministers, who will take advice from SFT.
- c) Should the procuring body choose to expand the scope of the project beyond that agreed between the Scottish Government, SFT and the procuring body as being appropriate for the project, the procuring body will be required to fully fund any resultant increase in unitary charge, including any inflationary impact over the term of the contract.
- d) Should the procuring body decrease the scope of the project below that agreed between Scottish Government, SFT and the procuring body, the level of revenue support provided by the Scottish Government will be commensurately reduced.
- e) In order for the project to enter procurement, the procuring body must satisfy both the Scottish Government and SFT that it has sought to minimise construction costs and operating costs within the agreed project scope and has undertaken a whole of life cost analysis. This will form part of the scrutiny of the Outline Business Case prepared for the project before approval is given for any procurement to commence.

Guidance

Underlying principles of the standard form contract

As described in the Scottish Government's budget document the underlying principles of the programme are:

- returns to the private sector are capped;
- no dividends are payable to shareholders; and
- surpluses are returned to the public sector

2. Capacity and governance required to deliver the project effectively

Conditions

- a) The procuring body is required to have in place a dedicated, qualified and sufficiently resourced project team to lead delivery of the project.
- b) The procuring body is required to have in place a Project Director with recognised expertise in project management and delivering revenue financed projects.
- c) The procuring body is required put in place a project governance structure, clearly linked to the governance arrangements of the organisation, which will ensure effective oversight and scrutiny – at a senior level – of the work of the project team and the development of the project.
- d) Where the project is also subject to scrutiny by the Scottish Government either at programme level or through the Infrastructure Investment Board (IIB), the project's Senior Responsible Officer must take account of all recommendations.
- e) The project will be required to go through Gateway Review, Key Stage Review and Post Project/Occupancy Evaluation, as directed by the Scottish Government, through the development phase until financial close is reached. The review process should be undertaken in full from the earliest applicable milestone.

Guidance

Project resourcing

The skills and experience of the Project Director and the wider Project Team needed to deliver a successful revenue financed project are outlined as follows:

The project team should:

- have knowledge and experience of revenue financed procurement to be able to provide a challenge function to advisers and bidders;
- operate as the public face of the project both internally and externally; and
- have an understanding of the assets and services to be provided by the private sector partner under the proposed contractual structure.

The project team should have the experience and expertise necessary to successfully manage and deliver the key phases in project procurement; specifically:

- the Pre-Qualification (PQQ) stage, which will be used to select, most likely, three consortia to Participate in Dialogue;
- the Competitive Dialogue process (as appropriate) and have the confidence and experience to lead detailed, wide-ranging and complex negotiations with bidders in relation to the technical, commercial and financial aspects of the project; and
- selection of a Preferred Bidder, based on rigorous and transparent evaluation of tenders.

In addition to the expertise outlined above, the project team must have sound knowledge of these important aspects of procuring revenue financed projects:

- design;
- risk transfer;
- affordability;
- the payment mechanism, including penalty and default issues;
- funder issues;
- interfaces between the procuring body and the private sector partner and between the private sector partner and subcontractors; and
- specification of hard facilities management (FM) services;
- an understanding of relevant employment regulations¹ where staff may be required to transfer from one employer to another.

The Project Director should have experience of comparable procurement of assets and long term services, ideally gained from senior involvement, for the public sector, in earlier revenue financed project(s).

The Project Director should have the experience and expertise necessary to:

- lead the PQQ stage of the procurement process, including the evaluation of PQQ submissions and direct engagement with consortia;
- take the lead role in managing the project from the selection of a Preferred Bidder to Financial Close and beyond into the operational phase of the project; and
- provide clear leadership during the transition from the procurement phase to the delivery phase of the project.

Project and programme governance

Effective governance is vital to the success of individual projects and the investment programme as a whole. At project level, therefore, the procuring body is required to put in place a reporting and governance structure which will enable scrutiny and oversight at senior level within the procuring body. The exact form of this structure will be for the procuring body to determine: options include the creation of a specific project board which reports to a management board and/or Finance Committee, or a regular, detailed report from the project's Senior Responsible Owner (SRO) to a management board. The SRO must be an employee of the procuring body.

The Scottish Government will develop governance structures at programme level to enable scrutiny of progress across projects within a specific sector. The procuring body will be expected to work within this structure and respond as appropriate to questions or recommendations that may arise at programme level.

The Scottish Government's Infrastructure Investment Board (IIB) has ultimate oversight of the NPD programme. The IIB may therefore decide to scrutinise the project individually or as part of a wider programme. Typically the IIB will provide this scrutiny early in the life of the project, and ideally before the development of an Outline Business Case. Where IIB makes specific recommendations in relation to the project, the SRO will be required to take account of those recommendations in taking forward the project.

¹ Especially the Transfer of Undertakings Protection of Employment (TUPE) Regulations.

Project assurance

Both the procuring body and the Scottish Government require assurance about the robustness of project management and the prospects for successful procurement, delivery and operation. OGC Gateway Review and Key Stage Review are separate and complementary assurance tools which will help to ensure the successful delivery of major capital projects. The project will be required to undertake both review processes, or an alternative appropriate assurance route as directed by the Scottish Government, at specific points in its development.

Gateway Review provides a short, focused review (at a strategic level) of a programme or project carried out at key decision points in its lifecycle by a team of experienced practitioners, independent of the Programme or Project Team. The Review is conducted on behalf of the project's SRO and provides assurance and support for the SRO in discharging their responsibilities. The SG Gateway Review process applies to all organisations covered by the terms of the Scottish Public Finance Manual, and within that, to all projects with a capital value of at least £5 million. Gateway Reviews will be coordinated via the Scottish Government's Centre of Expertise. Post Project/ Occupancy evaluation (which corresponds to Gateway Review 5) will remain the responsibility of the procuring body.

Key Stage Review provides a structured, independent 'due diligence' review of projects, supporting Project Managers and Sponsors at commercially critical procurement stages. Key Stage Reviews help to ensure that procuring authorities are sufficiently advanced in their project development and have put in place the necessary delivery arrangements and documentation in order to secure high quality, sustainable bids. They also ensure that authorities are adequately resourced to effectively and efficiently carry out the procurement, construction and operational stages of the projects. Key Stage Reviews are a formal requirement for all projects delivered through the NPD model and will be conducted by SFT.

Contract Management

Where a shared service is in place for contract management, the procuring body should agree to participate in that service.

3. Requirements for value for money assessment and business cases

Conditions

Outline Business Case stage:

- a) The procuring body is required to submit an Outline Business Case (OBC) to the Scottish Government, with a shadow bid model, which demonstrates how the project will deliver value for money in quantitative and qualitative terms. The OBC must be in line with Green Book guidance, the Scottish Public Finance Manual and appropriate sector specific guidance as outlined in Section 4.
- b) Before the project can enter procurement, the Outline Business Case must be approved by the procuring body and ultimately Scottish Ministers. SFT will have an oversight role and will provide comment to Scottish Ministers prior to their formal approval.
- c) The procuring body and the Scottish Government must both confirm at OBC stage that the project is affordable in terms of both unitary charge and non-unitary charge costs.
- d) Approval of the OBC will cap the revenue support based on agreed capital value supported at an agreed base date with an agreed construction inflation assumption and agreed centrally provided financing assumptions.²

Full Business Case stage:

- e) After the procuring body has selected a preferred bidder but in advance of financial close, the procuring body is required to submit a Full Business Case (FBC) to the Scottish Government, with detailed costings which confirms that, following a competitive procurement process, the project offers value for money in both quantitative and qualitative terms. The FBC must be in line with Green Book guidance, the Scottish Public Finance Manual and appropriate sector specific guidance as outlined in Section 4.
- f) Before the project can reach financial close the Full Business Case must be approved by the procuring body and ultimately Scottish Ministers. SFT will have an oversight role and will provide comment to Scottish Ministers prior to their formal approval.
- g) The procuring body and the Scottish Government must both confirm at FBC stage that the project is affordable in terms of both unitary charge and non-unitary charge costs.
- h) Approval of the FBC will fix Scottish Government revenue support based on the out-turn capital value of the project; anticipated financing terms; and maintenance and life cycle costs at an agreed base date.

² Revenue consequences of any upward movement in construction cost or timing after this date are likely to be the Authority's account, although in exceptional cases with a full justification in the Final Business Case, may be centrally funded.

Guidance

The Business Case process

The business case process for NHSScotland is mandated through the Scottish Capital Investment Manual. There are three business case stages in the development of a project:

- *Initial Agreement:* The IA should confirm the strategic context of the proposal; makes a robust case for change; and provide stakeholders and customers with an early indication of the proposed way forward (but not yet the preferred option).
- *Outline Business Case:* The OBC should provide more detail on the strategic case and identify a preferred option which demonstrably optimises value for money. The OBC also sets out the shadow bid model; examines affordability; and proposes the procurement strategy and arrangements for managing and delivering the project.
- *Full Business Case:* The FBC updates the OBC and records the findings of the subsequent procurement activities; together with the recommendation for an affordable solution which continues to optimise value for money, and details the arrangements for the successful delivery of construction and service provision for the project.

The procuring body should consider, in discussion with the Scottish Government, the current stage of development of the project and whether all three business case phases are required.

Guidance on developing business cases

In preparing a business case for the project, the procuring body should ensure compliance with the existing guidance; specifically:

- HM Treasury Green Book³ and associated technical guidance⁴;
- Scottish Public Finance Manual⁵;
- Scottish Government guidance on capital programmes and projects⁶; and
- Specific guidance for delivering capital projects within NHSScotland is contained within the Scottish Capital Investment Manual⁷.

³ Available at: http://www.hm-treasury.gov.uk/data_greenbook_index.htm

⁴ Available at: http://www.hm-treasury.gov.uk/d/greenbook_toolkitguide170707.pdf

⁵ Available at: <http://www.scotland.gov.uk/Topics/Government/Finance/spfm/pfipp>

⁶ This guidance is currently being revised. The updated version will be published by mid April. The current version is available at: <http://www.scotland.gov.uk/Topics/Government/Finance/18232/VFMCapital>

⁷ Available at <http://www.scim.scot.nhs.uk/>

4. Funding of preparatory and development costs

Conditions

- a) **The procuring body (and where relevant, other participating public authorities) is required to provide funding for the preparatory and development costs of the project in line with the proportions/amounts outlined below.**
- b) **The procuring body must return to the Scottish Government the full value of capital receipts associated with the project.**

Guidance

Four sets of preparatory and development costs have been identified as required in order to deliver the project through the NPD model. These are:

1. Public sector development costs – which may include feasibility, planning, design and specialist advisory services
2. Public sector advisory costs – which may include legal, financial, technical (if additional to design costs) and insurance advice costs
3. Public sector enabling capital costs – these are necessary to prepare the project for procurement (e.g. land purchase and preparatory works)
4. Public sector enabling revenue costs – which may include staffing costs or decant provision

Procuring bodies are required to provide funding for the above preparatory and development costs.

Treatment of capital receipts

- Capital receipts directly associated from the disposal of properties replaced/ released by supported projects must return to the Scottish Government the full value of capital receipts within an agreed time period of the completing the relevant transaction.
- The disposal must be made at fair value and the procuring body will be required to account for the disposal accordingly.

5. Scottish Government support for elements of the unitary charge

Conditions

- a) In order to be eligible for Scottish Government revenue support the project must be assessed, by the procuring body, under relevant Eurostat (ESA95) guidance as falling outside the public sector for national accounts purposes. This assessment will be reviewed by the Scottish Government.
- b) In order to secure revenue support, the procuring body must satisfy both the Scottish Government and SFT that it has sought to minimise capital and operating costs within the agreed project scope and has undertaken a whole of life cost analysis.
- c) The procuring body is required to fully fund the unitary charge elements relating to Hard FM (facilities management) costs and 50% of lifecycle maintenance costs.
- d) Projects will only receive Scottish Government revenue support upon successful completion of construction and commencement of operations.

Guidance

Components of the unitary charge

The unitary charge is the amount of money paid by the public sector procuring body to the private sector consortium over the duration of the contract. Unitary charge payments begin once the project is fully operational or individual phases have been completed. The total unitary charge payment will comprise some or all of these components:

1. Construction costs (including VAT where applicable)
2. Private sector development costs (including staffing, advisory and lenders' advisers' fees)
3. Financing interest (which is necessary to fund the project through construction)
4. Financing fees
5. Running costs for the project's Special Purpose Vehicle (SPV) during construction, including insurance costs and management fees
6. SPV running costs during operations, including insurance costs and management fees
7. Lifecycle maintenance costs
8. Hard facilities maintenance (FM) costs

For clarity, the following cost elements are outwith the scope of the NPD and hub DBFM contracts or are a pass through cost, and accordingly are a direct cost to the public body:

9. Soft FM costs, including cleaning, catering, grounds maintenance and security
10. Utilities including gas and electricity costs and rates
11. Equipment costs not included in overall construction cost

Components of the unitary charge to be supported by the Scottish Government

Subject to the procuring body meeting the other conditions outlined in this letter, and the satisfactory commencement of operations on the project, the Scottish Government will commit to provide the procuring body with revenue support for the following elements of the unitary charge:

- 100% of construction costs (subject to the agreed scope of the project);
- 100% of private sector development costs (subject to an agreed cap);
- 100% of financing interest and financing fees (at prevailing Financial Close rates);
- 100% of SPV running costs during the construction phase (subject to an agreed cap);
- 100% of SPV running costs during the operational phase (subject to an agreed cap); and
- 50% of lifecycle maintenance costs.

Components of the unitary charge to be supported by the procuring body

The procuring body is required to support the following elements of the NPD unitary charge:

- 100% of Hard FM (facilities management) costs; and
- 50% of lifecycle maintenance costs.

The procuring body will be required to fully fund additional cost components for soft FM services, utilities costs and equipment costs (not included in the overall construction cost) regardless of procurement route.

Determining the value of SG revenue support and the procuring body's contribution

As part of the value for money assessment process (described in Section 3), the procuring body is required at the Outline Business Case stage to prepare a detailed shadow bid model of anticipated project costs and financial flows. This model should provide projections of the various cost components of the project, including contributions to the total unitary charge payment from the relevant parties. SFT will provide base assumptions for the shadow bid model which will specifically include indicative figures for financing costs, inflation rates and indexation provisions. An updated financial model should be included in the Full Business Case in order that value for money can be reassessed at this stage.

At Financial Close, financing rates are determined and the total unitary charge payment is set, subject to inflation, for the term of the contract. The project financial model, which is prepared by the Preferred Bidder and forms the basis of Financial Close, will be used to determine the individual components of the unitary charge, and therefore the respective revenue contributions from each of the relevant parties.

SFT Role in £2.5bn Revenue Financed Investment Programme

Introduction

SG has requested that SFT supports the delivery of the £2.5bn revenue financed investment programme outlined in November 2010. This paper summarises SFT's proposed role at:

- i. **Programme Level** where SFT provides support to Scottish Ministers and to the Capital and Risk Division of Scottish Government;
- ii. **Portfolio Level** where SFT provides support to sponsor departments such as SGHD, SGELL, SFC and TS; and
- iii. **Project Level** where SFT provides support to procuring bodies tailored to the support requirements for a standalone NPD project or a project being procured using hub DBFM.

SFT's role at each level will vary. The attached table outline SFT's role at each level classified as follows:

- **Lead** where SFT is the lead organisation in relation to the activity.
- **Support** where SFT provides support to other parties (usually the procuring body or sponsor department) to deliver projects.
- **Approve** where SFT has an approving or pre-approval commentary role (usually on behalf of Scottish Government or Scottish Ministers).

In some instances, SFT's role may be extended to provide additional support at either a programme, portfolio or project level, for example, managing Scotland's Schools for the Future programme or, alternatively, providing additional support to individual projects.

Programme Level Support

Programme level support is provided to Scottish Ministers and to the Capital and Risk Division of Scottish Government. SFT's key work streams and associated roles are summarised below:

Programme Level Support Work Stream	Lead Role	Support Role	Approve Role	Notes
Standard NPD / hub DBFM Contracts	√			Development of standard contract and approval of any variations to the standard contract during the procurement of the programme.
Underlying NPD / hub DBFM Principles		√		Support SG to uphold the NPD / hub DBFM principles by being the 'guardian' of these principles during the procurement process.
ESA95	√			Obtaining programme level clearance from SG / HMT where possible noting that some projects will require project specific signoff.
Programme Affordability	√			Provide SGC&R with updates on programme affordability ensuring consistency and the appropriateness of the financial assumptions used.
Methodology for Revenue Support		√		Assist SGC&R in the development of the conditions and guidelines of providing revenue support and support the development of a methodology of calculating SG revenue support.
Value for Money Guidance		√		Provide input to SGC&R to update the VfM guidance including assessment methodologies.
Assurance and Approvals	√			Develop assurance process and template papers for completion by procuring bodies. Agree programme level approvals process (as

Programme Level Support Work Stream	Lead Role	Support Role	Approve Role	Notes
				required) with SGC&R including scope & extent of SFT comment / approval and provide support to IIB where projects are being reviewed by exception. SFT will not be involved in the Gateway review process.
Advisory Framework and Briefing Documents	√			Establish and maintain a framework of Technical, Legal and Financial advisors for use by public sector bodies involved in the revenue financed investment programme. Prepare template briefing documents for each function.
Market Interface	√			Manage the market interface relating to the investment programme with both the public and private sector including soft market testing of aspects of the revenue financed projects (e.g. contract development, scope of services) noting that this interface does not apply at individual project level.
Progress Reporting	√			Provide regular progress reports, as required by SGC&R, covering the investment programme as a whole, including (but not limited to): <ul style="list-style-type: none"> <li>i. Project timescales – highlighting any slippage <li>ii. Impact on SG budgets – indicating impact of changing interest rates; timetable slippages etc. <li>iii. Issues arising which should be brought to the attention of Scottish Ministers and/or SGC&R

Portfolio Level Support

SFT will support the sponsor departments (Scottish Government Health Directorate, Scottish Government Education and Lifelong Learning Directorate, Transport Scotland and the Scottish Funding Council) in the delivery of the revenue funded projects in the following areas:

Portfolio Level Support Work Stream	Lead Role	Support Role	Approve Role	Notes
Confirmation of Revenue Support		√		Provide support as required to the sponsor department to confirm level of SG revenue support. SFT will verify that the conditions attached to the SG revenue support offer are met prior to contract signature.
Assurance and Approvals			√	Agree portfolio level approvals process (as required) with sponsor department including scope & extent of SFT comment / approval which may include provide commentary on the review of business cases and reporting back on KSR findings and recommendations.
Progress Reporting	√			Provide regular progress reports, as required by the sponsor department, covering directly relevant projects the investment programme as a whole, including (but not limited to): <ul style="list-style-type: none"> i. Project timescales – highlighting any slippage ii. Impact on SG budgets – indicating impact of changing interest rates; timetable slippages etc. iii. Issues arising which should be brought to the attention of Scottish Ministers and/or the sponsor department

Project Level Support

SFT will support project teams in the delivery of the revenue funded projects in the following areas:

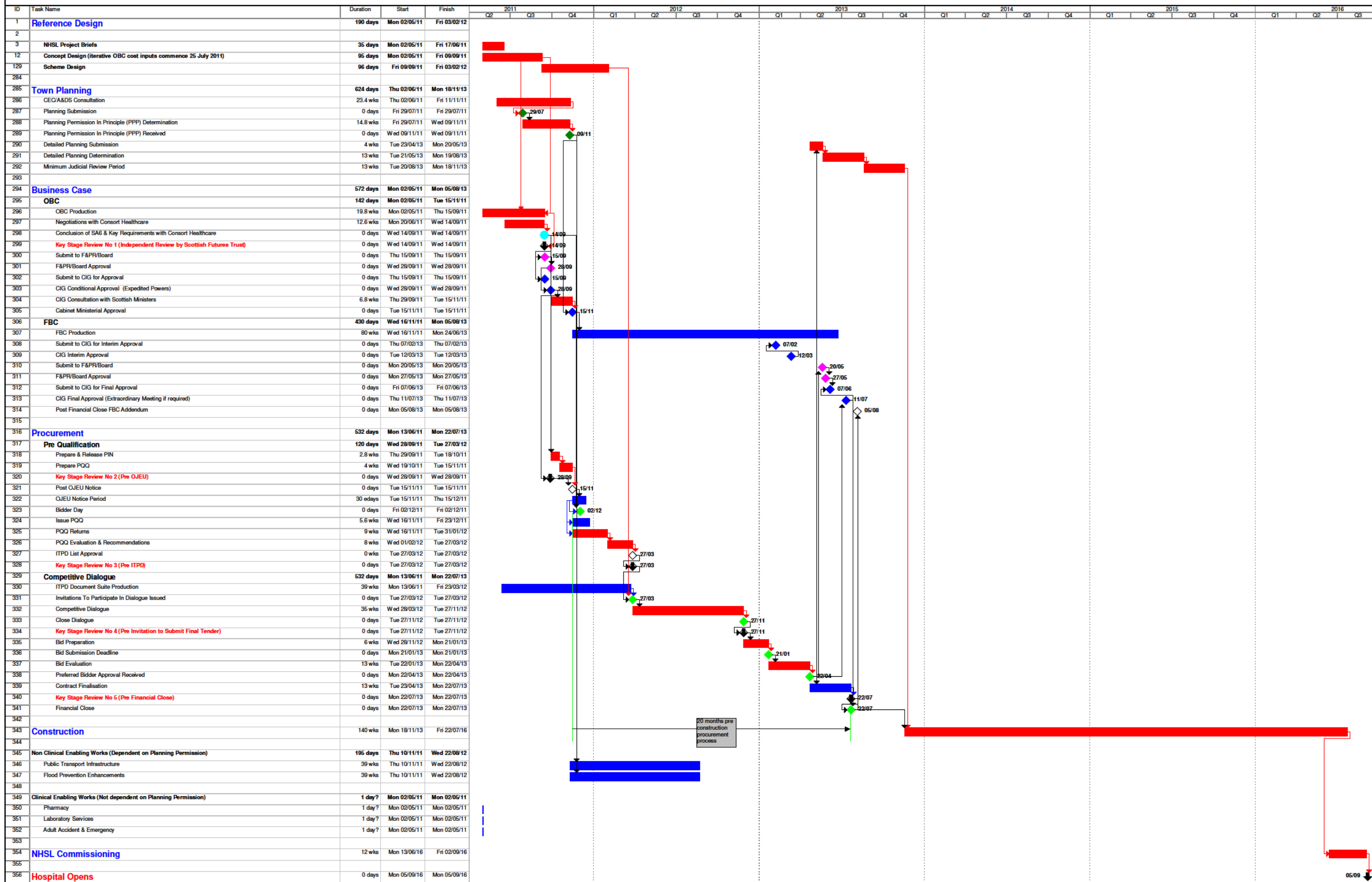
Project Level Support Work Stream	Lead Role	Support Role	Approve Role	Notes
Project Governance		√		SFT will provide support to establish a structure. This may include SFT representation on the Project Board as agreed with each procuring body.
Business Case Development		√		SFT will provide ad hoc advice in response to specific queries to assist procuring bodies when preparing OBC and FBC documents. For example, the scope of services, revenue support mechanics, nature / availability of shadow bid model and required assumptions / sensitivities.
Assurance and Approvals	√			Prior to each assurance review SFT will provide project teams with detailed requirements noting that assurance reviews will be undertaken on behalf of the relevant sponsor department.
Procurement Process Support		√		SFT will share best practice and provide ongoing support to queries raised by project teams relating to business cases, preparation for project assurance reviews, competitive dialogue procurement process, bid evaluation, short-listing, revenue support conditions, contract negotiations, feedback from funding market and other relevant matters.
Contract Derogations			√	SFT expect no amendments to the underlying contract principles and only project specific issues to be identified. SFT will sign off derogations at key stages in the procurement process if they are

Project Level Support Work Stream	Lead Role	Support Role	Approve Role	Notes
				assessed as being appropriate.
Ongoing Operational Phase Support		√		<p>SFT will provide ongoing operational phase support to projects which may include:</p> <ul style="list-style-type: none"> • Contract management guidance & training • Operational support e.g. insurance & benchmarking



RHSC + DCN - Little France

Strategic Development Delivery Programme Version 1.0



ACTION NOTES

Meeting RHSC & DCN Project Working Group
Title:
Date/Time: Thursday 26 May 2011 at 11.00 am – 13.00 pm
Location: MR3, Waverley Gate
Attendees: Brian Currie, Project Director
 Iain Graham, Director of Capital Planning and Projects
 Susan Lloyd, Partnership Lead
 Donna Stevenson, SFT
 Andrew Bruce, SFT
 Neil McLennan, Capital Planning Project Manager

NOTES

<i>Item</i>		<i>Lead</i>
1.	<p>Consort Letter Re Key Enabling Requirements for the Project</p> <p>Following the meeting held on 23rd May IG is currently re-formatting the letter. He has obtained comments from SG and will speak to JKS to get her comments.</p> <p>IG will issue the revised draft letter on 27 May & comments.</p>	IG
2.	<p>Reference Design</p> <p>BC stated that we are clear re what needs to be done for the rest of the calendar year.</p> <p>Scope of Reference Design - there are 2 broad options. Template for clinical functionality with supporting output specs or to take the design to quite advanced stage with competition being on price. Defining things too rigidly may compromise the design quality. Will need to be clear re the bidders' scope for flexibility.</p> <p>IG said that the clinicians will need comfort that they will not have to make compromises further down the line which will affect clinical functionality. Need to define how circulation will work, identify site constraints etc.</p> <p>AB expressed his concern re Nightingales being employed by one of the bidders and stated that there is a duty to create a level playing field. He suggested that Nightingales would be useful in reviewing bidders' proposals. BC stated that NHSL would want Nightingales to be employed by one of the bidding teams, that they would struggle to be objective when reviewing</p>	BC

ACTION NOTES

<i>Item</i>		<i>Lead</i>
	<p>proposals from the bidders and that MacRoberts view is that the market would not be inhibited if Nightingales were part of a bidding team.</p> <p>Technical advisers currently looking at options for reference design. Timeline for reporting back on this to be established. Advisers will also conduct soft market testing.</p> <p>Healthcare Planner - currently being tendered through Motts. Operational Briefs - being finalised.</p>	<p>BC</p>
<p>3.</p>	<p>Governance</p> <p>Paper re project being submitted to F&PR week commencing 30th May.</p> <p>Needs to give Board heads up re levels at which decisions will be made. Key decisions which will be made by Board need to be identified and that JKS and SG will have delegated authority for any other decisions. Board will need to approve selected bidder, OBC and FBC.</p> <p>Derogations - SFT may be delegated to deal with this.</p> <p>Consort - who has authority to approve the deal with Consort. NHSL and Consort will agree the deal. If the financial impact is more than £5 million it will have to be signed off by CIG.</p>	<p>IG/BC</p>
<p>4.</p>	<p>Programme</p> <p>AB queried length of competitive dialogue.</p> <p>DS stated that the timeline for tendering for the legal adviser needs to be clarified.</p> <p>Next meeting to focus on programme and reference design. Richard Cantlay & Fraser McQuarrie to be invited to attend.</p>	<p>IG</p> <p>BC</p>
<p>5.</p>	<p>Other</p> <p>OJEU Process</p> <p>AB stated that we need to be 100% sure re what needs to be in place before OJEU. The technical advisers will come to Working Group meetings to check this through. The Working Group meetings will merge into working sessions over a period of time.</p>	

ACTION NOTES

<i>Item</i>		<i>Lead</i>
	<p>NPD Contract IG emphasised that it is vital to have clarity early on how the process will work so that the market can be informed.</p> <p>It will also be helpful for the Board and clinicians for a clear explanation to be produced of how the process will work at the competitive dialogue phase.</p>	
	<p>DATE & TIME OF NEXT MEETING</p>	
	<p>2 June 2011, 11.00 am-13.00 pm, MR3, Waverley Gate</p> <p>Agenda & supporting papers to be issued in advance.</p>	<p>BC</p>

CONFIDENTIAL

1 June 2011

SCOTTISH
FUTURES
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Jackie Sansbury
NHS Lothian
Edinburgh Royal Infirmary
51 Little France Crescent
Edinburgh
EH16 4SA

Dear Jackie,

RHSC / DCN NPD Project

Further to the letter NHS Lothian received on 22nd March 2011 from the Scottish Government with regard to the funding conditions for delivering projects through the non profit distributing model, we are following up on certain specific matters as they relate to the funding of the combined NPD project for Royal Hospital for Sick Children and Department of Clinical Neurosciences ('the Project'). We also thought it useful to set out some further details as to the role of SFT in the project, as part of our wider engagement on the non profit distributing pipeline across the public sector. We have discussed the content of this letter with the Scottish Government Health Directorates.

Funding Conditions

Construction Costs

The letter of 22nd March 2011 made it clear that the Scottish Government would fund 100% of construction costs subject to a scope for construction being agreed between the procuring body and Scottish Government (which will be supported by SFT in this assessment). Below is set out how we propose to reach agreement on the scope of the project and therefore how a cap on this element of funding will be set. The cost of the project is made up of two elements

– the size of the new facility (using the gross internal floor area (GIFA) in square metres as a measure) and its specification (using the cost per m² as a measure).

As part of an updated Key Stage Review process, that will be applied uniformly on NPD projects in the health sector, we propose to engage in the ongoing design process of the Project to provide an independent review and challenge to the overall size of the facility and its specification on behalf of the ultimate funder of the project. To do this we are likely to employ an external adviser. This should provide independent validation of some of the key high level metrics of the proposed design and a valuable external benchmark on value for money.

The output from this review will be a report giving an opinion as to the efficiency of the design. This may be wide ranging and will comment from the funders perspective on the cost efficiency of the design solution to meet understood needs within the constraints in existence. Using advice from this report and other appropriate benchmarking evidence, the scope of the project will be agreed, following detailed discussions as required, between SGHD, SFT and NHSL and a cap set as to the maximum construction cost that will be funded by the Scottish Government within the NPD contract as part of the approval of the OBC. This cap will be adjusted by the rate of BCIS construction inflation between the date it is set and the date of financial close.

This cap will be set to include a small level of project risks (i.e. it will reflect a professional view as to the likely tendered price). A contingency budget to cover most of the higher level project risks (i.e. those that have a low probability of occurring but which will have a high impact on project cost if they do occur) will be held at a programme level and the Project will be able to make an application for this budget if a risk does crystallise.

It is the intention that this process will be followed for all acute health projects that are approved under the programme of NPD projects.

Lifecycle Funding

The letter from SG Health Directorate made it clear that it is the intention that the Scottish Government will fund 50% of lifecycle maintenance costs. A cap for this element of SG funding will be agreed as part of the outline business case approval, based upon a review of the presented cost estimates and comparing these to relevant external benchmarks. We have provided the project team with some estimates of the likely costs in this area.

Hard FM Costs

As set out in the SGHD letter, hard FM costs for the Project will not be funded by SG. We would be happy to provide guidance to NHS Lothian as to the likely out turn of these costs.

Development Costs & SPV Running Costs

All of the private sector development costs up to an agreed cap will be funded by Scottish Government. These are the professional costs incurred by bidders in preparing their bids – both external advisors (including designers) and internal staff costs as included in the tender. The level of these costs will depend not only on the size of the project, but also the level of design work that is required as part of the bid and the length of the procurement process. A budget for these costs will be agreed as part of the approval of the Outline Business Case and SFT will retain a challenge function regarding the final level of these costs. In the interim we would be happy to share our thoughts with the project team and advisors regarding the likely outturn of these costs.

The project company will also incur costs during the construction period of the project (SPV Running Costs during Construction) – these costs will include insurance premia, project management costs and bank technical advisory costs. It excludes bank commitment fees and interest costs, which are met through the roll up of senior debt capital during this period. (see section on Financing Interest and Financing Fees below). The unitary charge impact of the SPV Running Costs during Construction will be met by the Scottish Government subject to agreement as to the level of these costs. Similar to the development cost, we shall agree a budget for these costs as part of the OBC approval and retain a challenge function regarding

the final cost included in the Project. We shall share our experience with you regarding the likely level of cost in this area.

The project company will also incur running costs during the operational phase of the Project and it is confirmed that Scottish Government will meet the unitary charge impact of these costs subject to an agreed cap. These costs include staff costs, insurance, external advisory costs and bank agency fees (SPV Running Costs during Operations). We shall work with you to put forward a budget for these costs within the OBC. As above, SFT will also retain a challenge function as to the outturn of these costs during the procurement period, but will give you our thoughts up front as to these estimates.

NHS Lothian's advisory costs and any other up front costs associated with the project not mentioned above will not be funded by the central NPD revenue budget. SFT has no role in respect of funding such costs which are a matter for NHSL.

Financing Interest and Financing Fees

As is set out in the SGHD letter, the Scottish Government will provide revenue support to cover the finance costs of the Project. This will include the bank arrangement fees, commitment fees and the interest costs (rolled up during the construction period and paid out during the operational period). The risk of movements in interest rates up to the point of financial close will also therefore be covered by the Scottish Government funding.

Given this cost is being covered by SG, SFT will support the Scottish Government through both the Key Stage Review process and review of Outline and Full Business cases in approving the financing package offered by the preferred bidder. It would be expected that bidders are asked to provide fully financed bids as part of their final tender submissions, but that the right is reserved to carry out a preferred bidder debt funding competition during the preferred bidder period. The Scottish Government will reserve the right to call for such a competition if it is not felt the funding terms of the preferred bidder are competitive. SFT (on behalf of the Scottish Government) will also have a role in approving the interest rate proposed at financial close (i.e. when the interest rate swap is entered into).

Enabling Works & Equipment

In addition to the funding of the Project, there is likely to be a need for capital to fund the associated enabling works and equipment. SFT has no role in the allocation and management of such budgets which are a matter for NHSL and SGHD. Our broader remit in seeking optimum value for money for infrastructure investment does however extend to the use of both capital and revenue budgets on the projects in which we are involved. Therefore we shall retain a challenge function with regard to both the revenue and wider capital costs of the Project as part of our input to the review of the Outline and Full Business Cases.

We believe the enabling works are as follows (excluding the works on Car Park F):

- Clinical Works – works within the existing RIE to allow the reconfiguration of services and the appropriate interface with the new facility.
- Utility Diversion Works - redirection of water, drainage and other utilities from underneath the proposed footprint of the new facility in Car Park B.
- Other External Works - we understand these to include road reconfiguration on the Little France site and flood defence works.

We understand that the current estimate of these works is £24m (including VAT). We understand that there is a working assumption that all three of these classes of enabling works would be delivered as part of the existing Consort PPP contract (and to the extent this is possible, the VAT should be recoverable). As it stands this contract is classified as a government asset under ESA95 and therefore any works that are funded from additional unitary charge would also incur a charge on the Scottish Government's capital budget. Therefore without any change to the classification of this project, all additional works as part of this contract should be funded by capital, as capital cover will be required anyway.

There have also been some recent proposals to ask Consort to carry out some additional building works beyond the footprint of the existing hospital, which would change the point of

interface between the old PPP contract and the new PPP contract ('Connecting Works'). As previously discussed, we view these proposals as likely to add additional overall construction costs (given two building projects rather than one), increased risk of delay in delivery of the Project (as the new PPP contract is likely not to be able to start until the Connecting Works are complete) and a greater requirement of capital budget given the classification of the current PPP contract. We do not see any significant benefits from this approach that might act to counterbalance these issues and therefore we are pleased that you have put forward a recommendation that the Connecting Works are procured as part of the NPD contract.

There are also significant equipment requirements for the new RHSC / DCN facility – there is a current estimate of £29m (including VAT). Assuming that this is specialist medical equipment, we do not recommend that this is procured as part of the NPD contract. The lifecycle risk of specialist medical equipment is difficult (and hence costly) to transfer over the full period of an NPD contract and it would prove a major distraction to the delivery of the principal accommodation aspects of the Project. The option should be explored of procuring this under a separate revenue funded managed equipment service. If this does not appear viable it should be funded through capital budgets. Nevertheless more standard Groups 1-3 equipment should be considered for inclusion in the Project.

The detail of the enabling works and equipment and a cap on the capital budgetary impact would need to be agreed by SGHD as part of the OBC approval.

Capital Receipts

The Project is expected to release significant land and buildings at the Sciennes Road site and possibly to a smaller extent at the Western General site, which could be sold. We understand that SGHD policy on capital receipts is for SGHD to receive the net book value of these assets at the point of sale, with the Health Board recognising the profit or loss on this sale compared to their net book value through their own accounts. Finalising any such agreement in respect of the Project will be a matter between NHSL and SGHD.

Utilities

The letter from SGHD indicates that utilities costs are to be funded as a direct cost to NHS Lothian. Nevertheless we suggest that consideration is given to the inclusion of these costs within the contract as part of the service to be defined, albeit that the costs are still met from existing NHSL budgets. It is important that, if these costs are going to be part of the NPD contract, that this intention is made clear at the outset of the project (i.e. in the OBC). We would be happy to discuss this with you in more detail as there are clearly important interactions with the rest of the site and central purchasing arrangements.

Indexation

To date most acute health projects have agreed 100% indexation of unitary charge. This tends to reduce the starting rate of unitary charge, but transfers significant inflation risk to the procuring authority over the life of the project. We believe it represents better value for money that only the proportion of unitary charge is indexed which represents the amount of indexing project company costs (hard FM costs, lifecycle costs, SPV costs and insurance) as a proportion of total project company costs (hard FM costs, lifecycle costs, SPV costs, insurance, annual senior debt service costs, junior debt service costs). Therefore we would expect that this reduced level of unitary charge indexation be adopted. In addition the RPI index should be chosen as the appropriate means of inflating the base unitary charge. We would expect that the assumptions around indexation be brought out as part of the Outline Business Case.

Capacity and Governance

As is set out in the SGHD letter, we believe that the skills and experience of the Project Director and the wider project team are of vital importance in delivering the Project successfully. A key part of this is experience in delivering revenue funded projects, as this brings significant additional demands on the project team over and above those required on capitably funded construction projects. These include developing a services specification and payment mechanism, attracting and retaining the engagement of equity investors in a project

during the bid period and managing the demands of senior debt funders. Given the size of the Project, it is critical that this experience comes from the client team, as the project team have to be able to manage the advisory input to the project, both in terms of cost and strategic input – both of which become very difficult if the advisers themselves are the sole source of experience on key parts of the project.

With regard to current advisory appointments we do not believe it is sensible to appoint advisors with significantly overlapping remits (as appears to be the case with regard to technical advisory appointments). Our experience is that this leads to excessive levels of advisory costs and more internal management time to handle this situation. We are also concerned that the architects employed to carry out the reference design for the Project are not restricted from working for one of the bidders once this stage is complete. This will make it difficult to create a level playing field amongst bidders for the Project, as at least the perception will be that whichever bidder employs this architect will be at a significant advantage. We would welcome a dialogue with you as to how these issues are resolved.

Overall we do not believe that the current project team has sufficient experience of PPP project delivery and would look to agree with you a change to this resource at the earliest opportunity and certainly well before the commencement of procurement. We have offered some part time support over the next 3 months to temporarily mitigate this concern.

Supplementary Agreement 6

As we have discussed on a number of occasions Supplementary Agreement 6 needs to be concluded before approval of the OBC so that NHSL has all of the land and other rights and interests necessary to ensure that the development of the RHSC/DCN (including the physical connection to the existing RIE) can go ahead and that the enabling works can be carried out without requiring consent from Consort or third parties (subject to statutory consents being obtained).

There is substantial anecdotal evidence that potential bidders will require to see absolute clarity on these points prior to investing in tender activity for the Project, so it is particularly

important that agreement is reached and this is able to be clearly communicated to the wider market.

We recognise that recent progress you have made in drawing up a list of all the issues that need to be resolved within the existing contract prior to the procurement of the Project. It is important that these issues are now addressed as a matter of priority.

Role of Scottish Future Trust

SFT has roles at each of the NPD programme level, the portfolio level and the project level as set out in the document accompanying the letter from government and as described in this letter. In the sections below, we have set out additional comments on some of these roles.

Assurance and Approvals

In relation to the Project, SFT will review and provide support to CIG in its consideration of both the Outline Business Case and Full Business Cases for the project. Such comments will include whether, from our perspective, there are any issues that should be rectified prior to the approval of the business case. Ahead of formal submission of business cases, we are willing to work with you in the development of these documents.

In addition SFT will carry out Key Stage Reviews of the Project prior to important milestones on the project procurement. These are likely to be at Pre OBC, Pre OJEU, Pre Invitation to Participate in Dialogue, Pre Invitation to Final Tender and Pre Financial Close. These reviews will be carried out by staff that are independent from those SFT staff directly involved in the Project. We will work with the project team to minimise the overlap between these two important processes.

Project Governance

We have proposed that SFT will support the development of the Project through attendance at both the Project Board and Working Group meetings.

Finally, this letter raises a number of matters of key importance for the successful delivery of the Project. We believe it may be useful to arrange a meeting of senior personnel from each of SFT, SG and NHS Lothian to discuss these further.

We look forward to continuing our work with you and your colleagues on the delivery of this important project.

Yours sincerely



Peter Reekie
Director of Finance and Structures

cc. Mike Baxter SGHD



NHS Lothian RHSC + DCN Little France – Procurement Options

June 2011

NHS Lothian - RHSC & DCN Procurement Options

June 2011

Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
0	16 th June 2011	Denise Kelly	Richard Cantlay	Paul Hampson	

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1. INTRODUCTION

Since the combined RHSC & DCN project will now be procured under NPD, NHSL has been in discussions with the Scottish Futures Trust (SFT) to determine the shortest possible procurement route. The procurement process options, and their associated timescales, are directly linked to the approach adopted on the reference design and this paper considers three options around this along with their benefits and drawbacks.

2. EXEMPLAR/REFERENCE DESIGN APPROACH

Typically in the past, an exemplar design approach has been adopted on revenue funded projects (e.g. PFI/PPP). Under such an approach, as part of the Outline Business Case (OBC), NHSL is required to prepare its Conventional Procurement Assessment Model (CPAM), a scheme that if capital funding were available, would be capable of meeting NHSL's requirements. This exemplar scheme would also inform the costs included in the OBC and is typically shared with potential bidders for information only.

However, the intention here, based on discussions with SFT to date, is to go a step further and develop a 'reference' design and mandate certain elements as part of the ITPD. The purpose of doing so is to:

- reduce the overall NPD procurement timescales and associated bidding costs
- reduce the amount of clinical user consultation through the dialogue period
- provide greater cost certainty at Outline Business Case (OBC) stage
- provide greater certainty over the eventual design solution under NPD

A number of options are being considered in terms of the extent of reference design that is produced and subsequently mandated. An overview of the options (as to the extent of reference design and the associated procurement process) alongside the benefits and drawbacks of each approach are given below (Options A, B and C). In addition, an Option D is included which represents the previous exemplar design approach along with its key benefits and drawbacks.

3. IDENTIFIED OPTIONS

OPTION A – MANDATE CLINICAL FUNCTIONALITY

This involves developing the design to the extent required in order to fix aspects of the design as they relate to clinical functionality, as defined under the Project Agreement e.g.

- Access
- Relationships between buildings
- Adjacencies between clinical departments and between rooms
- Schedule of accommodation areas
- Room layouts (loaded)

The clinical functionality elements will then be mandated within the invitation to participate in dialogue (ITPD). Only associated elements of the design that are required to prove the robustness of the clinical functionality solutions will be developed and these will be released for information to bidders.

The benefits of this approach are

Risk - No change to the risk transfer profile as normally achieved under PFI/ NDP e.g. NHS already take clinical functionality risk, all other design risk remains with the private sector.

Design team involvement – there is likely to be fewer issues (and potentially no issues) with the reference design team members subsequently joining bid teams for the main project from a “level playing field” perspective.

Innovation – Compared to options B and C below this approach encourages greater innovation in terms of the architectural, services and structural solutions whilst allowing a greater level of certainty upfront over the clinical solutions than with an exemplar design approach.

Market interest - As there would still be a large part of the design to be developed, the opportunity remains for potential bidders to use their expertise to influence the project and overall design thus potentially increasing the attractiveness to the market.

Cost of design – the cost to NHSL of carrying out the reference design for this option would be less than options B and C.

The drawbacks of this approach are:

Innovation – As elements are mandated, does limit the extent of innovation possible compared to an exemplar design approach.

Programme – Compared to option B and C below, a more detailed and therefore longer dialogue period would be required to enable potential bidders to develop the design.

Clinical engagement – while the level of consultation required with clinicians during dialogue reduces compared to an exemplar design approach, it will require more input than options B and C below.

OPTION B – MANDATE FULL DESIGN

This approach involves using the reference design team to produce a more developed design with the intention of mandating significant elements of it (e.g. fixed floor plans) compared to option A, prior to launching the procurement process. This would ensure a much greater level of certainty over the final solution.

The benefits of this approach are:

Programme – as design is undertaken upfront, there is the potential to reduce the time required for dialogue.

Clinical engagement - reduces to a minimum the level of engagement required between the three short listed bidders and clinical user groups which would very likely reduce the risk of this period increasing. The engagement would be required upfront instead but with just the reference design team.

Affordability - gives a much greater degree of certainty over project affordability during dialogue.

The drawbacks of this approach are:

Programme – a longer period may be required for the design stage before launching the procurement process.

Risk – as potential bidders will effectively inherit a more fully detailed design, there are risk transfer issues that will require to be resolved if the same profile is to be maintained. For the private sector to accept design risk, they will require a full due diligence exercise on the design initially and it may be that this process results in a lesser level of design risk being transferred. Planning risk would also be affected since the potential bidders would be submitting a design prepared by others so creating difficulties if planners raised any issues – see option C below.

Cost of design – greater cost to NHSL than option A as the reference design team would be taking the design to a greater level of detail before passing it across to the private sector.

Design team involvement – likely to cause more issues with the reference design team members subsequently joining bid teams for the main project from a “level playing field” perspective given the extent to which they will have developed the design. To avoid this impacting on market interest, the reference design team may need to be conflicted out of joining bidding teams.

Innovation – limits scope for innovation as key elements of the design fixed by this point so becomes a competition based mostly around pricing and commercial aspects – this may impact on market interest.

Affordability – the scope for potential bidders to adopt solutions that are more cost effective would be lost making it more difficult to demonstrate value for money (linked with innovation).

OPTION C – MANDATE MORE DETAILED DESIGN + NOVATE

This option is essentially the same as option B however involves novation of the reference design team to the successful bidder. Given this option would appear to be a new approach and not one which we understand has been done before on PPP/NPD type projects, this would require detailed analysis to understand the extent to which it is deliverable. However, some early informal market soundings suggests that this option may be the most attractive in the absence of a fully flexible (non mandatory) design. It addresses some of the drawbacks under option B as follows:

Market interest – as this approach reduces bid costs for potential bidders whilst providing a level playing field, it is potentially more attractive to potential bidders than options A and B. Initial feedback suggests potential bidders’ preference is to have the opportunity to develop the clinical solution during dialogue however in the absence of this, option C is preferred.

Risk – it is likely that the novation of the reference design team would enable the design risk (excluding clinical functionality risk) to be transferred in full to the private sector since this risk could be passed down from NPD Co to the reference design team. It would also resolve any concerns about planning risk transfer to the private sector. However, this would require to be tested more fully prior to confirming this is the case.

OPTION D – EXEMPLAR DESIGN

This option is the approach typically used in previous health PPP/PFI projects whereby a high level exemplar design is developed which is indicative only and bidders can choose to adopt elements of the design, or otherwise, as they see fit. The deliverables from this option would typically be 1:500 site layouts supported by some 1:200 sketch drawings showing key departmental layouts.

The benefits of this approach are:

Cost of design – the cost of the design under this option is likely to be far less than Options A, B and C.

Innovation – As the design is completely open, opportunities for innovation from the private sector are maximised under this option.

Risk – full design risk transferred to the private sector with exception of clinical functionality in line with standard project agreement risk allocation.

Market Interest - .linked to the above, given the opportunities for the private sector to provide innovation the competition would have more emphasis on quality as well as price - this is likely to be attractive to the market. However, it should be noted that there is a risk that this may have negative impact from the cost of bidding perspective.

Design team involvement – given the high level and indicative nature of the design, this option is likely to cause no issues around the design team joining bidders without jeopardising a level playing field.

The drawbacks of this approach are:

Clinical engagement – due to the fact that designs are being developed by the bidders from a much earlier stage, this would require intensive clinical input throughout the bid period and bidders would require full access to the clinical user groups.

Programme – this option would require the longest period for competitive dialogue since bidders need sufficient time to develop their design from first principles – however, the overall impact of this may be minimised through a reduction in time up to OJEU (since limited time needed for up front design).

Affordability – there is typically less certainty over project affordability during dialogue.

Option durations

Activity	Option Duration A	Option Duration B	Option Duration C
Now – OJEU ¹	4 months	5 months	5 months
OJEU – Issue of ITPD ²	4 months	4 months	4 months
Issue of ITPD – Close of Dialogue ³	8 months	6 months	6 months
Close of Dialogue – Appoint of Preferred Bidder ²	4.5 months	4.5 months	4.5 months
Preferred Bidder – Financial Close ⁴	3 months	3 months	3 months
Overall (OJEU to FC)⁵	19.5 months	17.5 months	17.5 months

Notes:

1. Under Options B&C, OJEU date put back by 3 months to allow design to be completed by start of dialogue (this only has an impact of 1 month however since under Option A, there is 2 months of float between completing the reference design and issue of the ITPD). Durations for all three options subject to final confirmation of the reference design deliverables for each.
2. As discussed and agreed as realistic durations at meeting with SFT on 24/5/11.
3. Under Option A, we believe that the Competitive Dialogue could be reduced to around 8 months (from 10 months) – this would include a 2 month “draft tender” period prior to closing dialogue in line with OGC guidance. This would be a challenging timescale for potential bidders and very likely impact on their bid costs. For options B and C it is thought that the Competitive Dialogue period could be reduced to 6 months (although potentially shorter for Option C).
4. As discussed and agreed at meeting with SFT, this duration achievable based on new standard form position of the public sector taking the planning judicial review risk.
5. The duration for Option D would be longer than the other options since the time to OJEU would still be required for OBC processes and approval and there would need to be a longer Competitive Dialogue Period.

4. ESTIMATED COST OF REFERENCE/EXEMPLAR DESIGN FOR EACH OPTION

A high level estimate of the cost to NHS Lothian of carrying out the design under each option is set out in the table below:

Option	Estimated Cost Range
A	£1.76
B	£6.05
C	£6.05
D	£50,000-£100,000

Note: The above are ball park figures based on high level predictions

5. Soft Market Testing

A soft market testing exercise was conducted to gauge the markets view on the above proposals.

The organisations approached were Morgan Sindall, Brookfield, Galliford Try Investments and Morrison Construction.

Each respondent was asked if they were interested in bidding the project as an NPD. All except 1 confirmed they would be.

Each respondent was advised of the option A, B & C approach. The consensus was that bidders would prefer the design to be treated as an exemplar to enable them to have the freedom to truly innovate on the project. Whilst option A gives some degree of flexibility, this was considered to be fairly limited.

None of the respondents could see a benefit in Option B over options A & C. And this was considered to be the least favourable.

Given that clinical functionality is being fixed under Option A and the ability to innovate is limited by this, all of the respondents preferred Option C primarily because it significantly reduces bid costs.

All respondents confirmed that they would be comfortable with a full risk transfer under all 3 options (with the exception of clinical functionality).

None of the respondents expressed a concern about the incumbent design team joining another bidder. The respondents felt that they can engage with other designers who may be able to significantly improve what has been carried out to date.

6. AGREED WAY FORWARD

At the Working Group meeting on 2 June 2011,, it was agreed to proceed on the basis of Option A since this option adopts the principal of using a reference design (and therefore utilises some of the work done to date) while bringing the advantages described under option A (namely around risk transfer, innovation, market interest and cost of design) without resulting in an unacceptable programme or overly onerous clinical user involvement requirements through the procurement process.

From: [Currie, Brian](#)
To: [Andrew Bruce](#)
Subject: RHSC + DCN - Little France - Working Group
Date: 24 June 2011 12:27:37

Andrew

Taking the points in your recent email to me of 22 June in turn:

We seem to be moving away from what I recall was a relatively informal and collaborative workshop arrangement where ideas and opinions could be stated and explored freely to a much more formal affair with action points list, full minutes and now papers in advance etc. Nothing obviously wrong with this and is what we do all the time for very many other meetings. Action on NHSL to implement going forward.

Availability for meetings is a problem generally particularly given the summer holiday season is upon us. 1st July is not possible for other attendees and I suggest we reconvene on the 14th July and fortnightly thereafter thus avoiding the third Thursday of each month?

The current Consort position is that having spent a considerable amount of time with SFT re positioning what NHSL would be negotiating with Consort we issued a letter to them on 2nd June. We have received a confirmation email from them acknowledging receipt of that letter and not much else. Susan Goldsmith is today, again, chasing up Stephen Gordon and John Cavill and advising them both of our programme of key events/meetings and NHSL Negotiating Team to ensure an early conclusion (Sept this year). George Curley continues to progress negotiations with Consort on all other Supplementary Agreements.

As regards the issue of restricting our current architectural team to preparing a reference design only, I didn't state at the 9th July meeting that it had been resolved and the notes of that meeting reflect that:

"BC informed the group he hoped that the architects could be persuaded to extend their involvement as Technical Advisors beyond the Reference Design. This would preclude them from bidding for the project. This agreement is to be formalised through MM should the NA Board confirm their agreement to this request by SFT / SGHD".

The current position is that I met with main board members of both architectural practices on Wednesday of this week (as noted I would do last week) and conveyed SFT's request again in fairly plain language. They will be stating their final position very shortly. There is also apparently growing concern from other consultants on the project that this issue may set a precedent for other projects where SFT are involved. We, naturally, remain extremely concerned of the programme implications for this project and our ability to attract a first rate architect to prepare our reference design should the boards of both Nightingale and BMJ choose to withdraw from the reference design process. It is my intention to have a full response to SFT's request on this issue just as soon as possible and obviously once my colleagues and senior management within NHSL understand the potential consequences.

As stated by Gordon and as confirmed by Donna, Gordon's contributions to the management and administration of this project, in whatever form, are not in any way to be taken as the SFT view. Clarity is essential here for not just the NHSL project team members but the wider project team community. I will talk to Gordon further about using SFT headed emails for example which can be misinterpreted. As regards his own initiative, following agreement with senior colleagues in NHSL, I set down in an email to Gordon on the 25th May the terms of reference for his temporary involvement with the NHSL project team. This clearly stated that the areas where we felt he should be deployed are procurement and business case. Any work Gordon is doing be it on commenting on the current NHSL Governance process, the Consort/NHSL negotiating strategy and composition of the NHSL negotiating team or general project management has been of his own making.

Regards

Brian

Brian Currie
Project Director
LUHD - RHSC + DCN Re provision

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From: [Cosens, Sorrel](#)
To: [Baxter M \(Mike\) \(Health\)](#); [Kinnear N \(Norman\)](#)
Cc: [Roy G \(Glenda\)](#); [Currie, Brian](#); [Potter, Carol](#); [Sansbury, Jackie](#); [Goldsmith, Susan](#); [Gordon, Shirref](#); [Waugh I \(Ian\)](#)
Subject: RE: RHSC + DCN - Little France: Business Case
Date: 05 July 2011 09:57:16
Attachments: [RHSC DCN OBC Contents 050711.doc](#)

Dear Mike & Norman,

I hope you are both well. As agreed with you at Working Group meetings, NHS Lothian plans to share and shape the OBC with your input as information is available over the next twelve weeks. We have developed the attached contents and action plan for the production of the OBC, and would appreciate your confirming that this structure and content is what SGHD are expecting to be submitted at the end of September. It follows the SCIM guidance for an OBC, but with adaptations for NPd and the advanced stage that we have reached in determining the preferred option for RHSC + DCN.

With best wishes,
Sorrel

From: Mike.Baxter [REDACTED]
Sent: 16 June 2011 12:15
To: Cosens, Sorrel
Cc: Glenda.Roy [REDACTED]; Currie, Brian; Potter, Carol; Sansbury, Jackie; Goldsmith, Susan; Gordon, Shirref [REDACTED]; Ian.Waugh [REDACTED]
Subject: Re: RHSC + DCN - Little France: Business Case

Sorrel

In response to your points below:

1. Arrangements are in hand re approvals.
2. The analysis re Consort developing DCN should be expanded to reflect the latest ESA 95 assessment and the implication of on balance sheet treatment.
3. With regard to capital there should be no assumed contribution from other Boards. The OBC should identify 100% of the capital requirement (enabling and equipment). The case should also be explicit regarding the role of endowment and charitable funding in the overall budget for the project.

On revenue the contribution of Boards will need to be explicit and agreed. This should reflect the share of the unitary payment falling to NHS lothian and running costs and not any element for which SG support is agreed.

I trust this is helpful.

Mike

Sent from my BlackBerry Wireless Handheld

From: Cosens, Sorrel [REDACTED]
To: Baxter M (Mike) (Health)
Cc: Roy G (Glenda); Currie, Brian [REDACTED]; Potter, Carol [REDACTED]; Sansbury, Jackie [REDACTED]; Goldsmith, Susan [REDACTED]

[REDACTED]; Gordon Shirreff
Sent: Thu Jun 16 11:48:24 2011
Subject: RHSC + DCN - Little France: Business Case

Dear Mike,

I write to update you on the proposed submission of a Business Case for the RHSC and DCN at Little France, and seek clarification from CIG on the following issues.

- When will NHSL receive formal notification that the Addendum submitted in March 2011 has been accepted and is our basis for moving forward?
- Is the level of appraisal completed in the Addendum sufficient to eliminate the option of Consort delivering DCN as part of the RIE, and can NHSL now focus on developing the preferred option of a joint NPD in this Business Case?
- In order to complete the financial model, what do SGHD envisage the capital and revenue funding commitments required of other NHS Boards will look like?

We plan to present the case to NHSL Board at their 28/09/11 meeting. If CIG will accept the business case to commence their own review prior to formal approval by NHSL, then we could submit it as a final draft in mid-September, pending final approval from NHSL. As discussed at the Working Group, it is hoped that we will have CIG and ministerial approval, and therefore be in a position to go to OJEU, before the end of November.

These timescales are dependent on our confirming the scope of the business case document now required in the next two weeks, and your assistance is much appreciated.

Best wishes,
Sorrel

Sorrel Cosens
Project Manager
DCN and RHSC Reprovision Projects
NHS Lothian
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Section	Description (SCIM Requirement)	Tasks	Information Required	Section author and organisation	Status / Next Review Date		Deadline for Completion of Section
					% Complete	Review Date	
Project Management	Develop a draft Action Plan for approval and sign off by the Project Board. Undertake the Project Management of the OBC production.	Establish NHSL & SGHD approval requirements to be approved at Project Board, 08/07/11.	Proposed to Chief Operating Officer & Director of Finance.	SC		08/07/11	12/07/11
		Agree leads for each of the sections		SC		21/06/11	28/06/11
		Establish meeting schedules	OBC Working Group (bi-weekly) Project Sponsor Meetings TBC	SC		30/06/11	12/07/11
		OBC programme and programme for engagement with CIG to be approved at Project Board, 08/07/11.	Proposed to Chief Operating Officer & Director of Finance.			08/07/11	12/07/11
		Coordination and Lead Author		SC			
		Set up the OBC document template and document wayfinding		SC		28/06/11	28/06/11
		Review correspondence and discussion notes with SGHD and CIG.		SC		28/06/11	12/07/11
Section 1 – Executive Summary							
1.1	Introduction			SC, NHSL	0		01/09/09
1.2	Background	To include Nov 2010 decision that NPD route to be followed.	Formal approval of March 2011 Addendum.	SC, NHSL	0		01/09/09
1.3	Strategic Case	To include Consort Interface		SC, NHSL	0		01/09/09
1.4	Economic Case			SC, NHSL	0		01/09/09
1.5	Commercial Case			SC, NHSL	0		01/09/09
1.6	Financial Case			SC, NHSL	0		01/09/09
1.7	Management Case			SC, NHSL	0		01/09/09
Section 2 – The Strategic Case							
2.1	Strategic Context	Overview of national and local strategic context.	Update from 2008 OBC & 2011Addendum as required.	SC, NHSL	90	28/06/11	26/07/11
2.2	Organisational Overview	Snapshot of the organisation: purpose, structure & environment.	Update from 2008 OBC & 2011Addendum as required.	SC, NHSL	90	28/06/11	26/07/11
2.3	Commercial Context	1. NPD funding route description. 2. Little France: Explain deal reached with Consort to allow project to proceed. 3. Position of previous HFS partner	Confirmation of SA6 by George Curley	BC, NHSL / LAs / SFT	0		01/08/11
2.4	Business Strategy & Aims	Existing and future business plans, including any relevant national initiatives and stakeholders / customers for services	Update from 2008 OBC & 2011Addendum as required.	SC, NHSL	90	28/06/11	26/07/11
2.5	Other Organisational Strategies	Existing and future plans. Strategic needs.	Update from 2008 OBC & 2011Addendum as required.	SC, NHSL	80	28/06/11	26/07/11

Section	Description (SCIM Requirement)	Tasks	Information Required	Section author and organisation	Status / Next Review Date		Deadline for Completion of Section
					% Complete	Review Date	
2.6	Investment Objectives	Investment Objectives ranked in order of priority and made SMART.	Merging of RHSC and DCN Investment Objectives.	Meetings with NHSL stakeholders to finalise SMART objectives.	SC, NHSL	30	12/07/11
2.7	Existing Arrangements	Snapshot of current service arrangements.	Update from 2008 OBC & 2011 Addendum as required.		SC, NHSL	80	28/06/11
2.8	Business Needs – Current & Future	Service gaps to be filled.	Update from 2008 OBC & 2011 Addendum as required.		SC, NHSL	80	28/06/11
2.9	Clinical Scope and Service Requirements	Detailed description of business scope and high level service outputs.	Provide statement of design and facility overview and Operational Policies overview. Summarise activity and capacity modelling to underpin scope.	Completed bed model, or agreed at a point in time.	SC, NHSL	50	28/06/11
2.10	Facilities Management Scope and Service Requirements		Provide statement of design and facility overview and FM Operational Policies overview.		SC, NHSL	0	28/06/11
2.11	Design Scope and Requirements		Extent of design work undertaken in Reference Design, how to be communicated to bidders and room for bidders to innovate. "Non-negotiables" to be explained. Could possibly alternatively be included as part of Commercial Case		BC, NHSL	0	28/06/11
2.12	Funding Scope		The scope of the overall project to be funded as part of the NPD project must be clearly stated. Capital funding requirements exist too, equipment, enabling works, FM etc.		CP, NHSL	0	28/06/11
2.13	Benefits Criteria	Main benefits by key stakeholder groups – ranked in order of importance and / or weight.	Completed December 2010. Included in 2011 Addendum.		SC, NHSL	100	28/06/11
2.14	Strategic Risks	Key business, service and external risks, together with specific proposals for mitigation and management.	Risk Workshops Specific procurement risks must be included	Output from Risk workshop 29/06/11	BC, NHSL DK, TAs	0	12/07/11
2.15	Constraints and Dependencies	Internal & external.	Update from 2008 OBC & 2011 Addendum as required. Decant and migration need to be included. Consort interface needs to be referenced.	Confirmation of SA6 by George Curley	SC, NHSL	0	12/07/11
Section 3 – The Economic Case							
3.1	Critical Success Factors	Weighted and ranked in order of importance.	Review SCIM and draft CSFs for stakeholder agreement and weighting / ranking.	Stakeholder input	SC, NHSL	0	12/07/11
3.2	Main Business Options	Revisit and update long list for SWOT analysis, including 'do nothing' or 'do minimum' options.	March 2011 Addendum explained options appraisals to date. Include in OBC for completeness.		SC, NHSL	90	28/06/11
3.3	Preferred Way Forward	Conclusion and initial assessment using options	Completed in March 2011 Addendum, supported by SGHD letter 21/06/11.		SC, NHSL	90	28/06/11

Section	Description (SCIM Requirement)	Tasks	Information Required	Section author and organisation	Status / Next Review Date		Deadline for Completion of Section	
					% Complete	Review Date		
	framework.							
3.4	Short-listed Options	Detailed description of short-listed options including 'do nothing' or 'do minimum' and outline Conventional Procurement Assessment Model.	Completed in March 2011 Addendum.	CPAM not applicable here. SGHD to advise on which options	SC, NHSL	50	28/06/11	26/07/11
3.5	NPC/NPV Findings	Result of economic appraisals for preferred option (change from SCIM advised by M Baxter by email 16/06/11)	Update information on Consort option for DCN and ESA95. Result of economic appraisals for preferred option: Lifetime cost analysis. Capital and lifecycle costs including phasing over financial years and FBC analysis. Revenue costs. Transitional (including decant) and opportunity costs.	Capital costs – build & equipment. Revenue costs.	CP, NHSL	0	09/08/11	31/08/11
3.6	Benefits Appraisal	Results of ranking, weighting and scoring the qualitative benefits for each short-listed option.	Completed in March 2011 Addendum.		SC, NHSL	90	28/06/11	26/07/11
3.7	Sensitivity Analysis	Results of sensitivity analysis undertaken for short-listed options.	VfM analysis including a range of sensitivities that test key areas such as interest rate movements or capital cost increases. See SFT VfM guidance.		CP, NHSL	0	09/08/11	31/08/11
3.8	Preferred Option	Recommended option following above analysis.			CP, NHSL	0	09/08/11	31/08/11
Section 4 – The Commercial Case								
4.1	Scope and Services	Potential scope and services for the possible NPD deal.	OBC will need to demonstrate that NHSL is in full compliance with conditions set out in SGHD letter 22/03/11.		BC, NHSL	0	26/07/11	09/08/11
4.2	Risk Allocation	Potential risk allocation for the possible deal. (Risk Quantification normally in Section 2 not required as no CPAM.	A standard NPD risk allocation table should be available and can be adapted for the project. SFT have advised that affordability modelling should exclude optimism bias, with the shadow bid model priced as if it were a fixed price PFI style contract.		BC, NHSL GS	0	26/07/11	09/08/11
4.3	Charging Mechanisms	Potential charging mechanisms for the possible deal.	Review and adapt standard Payment Mechanism		BC, NHSL DK, TAs	0	12/07/11	09/08/11
4.4	Key Contractual Arrangements	Potential key contractual arrangements for the possible deal.	Standard NPD contract will be used for the project. Derogations must be agreed with SFT. Some schedules require to be prepared by NHSL advisers.		BC, NHSL LA and TAs	0	26/07/11	09/08/11
4.5	Site Disposals		Financial and other project implications of site disposals should be included.		CP, NHSL	0	31/07/11	09/08/11
4.6	Personnel Implications	Potential personnel implications for the possible deal.	Any possible TUPE implications will have to be referred to here.	HR input.	SC, NHSL	0	26/07/11	09/08/11

Section	Description (SCIM Requirement)	Tasks	Information Required	Section author and organisation	Status / Next Review Date		Deadline for Completion of Section	
					% Complete	Review Date		
4.7	Implementation Timescale	Potential implementation timescale for the possible deal.	Key points from project timescale to be referenced		BC, NHSL	0	26/07/11	09/08/11
4.8	Accountancy Treatment	Potential accountancy treatment for the possible deal.			CP, NHSL	0	31/07/11	09/08/11
Section 5 – The Financial Case								
5.1	Capital Requirement	Potential capital requirement for the possible deal.		There should be no assumed contribution from other Boards. The OBC should identify 100% of the capital requirement (enabling and equipment). The case should also be explicit regarding the role of endowment and charitable funding in the overall budget for the project. MB email – 16/06/11	CP, NHSL	0	09/08/11	31/08/11
5.2	Revenue Requirement	Revenue requirement for the possible deal.	Revenue costs of NPD. NHSL workforce revenue. Equipment maintenance revenue costs.	Workforce plan from CMT – FH. Equipment costs – GG The contribution of Boards will need to be explicit and agreed. This should reflect the share of the unitary payment falling to NHS lothian and running costs and not any element for which SG support is agreed. MB email – 16/06/11	CP, NHSL	0	09/08/11	31/08/11
5.3	Net Effect on Prices	Potential net effect on prices for the possible deal.			CP, NHSL	0	09/08/11	31/08/11
5.4	Impact on Balance Sheet	Potential Impact on balance sheet for the possible deal.	Position of project in relation to government's balance sheet (ESA 95) must be clearly stated.		CP, NHSL	0	09/08/11	31/08/11
5.5	Impact on Income and Expenditure Account	Potential impact on income and expenditure account for the possible deal.			CP, NHSL	0	09/08/11	31/08/11
5.6	Overall Affordability	Overall affordability for the possible deal.	The extent of the overall project to be funded through the NPD revenue funding must be confirmed. All other project costs e.g. enabling works, equipment etc. must be identified as well as how they are to be funded. The requirement for up front capital must be clear. The affordability of the project to NHSL must be demonstrated.		CP, NHSL	0	09/08/11	31/08/11
Section 6 – The Management Case								
6.1	Governance		Project governance put in place by NHSL must be fully explained		BC, NHSL GS	0		26/07/11

Section	Description (SCIM Requirement)	Tasks	Information Required	Section author and organisation	Status / Next Review Date		Deadline for Completion of Section
					% Complete	Review Date	
6.2	Procurement Strategy	Intended method of procurement, including use of: <ul style="list-style-type: none"> - EC/GATT regulations - Evaluation criteria - Selection of preferred bidder 	This is already available in draft. Once approved by Project Board can be summarized here and incorporated in full as an appendix.	BC, NHSL GS	0	26/07/11	26/07/11
6.3	Project Management	Outline arrangements for project management	Procurement project management / to FBC. Construction project management. Operational NPD management. How the project is to be resourced by NHSL must be explained	DK, TAs DK, TAs BC, NHSL CP, NHSL	0	12/07/11	26/07/11
6.4	Value for Money	VFM assessment to be included	To be based on appendix C of SFT VfM Assessment Guidance, with proposed adaptations by GS. Full VFM schedules could be included as an appendix.	CP, NHSL	0	09/08/11	09/08/11
6.5	Change Management	Outline arrangements for change management	Changes during design and construction. Change management for workforce and services.	SC, NHSL	0	26/07/11	26/07/11
6.6	Benefits Realisation	Outline arrangements for benefits realisation		SC, NHSL	0		26/07/11
6.7	Risk Management	Outline arrangements for risk management		BC, NHSL DK, TAs	0	12/07/11	09/08/11
6.8	Post Project Evaluation	Outline arrangements for post project evaluation		SC, NHSL	0		26/07/11
Typical Appendices to support an OBC							
A	Economic appraisals			CP, NHSL & MP, E&Y	0	09/08/11	09/08/11
B	Financial appraisals			CP, NHSL & MP, E&Y	0	09/08/11	09/08/11
C	Non-financial benefits			SC, NHSL	0		
D	NPD Structure			BC, NHSL	0		
E	Procurement Strategy			BC, NHSL	0		
F	VFM Schedules			CP, NHSL	0		

Section	Description (SCIM Requirement)	Tasks	Information Required	Section author and organisation	Status / Next Review Date		Deadline for Completion of Section
					% Complete	Review Date	
G	Project Timetable			CP, NHSL	0		
H	Risk potential assessment			BC, NHSL DK, TAs	0	12/07/11	
I	Letter of Commissioner / stakeholder support				0		
J	Draft OJEU notice			DK, TAs	0	01/09/11	
K	Strategic business plans			SC, NHSL	0		

ABBREVIATIONS KEY

Individuals		Organisations	
BC	Brian Currie	E&Y	Ernst & Young
CP	Carol Potter	LA	Legal Adviser
DK	Denise Kelly	NHSL	NHS Lothian
FH	Fiona Halcrow	SFT	Scottish Futures Trust
GC	George Curley	TAs	Technical Advisors
GS	Gordon Shirreff	TG	Thomson Gray
MP	Michael Pryor		
NMcL	Neil McLennan		
SC	Sorrel Cosens		

DRAFT

NHS Lothian

Note of a Meeting to Discuss the Royal Hospital for Sick Children/DCN (RHSC/DCN) Project between NHS Lothian, Scottish Government Health Department (SGHD) and Scottish Futures Trust (SFT) held at 3.00pm on 12 July 2011 in the Chief Executive's Boardroom, Meeting Room 5.1, 5th Floor Waverley Gate, 2-4 Waterloo Place, Edinburgh.

Present: James Barbour, Susan Goldsmith, John Matheson, Peter Reekie and Barry White.

In Attendance: Douglas Weir.

1. Introduction

- 1.1 James Barbour commented the purpose of the meeting was to mutually agree the respective accountabilities and responsibilities for the RHSC/DCN project, in respect of Scottish Government, SFT and NHS Lothian. He stressed the importance of ensuring SFT expertise was deployed appropriately and in a way that avoided, wherever possible, adding to the complexity of the process, by avoiding duplication of effort. Barry White commented that in the UK and in Europe, and as set out in a WEF report, there is a clear view that having a central taskforce supporting such programmes of investment is a key factor in successful delivery of projects and helps avoid the mistakes of the past.

2. Progress since Previous Meeting

- 2.1 John Matheson advised since the previous meeting he and Susan Goldsmith, along with other colleagues, had met and recognised the position on Lothian's design issues in what had been a helpful and productive meeting.
- 2.2 Susan Goldsmith reported it was proposed to establish a workshop session which would showcase work to date on design and to allow SFT to receive on behalf of the Scottish Government assurance through appropriate challenge. She was confident all necessary work had been undertaken in respect of the RHSC project, although further opportunities might be available in respect of DCN.
- 2.3 Barry White confirmed he was supportive of this process which fitted with timescales already mapped out. James Barbour questioned whether this would obviate the need for more expense on external advisers. Barry White advised that SFT may use some specialist external support but also noted that useful benchmarks were already available and that it is useful to know that other recent hospital projects, for example, had achieved equipment transfer rates of between 37% and 50% and therefore to benchmark what is proposed here seems sensible and pragmatic. James Barbour stressed if the workshop highlighted

any design issues, then ownership of the resolution must remain with NHS Lothian. Peter Reekie agreed that if any potentially contentious or significant points were identified at the workshop that could affect the fundamentals of the project then these would be reported back to NHS Lothian team as soon as possible after the workshop. Barry White commented the process would be relatively light touch given the stage the project was at. James Barbour commented this felt to be a sensible way forward which did not compromise timescales. Susan Goldsmith would advise the Board through the Finance and Performance Review Committee (FPRC) that this issue was now resolved and did not impact on project timelines.

- 2.4 Barry White stressed accountability for the delivering the RHSC/DCN project remained with NHS Lothian and its Accountable Officer and that accountability for the wider NPD programme rested with SFT. Therefore SFT would generally act in a supporting/advisory capacity to individual projects rather than in a requiring capacity. However there are some issues of programme wide significance such as the standard contract derogations that required SFT agreement. In supporting the project if SFT highlighted an issue it would hopefully be resolved through the operational teams. If that were not to be the case then it would be intended to resolve those issues jointly between himself and James Barbour. Escalation beyond that, while unlikely, is possible if it were an issue of fundamental concern likely to impact on the success of the project.
- 2.5 James Barbour commented it would be useful if Barry White would capture the essence of his words in terms of the advisory role of SFT in support of NHS Lothian and to confirm the process if this were ever to move beyond an advisory role into one where requirements were being laid down by SFT. He felt it was important to set this out clearly in order to ensure everyone was clear about responsibilities. Barry White would progress. **BW**
- 2.6 Barry White suggested he and James Barbour meet on a bi-monthly basis. James Barbour commented he was content to have a high-level strategic overview meeting, it would be important to ensure issues did not routinely escalate to that level.
- 2.7 Discussion of the link between the new and existing hospital was considered. SFT believe commercially that procuring the link as part of the new build NPD is a better commercial proposition as the interface issues are more easily managed but have a fundamental concern that without certainty about available capital and planning that it might be impossible for an outbuild by Consort to be delivered. John Matheson reminded colleagues public sector capital remained tight and commented there was still no clarity about the out-build from Consort. Susan Goldsmith agreed there was a need to move the position on the link forward in advance of further discussions, and she was progressing this work. **SG**
- 2.8 Barry White reiterated his concerns about the strength of the project team and sought clarification that the PWC review of the project arrangements would include both governance and project management aspects. Susan Goldsmith confirmed this was the case and the review would ensure the necessary skill sets were in place at Director and sub-Director level to ensure the proper delivery of the project. Barry White advised he was re-assured by this information, commenting the competitive challenges process was complicated and could be

time consuming if not well managed. James Barbour stressed if PWC made any recommendations these would be addressed and Susan Goldsmith would share the terms of reference for the review with Barry White. SG

- 2.9 Barry White stated that the secondment arrangement proposed by SFT had not got off to the best start and advised the offer of support remained on the table, but that SFT can redeploy the seconded resource elsewhere to other projects if not required by NHS Lothian.. He stressed, however, if the secondment continued this should be reporting within the NHS Lothian team management arrangements and using an NHS email address. James Barbour cautioned against rushing to judgement commenting if the PWC review identified a skills gap, and the secondment provided the solution, this would be an appropriate course of action. Susan Goldsmith commented she recognised the points made by Barry White about the complexities of the competitive dialogue process and accepted currently NHS Lothian would need more capacity in this area, although she stressed the project had not reached that stage.

3. Consort Issues

- 3.1 Susan Goldsmith re-affirmed that good progress was being maintained in respect of SA6, although a signed solution had not yet been produced. She had written to Consort setting out the requirements including the land transaction. She advised that Consort had intimated support, in principle, in their response, although they had commented in detail on a point-by-point basis on the contents of her letter. Susan Goldsmith commented, however, there had been no surprises in the Consort response.
- 3.2 Susan Goldsmith advised she had held positive discussions with John Cavill from Barclays with whom fundamentals had been agreed in principle. She commented Consort would seek indemnity on availability (doable but difficult); revenue streams and guaranteed car park income. Susan Goldsmith commented John Cavill had advised of the need for discussions to be held with the lenders and for legal advice to be concluded. Susan Goldsmith commented, however, John Cavill was keen to progress as expeditiously as possible, and had re-affirmed willingness to work with NHS Lothian in support of its achievements.
- 3.3 Susan Goldsmith advised she would write to Consort in respect of their governance process. She commented the 'lock-in' session with all key partners, including SFT had been agreed although the summer holiday period was throwing up challenges in respect of firming up on the final date, which was being actively pursued for early September.
- 3.4 John Matheson commented in order to expedite matters, it would be useful if Consort could agree who the lead agent would be to undertake due diligence work. Susan Goldsmith advised progress was being made but the current lead agent was the Royal Bank of Scotland who had no finances available and might need to step back with the lenders having to identify a new lender bank. Susan Goldsmith advised she would address this with John Cavill. Susan Goldsmith commented in her discussions no issues of principle had been raised that could

not be overcome in respect of the land deal with the only area of discussion being around timescale with Consort.

- 3.5 James Barbour commented he did not think Consort/Balfour Beatty were hostile or instrumental in delaying the project. He appreciated, however, their approvals process was slow. James Barbour questioned whether SFT would be involved in the preparatory day and the lock-in session. Barry White confirmed this would be the case and suggested the lock-in process might require separate facilitation.
- 3.6 Barry White commented that in other negotiations in the UK that as part of a negotiation strategy a meeting between the private sector and a politician had helped move matters forward. John Matheson commented the timing of such a move would need to be carefully considered and only used if there was a significant blockage. Barry White suggested all parties involved were aware of the high profile nature of the project and he would hope that this element of a negotiation strategy would be unnecessary but could be kept in reserve as an option.
- 3.7 James Barbour updated colleagues on work which had been commissioned by NHS Lothian via a private independent resource to gauge the viability of whether the RHSC project would be susceptible to public fund raising. Initial views were the project would attract fund raising interest and he felt this would raise the profile of the project.
- 3.8 Barry White commented that the Board's technical advisers had suggested the new facility would take three years to build thereby suggesting a timeline of September/October 2016. James Barbour suggested in coming to that conclusion, detailed explanations would be required to explain the elapsed time including the extent to which current work added to the timescale. He remained extremely concerned over media coverage and public perception, in the context of a project to which NHS Lothian was actively committed to delivering timeously, thereby ensuring world class facilities and services for the people of Lothian and beyond.
- 3.9 James Barbour questioned whether the Scotland Act would open up alternative funding options such as whether the availability of capital funding would raise a comparison of funding routes which might positively impact on the timescale. He stressed the Board's public position was not yet one of 2016, never mind any possibility of this stretching to early 2017.
- 3.10 John Matheson stressed at this point the non-profit distributing model (NPD) was the only available option. James Barbour commented if the project was moving away from the timescale currently in the public domain there would be a need to provide a clear explanation for the change. He acknowledged the desirable addition of DCN would account for six months, although a handling strategy would be needed for the remainder of the difference and this should be addressed through the lock-in session being arranged by Susan Goldsmith.
- 3.11 Susan Goldsmith advised Jackie Sansbury was working on timescale aspects and a communication had already been submitted and shared with the Cabinet Secretary. John Matheson advised the Cabinet Secretary had been informed

the timescale was September 2016 but that every effort needed to be made by all parties to bring this forward.

3.12 James Barbour commented the reasons for timeline slippage would need to be clear in the event the process was subject to an FOI request. Susan Goldsmith reported she would discuss with Jackie Sansbury appropriate wording for reporting to the FPRC in August. John Matheson stressed the need to get programmes moved in parallel. James Barbour stressed the only timeline running on its own was the construction aspect.

3.13 The following high-level actions were agreed:-

1. Susan Goldsmith would ensure SFT was played into the pre-work and the lock-in event. **SG**
2. Barry White would produce a form of words clarifying the balance between SFT providing advice and imposing requirements and how this would be manifested and dealt with. **BW**
3. Susan Goldsmith would encourage Consort to identify their lead agent. **SG**
4. Susan Goldsmith would provide details of the PWC terms of reference to Barry White. **SG**
5. Susan Goldsmith, with Jackie Sansbury, would craft a form of words for the FPRC detailing the context of the revised timeline.

4. Date and Time of Next Meeting

4.1 Douglas Weir would arrange for James Barbour and Barry White to meet on a bi-monthly basis.

Contract Control Order No 290961/02
 Title Initial Appointment of Ref Design Team
 Dated 11 July 2011



Project Title NPD Project for RHSC/DCN at Royal Infirmary Edinburgh for NHS Lothian

Source of Change

Appointment of Reference Design Team in accordance with attached scope and programme. (DL input outlined in attachment to be subject to separate Contract Control Order.

Description and Reason for Control Order

Instruct expenditure from Section C Reference Design (Provisional Sums) in accordance with Clause 34 of the Contract to permit the full appointment of the Reference Design Team consequent upon Contract Control Order No 01. The Reference Design Team will comprise; Nightingale Associates, BMJ Architects, Hulley & Kirkwood and Arup and will be appointed direct to Davis Langdon

Consequential Changes

There are no consequential changes save that work on the Reference Design will continue to completion. A further Contract Control Order will be issued in regard to the remainder of the Reference Design Provisional Sum. (DL/MML/TG/TTPM input).

Effect on Programme / Schedule

None

Cost Summary (based on Schedule 2-3 of the Contract – Services and Fee Schedule)

Estimated change in Labour Costs:

Estimated change in Direct Costs:

Estimated change in Total Costs: £1,539,486 CCO No 02

New estimated total project Costs: Section A £1,370,292 Original Fixed Price Agreed

(Currently all as contract.) Section B -

Payment for changed Ordered Services and Variations to be in accordance with Clause 43 of the Contract Section C £1,539,486 CCO No 02
 Section D -

Classification

This Control Order is considered to comprise:

Additional Work

Clarification of present scope of work

A variation to existing work

Release of work previously on hold

This Control Order is issued for your information and record. Please sign and return one copy. Further information and details will be provided in due course. Please provide your comments in writing within 10 days after which we will assume that we have your approval to proceed with the above change.

Signed for Mott MacDonald Limited

Signed for NHS Lothian

Date: 11 July 2011

Date: 29 July 2011

Distribution: NHSL (PD,PM); Relevant Sub Consultants; MML (PD,PM,PPW,Relevant Staff, PiMS CC)

Introduction

The following document has been prepared to highlight the actions undertaken in association with the appointment of the Reference Design Team members, notably;

- Nightingale Associates (Concept Architects)
- BMJ Architects (Clinical Architect)
- Hulley & Kirkwood (Services Engineer)
- Arup (Civils, Structural, Traffic and Transportation, Acoustics and Fire Engineering)
- Tribal (Health Planners)

Each of these organisations were invited to submit **lump sum** fee proposals for their individual services based on the NHS Lothian Reference Design Deliverables document dated 22 March 2010. This document has been updated since to incorporate various amendments (Copy attached in Appendix A)

In addition to the Reference Design Deliverables document, each organisation was asked to include for the services included in the scoping documents (copies attached in Appendix B).

Each organisation was requested to base their costs on the agreed HfS hourly rates (already proven to be VFM under the HfS framework) with a further discount factor applied to same as they were not subject to competition.

Fee Submissions

The following table highlights the level of fees originally submitted by each of the design organisations.

	H&K	Arup	Nightingale Associates	BMJ	Davis Langdon	Tribal	Total
Original Fee Submission	£337,500	£307,936	£637,175	£294,500	£311,000	£260,645	£2,148,756

The total fees exceeded the £2.0M provisional sum allowance, therefore each organisation were asked to re-assess their fee proposal and offer further discounts.

It was at this Stage that Tribal were removed from the Reference Design team control, therefore their costs were to be ignored moving forward.

The revised fees and the associated discounts offered by each of the design companies are as indicated below.

	H&K	Arup	Nightingale Associates	BMJ	Davis Langdon	Tribal	Total
Original Fee Submission	£337,500	£307,936	£637,175	£294,500	£311,000	£260,645	£2,148,756
Agreed Fee	£300,000	£275,000	£534,500	£294,500	£311,000	£0	£1,715,000
Discount	11.11%	10.70%	16.11%	0.00%	0.00%		

Each of the reference design team members have submitted hourly resource schedules to supplement their lump sum offers. (copies attached in Appendix C)

The reference design team draw down schedules is as follows;

	H&K Drawdown	Arup Drawdown	NA Drawdown	BMJ Drawdown	Davis Langdon	Total
01 July 2011	£12,000	£20,000	£53,500	£26,621.10	£62,200.00	£174,321.10
29 July 2011	£36,000	£35,000	£60,500	£31,008.01	£31,100.00	£193,608.01
26 August 2011	£36,000	£35,000	£75,000	£46,822.09	£31,100.00	£223,922.09
30 September 2011	£36,000	£30,000	£75,000	£31,703.76	£31,100.00	£203,803.76
28 October 2011	£36,000	£35,000	£75,000	£49,482.81	£31,100.00	£226,582.81
25 November 2011	£36,000	£30,000	£67,500	£39,586.25	£31,100.00	£204,186.25
23 December 2011	£36,000	£30,000	£55,000	£39,586.25	£31,100.00	£191,686.25
27 January 2012	£36,000	£30,000	£45,000	£29,689.73	£31,100.00	£171,789.73
24 February 2012	£36,000	£30,000	£28,000	£0.00	£31,100.00	£125,100.00
	£300,000	£275,000	£534,500	£294,500	£311,000	£1,715,000

Analysis

The **final** reference design fee of £1,715,000 was benchmarked against typical fee levels for a project of this nature and complexity.

Typically the fee levels of for a project of this nature and complexity would equate to circa 9 – 10% of the total construction cost.

If we assume that the construction cost is circa £160M, the total fees for the project should equate to £14.4 – 16.0 million pounds.

It should be noted that the total fees will also allow for QS services. In this instance the QS services are funded separately, therefore an allowance of £1.6M has been deducted from the total fees.

Taking into account this allowance the total design fees for the project should be circa £12.8 – 14.4 million pounds.

Considering that the reference design deliverables equate to a Stage C level of design input, the fees upon completion of these works should equate to 15% of the total fee, which should roughly equate to £1.92 - 2.16 million pounds.

The **final** reference design fee of £1,715,000 represents a relative saving of £200,000 – 445,000 pounds.

Conclusion

We are of the opinion that the **final** reference design fee of £1,715,000 represents value for money to NHS Lothian based on the following;

- The reference design teams hourly rates have been further discounted from the rates previously submitted when the projects was proceeding under the HfS procurement route. In addition the hourly rates under the HfS agreements have been frozen from the time of initial agreement, therefore the real discounts are actually greater than indicated in this paper.
- The level of design being progressed on the architectural front is actually in excess of Stage C and is more comparable to Stage D/D+. Given that we are obtaining this enhanced level of design detail for Stage C costs then VfM is further evidenced.

The final reference design fee has now been agreed to cover the following documents;

- The RHSC+DCN Deliverables for Reference Design v4 June 2011 document (copy attached in Appendix A)
- Reference Design Scoping Documents (copies attached in Appendix B)
- Reference Design Programme (copy attached in Appendix D)



RHSC + DCN Little France | Reference Design
Value for Money Statement



Appendix A – RHSC+DCN Deliverables for Reference Design v4 June 2011

Deliverable	Deliverable Use Categories							Status	Notes	Lead	Output	Reference Design Teams Comment
	Mandatory and Fix Clinical Functionality	QBC Costings	Planning and 3rd Party Consultations	Validate Design and Test Against OS	Enabling Works Design	Site Information for Bidders						
Schedules of Accommodation	✓	✓						Mandatory	Clinical Functionality. To include Soft FM Spaces. Also to include the 'O Zone' or preferably annotated as Atrium Space or Extended Waiting Space. Circulation to be excluded (at Project Go risk) but requirements (widths etc.) for circulation to be outlined in Output Specification. Circulation links and adjacencies to be indicated in Reference Design.	Capita		Capita will lead this phase with input from H&K with regard to the plant/riser strategy/lifts and communication spaces. Capita will @own@ the schedules and update with as-drawn information.
Room Data Sheets	✓	✓						Mandatory	Clinical Functionality Designers will require to receive full ADB database at start of reference design process.	Capita		Capita will lead this phase, H&K to develop the environmental information. Capita will identify GP/2/3 items with users and list in component sheets.
Equipment Schedules	✓	✓						Mandatory	Clinical Functionality	NA/BMJ	Schedules/Reports (Specific requirements to be defined)	Equipment schedules to be produced via Cadebook upon receipt of signed-off RDS and development of room layouts and in conjunction with specific Trust equipment requirements. The reference design team will identify any equipment that the Trust will need to provide specific manufacturer info for.
Development Control Plan + Urban Design 1:1000/1:500	✓	✓	✓		✓	✓		Mandatory	Clinical Functionality All relevant site wide issues to be addressed	NA/BMJ	1:1000 and 1:500 site plans indicating building footprint, road adjustments, parking layouts, access, energy centre and support facilities, blue-light/emergency appliance access, outline landscape/public realm proposals.	The reference design basis on site wide issues will include the bus, car parking, cycle route and A&E route strategies previously developed to Planning stage for the RHSC scheme. Proposals will take account of boundaries of land under Consort control (to be defined by NHS), servicing/waste strategies, buses and public transport requirements, site-wide parking provisions, flood protection plus feedback from CEC/A&DS. It is assumed that the strategy to be adopted for public transport will be based on previously agreed designs prepared. Early specialist involvement is recommended to develop an approach for the Helipad design which complements all other building design considerations (see also item 36 below).
Departmental Layouts 1:500	✓	✓	✓					Mandatory	Clinical Functionality	NA/BMJ	1:500 CAD layout plans for all levels identifying departmental adjacencies, departmental areas, and vertical circulation cores.	We anticipate 3 iterations being sufficient to achieve user sign-off. User engagement is assumed to involve a High level / strategic / heads of department interface only at this stage.
General Arrangements Plans 1:200	✓	✓						Mandatory	Clinical Functionality	NA/BMJ	1:200 CAD layout plans for all levels identifying room numbers, room areas (proposed and as-drawn), structural grid integration, main service risers, vertical circulation cores. Window locations will be excluded and partition thicknesses will be standardised.	We anticipate 2 iterations of user meetings being sufficient to achieve sign-off for Sick Kids departments with 2 iterations for DCN departments. Full user group interface at the 1:200 stage only.
General Arrangement Elevations and Sections.		✓	✓					Non-Mandatory	Required for discussion with A+DS and CEC Planning only.	NA/BMJ	Key 1:200 outline elevations and sections for main hospital building plus energy centre/support buildings. Elevations will establish general scale/form. Suggested strategies for material palette and fenestration to be illustrated by 3D sketches.	We recommend that in order to secure adequate support from CEC/A&DS the reference design should include some strategic studies using elevations and sections. This will also be required to enable a BREEAM pre-assessment. H&K needs the information to inform the section 6 calculations and SBEM modelling.
Generic Room Layouts 1:50	✓	✓						Mandatory	Clinical Functionality Quantity and Quality to be defined	NA/BMJ	1:50 layout plans indicating all fixtures/fittings and relevant codes, corresponding room elevations, equipment schedule, area analysis, 3D isometric views can be supplied for some rooms – extent to be agreed.	We estimate 37 No. generic rooms will be required based on the work already completed on the previous scheme.
Key Room Layouts 1:50	✓	✓						Mandatory	Clinical Functionality Actual rooms to be specified			
Fire Strategy 1:200			✓					Non-Mandatory	Reference Design Demonstrating Compliance. Supplemented in OS Design to show compliance with Bld Standards not bespoke fire engineered solutions. Escape strategies also to be developed. Services input essential	NA/BMJ/ARUP	1:200 CAD plans indicating all compartments/sub-compartments, hazard rooms, fire doors, vertical and horizontal means of escape, final exits external appliance access, Helipad requirements. Input to fire strategy report as required. Contribution to a strategy report (led by ARUP) as necessary.	Why is the fire strategy being included as part of the output spec? The scheme will be designed to ensure building regulation compliance is achieved as far as possible without the need to adopt a fire engineering solution. However, in order that constraints do not prevent the inclusion of spaces such as the 'O-Zone', a degree of localised fire engineering may be required. Plans indicating compartmentation (and subcompartmentation), vertical and horizontal means of escape, hazard rooms, final exits,

RHSC + DCN - Little France

AGREED DELIVERABLES FOR REFERENCE DESIGN

v 4 16 June 2011

Deliverable	Deliverable Use Categories						Status	Notes	Lead	Output	Reference Design Teams Comment
	Mandate and Fix Clinical Functionality	O&C Corings	Planning and 3rd Party Consultations	Validate Design and Test Against OS	Enabling Works Design	Site Information for Bidders					
Interior Design + Artwork Concepts		✓		✓			N/A	Output Specification	NA/BMJ	3D sketches/sketch sectional elevations of key internal spaces (such as the O-Zone). Finishes, colour selection and signage all excluded	The development of the 1:500 and 1:200 layouts will include consideration of the key strategies for way-finding, interior design and opportunities to integrate artwork.
Wayfinding Strategy		✓		✓			N/A	Output Specification but with supporting drawings/strategy report.	NA/MJ		It is essential that development of the 1:500 and 1:200 layouts will include consideration of the key strategies for way-finding, interior design and opportunities for artworks to ensure that these are fully integrated and not add-ons.
Flexibility and expandability			✓	✓			N/A	Output Specification with flexibility clearly defined.	NA/BMJ/H&K/Arup	Client requirements to be incorporated into relevant layout plans/drawings. Site constraints imply that future expansion/extension opportunities will be extremely limited.	Reference design will need to respond to NHS requirements for flexibility – e.g. ability to convert non-clinical to clinical space, ability to merge boundaries between inpatient areas etc. Structural reference design will identify whether structural frame expansion options exist and also possible flexibility of the structure e.g. future change of use of building floorplate from admin area to clinical area etc.
Supplies, Storage, Distribution and Waste Management (Soft FM)	✓	✓					Mandatory	Clinical Functionality – Ref Design to indicate space allocations, Operational policies and area schedule req to commence ref design process. NHS Facilities and Tech Advisor to advise.	NA/BMJ/H&K/Arup	Client requirements to be incorporated into relevant layout plans/drawings.	Precise NHS requirements to be clarified
Decontamination and Control of Infection (HAI-SCRIBE)				✓			N/A	Output Specification However, operational policies and schedule of area will be required to inform reference design and HAI-SCRIBE guidance indicates early design team involvement	NA/BMJ/H&K/Arup	Client requirements to be incorporated into relevant layout plans/drawings.	Precise NHS requirements to be clarified
BREEAM				✓			N/A	Reference Design Demonstrating Compliance. Requirement for Excellent rating to be covered in OS. Pre assessment required by reference design team.	H&K	Input to BREEAM pre-assessment workshops and provision of preliminary 'evidence' as necessary.	The reference design team will contribute to any reports and attend specific workshops as necessary.
Geotechnical Site Investigation					✓	✓	N/A	Reference Design Demonstrating Compliance. Information in OS + Data Room. Geotech and SI should be an appendix to OS. National Structure only red from reference design team	ARUP	Intrusive geotechnical and geo-environmental site investigation works to the existing flood protection embankment to the water RIE site. Design, tender and supervision of Site Investigation works.	Related to the site wide issues which impact upon the reference design
Decanting, Phasing.				✓			N/A	Output Specification		No input from Reference Design Team	
Traffic Impact Assessment and Traffic Management Plan			✓			✓	Mandatory	Reference Design Demonstrating Compliance. Information in OS + Data Room. Also to consider traffic movement during construction.	ARUP	NA/BMJ will contribute to any reports and attend specific workshops as necessary.	The reference design site wide solution with respect to bus routes, bus stances, car parking, A&E routes, cycle routes is to be as per the solutions developed for the previous RHSC scheme.
Security Strategy				✓			Mandatory	To be supplemented with requirements outlined in Output Spec. Estate wide reqs within OS. Reference design to capture project specific.	NA/BMJ/H&K	NA/BMJ and H&K will contribute to reports being prepared by others and attend specific workshops as necessary to develop a High Level strategic approach complementary to the building design and wayfinding strategy etc.	
Construction Strategy							N/A	Any restrictions / controls required to be outlined in D&C Output Spec.		No input from Reference Design Team	
Arch + Civ/Struct Specifications		✓	✓	✓			N/A	Output Specification to deal with materials and finishes in broad terms. Reference design provides the preferred clinical solution and general indication of massing.	NA/BMJ/Arup	Design team will contribute to information being prepared by others. Assume some narrative to support outline strategies adopted in elevation studies.	Stage C Civil & Structural Engineering Report for Reference Design
Services Infrastructure Plans 1:1000/1:500		✓		✓	✓	✓	Mandatory	To be supplemented with requirements outlined in Output Spec. To tie in with the requirements outlined in DCP.	H&K	The site utilities infrastructure will be developed to ensure that the facility is completely autonomous	
Integration of new and existing services.		✓		✓	✓	✓	Mandatory	To be supplemented with requirements outlined in Output Spec. To tie in with the requirements outlined in DCP.	H&K		

Deliverable	Deliverable Use Categories							Status	Notes	Lead	Output	Reference Design Teams Comment
	Mechanics and Fix Clinical Functionality	ODC Coatings	Planning and 3rd Party Consultations	Validate Design and Test Against OS	Enabling Works Design	Site Information for Bidders						
M&E Strategy drawings and statements		✓		✓				N/A	Output Specification with location of service connections and loadings req. Some drawings req from reference design team to support BREEAM pre assessment.	H&K		
Plant Room layouts.		✓		✓				N/A	Output Specification	H&K	We will indicate plant area on all 1:500 layouts and site plans. We will indicate a notional layout of the energy centre and service compound/VIE plant area based upon H&K advice.	We would expect the reference design to include adequate allowances for plant. Assume H&K will liaise with Capita regarding communication percentages and will also define notional plant space sizes/areas/height requirements as well as define key riser locations.
Fire Strategy Drawings 1:200		✓		✓				Non-Mandatory	As Fire Strategy Services input req.			
Energy Strategy + Schedules of Power, Heating and Cooling Loads.		✓		✓				N/A	Output Specification Also needed to support BREEAM pre assessment.	H&K		
Engineering Design Philosophy		✓		✓				N/A	Output Specification Also needed to support BREEAM pre assessment	H&K		
Lift Usage Traffic Assessments				✓				Mandatory	Numbers + Adjacencies for lifts to be included in the Ref Design supplemented by Information in OS. Links to M+E, FM and Wayfinding solution.	H&K		The reference design team will contribute to any reports and attend specific workshops as necessary.
Life Cycle expectancies.		✓						N/A	Output Specification		No input from Reference Design Team	
M&E Eng Specifications				✓				N/A	Output Specification		No input from Reference Design Team	
Commissioning and Testing								N/A	Output Specification		No input from Reference Design Team	
Lighting aesthetics.								N/A	Output Specification		No input from Reference Design Team	
ICT strategy		✓		✓	✓	✓		Mandatory	Server Room locations and numbers , operational policies and area schedules req for reference design.	H&K	Client requirements to be incorporated into relevant layout plans/drawings.	Op. policies and schedules required at commencement of 1:500 stage - assume Capita will liaise with NHSL and provide schedules.
Flood Risk		✓			✓	✓			Output Specification to identify the susceptibility of the site to flooding and that the SPV will mitigate the risk in its design.	ARUP	NA/BMJ will contribute to any reports and attend specific workshops as necessary.	Reference design proposal for flood prevention.
Helipad	✓	✓							Reference design to locate the helipad within general massing and have been successfully tested against aviation reqs.	NA/BMJ/Arup	Proposed sections, elevations, 3D drawings, roof plan will take account of heli-pad requirements. Layout plans will ensure integration with vertical circulation cores.	Input of specialist consultant (e.g. Peter Rover) Bone Air recommended to ensure compliance.
CEC Planning			✓						Reference Design to incorporate output from regular dialogue with CEC Planning.	NA/BMJ	Attendance at regular dialogue meetings where scheme development will be presented. Culminating in a formal Design Report upon which CEC/A&DS can issue their final comments.	Assume a letter of support from CEC and design review report from A&DS is NHSL's required outcome. Early engagement will determine whether any additional deliverables may be necessary in order to achieve these outcomes.
A+DS			✓						Reference Design to incorporate output from regular dialogue with A+DS.			
External Stakeholder Groups									Reference Design to incorporate output from regular dialogue with all appropriate stakeholders.	NA/BMJ	Assumed occasional meetings only with limited external stakeholders.	NHSL to confirm any engagement necessary.



RHSC + DCN Little France | Reference Design

Value for Money Statement



Appendix B – Reference Design Scoping Documents

Reference Design Deliverables – Architectural Services

The following design deliverables are to be read in conjunction with the NHS Lothian agreed deliverables for reference design document v3 June 2011 document

Overview

The required project outcome is the production of a reference design defined in sufficient preliminary information and expressed in drawings, reports or outline specifications such that the outcome represents a reference design solution that meets the brief, declares its design objectives, establishes the required quality and supports NHS Lothian trust's healthcare principles and philosophy.

The purpose of the Reference Design is as follows:

- Mandate and fix Clinical Functionality that will be Mandatory for the Bidders to adopt.
- Provide information as required for the D&C Costings to be included in the Outline Business Case.
- Information required for the Planning Permission in Principle application
- Examine, test and verify the feasibility and validity of the reference design and clinical functionality proposals and test against the D&C Output Specification to determine that a compliant solution can be developed on the basis of the mandatory elements of the Reference Design.
- Development of the design information for the Enabling Works
- Provide general and detailed site information for use by the Bidders.

Design activity

General obligations, external liaison (statutory bodies, external stakeholders)

- Consult CEC Planning Department about matters of principle in connection with the architectural design – including but not limited to building massing, materials, compliance with applicable statutory legislation;
- Consult A+DS about matters of principle in connection with the architectural design;
- Liaise with External Stakeholder Groups e.g. community liaison, as necessary to progress the Reference Design;
- Consult appropriate external regulatory bodies in connection with the architectural design such as aspects of the heli-pad works;

Client liaison

- Evaluate physical, environmental, functional and regulatory constraints from clients' brief, for potential schemes.
- Visit site(s) to assess the opportunities and physical constraints afforded by the site that might influence the design philosophy or the development of the design.

- Advise the client on the need for arrangements to be made for and define the extent of topographical surveys.
- Assess the site and brief for opportunities for sustainable design and renewable energy.
- Contribute to the Output Specification with regard to the operating and maintenance strategy including maintenance of the external fabric.
- Review and advise the client on the architectural design requirements generated by the ADB room data sheets.
- Review & comment on NHSL client technical brief and output specifications and departmental operational policy documents
- Participate in a series of structured design review meetings with NHSL User Group representatives;
- Participate in AEDET reviews (NHS Lothian to organise and facilitate);
- Participate in HAISCRIBE Workshops (NHS Lothian to organise and facilitate);

Team liaison

- Undertake the role of lead consultant;
- Attend fortnightly design team meetings with the design team members;
- Discuss the potential options for the architectural design solution culminating in the preferred solution with the rest of the design team;
- Advise design team members (structural engineer, services engineer) of significant implications of the architectural design portion including spatial restrictions and aesthetic consideration;
- Provide architectural design contribution to the outline emergency and fire escape strategy;
- Provide architectural design information, including outline fabric specification proposals, to other members of the design team sufficient to enable them to carry out strategic studies and environmental modelling required to support the design and obtain qualitative feedback.
- Review concept design proposals for compliance with Section 6 of the Technical Standards and SHTM 07-02;
- Review CEC code for sustainable buildings in relation to energy/carbon targets to be embodied in the architectural design;
- Prepare risk assessments for the design;
- Review the existing health and safety file (for additional construction on an existing site).
- Provide architectural design contribution to the BREEAM pre-assessment process;
- Review & comment upon mechanical engineering strategy and implications for architectural design;
- Review & comment upon structural engineering strategy and implications for architectural design;
- Provide architectural design contribution to other team member's reports as necessary.
- Provide architectural design contribution to other team member's strategy development e.g. fire engineering, energy use etc. as necessary.
- Provide architectural design contribution to other team member's outline specification development as necessary.

Architectural design

- Receive and develop the Client's brief in order to determine the preferred architectural concept design solution (referencing and addressing the criteria of the AEDET Evolution categories: functionality, impact, build quality in order to progress the design);
- Prepare the Concept Design in sufficient detail to equate with the agreed Deliverables for Reference design document including incorporation of Outline Proposals for structural and building services systems, and including outline specifications.
- Prepare the Concept Design in sufficient detail to include consideration of the key strategies for: emergency and fire escape; way-finding, interior design and opportunities to integrate artwork; supplies, storage, distribution and waste management; Decontamination and Control of Infection (HAI-SCRIBE); flexibility and expandability; security; traffic management.
- Prepare the Concept Design in sufficient detail to provide information for the approximate estimate of relevant costs.

Deliverables

Deliverables - including drawings, specifications, reports:

- 1:1000 Scale drawings sufficient to demonstrate proposed: site location; boundaries; relationship with adjoining properties and wider environs; interface with roads infrastructure - site and site environs; relationship to public/urban realm;
- 1:500 Scale drawings for all levels (including roof) sufficient to demonstrate proposed: disposition of departments; inter-departmental relationships and adjacencies; primary circulation (horizontal and vertical) and emergency escape strategy; main service cores; access roads; visitor, patient and staff routes; external spaces including outline landscape proposals, parking, emergency vehicle access, helicopter access and internal courtyard spaces;
- 1:200 Scale drawings for all levels sufficient to demonstrate: disposition of accommodation within each department; functional adjacencies and relationships; department relationship with adjacent accommodation; department circulation (horizontal and vertical) and emergency escape; individual room function, number and area; structural grid; outline fire separation and compartmentation; main service risers;
- General Arrangement Elevations and Sections including outline elevations and sections for main hospital building plus energy centre/support buildings sufficient to demonstrate: general scale/massing/form with additional information detailing outline strategies for material palette and fenestration. Output information to be tailored to provide adequate information for consultation with CEC/A&DS and to provide sufficient architectural design input to inform BREEAM pre-assessment and Technical Standard Section 6 calculations and SBEM modelling;
- 1:50 Generic and Key Room Layouts indicating all fixtures/fittings and relevant codes, corresponding room elevations, equipment schedule, area analysis. Equipment Schedules to be produced via Codebook upon receipt of signed-off RDS and development of room layouts and in conjunction with specific Trust equipment requirements;
- Outline specifications for external fabric sufficient to allow other members of the design team sufficient to enable them to carry out strategic studies and environmental modelling;

- Design Report - for CEC/A&DS comments.

Reference Design Deliverables –Civil & Structural Engineering, Transportation, Fire & Acoustics

The following design deliverables are to be read in conjunction with the NHS Lothian agreed deliverables for reference design document v3 June 2011 document

Overview

The required project outcome is the production of a reference design defined in sufficient preliminary information and expressed in drawings, reports or outline specifications such that the outcome represents a reference design solution that meets the brief, declares its design objectives, establishes the required quality and supports NHS Lothian trust's healthcare principles and philosophy.

The purpose of the Reference Design is as follows:

- Mandate and fix Clinical Functionality that will be Mandatory for the Bidders to adopt.
- Provide information as required for the D&C Costings to be included in the Outline Business Case.
- Information required for the Planning Permission in Principle application
- Examine, test and verify the feasibility and validity of the reference design and clinical functionality proposals and test against the D&C Output Specification to determine that a compliant solution can be developed on the basis of the mandatory elements of the Reference Design.
- Development of the design information for the Enabling Works
- Provide general and detailed site information for use by the Bidders.

Design activity

CIVIL & STRUCTURAL ENGINEERING

- Advise on any physical site restrictions which may affect the civil & structural engineering options for the Works.
- Advise on the need for arrangements to be made for geotechnical investigations to the flood protection embankment. Arrange as agent for the Client when authorised by him for such investigations to be undertaken, certify the amount of any payments to be made by the Client to the persons or firms carrying out such investigations and advise on the results of such investigations.
- Prepare an outline flood protection design for the RHSC/DCN site and consult CEC Flood Prevention Officer as necessary on reference design proposals. Liaise with Consort as necessary.
- Consult with Scottish Water on foul drainage discharge for larger development and arrange as agent for the Client for updated DIA to be prepared by Scottish Water if deemed necessary.

- Consult with Consort and SEPA as necessary on surface water discharge proposals.
- Consider alternative outline solutions for the Works in conjunction with the Architect and other design team members.
- Input to design studies and development of outline design proposals in relation to the Civil & Structural aspects.
- Provide an Outline Proposals Reference Design for Civil & Structural Engineering (Stage C detail) based on the 1:200 design proposals. The outline design report will define the civil & structural engineering concept using drawings, sketches and other relevant details but only in so far as required to check the feasibility and validity of the Reference Design.
- Input to testing the outline design proposals against planning controls and cost, programme, structural and engineering services constraints

TRANSPORTATION

- Advise on any limitations on road and public transport access to the site, both during construction of the Works and on completion which may affect design options.
- Provide comment and assist in the development of the site layout;
- Review the site layout in terms of how it links to the wider local area in terms of both existing and committed schemes;
- Review the NHS justification on allocated DCN parking numbers and advise on need for further work and/or surveys if required;
- Consider the requirements of all site end-users namely emergency vehicles, patients, staff, visitors, public transport (including taxis) and servicing requirements.
- Review and update the site wide solution with respect to bus routes, bus stances, car parking, and cycle routes
- Review and Update of the Transport Assessment
- Review and Update the Car Park Summary Report.
- Review and Update the Impacts of RHSC Proposals on Parking Capacity report.
- Review and Update the Development of Transport Proposals Note.
- Update the Car Park Management Plan/ Strategy to accommodate the RHSC/ DCN proposals.
- Prepare information pack to be made available to the Bidders.

FIRE ENGINEERING

- Provide mark ups based on the 1:500 design proposals to assist 1:500 development and to consider the progression of the 1:500 concept to ensure feasibility moving through to the 1:200 stage.
- Provide support to the project team with regards to queries and design development options.

- Provide mark ups based on the 1:200 design proposals to assist 1:200 development and to consider the progression of the 1:200 concept and be used within the Outline Reference Design Fire Strategy (see next bullet).
- Provide an Outline Reference Design Fire Strategy (Stage C detail) based on the 1:200 design proposals. The outline report will define the fire strategy concept using drawings, sketches and other relevant details, but only in so far as required to check the feasibility and validity of the Reference Design.
- Provide a risk register to detail any items within the Reference Design that do not meet the prescriptive guidance recommendations as defined within the SHTM.
- Allowance for meeting with the Approving Authority.

ACOUSTICS

- Input to the Output Specification associated with the identification of the internal partition and door sound insulation performance requirements.
- Provide acoustic criteria for airborne and impact sound insulation, reverberation time, internal noise levels and external noise break out.
- Provide outline advice on internal wall types, external façade, helipad, service yard and energy centre.
- Provide an Acoustics report that confirms that there are no acoustic issues with the Reference Design that cannot be solved in the normal development of the scheme.

ENVIRONMENTAL

- Review and update the Environmental Impact Assessment to facilitate the Planning Permission in Principle (PPP) application.

General

- Attend regular design team meetings with the design team as required to undertake the Reference Design.
- Provide Civil & Structural, Acoustics and Transport contribution to the BREEAM pre-assessment process.
- Input to the update of risk identification & hazard risk register

Exclusions

FIRE

- Modelling such as Zone Modelling, Computational Fluid Dynamics, Evacuation Modelling, Structural Fire Modelling etc.
- The preparation, or checking of detailed specifications, designs or drawings, e.g. CAD mark ups of our 1:500 and 1:200 deliverables as described above.
- Advice to specifically incorporate any features that are specifically aimed at reducing business interruption or providing property or environmental protection.
- Specific building management details or risk assessments.

Reference Design Deliverables – M&E Services

The following design deliverables are to be read in conjunction with the NHS Lothian agreed deliverables for reference design document v3 June 2011 document

Overview

Provide sufficient preliminary information in relation to the works in the form of **advice, sketches, reports or outline specifications.**

The purpose of the Reference Design is as follows:

- Mandate and fix Clinical Functionality that will be Mandatory for the Bidders to adopt.
- Provide information as required for the D&C Costings to be included in the Outline Business Case.
- Information required for the Planning Permission in Principle application
- Examine, test and verify the feasibility and validity of the reference design and clinical functionality proposals and test against the D&C Output Specification to determine that a compliant solution can be developed on the basis of the mandatory elements of the Reference Design.
- Development of the design information for the Enabling Works
- Provide general and detailed site information for use by the Bidders.

Design activity

General obligations, external liaison (statutory bodies, utilities)

- Consult local authorities about matters of principle in connection with the services design of the works;
- Obtain information on the existence and extent of public utilities and record;
- Define extent of life safety systems required. (as dictated by the fire engineering strategy compiled by Arup fire)

Client liaison (briefing, handover, surveys)

- Evaluate physical, environmental, functional and regulatory constraints from clients' brief, for potential schemes.
- Obtain information and documents on existing services.
- Visit site(s) to assess physical restrictions that might influence the design philosophy or the development of the design.
- Advise the client on the need for arrangements to be made for and define the extent of special investigations or tests (could be intrusive or non-intrusive).
- Review and report on the condition/status of any existing services installations
- Review options for renewable energy supplies/systems.

- Give initial recommendations to the client in the development of an operating and maintenance strategy.
- Review and advise the client on the engineering services requirement elements contained within the ADB room data sheets
- Review & comment on NHSL client technical brief and departmental operational policy documents

Team liaison (builders work, spatial coordination, energy targeting)

- Undertake the role of non lead consultant;
- Attend fortnightly design team meetings with the design team members;
- Discuss the potential options for the mechanical, electrical and public health schemes culminating in the preferred solution with the rest of the design team.
- Advise team members (architect, structural engineer) of significant implications (size, weight) of mechanical, electrical, public health systems including central plant.
- Agree builders' work philosophy (such as the treatment of structural openings) for principal mechanical, electrical and public health systems.
- Undertake energy strategy studies for the building fabric and engineering services to support the design - typically generic thermal simulation and 2d modelling with simplified boundary conditions to give qualitative feedback.
- Undertake generic daylight computer modelling required to support the design and obtain qualitative feedback.
- Review architect's proposals for compliance with section 6 and SHTM 07-02
- Review CEC code for sustainable buildings from energy/carbon target perspectives (note architect needs to review this from arch perspectives)
- Prepare risk assessments for the design.
- Detailed review of existing health and safety file (for additional construction on an existing site).
- BREEAM pre-assessor input,
- BREEAM check list M&E designer credits input
- Review & comment upon fire engineering strategy and implications for M&E
- Review & comments on generic room layouts from M&E perspectives

Mechanical design

- Determine the mechanical services system philosophies (natural / medical gases, cooling, heating, natural ventilation, mixed mode ventilation, mechanical ventilation, pneumatic tube, fire protection and automatic controls installations);

Electrical design

- Determine the electrical systems philosophies (HV/LV power distribution, standby generation, small power, natural and artificial lighting, data, nurse call, fire alarms,

disabled alarms/refuge, lightning protection, security, access control, external lighting lifts and containment installations)

- Develop it node rooms/central comms room strategy

Public health design

- Determine the public health systems philosophies (above ground drainage and water service installations)
- Develop soil drainage stack strategy aligned with structure to ensure vertically aligned stacks can service the drainage needs of all appliances.

Deliverables

Deliverables - including drawings, specifications, reports

- Prepare report on building services issues as part of the reference design report, including:
 - Preliminary design parameters/criteria;
 - Indicative sketches of plantroom layouts, locations and service riser locations;
 - Outline services drawings for the reference design
 - Concept schematics for all installations clearly defining the design philosophies;
- Provide information for early-stage whole-life cost studies.
- Provide sufficient information to allow the preparation of the outline cost plan for building services based on floor area/building type/ system assumptions.
- Sign-off the reference design documentation.

Appendix C – Resource Schedules

Nightingale Associates	Number of Hours	Rate	Total Cost
Principal	1,356	£101.04	£137,010.24
Professional P1	884	£73.36	£64,850.24
Professional P1	1,260	£73.36	£92,433.60
Professional P2	1,410	£65.08	£91,762.80
Professional P3	700	£59.66	£41,762.00
Technical T1	1,065	£42.78	£45,560.70
Technical T1	1,175	£42.78	£50,266.50
Technical T2	317	£34.26	£10,860.42
Fee Proposed			£534,500.00

BMJ Associates	Number of Hours	Rate	Total Cost
P(SLS)	163	£91.82	£14,966.66
P1(RGH)	932	£71.78	£66,898.96
P1(RM)	932	£63.92	£59,573.44
P1(SD)	932	£59.16	£55,137.12
P2	221	£48.54	£10,727.34
P3	0	£41.00	£0.00
T1	0	£50.34	£0.00
T2	1,049	£37.20	£39,022.80
T2	1,049	£31.20	£32,728.80
T3	1,049	£14.66	£15,378.34
Admin	0	£32.82	£0.00
Fee Proposed			£294,500.00

Hullay & Kirkwood	Number of Hours	Rate	Total Cost
Michael O'Donnell - Director	650	£90	£58,500.00
David Stewart - Director	600	£90	£54,000.00
Simmy Telfer - Director	100	£90	£9,000.00
Ron Nolan - Associate	400	£66	£26,400.00
Colin Wilkie - Associate	400	£66	£26,400.00
Ian Sandford - Principal Engineer	200	£66	£13,200.00
Bruce Elrick - Breeam Professional	200	£60	£12,000.00
Jonathan McMillan - Design Engineer	400	£40	£16,000.00
Hunter Ip - Design Engineer	400	£40	£16,000.00
Alasdair Munro - Design Engineer	200	£40	£8,000.00
Ian Ezzi - Design Engineer	400	£40	£16,000.00
Chris Madden - Design Engineer	200	£40	£8,000.00
Graeme Dean - Design Engineer	200	£40	£8,000.00
Brian Feeley - Cad Tech/Doc Control	400	£35	£14,000.00
Mike Bryan - Cad Tech/Doc Control	400	£35	£14,000.00
Fee Proposed			£300,000.00

ARUP	Number of Hours	Rate	Total Cost
Principal	398	£117.37	£46,654.58
Principal	38	£157.30	£5,898.75
Professional P1	1,323	£93.16	£123,204.10
Professional P1	50	£123.80	£6,190.00
Professional P2	350	£77.44	£27,104.00
Professional P2	150	£94.99	£14,248.50
Professional P3	300	£65.34	£19,602.00
Technical T2	300	£54.44	£16,332.00
Technical T3	1,150	£42.35	£48,702.50
Fee Proposed			£0.00



RHSC + DCN Little France | Reference Design

Value for Money Statement

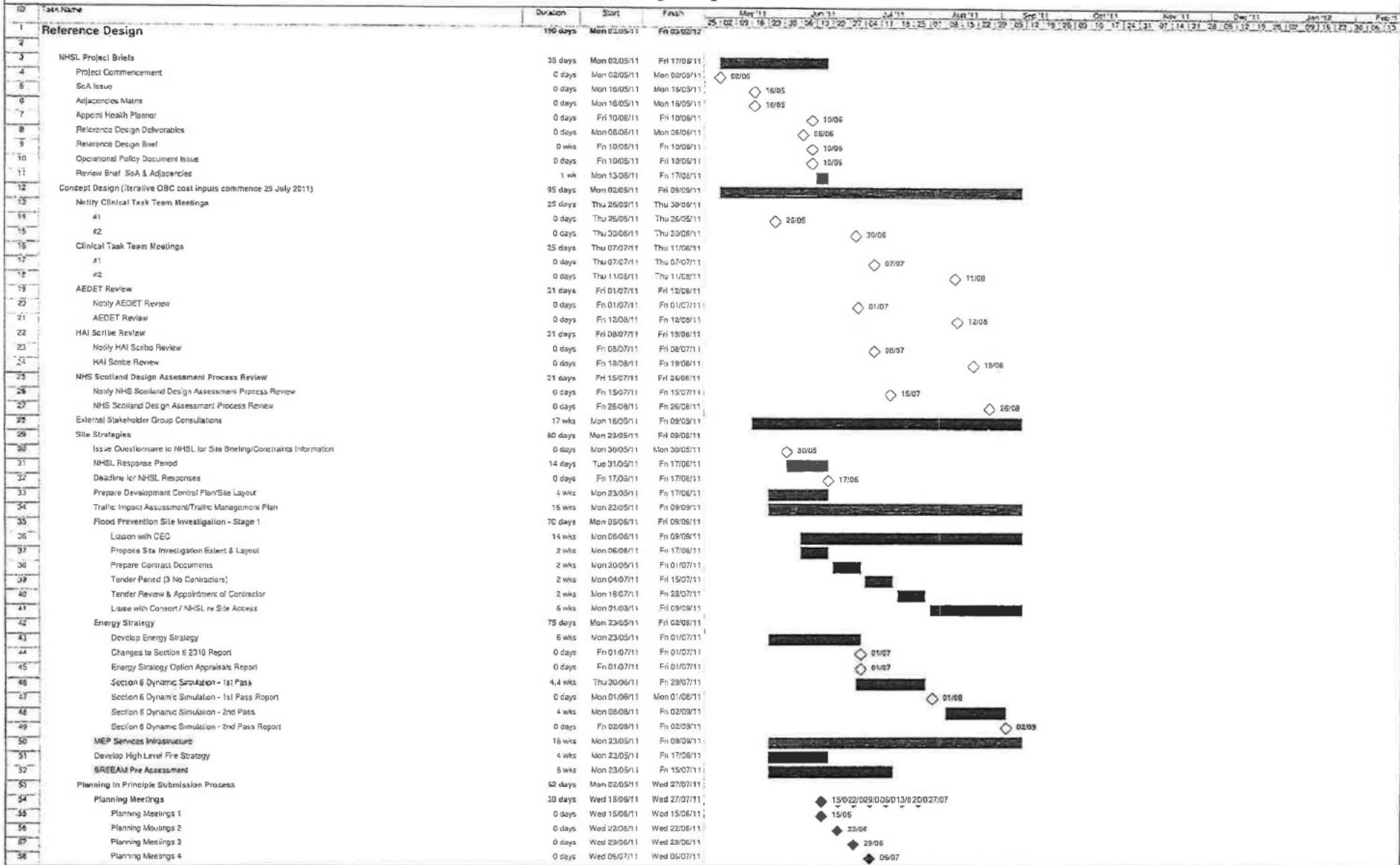


Appendix D – Design Programme



RHSC + DCN - Little France

Reference Design Programme Version 1.1



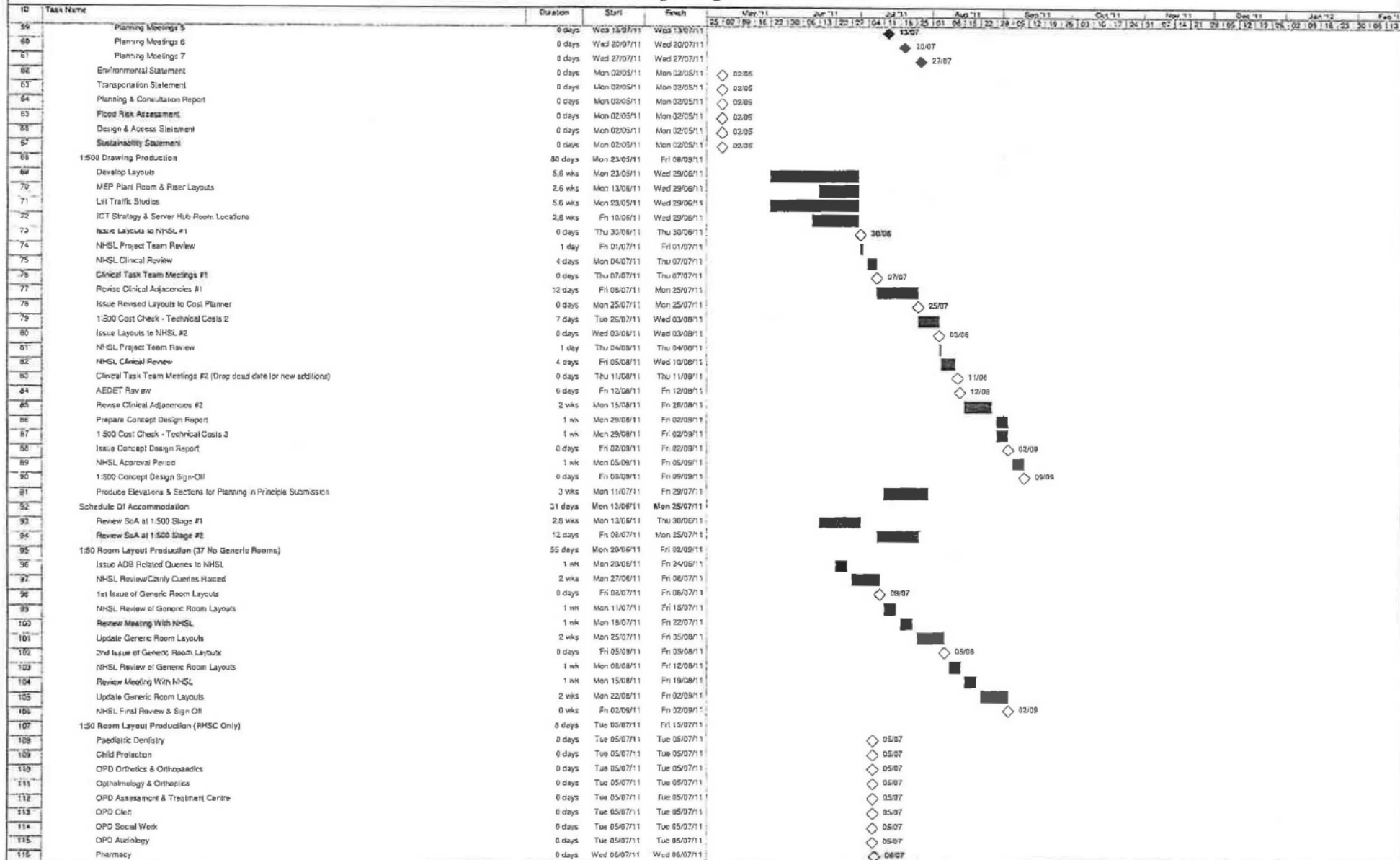
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Task	Milestone	F&PR	S&B	Summary	PPP
Critical Task	PPP	CIG	CD	KSR	



RHSC + DCN - Little France

Reference Design Programme Version 1.1



Date: Mon 04/07/11

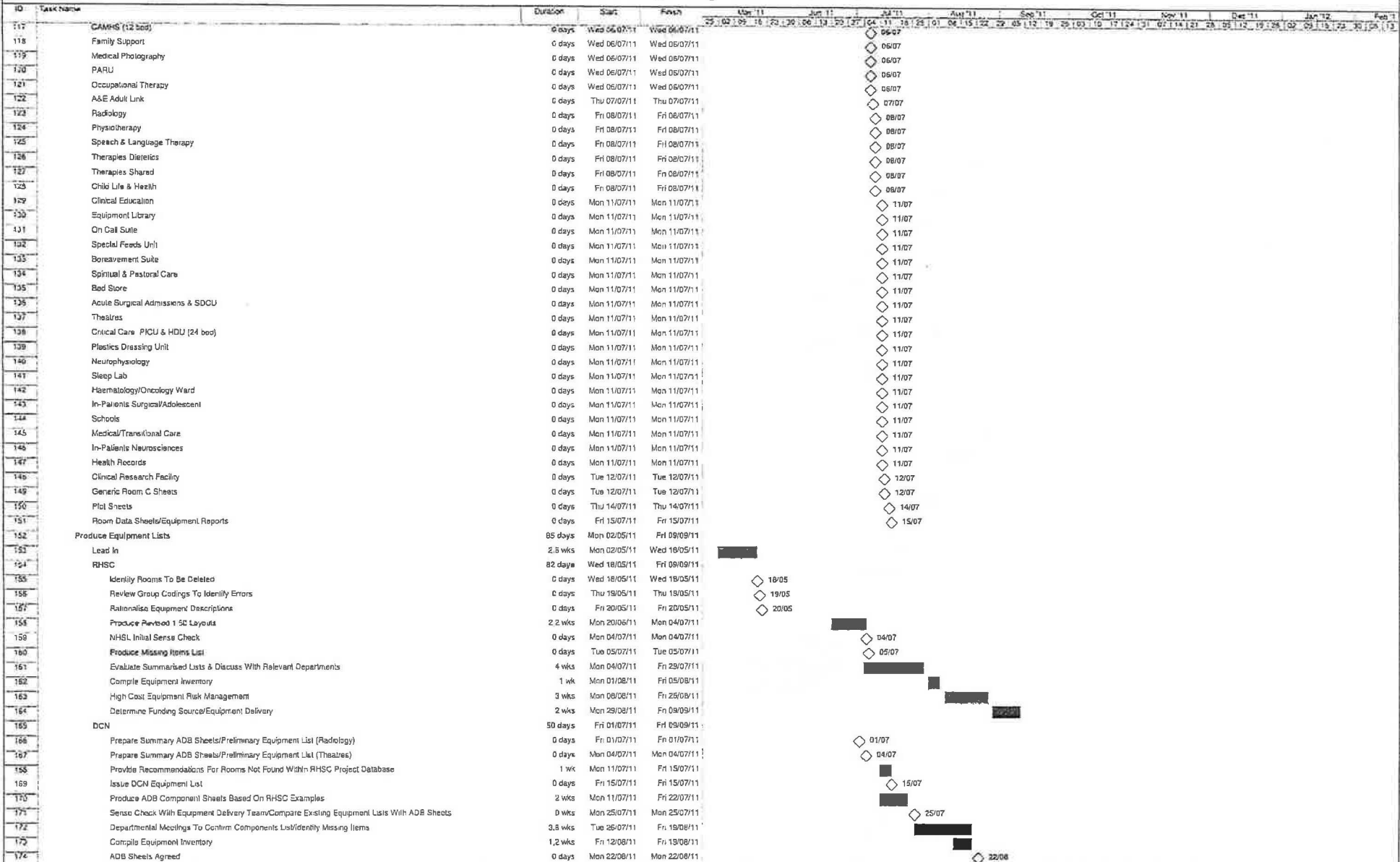
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Reference Design Programme Version 1.1



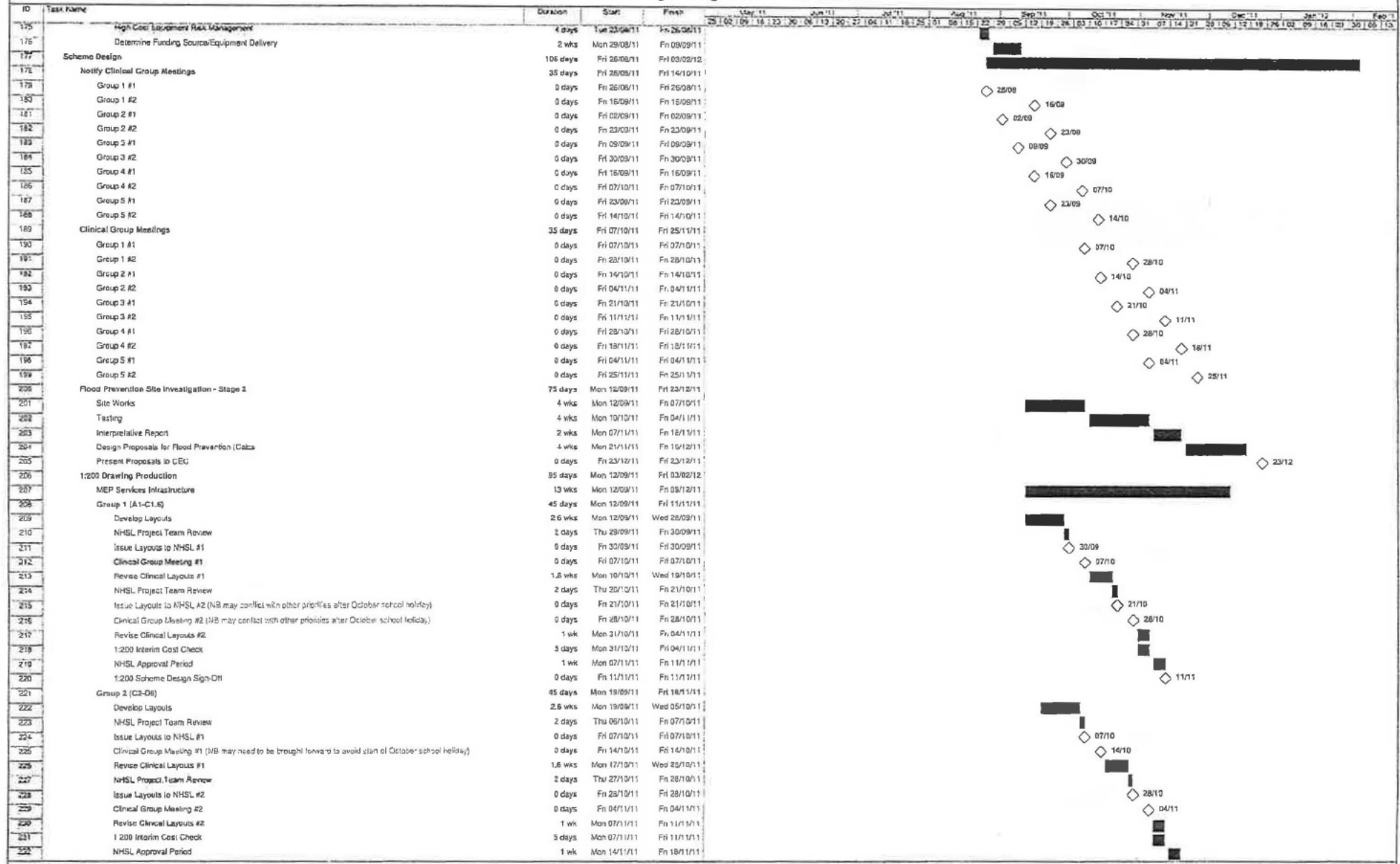
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Task	Mission	F&PR	SAG	Summary	PPP
Critical Task	PPP	C&S	CD	KSR	



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Reference Design Programme Version 1.1



Date: Mon 04/07/11

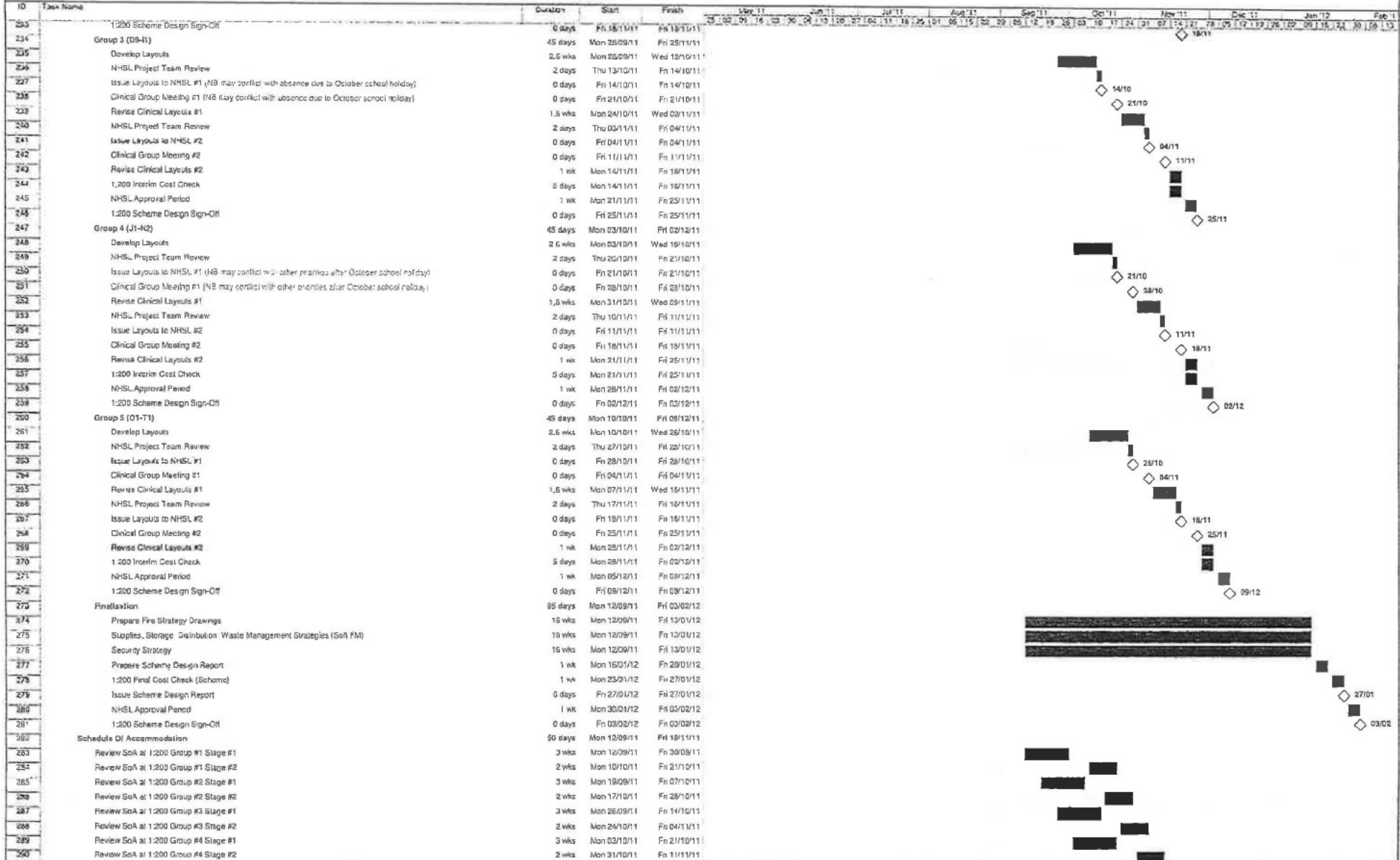
Task	█	Milestone	◇	F&PR	◆	SA&E	●	Summary	█	PPP	◆
Critical Task	█	PPP	◆	CIC	◆	CD	◆	KSR	↓		



RHSC + DCN - Little France

Reference Design Programme Version 1.1

Davis Langdon
An AECOM Company



Date: Mon 04/07/11

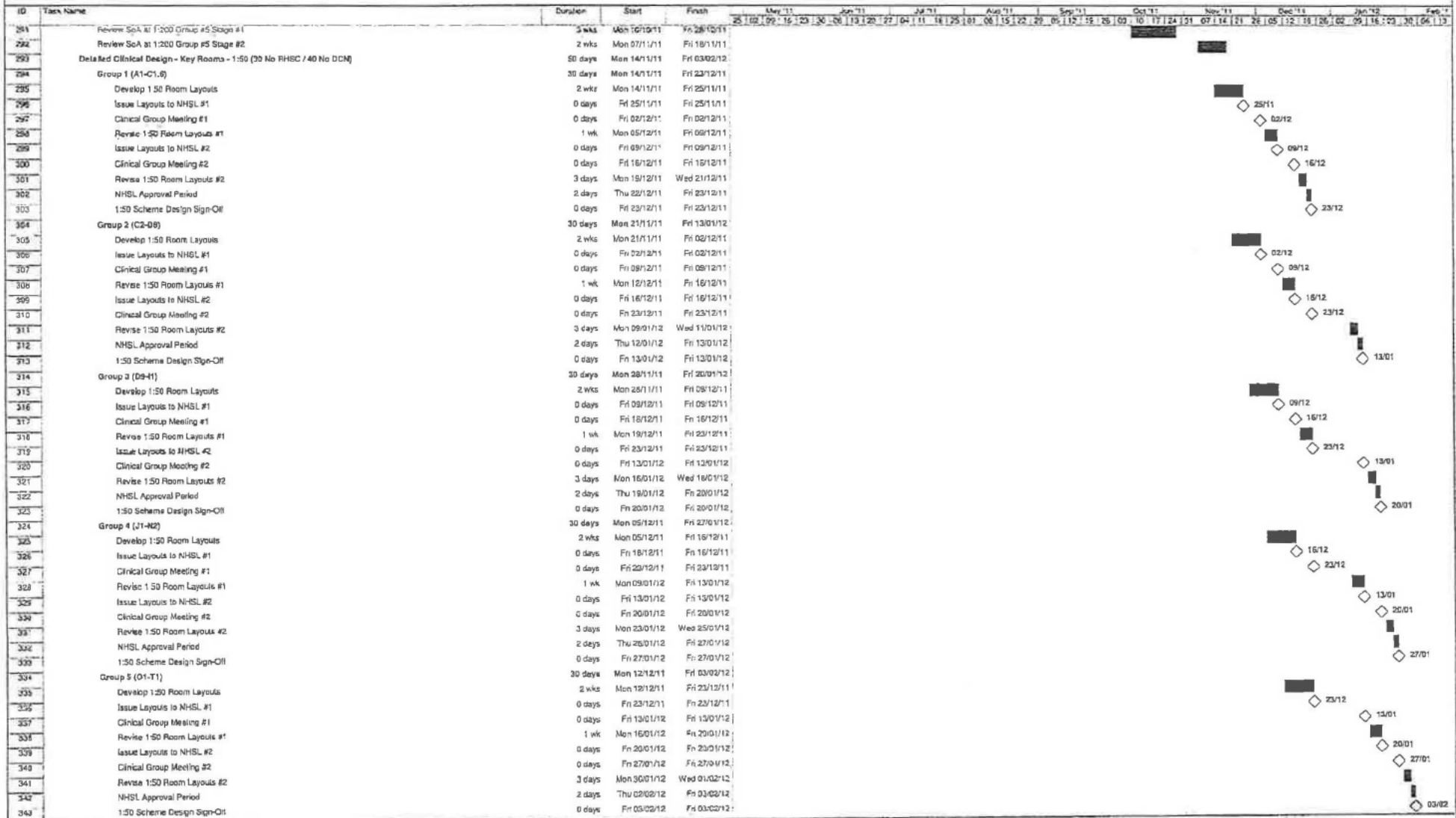
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Critical Task: [Symbol] PPP: [Symbol] CIG: [Symbol] CD: [Symbol] KSR: [Symbol]



RHSC + DCN - Little France

Reference Design Programme Version 1.1



Date: Mon 04/07/11

Task	■	Milestone	◇	F&PR	◆	SAE	●	Summary	■	PPP	◆
Critical Task	■	PPP	◆	CRG	◆	CD	◆	KSR	↓		

From: [Gardiner Neil \(NATIONAL SERVICES SCOTLAND\)](#)
To: [Henderson Peter \(NATIONAL SERVICES SCOTLAND\)](#)
Subject: RHSC review
Date: 08 August 2011 10:06:00

Peter

I have had a conversation with David Stillie, Supervisor of Mott MacDonald who has been requested to carry out an 'end-up review' on the RHSC project by NHS Lothain. Can you please give him a call on [REDACTED] (Mott MacDonald Edinburgh [REDACTED]).

Having spoken to David, his request for information appears not HFS Framework related, but rather the tripartite design review.

Thanks

Neil

Neil Gardiner
Capital Projects Advisor
Property & Capital Planning
Health Facilities Scotland
NHS National Services Scotland
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Gateway Review

PROJECT: Reprovision of the Royal Hospital for Sick Children and the Department of Clinical Neurosciences, Edinburgh

**Gateway Review 2
(Delivery Strategy)**

Report Status:	Final
Date/s of Review:	05/09/11to 07/09/11
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Final Report Issued to SRO & Copied to PPM-CoE:	19/09/11
Delivery Confidence Assessment:	Amber/Red
Senior Responsible Owner:	Jackie Sansbury
Scottish Government's Accountable Officer:	Derek Feeley
Organisation's Accountable Officer: (where appropriate)	James Barbour

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1. **Background**

1.1 **Aims of the Project**

1.1.1 The project aims to provide a new fit for purpose and world class Children and Young People's Hospital and Department of Clinical Neurosciences to replace the existing buildings in Edinburgh.

1.2 **Driving Force for the Project**

1.2.1 The key factors driving the need for change are;

- The confirmed need to deliver high quality and clinically effective services as outlined in NHS Scotland's 2010 Quality Strategy
- The inadequacy and unsuitability of the existing premises to deliver sustainable specialist services.
- The desire for modernisation and development of support services to ensure the most efficient and effective use of resources
- The impact of Modernising Medical Careers and the European Working Time Directive on current workforce availability.

1.3 **Procurement/Delivery Status**

1.3.1 Until November 2010 the project team had been working towards a capital funded, design and build procurement, utilising Frameworks Scotland, of a new Children's Hospital on the site at Little France. Following the announcement that capital funds were no longer available, the project has been directed towards a revenue funded provision to meet the requirement for the new Children's Hospital and the DCN, using the Scottish Government Non Profit Distributing Revenue Funded Model (NPD).

Following a reorganisation of the project structure to suit the new form of procurement, the project is now working towards submission of an outline business case with a view to issuing an OJEU notice in November 2011.

1.4 **Current Position Regarding Gateway Reviews**

1.4.1 Gateway Reviews 1 and 2 were carried out on the RHSC project in June 2008 and February 2010.

2. **Purpose and Conduct of the Review**

2.1 **Purpose of the Review**

2.1.1 Gateway Review 2: Delivery Strategy. This Review investigates the assumptions in the Outline Business Case and proposed approach for delivering the project. When there is a procurement, the delivery strategy will include details of the

sourcing options, proposed procurement route and supporting information. The Review will also check that plans for implementation are in place.

2.1.2 A full definition of the purpose of a Gateway Review 2 is attached for information at **Appendix A**.

2.1.3 This report is an evidence-based snapshot of the project's status at the time of the review. It reflects the views of the independent review team, based on information evaluated over a three to four day period, and is delivered to the SRO immediately at the conclusion of the review.

2.2 Conduct of the Review

2.2.1 The Gateway Review 2 was carried out on 5th to 7th September 2011 at Rillbank Terrace, Edinburgh.

2.2.2 The Review Team members and the people interviewed are listed in **Appendix C**.

2.2.3 The Review Team would like to thank the SRO, the RHSC/DCN Project Team, their Advisers and all interviewees for their support and openness, which contributed to the Review Team's understanding of the project and the outcome of this review.

3. Gateway Review Conclusion

3.1 **Delivery Confidence Assessment.** The Review Team finds that overall delivery confidence assessment is **Amber/Red**.

The reconstituted project has made good progress in appointing advisers and taking forward the preparation of reference design, specifications and other new requirements of the new form of procurement. The current programme is to issue an OJEU notice in November this year with a subsequent Competitive Dialogue phase leading to award of contract in July 2013. This is recognised to be a very tight programme but from what we have seen of preparations so far and in discussions with the project team, we would regard it as achievable.

However, to achieve these dates there is a critical dependency for NHS Lothian (NHSL) to conclude negotiations with Consort to secure the land, access routes and other enabling agreements to allow the new development to be undertaken.

These negotiations have been ongoing for a considerable period of time, those involved have impressed upon us the unusual level of complexity and we have heard a wide spectrum of views on whether a resolution can be achieved within a timescale that will meet the current programme for the new development.

Issue of the OJEU notice also requires prior approval of the Outline Business Case, due to be submitted in October 2011 but again we have some concerns over management of this task.

In these circumstances, particularly recognising the criticality and unpredictability of the Consort situation, we assess the current level of confidence in delivery in accordance with the current programme, at **Amber/Red**.

The Delivery Confidence assessment RAG status should use the definitions below.

<u>RAG</u>	<u>Criteria Description</u>
Green	Successful delivery of the project/programme to time, cost and quality appears highly likely and there are no major outstanding issues that at this stage appear to threaten delivery significantly
Amber/Green	Successful delivery appears probable however constant attention will be needed to ensure risks do not materialise into major issues threatening delivery
Amber	Successful delivery appears feasible but significant issues already exist requiring management attention. These appear resolvable at this stage and if addressed promptly, should not present a cost/schedule overrun
Amber/Red	Successful delivery of the project/programme is in doubt with major risks or issues apparent in a number of key areas. Urgent action is needed to ensure these are addressed, and whether resolution is feasible
Red	Successful delivery of the project/programme appears to be unachievable. There are major issues on project/programme definition, schedule, budget required quality or benefits delivery, which at this stage do not appear to be manageable or resolvable. The Project/Programme may need re-baselining and/or overall viability re-assessed

3.2 A summary of the Report Recommendations is available at **Appendix B**.

4. **Findings and Recommendations**

4.1 **Assessment of the delivery approach**

In the Scottish Government (SG) budget announcement in November 2010 the delivery route for this project was set as the privately funded NPD Programme being established by SG with the support of Scottish Futures Trust (SFT).

This delivery approach builds upon previous experience of design, build, finance and maintain projects and we understand, will utilise appropriate updates of much of the contract documentation developed over recent years.

Although NHSL do have experience of operating one of the early PFI schemes at the Royal Infirmary of Edinburgh (RIE), most members of the current NHSL team have little or no experience of this form of procurement on projects of this size. However, they have been able to secure considerable experience and expertise within the team of external advisers they have or are about to appoint. The advisers we have interviewed are generally content that the NHSL needs can be met satisfactorily through NPD, particularly in the current state of the market where there are few opportunities of this size.

We are therefore given confidence that this approach will deliver an acceptable solution, provided the client team make best use of the support and guidance available from external advisers and SFT.

We know there have been discussions around the need to give prospective bidders the best possible impression of NHSL capabilities as a client. This is something we would strongly support since even in the most favourable of markets less capable clients can be seen by bidders as a risk with the potential to result in additional costs.

4.2 Business case and stakeholders

The decision to combine the RHSC and DCN developments with an NPD procurement has necessitated preparation of a new combined Outline Business Case which is scheduled for completion later this month. At the time of our Review this document is still in an early draft form. However, we have been able to see these drafts and discuss the proposed strategy for completion.

In view of the previous submissions for separate RHSC and DCN reprovisions and the time pressures on the project, the intention has been to minimise content in this document and make frequent reference to information provided in the June 2008 and subsequent submissions, without repeating the actual text. We do not believe this is a good solution as the justifications and medical strategies set out there are key to the understanding of the whole submission. In addition, we have had evidence that some elements of the strategy have been updated as practice develops and there are also policies and efficiencies to be gained from bringing the previously separate facilities into a single entity, which need to be explained.

For these reasons and restating what was said in the previous Gateway report that 'the business case is not only a financial submission but a sales document and an indication of the quality and capability of the whole team charged with procuring the new facility', we believe the opportunity should be taken to review the proposed content and ensure that the OBC will fully represent the current aspirations for the new development.

Parts of the current drafts where we see particular gaps or inconsistencies are in relation to;

- The challenges in operating from the existing buildings
- Service improvements and efficiencies the new build will facilitate, with future-proofing
- Project governance structures for the next phase.
- Stakeholder management planning

Recommendation:

Further develop the current draft of the Business Case to fully represent the current aspirations for the new development.

Across the internal stakeholder community we have been made aware that the loss of capital funding and consequent delays has resulted in considerable frustration with the potential for disengagement. While this is not seen in all areas, it is considered to be particularly evident amongst staff within the Children's Hospital whose cooperation and participation in preparation for the next stages of the procurement will be vital to a successful outcome. We therefore support what is currently being done to address these issues but would highlight the need to maintain regular and effective dialogue, on a planned basis, to try to re-establish full confidence and support across this key stakeholder community.

4.3 Risk Management

Two risk workshops have been held during August and from this work a comprehensive listing of risks has been compiled.

Each risk has been assessed against probability, impact on cost, impact on programme and given a total risk value covering both programme and cost impact.

The risks are allocated a category, which indicates the element of work that it relates to and provides an indicator on where the funding responsibility rests. Of the seven categories identified, one is allocated to the SPV NPD Project level and another as SFT Project level. We believe this needs to be clarified as it does appear to us that SFT are not in a position to manage risks associated with an NHS owned project.

The last section of the register looks at management actions planned and risk owner, with additional ability to define Action Owner and Review date. It was explained that to date the Project Board have not yet had the opportunity to review the Risk Register.

The primary focus of the work on Risk to date has been for the purpose of compiling cost information for the OBC with ongoing discussion around the appropriateness of current SCIM guidance for projects of this size.

At the last Project Board meeting it was recorded that the "the top six project risks to be highlighted on future dashboard reports". The implication being that the other risks will be managed by the Project Director, and this will work well if our later recommendation for an integrated project team is implemented.

The Review team fully supports these recent developments which should allow wider application of risk management across the project and reinforces the need for full recording, and management of all project risks together with escalation procedures.

Recommendation;

Adopt full risk management across the project incorporating recording, and management of all project risks together with escalation procedures.

4.4 Review of current phase

Since the reorganisation of the project around the new procurement arrangements the team have made good progress in revisiting the client brief and preparing the various parts of documentation that will be required for the NPD competition and subsequent contract.

A network of work-stream groups have been used to generate the necessary input and stakeholders have been content with their access to the process and the performance of in-house workstream leaders and external advisers. There is a strong level of confidence that the needs of the project are adequately defined and that these can be translated into the necessary contract documentation within the current timescales.

This phase has however been overshadowed by the ongoing negotiations with Consort, the PFI Provider at the Royal Infirmary of Edinburgh (RIE). These negotiations are necessary to secure the land, access routes and other enabling agreements to allow the new development to be undertaken. Conclusion of these complex negotiations is essential before the NPD project can proceed. From the interviews we have had with some key players in the negotiations we have heard a spectrum of views on the likelihood of a successful conclusion within a timescale that will allow the NPD project to proceed as currently planned.

It is not within our remit to look in detail at this negotiation process but recognising the project's dependency on timeous resolution we would suggest that NHSL may wish to consider making greater use of the expertise of the NPD Technical and Financial Advisers who have good PPP understanding and would be well placed to assist. This could also help to ensure full integration of what is being agreed with the needs of the NPD project.

Recommendation:

Consider integration of the NPD Adviser team into the Consort Supplementary Agreement negotiations.

4.5 Readiness for next phase – investment decision

The next phase will constitute the bidding competition for the NPD and subsequent conclusion of a contract with the preferred bidder. This market facing period will be crucial in securing an acceptable outcome and in our view will require a different project structure to facilitate effective management of the process.

It is recognised that the Consort situation has necessitated a high level of attention from the Project Board in particular and not allowed that body to adopt a properly strategic role in the governance of the NPD project. Plans are already underway to prepare the Board for a more appropriate role in the next phase and we would support these initiatives as there is a clear need to create greater separation between the day to day management of the project and a more senior Board that can lead, guide and challenge the work of the Project Team.

These changes would also help to clarify the differing roles of SFT, being supportive in an advisory capacity, at the Project Team level and fulfilling their governance responsibilities at the Project Board.

We see further opportunities to extend the membership of the Board with appropriate Clinical membership and also to take more frequent advice direct from external advisers when the need arises.

To ensure the project has a suitably prompt decision making capability, it would be beneficial to secure delegation for the Project Board from the F&PR Committee at an appropriate level.

Whilst the Workstream arrangements have been able to make satisfactory progress on the work to date, we have heard that the structure is seen as over complicated and not conducive to effective communication across the whole team. We recognise the problems this has created and support the moves that have already been initiated to rationalise the project structure at the working level.

We would strongly recommend taking this rationalisation further with the establishment of a single, fully integrated Project Team led by the Project Director and comprising appropriate NHSL staff and external Advisers. This Team would meet regularly to manage all aspects of the project and submit reports and papers to the Project Board where key decisions are necessary. The core meeting may well set up other sub-groups but all aspects of progress would be reported to the full Team.

We have also noted and had comment that the current structure is seen as 'flat' with a lack of clarity around overall ownership and leadership. While the official role is understood, it is not always recognised in the way matters are conducted. It will be essential in the next market facing phase that overall leadership is strong and unambiguous.

A plan for the Competitive Dialogue (CD) process of the procurement has recently been circulated and again it will be essential that NHSL resourcing requirements are fully understood and planned. In particular our discussions have highlighted the need for potentially full-time senior resourcing for Clinical and Financial areas.

The project also needs to recognise the substantial task around effective and legally compliant management of the CD process. While client leadership and ownership of the role will be important NHSL will also need to ensure they recognise the magnitude of the task and make appropriate use of the experience and resource of external advisers.

One other issue we have noted from our discussion is that the Reference Design architects may wish to become part of a bidding team and therefore be lost to the client during the CD phase. If this is the case, some arrangement will need to be put in place for full evaluation of design proposals.

Recommendation:

Review project governance at all levels to produce a more effective and integrated arrangement for the next phase.

4.6 Previous Gateway Review Recommendations

Whilst we recognise that this is a different project to that reviewed previously we note that of the five Recommendations made by the Review in Feb 2010, two of these areas on Business Case and Risk Management remain of concern on this project.

5. Next Gateway Review

The next Gateway Review Gate 3 is expected in July 2013.

6. Distribution of the Gateway Review Report

6.1 The contents of this report are confidential to the SRO and their representative/s. It is for the SRO to consider when and to whom they wish to make the report (or part thereof) available, and whether they would wish to be consulted before recipients of the report share its contents (or part thereof) with others.

6.2 The Review Team Members will not retain copies of the report nor discuss its content or conclusions with others.

6.3 A copy of the report is lodged with the Scottish Government's Programme and Project Management Centre of Expertise (PPM-CoE) so that it can identify and share the generic lessons learned from Gateway Reviews. The PPM-CoE will copy a summary of the report recommendations to the Scottish Government's Accountable Officer, and where appropriate, to the Organisation's Accountable Officer where the review has been conducted on behalf of one of the Scottish Government's Agencies, NDPBs or Health Sector organisations.

6.4 The PPM-CoE will provide a copy of the report to Review Team Members involved in any subsequent review as part of the preparatory documentation needed for Planning Meetings.

6.5 Any other request for copies of the Gateway Report will be directed to the SRO.

Appendix A - Purpose of a Gateway Review 2: Delivery Strategy

- Confirm the Outline Business Case now the project is fully defined
- Confirm that the objectives and desired outputs of the project are still aligned with the programme to which it contributes
- Ensure that the delivery strategy is robust and appropriate
- Ensure that the project's plan through to completion is appropriately detailed and realistic, including any contract management strategy
- Ensure that the project controls and organisation are defined, financial controls are in place and the resources are available
- Confirm funding availability for the whole project
- Confirm that the development and delivery approach and mechanisms are still appropriate and manageable
- If appropriate, check that the supplier market capability and track record are fully understood (or existing supplier's capability and performance), and that there will be an adequate competitive response from the market to the requirement
- Confirm that the project will facilitate good client/supplier relationships in accordance with government initiatives such as Achieving Excellence in Construction
- For a procurement project, confirm that there is an appropriate procurement plan in place that will ensure compliance with legal requirements and all applicable EU rules, while meeting the project's objectives and keeping procurement timescales to a minimum
- Confirm that appropriate project performance measures and tools are being used
- Confirm that there are plans for risk management, issue management (business and technical) and that these plans will be shared with suppliers and/or delivery partners
- Confirm that quality procedures have been applied consistently since the previous Review
- For IT-enabled projects, confirm compliance with IT and information security requirements, and IT standards
- For construction projects, confirm compliance with health and safety and sustainability requirements
- Confirm that internal organisational resources and capabilities will be available as required for future phases of the project
- Confirm that the stakeholders support the project and are committed to its success
- Evaluation of actions taken to implement recommendations made in any earlier assessment of deliverability.

Appendix B - Summary of Recommendations

Ref No.	Report Section	Recommendation	Status (C.E.R.)
R1	Business Case & Stakeholders	Further develop the current draft of the Business Case to fully represent the current aspirations for the new development.	Critical
R2	Risk management	Adopt full risk management across the project incorporating recording, and management of all project risks together with escalation procedures.	Essential
R3	Review of current phase	Consider integration of the NPD Adviser team into the Consort Supplementary Agreement negotiations.	Recommended
R4	Readiness for next phase	Review project governance at all levels to produce a more effective and integrated arrangement for the next phase.	Critical

Each recommendation has been given Critical, Essential or Recommended status. The definition of each status is as follows:

CRITICAL - Critical for immediate action, i.e. to achieve success the project should take action immediately to address the following recommendations:

ESSENTIAL - Critical before next Review, i.e. the project should go forward with actions on the following recommendations to be carried out before the next Gateway Review of the project:

RECOMMENDED - Potential Improvements, i.e. the project is on target to succeed but may benefit from uptake of the following recommendations.

Appendix C - Review Team and Interviewees

Review Team:

Review Team Leader:	Bert Niven
Review Team Members:	John Connolly
	David McLuckie

List of Interviewees:

Name	Organisation/Role
Jackie Sansbury	Chief Operating Officer
Brian Currie	Project Director
Fraser McQuarrie	Project Manager, Davis Langdon
Sorrel Cosens	Project Manager
James Steers	Clinical Project Director
Iain Graham	Director of Capital Planning and Projects
Richard Cantlay	Technical Adviser, Mott MacDonald
George Curley	Acting Director of Facilities
Janice Mackenzie	Chief Nurse
Donna Stevenson	Scottish Futures Trust
Edward Doyle	Associate Medical Director
Carol Potter	Assistant Director of Finance
Tom Groves	Architect, Nightingale Associates
Michael Pryor	Financial Adviser, Ernst & Young
Susan Goldsmith	Director of Finance
Susan Lloyd	Partnership Representative

INFRASTRUCTURE INVESTMENT BOARD
26 SEPTEMBER 2011
ROYAL HOSPITAL FOR SICK CHILDREN AND DEPARTMENT OF CLINICAL
NEUROSCIENCES REPROVISION

IIB members are asked:

- to note the background information and proposed discussion points; and
- to state if further information, or an oral briefing, would be helpful before the meeting on 26 September.

Background

1. The project covers the reprovision of acute hospital facilities for children and young people, and for adult clinical neurosciences patients provided in Edinburgh by NHS Lothian.

2. NHS Lothian's Property and Infrastructure Strategy 2007 recognised that both Royal Hospital for Sick Children (RHSC), currently located at Millerfield Place, and the Department for Clinical Neurosciences (DCN), currently located at Western General Hospital, required significant modernisation and that it was unlikely that this could be achieved within the confines of the current sites.

3. Alongside the announcement of a pipeline of revenue financed investment of £750m of health projects in the Draft Budget 2011-12 in November 2010, it was announced that the RHSC/DCN would be taken forward as an integrated NPD project (previously the two were going to be progressed as separate capital projects). An integrated project allows the generation of a number of physical and operational synergies that would not have been possible had the developments been taken forward separately (e.g. the ability to deliver paediatric and adult neurosurgery in the same theatre suite).

4. The new hospital for children and young people and the adult department of clinical neurosciences will therefore be integrated into the same new build on car park B at the Edinburgh Royal Infirmary (ERI), Little France. The facility will be stand-alone in terms of infrastructure and facilities management. It will link in to the ERI at ground and first floor to ensure clinical functionality. It will have a helipad on the roof to provide emergency access to all adult and paediatric specialities on site.

5. The detailed proposals for the project are being developed and will be presented as an Outline Business Case to the Scottish Government Health Directorates (SGHD) in October / November 2011. This proposal will be the basis of a procurement scheduled to commence in November 2011.

6. SFT has roles at each of the NPD programme level, the portfolio level and the project level. SFT will review and provide support to the SGHD Capital Investment Group in its consideration of both the Outline Business Case and Full Business Case for the project. In addition, SFT will carry out Key Stage Reviews of the project prior to import milestones in the project procurement. SFT and Scottish Government

Health Division also support the development of the project through attendance at both the Project Board and Working Group meetings.

7. IIB may wish to focus on three sets of issues in relation to the project:

- Strategy;
- Financing, cost and affordability; and
- Governance and assurance.

Each set of issues is outlined below, along with questions which IIB may wish to explore.

Strategy

8. This is a complex project to deliver in view of the existing PFI contract for the Edinburgh Royal Infirmary (ERI) on the Little France site. Consort, the venture comprising Balfour Beatty and Barclays Infrastructure Fund which is taking forward the Private Finance Initiative (PFI) contract, controls the land on which the RHSC/DCN will be built. The PFI contract was signed in 2003 and lasts until 2028. The lease on the land is for 130 years.

9. The interface issues with the existing PFI contract (e.g. land ownership, links between the PFI building and the new facility, enabling works on the ERI site) have to be resolved prior to procurement to allow an open competition for the RHSC/DCN project and ensure that there are no blockages either during or post procurement to the delivery and/or operation of the new facility. NHS Lothian has formally written to Consort seeking a resolution of these issues and discussions are ongoing.

10. NHS Lothian is very aware of the need to minimise any delay in the delivery of the project. The key determinants of any extension to the timescale are the revised scope (to include DCN) and the NPD procurement process. The most recent timetable presented would give an operational date of September 2016, with procurement commencing in November 2011, the preferred bidder selected in April 2013, start on site in November 2013 and the construction complete by July 2016.

Issues the IIB may wish to explore include:

- **What is the current state-of-play in relation to negotiations with Consort?**
- **How confident is NHS Lothian that the facility can be operational by September 2016?**
- **How are public expectations regarding the operational start date for the new facility being managed?**
- **Can any lessons can be learned about how we take forward NPD contracts in future from the difficult negotiations with Consort over its PFI contract?**

Financing, cost and value for money

11. The NPD procurement model features the use of the private sector to design, build, finance and maintain the new hospital. The public sector then repays the capital, financing and maintenance costs over a 25 to 30 year period through a unitary charge once the buildings are in use.

12. The NPD model requires both Hard Facilities Management (FM) Services and Lifecycle replacement to form part of the service provided by the private sector. The SG has confirmed that it will fund 100% of the unitary charge associated with construction, financing and private sector operating costs and 50% of lifecycle costs. NHS Lothian will therefore be responsible for funding 100% of Hard FM costs, 50% of lifecycle costs and all utilities and rates. It is estimated that the total capital value of the project will be around £230 million. The average unitary charge over 25 years will be around £21.6 million per year.

13. NHS Lothian is developing a "reference design" for an integrated RHSC/DCN in order to facilitate a speedy delivery and minimise the up-front costs for bidders. This means that most of the design development (except in relation to mechanical and electrical design) will be done before the project enters procurement, rather than bidding contractors preparing detailed designs themselves. Although it potentially limits innovation, this approach should increase the attractiveness of the project to bidders and allow for a more certain overall cost for the project at Outline Business Case stage. As part of a 'needs not wants' challenge SFT is undertaking an independent review of the design.

14. In addition to the funding of the NPD project, there is likely to be a need for capital to fund the associated enabling works and equipment (e.g. clinical works within the existing ERI to allow for reconfiguration of services, redirection of utilities, road reconfiguration), for which the current estimate is £24 million (excluding VAT). The current assumption is that all three of these classes of enabling works would be delivered as part of the existing Consort contract but funded via a capital injection from SG to avoid the need for the refinancing of the whole project. Capital cover would be required in any case as the existing ERI contract is on balance sheet. These costs have been programmed as part of the health capital programme. There are also significant medical equipment requirements for the new RHSC/DCN, for which there is a current estimate of £29 million (excluding VAT). Again these costs are included within long term capital plans but will not impact until 2015-16 and 2016-17.

15. It is understood that there is significant interest in the project from developers, and around six to seven contractors are expected to consider a bid for the project. As with other large NPD projects, the limited availability of long term project finance remains a key risk.

Issues IIB may wish to explore include:

- **Whilst the reference design approach has many benefits, it means that contractors are less able to innovate (and reduce costs) in the design at procurement stage - how will NHS Lothian ensure that costs are minimised in the delivery of the building?**

- **How will surplus land and buildings released at the Sciennes Road site (currently the location of Sick Kids) be dealt with? Could these receipts be considered as part of a brokerage package, repaying part of the initial capital investment?**

Governance and assurance

16. The skills and experience of the Project Director and the wider project team are of vital importance in delivering the project successfully. A key part of this is experience in delivering revenue funded projects, as such projects bring significant additional demands on the project team over and above those required on capital funded construction projects. These include developing a services specification and payment mechanism and managing the demands of senior debt funders.

17. Given the size of the project, it is critical that this experience comes from the client team, as the project team have to be able to manage the advisory input to the project, both in terms of costs and strategic input - both of which become very difficult if the advisers themselves are the sole source of experience on key parts of the project.

18. It is currently not clear that the project team has such skills. Moreover, it is not clear what effective governance arrangements are in place to oversee the procurement process (e.g. formal Project Board).

19. The project is subject to both Gateway Reviews and Key Stage Reviews. Gateway Review 2, an assessment of the project's readiness to deliver at stage of preparing to submit the Outline Business Case, took place on 5-7 September 2011. The first Key Stage Review in the form of an independent design review is currently being undertaken by SFT.

Issues that IIB may wish to explore include:

- **Is NHS Lothian confident that the project team has the appropriate skills to ensure the successful delivery of the project? If not, what action is being taken to address any skills gaps?**
- **What governance arrangements are in place for the project? Does a formal Project Board exist which is empowered to take decisions?**
- **How is NHS Lothian finding the various assurance processes? Having both Gateway and Key Stage Reviews is quite resource intensive – is this adding value from their perspective and do they understand how the two fit together?**

IIB members are asked:

- to note the background information and proposed discussion points; and
- to state if further information, or an oral briefing, would be helpful before the meeting on 26 September.

Royal Hospital for Sick Children & Department of Clinical Neurosciences at Little France Project NHS Lothian



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Document Issue

Issue:	File Path:	Date:	Prepared:	Checked:	Reviewed:
1	Stored on BIW	01.06.2011	RP & NL	FMcQ	To be reviewed by all leads
1.1	N/A	12.08.2011	RP	AM	Internal Review
1.2	N/A	19.08.2011	RP	RC	Internal Review
1.3	Stored on BIW	23.08.2011	RP	FMcQ	Issued to NHSL for SFT Review
2.0	Stored on BIW	06.09.2011	RP	FMcQ	Issued to NHSL and Workstream managers
2.1	Stored on BIW	28.09.2011	NL	-	Issued to Business Case Lead for inclusion in OBC

Schedule of Revisions

Revision:	Date:	Details of Revision:	Revised By:
Draft 1.	01.06.2011	Updated draft for review / comment	RP
Draft 2.	06.09.2011	Update to reflect feedback and project status	RP

1. Introduction

1.1 Project Name

The name of this project is Royal Hospital for Sick Children and Department of Clinical Neurosciences at Little France, and is abbreviated to RHSC + DCN – Little France.

1.2 Purpose of the Document

This Project Execution Plan (PEP) is intended to impart to all parties involved in the project a clear understanding of how they interact with each other, and sets out the governing strategy, organisation, control procedures and roles and responsibilities for the project. The document provides a concise introduction to the project for new team members in terms of how the project will be delivered.

It is intended that this document will be a working document, amended and further developed during the progression of the project, with revisions issued as appropriate. Davis Langdon, an AECOM Company (DL), will be responsible for developing the document with input from the various parties of the project.

All parties involved in or associated with the project are requested to comply with the contents of this PEP. Any issues which may result in necessary amendments, amplifications or improvements to practices or procedures contained herein should be raised for discussion with all parties.

1.3 Precedence of Document

If any matter within this document is at variance with any Contract or Agreement signed by NHSL Board relating to the execution of the works, then that which is contained within such Contract or Agreement will be deemed to take precedence. Any such variation should be reported to DL in order for the necessary amendments to be made.

1.4 Acronyms and Abbreviations

A&E	Accident and Emergency
AEDET	Achieving Excellence Design Evaluation Toolkit
CA	Company Administrator
CAMHS	Children and Adolescent Mental Health Services
CIG	Capital Investment Group
CDM	Construction Design Management
C&YP	Children and Young People
DCN	Department of Clinical Neuroscience
DL	Davis Langdon, An AECOM Company
ENT	Ears, Nose & Throat
EY	Ernst & Young
FBC	Full Business Case
MM	Mott MacDonald Limited
NES	National Education Services Scotland
NHSL	National Health Service Lothian
NPD	Non Profit Distribution
NSD	National Services Division
NSD MCN	National Services Division Managed Clinical Network
OBC	Outline Business Case
OGC	Office of Government and Commerce
PAA	Paediatric Acute Admission and Assessment Unit
PEP	Project Execution Plan
PFPI	Patient Forum and Public Involvement

PIC	Project Information Co-ordinator
PME	Project Management Executive
PSC	Professional Services Contract
REH	Royal Edinburgh Hospital
RHSC	Royal Hospital for Sick Children
RDT	Reference Design Team
REH	Royal Edinburgh Hospital
RIE	Royal Infirmary Edinburgh
SFT	Scottish Futures Trust
TG	Thomson Gray Partnership
TT	Turner & Townsend
WGH	Western General Hospital

2. Project Introduction

2.1 Background

The NHSL Property and Infrastructure Strategy published in 2007 recognised that the RHSC and DCN require significant modernisation to ensure an appropriate environment for the provision of high-quality paediatric and neuroscience services. Physical building and site constraints, together with practical phasing difficulties, limit the ability to achieve such modernisation in a successful and cost effective manner on the current respective sites.

- RHSC

The RHSC facility is rated as being 47% non-compliant with fire standards and 56% non-compliant with other statutory and non-statutory standards. 48% of the property is in an unacceptable physical condition and, in terms of functional suitability, 13% is deemed to be unfit for its present purpose. 6% of the hospital is recorded as overcrowded.

- DCN

In February 2008 the Scottish Government endorsed the recommendation of the Neurosciences Implementation Group that adult neurosurgery continues to be provided in Aberdeen, Dundee, Edinburgh and Glasgow.¹ These services would be consolidated under a single management structure for Scotland; NHS Lothian is fully engaged with the national Managed Service Network for neurosurgery.

The re-provision of the Royal Hospital for Sick Children and Department of Clinical Neurosciences, within a combined facility at Little France, is a key part of the NHSL Board Strategic Capital Investment Programme. NHSL Board has decided to procure the project through the Scottish Government Non Profit Distributing model.

The new building will be located at the Royal Infirmary Edinburgh (RIE) on the Little France site.

2.2 The Project Brief and Scope

2.2.1 RHSC Existing Facilities Overview

The Royal Hospital for Sick Children, Edinburgh, is currently based at Sciennes, near Edinburgh city centre. It was originally built in 1895 and has had several structural developments over the last 100 years. The Hospital and many of the surrounding houses, which are owned by NHSL or by NHSL Endowments, are listed buildings.

The services that at present are provided by the Royal Hospital for Sick Children site are:

Children's services provided in RHSC		
A&E	Haematology / oncology	Ophthalmology
Ambulatory paediatrics	Inherited metabolic disease	Paediatric Liaison psychiatry / psychology
Audiology	Paediatric Intensive Care	Paediatric Pharmacy
Anaesthesia	Paediatric High Dependency	Paediatric physiotherapy
Burns	Infectious diseases	Paediatric Radiology
Cardiology (inpatient facility in Yorkhill)	Intensive Care Retrieval (NSD contract)	Paediatric Respiratory medicine
Child protection	On-site laboratories – haematology / biochemistry	Renal medicine (outreach from Yorkhill)

¹ Neuroscience Implementation Group (2008): *Report to Cabinet Secretary for Health and Wellbeing*

Chronic pain service	Maxilo-facial surgery	Paediatric Rheumatology (outreach from Yorkhill)
Cleft lip and palate surgery (NSD MCN)	Paediatric medicine	Pain Management
Day surgery	Neonatal surgery	Speech and language therapy
Paediatric Dietetics	Neurosciences (neurology / neurophysiology/neurosurgery)	Paediatric general surgery
Endocrinology & diabetes	Occupational therapy	Paediatric spinal deformity surgery
Genetics	Oral surgery	Specialist neuro-developmental paediatrics
Gastroenterology	Out patient services	Theatres
Services shared with adult service but provided on-site at RHSC		
Dentistry	Neurosurgery	Orthotics
Dermatology	Orthopaedics	Plastic surgery
ENT		

The current 12-bed CAMHS inpatient unit is located in the Young People's Tier 4 Unit on the Royal Edinburgh Hospital (REH) site, adjacent to the regional forensic unit. It incorporates 12 single rooms in 3 groups or 'pods'. Designed around the idea of a therapeutic community, the unit imposes major constraints on staff wanting to provide modern treatment and care. In particular the current facility only has one communal area with all the bedrooms opening into this area. Privacy is therefore significantly compromised.

Day children's services are currently based at Forteviot House, Hope Terrace and comprise 2 Victorian villas which have been connected together.

2.2.2 DCN Existing Facilities Overview

The Department of Surgical Neurology opened in a purpose-built facility in the Western General Hospital (WGH) in 1960. It had 60 beds and 2 dedicated operating theatres designed by the internationally renowned neurosurgeon Norman Dott. Neurology was based at the Northern General Hospital at this time, with 30 inpatient beds.

The facility was re-named the Department of Clinical Neurosciences in 1987 when neurology moved to WGH, and then comprised 48 neurosurgery and 24 neurology beds.

In 1990 the DCN theatre complex was developed to meet Royal College of Anaesthetists standards for training and best clinical practice. The original theatres remain, with updated anaesthetics rooms, recovery beds and other support accommodation.

Until the early 1990s neurosurgical trauma was based at the Royal Infirmary of Edinburgh (RIE), with a dedicated trauma theatre, critical care facilities and inpatient ward. In 1991 these services moved into the DCN at WGH, with an overall reduction in NHS Lothian neuroscience beds of 19 and a concentration of all neurosurgery into two operating theatres.

In 1996 DCN was expanded to include a dedicated outpatients department, teaching and office accommodation. DCN now holds other outpatients' clinics in various locations on the WGH site as the 10 consulting rooms are no longer sufficient.

Prior to 1997 the population served by the DCN was approximately 1 million, covering the Lothians, Fife and the Borders, but this has expanded considerably in the last 12 years to a base population of 1.8 million to include Dumfries and Galloway and part of Forth Valley.

The services that at present are provided by the Department of Clinical Neurosciences are:

Neurological services provided in DCN		
Chronic Pain Service	Diagnostic Neuroradiology	Dietetics
Edinburgh Centre for Neuro-oncology	Neurosciences High Dependency Unit	Health Records

Interventional Neurovascular Radiology	Neurology	Neurophysiology
Neuropsychiatry	Neuropsychology	Neurosurgery
Occupational Therapy	Outpatients Department	Pre-Admission Clinic
Programmed Investigation Unit	Physiotherapy	Speech and Language Therapy
Theatres and Anaesthesia		
Shared services provided on-site at DCN		
Neuroradiology	Neurophysiology	

2.2.3 Summary of Client Brief

The new combined facility will be sited at Little France. The gross floor area of the new combined build as detailed in the feasibility study is estimated at approximately 50,000 square metres (m²). The RHSC project has an approved OBC and was based on procurement through Framework Scotland. The design for this stand-alone facility was well advanced and three rounds of user-groups meetings had been conducted resulting in the sign-off of a design to 1:50 detailed design stage (equivalent to RIBA Stage E). The DCN project is not as developed, either in terms of design or business case production. Outline design information, including Schedules of Accommodation, has been developed in order to support a draft OBC. As part of the Scottish Government 2010-2011 Budget announcement, the RHSC and DCN schemes were announced as forming part of the new NPD pipe-line. Consequently, clinical and building elements of the previously proposed stand-alone buildings will now be combined.

2.2.4 Strategic Objectives

The anticipated outcomes and benefits from the development are:

In-patient & Ambulatory Care Services

- Co-location with acute adult, maternity and neonatal services where the support of clinicians from across different specialities will be available. The provision of a purpose-built state-of-the-art Children & Young People's (C&YP) hospital with improved facilities and an appropriate environment for children, young people, families and staff;
- An expanded 'front door' service (including a Paediatric Acute Admission and Assessment Unit (PAA) that links with primary care and unscheduled care services, and therefore supports service redesign and sustaining national targets for reducing waits and delays in A&E);
- High-quality clinical care for patients that is timely, accessible and consistently available;
- Sustainable core and specialist emergency and elective service, and local, regional and national services;
- Improved planning and processes for patient transition from paediatrics to adult services, leading to improved pathways of care for patients and families;
- The synergy of having co-located adult and paediatric services providing significant additional research and development opportunities for children's services;
- Support the effective delivery of teaching and education through co-location of the hospitals located at Little France, the Medical School and the Bio-medical Research Park on one site;
- Retention of children's neurosurgical service which depends on the co-location of the adult neuroscience service.

Children & Adolescent Mental Health Services

- Improved patient care for C&YP with both mental health and physical illnesses. Physical co-location will support faster diagnosis and treatment;
- Professional benefits to CAMHS staff and paediatricians of working alongside each other, reducing the risks of professional isolation and improving the dialogue between colleagues;
- Suitably designed premises enabling staff to work effectively when treating young people with serious mental illness;
- Reduction in the stigma young people associate with mental illness by being treated on the same site as all other children and young people.

Department of Clinical Neurosciences

[NB Section to be developed - DCN outcomes and benefits of a combined facility not considered within draft OBC.]

2.2.5 Project Parameters and Key Issues

One of the key constraints of this project is that the footprint and massing of the hospital will be constrained by existing buildings, services and infrastructure on the RIE site. These include:

- Physical Link – connection to the A&E department within the RIE hospital;
- Road Network – potential realignment of the existing network may be necessary to maintain a workable hospital layout. The potential impact on cars, ambulance / emergency access and buses during construction will be managed;
- Utilities – the proposed service strategy will be to create new independent utility supplies including drainage, water, gas, electricity and communications, with the ultimate objective of delivering an autonomously-serviced department;
- Niddrie Burn and Other Water Courses – a key constraint to the south and east of the site, together with realignment plans by City of Edinburgh Council to the east;
- Site Conditions – data from the RIE development and site investigations on the adjoining land is available, suggesting restrictions in some areas;
- Car Parking – the maintenance during construction and the operation of sufficient car parking will require cognisance of the neighbouring developments and planning restrictions. Fully accessible and, where appropriate, managed car parking for the RHSC / DCN patients and staff to be balanced with planning requirements (e.g. Green travel planning) and site capacity limitations. The opportunities for maximising collaboration with neighbouring developments and public transport servicing will be pursued;
- Height – the current development plans include a development height restriction of three floors, based on “lines of sight” from Old Dalkeith Road and maintaining the uninterrupted ridges of Craigmillar Castle and Edmonston. The increased building footprint and formation of an independent energy centre and service yard will extend the building constraints and ultimately breach the defined sky-line policy. This will need to be carefully managed with the City of Edinburgh Council Planning department and Architecture and Design Scotland;
- Clinical Services – the clinical services at RIE require continued function and cannot be disrupted;
- Access To Existing Amenities and Public Services – access to existing services on the Little France site (for patients, staff, visitors, public transport and suppliers) will require to be maintained throughout the project;
- Full Planning Permission – yet to be granted for the project and this may be influenced by the permissions required for the whole of the Little France future master-planning of the site. This work is underway for Little France incorporating the plans for re-provision of the RHSC and DCN. This work has to be aligned to the overall master-plan for the Bio-quarter development, and is at an advanced stage. This will have to be considered in full detail in relation to the site-wide traffic management strategy.

2.3 Project Delivery

2.3.1 Overall Project Delivery

The Client has contracted Advisers to support the Project Delivery in the following way:

RHSC & DCN NHSL Project Delivery

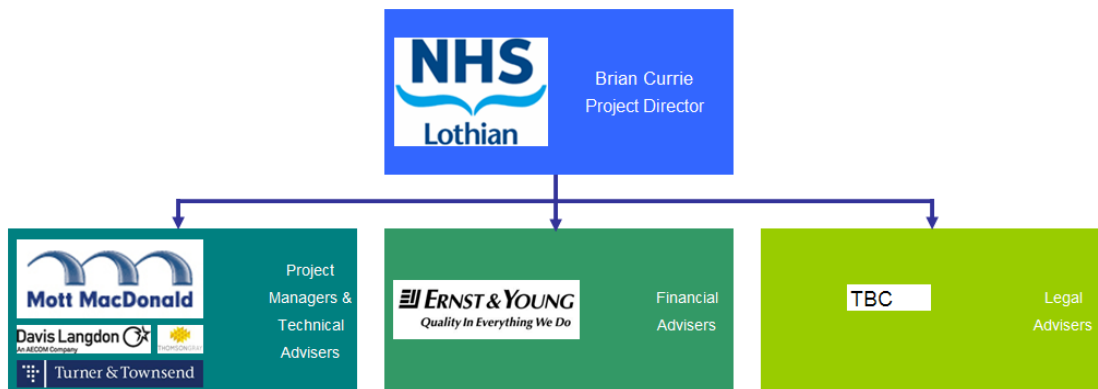


Figure 1: NHSL and Advisers Project Structure

The NHSL Delivery Team will be working alongside the Advisory Teams to delivery the project. The NHSL Team is set up as follows:

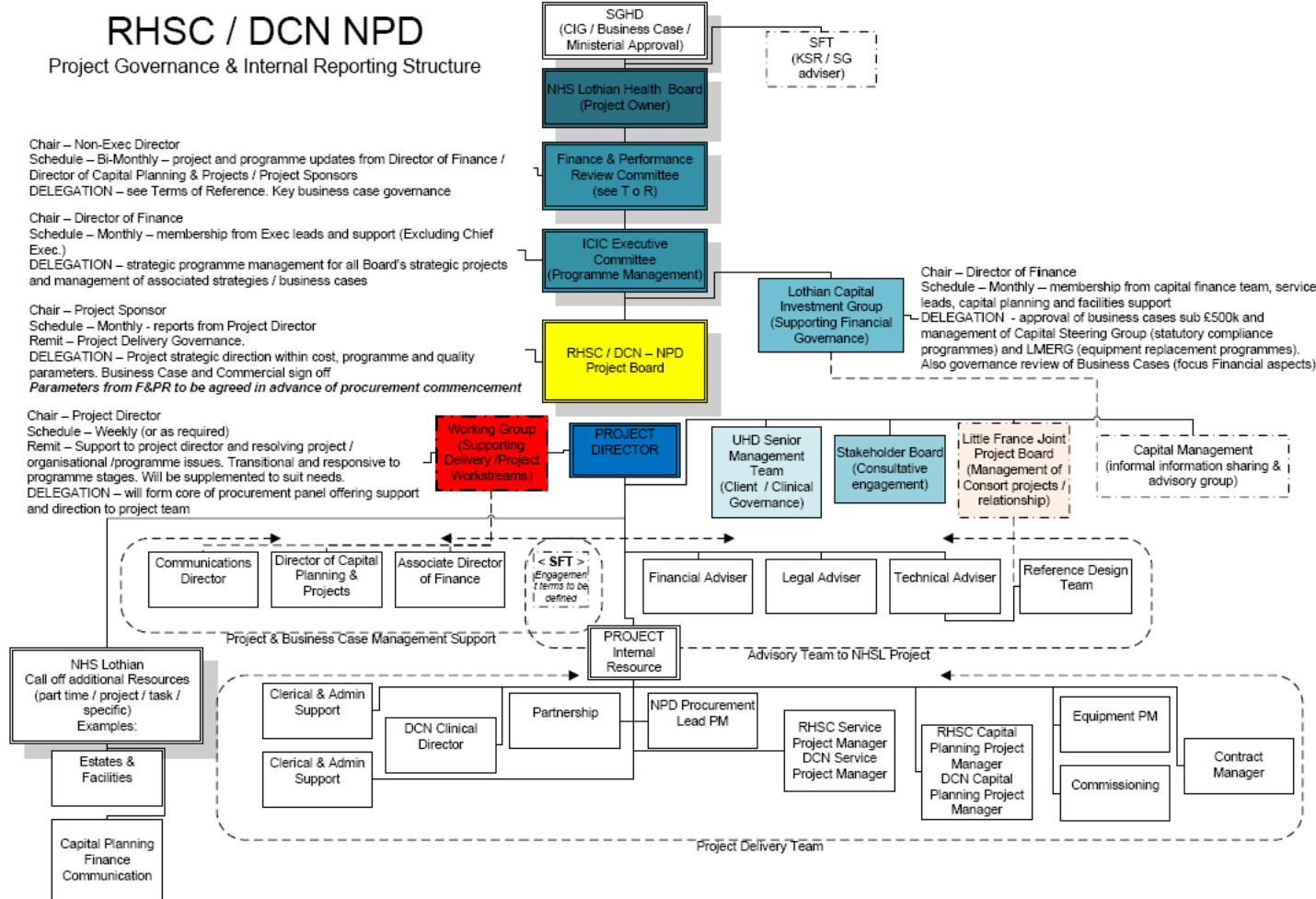


Figure 2: NHSL Delivery Team

2.3.2 Advisory Services Contracted by NHSL

The form of Contract for the Project Management & Technical Advisory Team during the pre-construction delivery phase is the Standard Model Contract on OGC Buying Solutions Framework Agreement RM457/1, signed 20th Oct & 2nd Nov 2009 (framework agreement).

The Contract is agreed between the following companies:

- Employer – NHS Lothian
- Project Management & Technical Advisory – Mott MacDonald Limited

Mott MacDonald Limited has engaged the following companies in sub-consultancy agreements to comprise the Project Management & Technical Advisory Team:

- Project Manager / Reference Design / Facilities Management / Procurement – Davis Langdon
- CDM Co-ordinator – Turner & Townsend
- Cost Adviser – Thomson Gray Partnership
- Health Planner – Capita

The design team will comprise the following companies, who will be entering into a sub-consultancy agreement with Davis Langdon:

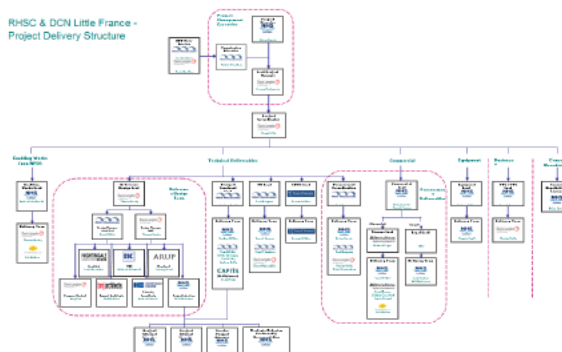
- Boswell Mitchell Johnson – Architectural Services
- Nightingale Associates – Architectural Services
- Hulley & Kirkwood – Building Services Engineering
- Arup – Civil & Structural Engineering
- Montagu Evans – Planning

2.4 Project Organisation Structure

The organisational structures will develop and alter as the project progresses. Stage One of the project will include, but is not limited to, the following deliverables: preparation of the reference design, production of NPD procurement document, completion of the Outline Business Case and compilation of the Board’s Construction, Facilities Management Specifications, OBC drafting support, contract development and Planning in Principle. The Second stage is competitive procurement of an NPD provider and the third stage is construction delivery. The Organisation Structure is included in Appendix F and Communication and Contractual Links are included in Appendix G.

Below two diagrams are given:

- 1) The Project Delivery Organisational Structure diagram sets out the structure of the project, identifying the key roles, Work-stream Leads and organisations involved in the delivery and management of the project in the two separate stages;
- 2) Communication and Contractual Links portray the primary lines of communication as well as contractual links, and the formal communication is expanded upon in section 4.1.



Figures 3: Organisation Structure

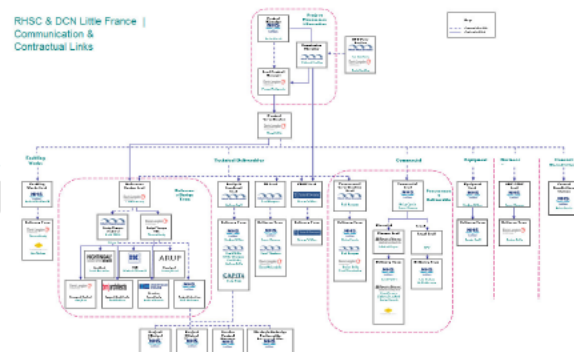


Figure 4: Communication and Contractual Links Structure

2.5 The Project Team

The Leads for the Project and Work-streams are identified as follows:

Company	Title	Forename	Surname	Notes
NHSL	Project Director, and Commercial and Consort Negotiations Liaison Leads	Brian	Currie	
NHSL	Business Case Lead	Sorrel	Cosens	
NHSL	Equipment Lead	Graham	Gillies	
NHSL	Enabling Works Lead	Andrew	MacDonald	
NHSL	Clinical Lead – Paediatric	Janice	Mackenzie	
NHSL	Clinical Lead – Neurosciences	James	Steers	
Mott MacDonald	Commission Director	Richard	Cantlay	
Mott MacDonald	Peer Review	Iain	Courtney	
Mott MacDonald	Facilities Management and Procurement Co-ordination Leads	Paul	Hampson	Procurement Co-ordination is combined with Commercial although distinct meetings continue
Mott MacDonald Limited	Commission Manager and Design & Construct Lead	Andrew	Scott	
Mott MacDonald	Design Manager – Architect Lead (Reference Design)	David	Stillie	
Davis Langdon	Peer Review	Kevin	Bradley	
Davis Langdon	Reference Design Lead and Design Manager – M&E Lead (Reference Design)	Tom	Brady	
Davis Langdon	Lead Project Manager	Fraser	McQuarrie	
Thomson Gray	Cost Consultancy Lead	Iain	McLean	
Turner & Townsend	CDM Co-ordinator Lead	Graeme	Walker	
Ernst & Young	Commercial – Financial Lead	Michael	Pryor	
TBC	Commercial – Legal Lead	TBC	TBC	Insert when confirmed

The Delivery Team members are as follows:

Company	Title	Forename	Surname	Notes
NHSL	Reference Design,	Neil	McLennan	
NHSL	Clinical Support	Fiona	Halcrow	
NHSL	Cost Management	Kenneth	Ngai	
NHSL	Cost Management and Commercial	Carol	Potter	
NHSL	Commercial	Iain	Graham	
NHSL	Equipment	Dougie	Coull	
NHSL - Partnership	Clinical Support	Susan	Lloyd	
Mott MacDonald	Design & Construct	Andy	Duncan	
Mott MacDonald	Design & Construct	Paul	Kelly	
Mott MacDonald	Design & Construct	Andrew	Kelly	

Mott MacDonald	Design & Construct	Willie	Stevenson	
Mott MacDonald	Design & Construct	David	Stillie	
Mott MacDonald	FM	Carol	Thorburn	
Davis Langdon	Document Control	Amy	Kam	
Davis Langdon	Procurement Co-ordination	David	Cunningham	
Davis Langdon	Procurement Co-ordination and Business Case support	Denise	Kelly	
Davis Langdon	Project Co-ordinator	Naomi	Lillie	
Davis Langdon	FM	Simon	McLaughlin	
Davis Langdon	Senior Project Manager	Richard	Park	
Davis Langdon	Enabling Works	Tom	Brady	
Thomson Gray	Enabling Works	Iain	McLean	
Thomson Gray	Cost Management	James	Gibson	
Thomson Gray	Cost Management	Ron	Thomson	
Arup	Reference Design - Structural	Jeremy	Grant	
Arup	Reference Design - Structural	Bethan	McEwan	
Boswell Mitchell Johnson	Reference Design - Support Architects	Bob	Hedivan	
Boswell Mitchell Johnson	Reference Design - Support Architects	Sonia	Scott	
Hulley & Kirkwood	M&E	Michael	O'Donnell	
Nightingale Associates	Reference Design - Architect	Jamie	Brewster	
Montagu Evans	Reference Design - Planners	Fraser	Littlejohn	
Montagu Evans	Reference Design - Planners	Andrew	Munnis	
Capita	Health Planners	Craig	Dixon	Capita was formerly known as 'Tribal'
Ernst & Young	Commercial	David	Fraser	
Ernst & Young	Commercial	Lindsay	Crawford	
Ernst & Young	Commercial	Louise	Branch	

2.5.1 Roles & Responsibilities

Detailed Roles and responsibilities for each individual within the core project team are given in Appendix A. Noted below is an overview of each organisation's main functions.

2.5.1.1 Employer – NHS Lothian Health Board

NHSL is responsible for providing health and treatment services for the population of the Edinburgh and the Lothian's. NHSL is the Employer for the Project.

NHSL will be responsible for the preparation of the Reference Design, compilation of their briefing requirements (including design, construction and facilities management), interface management with the existing site operator (Consort) and confirmation of all policy-related issues.

Refer to 'Figure 2: NHSL Organogram' at 2.3.1 for details.

The Clinical Management Teams (CMT) have operational management responsibility for Children's Services and DCN and as part of this, are key players in relation to the RHSC + DCN – Little France project. The CMT require to have sign-off of the Reference Design at all stages prior to final approval by NHS Lothian.

[NB Role of Partnership to be recorded]

2.5.1.2 Mott MacDonald Limited

Mott MacDonald Limited has been appointed as the lead consultant and will deliver the following services:

- Lead Strategic advice;
- NPD Procurement advice;
- Facilities Management advice;
- Design and Construction advice.

2.5.1.3 Davis Langdon, An AECOM Company

Davis Langdon has been appointed as a sub-consultant to Mott MacDonald Limited and will deliver the following services:

- Project Management services;
- Reference Design Management and coordination;
- NPD Procurement support;
- Facilities Management advice.

2.5.1.4 Thomson Gray Partnership

Thomson Gray Partnership has been appointed as a sub-consultant to Mott MacDonald Limited and will deliver the following services:

- Cost Advisory services (excluding Facilities Management);
- Whole Life Costing.

2.5.1.5 Turner & Townsend

Turner & Townsend has been appointed as a sub-consultant to Mott MacDonald Limited and will deliver the following services:

- Construction Design Management and Health and Safety advice.

The role of CDM Co-ordinator is to provide the client with a key project adviser in respect of construction health and safety risk management matters. The CDMC should: assist and advise the client on appointment of the NPD contractor and the adequacy of management arrangements; ensure proper co-ordination of the health and safety aspects of the design process; facilitate good communication and co-operation between project team members; and co-ordinate health and safety information for issue to the NPD contractor.

2.5.1.6 Financial Advisers – Ernst & Young

The Financial Advisor is engaged to provide financial advice to NHSL in preparing the OBC, including affordability and VFM analysis, and throughout the NPD procurement process, preparing financial elements of bid documentation and financial appraisal of bids.

2.5.1.7 Legal Advisors – To be appointed

[NB Expand services to reflect scope on appointments]

Legal advisers for the project are still to be appointed. Interim legal advisory services are being provided by **[insert name]** through existing arrangements with a full appointment to be sought through completion.

2.5.2 Project Stakeholders

The project is influenced by two branches of stakeholder groups:

- 1) Internal – Clinical and management groups –
 - Estates & Facilities Management;
 - Clinical Task Group. Refer to the table below outlining these groups;
 - Partnership;
 - SEAT Boards;
- 2) External – parties with specific project interest –
 - Scottish Futures Trust;
 - Scottish Government;
 - City of Edinburgh Council;
 - Architecture & Design Scotland.

Task Sub Groups	
Co-joined Theatres	RHSC – Medical Inpatients + MDCU
Co-joined Radiology	RHSC – Inpatients – Medical & Surgical Shared
Shared Health Records	RHSC – Neuroscience Inpatients
Joined Neurophysiology	RHSC – Haem/Onc
Clinical Management Suite	RHSC – Classrooms
Main Entrance	RHSC – Critical Care
On – Call	CAMHS
Basement people – Domestic/ Staff changing, Materials Management, Bed Store, Estates	RHSC – Clinical Education & Child, Life & Health
Kitchen	RHSC – Clinical Research Facility
RHSC – A&E/Radiology/PARU Shared	RHSC – Family Support
RHSC – Emergency Care + Adult Link	Spiritual Care & Bereavement
RHSC – PARU	DCN – Acute Care
RHSC – ASAA + Surgical Inpatients	DCN – OPD
RHSC – Therapies + Special Feeds Unit	DCN – PIU & Inpatients
RHSC – OPD – Group 1	DCN – Therapies
RHSC – OPD – Group 2	

2.6 Work-streams

To assist with management of the different elements of the project, the project has been split up into the following work-streams:

- Reference Design Team;
- Design & Construct;
- Facilities Management;
- Construct Design Management Co-ordination;
- Commercial, incorporating Procurement Co-ordination and Commercial Services;
- Equipment;
- Business Case (both Outline and Full);
- Enabling Works;
- Consort Negotiation Liaison;

There is also the Project Management Executive, providing a managerial function across all work-streams, and Clinical support (see below).

The objective of work-streams is to empower individual work-stream leads and their delivery teams to manage themselves in the most appropriate way rather than taking a 'one size fits all' approach to these very different project disciplines.

Work-stream over-views and functions are summarised below.

2.6.1 Project Management Executive (PME)

The PME comprises the Project Director, the Commission Director and Lead Project Manager. This group will meet fortnightly to manage the overall project. Although not a work-stream in itself, the PME will liaise with all the work-streams at a monthly meeting to monitor progress and ensure the project is proceeding appropriately. The PME meeting invitations will extend to Michael Pryor as Finance Lead and the Legal Lead **[NB update when confirmed.]**

2.6.2 Reference Design

The purpose of the Reference Design work-stream relates to the production and management of the Board's "Reference Design" solution for the RHSC and DCN combined build, which will be released to the market during the competitive dialogue period to demonstrate the Board's anticipated design requirements as a guide for bidding parties. The members of the

Reference Design team are not party to or involved in any commercial project activities or discussions – their activities are managed to ensure their service delivery is “ring-fenced”, both across the project in general and using access permissions within BIW, considering that they may join bidding consortia during the procurement process.

Key responsibilities & duties include:

- Preparation of the reference design;
- Production of Room Data Sheets;
- Input of technical data and information for the Equipment Responsibility Matrix;
- Development of engineering solutions;
- Development of robust site development solutions;
- Responsibility for Nightingale associates and BMJ - architectural reference design;
- Responsibility for Arup - structural design;
- Responsibility for Hulley & Kirkwood - M&E design;
- Responsibility for Montagu Evans – Planning Consultant.

Co-ordination / liaison issues may include:

- Liaison and co-ordination of design team members;
- Liaison with NHSL teams in respect of clinical design requirements;
- Liaison with NHSL teams in respect of facilities management requirements;
- Liaison with third party stakeholders including CEC and A&DS;
- Interface with Design and Construction work-stream to ensure aligned requirements and outputs.

2.6.3 Procurement Co-ordination

The purpose of the Procurement Co-ordination work-stream is to develop and agree the procurement elements of the projects, including the procurement strategy and associated procurement documentation. In addition, the work-stream is to guide the other technical sub-groups in the development of their deliverables in a manner which is consistent with the agreed procurement process. The Procurement Co-ordination work-stream joined with the Commercial work-stream to create a Procurement Deliverables Team, incorporating Financial and Legal Advisers.

The key deliverables and tasks for this work-stream are as follows:

- Development of NPD procurement process;
- Development of procurement documentation;
- Management of procurement process;
- Management of the development of technical elements of the Project Agreement;
- Development of technical elements of the Payment Mechanism.

Co-ordination / liaison issues may include:

- Liaison with legal and financial sub-groups for their input into the agreed procurement process and specific procurement issues;
- Liaison with Design and Construction, Facilities Management, Cost Consultancy and Reference Design work-streams to ensure their progress is consistent with the agreed procurement strategy and approach to key procurement issues;
- Liaison with the Project Management Executive to agree the management of the process.

2.6.4 Design and Construction

The purpose of the Design and Construction (D&C) work-stream is to address all technical non-clinical issues in relation to the procurement of the facility. During the NPD process, the work-stream will be responsible for the preparation of the D&C Output Specification or Board's Construction Requirements for inclusion in the ITPD, liaising with other work-streams so that technical requirements are compatible with all other parts of the procurement documentation. The team will also assist in the evaluation of the PQQ responses submitted by potential Bidders. Thereafter input will be provided as required during the Competitive Dialogue (CD) process culminating in evaluation of the technical aspects of the tenders submitted. The team will advise on issues surrounding the appointment of the Preferred Bidder. During the lead up to Financial Close (FC), assistance will be given in the review of the Preferred Bidders proposals. This will include the review of Reviewable Design Data (RDD) which will continue after FC until all RDD has been issued by the successful bidder. Subject to subsequent agreement, the D&C work-stream may also be involved during the construction period to monitor works on site.

Key Responsibilities and Duties include:

- Technical advice on all D&C aspects of the project;
- Technical input to the Bidder selection process;
- Development of the Non-Clinical Brief for the Reference Design;
- Validation of the technical feasibility of the Reference Design;
- Development of the D&C Output Specification;
- Technical input to the CD process;
- Evaluation of Bidders' D&C proposals;
- Review of the Preferred Bidder's proposals;
- Review of all RDD;
- Preparation of Information and Communication Technology briefing requirements;
- Assistance on site (if required).

Co-ordination / liaison issues may include:

- Liaison with other work-streams to achieve a consistency of approach, particularly in regards to FM;
- Liaison with NHSL Estates so that technical proposals / information for Bidders is consistent with NHSL policies;
- Liaison with Reference Design Team regarding the Brief and to review proposals;
- Liaison with NHSL so that Output Specification is aligned with the enabling works and other issues outwith the site;
- Working in conjunction with NHSL during the evaluation of potential bidders PQQ submissions;
- Working in conjunction with NHSL and the other work-streams during the CD process, including responding to any clarifications required;
- Working with the Preferred Bidder / Project Co to review proposals;
- The D&C work-stream will communicate with NHSL through the NHSL D&C Team Member. The work-stream lead will communicate on a regular basis with the other work-stream leads to co-ordinate and maintain consistency across the project.

2.6.5 Facilities Management

The purpose of the Facilities Management (FM) work stream is to assist and advise the Board in respect of ensuring the reference design takes due cognisance of how FM services can be effectively delivered during the operational phase. During the NPD procurement process and until Financial close, the FM work stream shall work with the design team and the Board to develop FM Service Level Specifications (SLS), Tender Documentations, Payment Mechanism and Interface agreements, which shall ensure the new facility is effectively and efficiently maintained.

Key Responsibilities and Duties include:

- Providing advice on design / material selection for Reference Design;
- Development of FM SLS;
- Providing input into PQQ documentation/ evaluation of responses;
- Providing input into tender documentation;
- Providing input into competitive dialogue process;
- Evaluation of FM tender technical and commercial responses;
- Advising on FM costs and benchmarking.

Co-ordination / liaison issues may include:

- Liaison with design team members;
- Attendance at design team meetings;
- Liaison with NSHL teams in respect of developing FM SLS and Interface Schedules;
- Liaison with NSHL teams in respect of developing payment mechanisms;
- Management of FM dialogue meetings with bidders during competitive dialogue meetings;
- Issuing and responding to FM clarifications during the tender period;
- Issuing FM Clarifications during the evaluation process.

2.6.6 Construct Design Management Co-ordination

The purpose of the Construct Design Management (CDM) Co-ordination work-stream is to undertake the role of CDM Co-ordinator (CDMC), under the Construction (Design and Management) Regulations, during the development of the reference design and during the NPD procurement process up until the Preferred Bidder is appointed.

Key responsibilities & duties include:

- Notification of the project to the Health and Safety Executive;
- Development of pre-construction information during the reference design;
- Review of strategies and residual risk information produced during the reference design;
- Reviewing health and safety requirements of any construction contracts;
- Development of requirements within the ITPD documentation to address the Construction (Design and Management) Regulations;
- Evaluation of the NPD organisations' responses during the ITPD and tender e.g. competence requirements and approach to design hazard removal / mitigation;
- Review of strategies and residual risk information produced during the period up to Financial Close.

Co-ordination / liaison issues may include:

- Liaison and interface with design team members;
- Attendance at design development meetings;
- Liaison with NHSL teams in respect of Employer duties, obligations and responsibilities in relation to health and safety and statutory obligations.

2.6.7 Commercial Services

The following specialist services and sub-streams will be required to support the project under the banner 'Commercial', along with the Procurement Co-ordination work-stream (see 2.6.3).

2.6.7.1 Cost Consultancy

The purpose of the Cost Consultancy sub-stream is to assist and advise the Board in respect of RHSC/DCN capital value, life-cycle costing and Change Control Processes during the development of the reference design and during the NPD procurement process up until Financial Close.

Key responsibilities & duties include:

- Advising in respect of FM costs;
- Cost Consultancy advice in respect of overall 'site wide' affordability issues e.g. clinical and external enabling works;
- Input into business case preparation;
- Input into pre-qualification issues and selection;
- Participation in Competitive Dialogue as appropriate;
- Input into project Financial Closure;
- Advising NHSL Finance on project cash-flow forecasts.

Co-ordination / liaison issues may include:

- Continual liaison with design team members;
- Attendance at design development meetings;
- Liaison with NHSL teams in respect of clinical enabling works and procurement of same (also potential liaison with PFI provider);
- Liaison with NHSL teams in respect of external enabling works and procurement of same (also potential liaison with PFI provider);
- Liaison with NHSL Finance regarding cash-flow forecast requirements and reporting.

2.6.7.2 Financial

The Board will be supported by externally-appointed Ernst & Young to provide financial advisory services for the pre-construction and procurement phases of the project. The purpose of the Financial Adviser function is to provide financial advice to NHSL with regards to the pre-procurement and procurement stages of the RHSC + DCN – Little France project.

Key responsibilities & duties include:

- Assistance in OBC preparation;
- Focussing on VFM and affordability;
- Pre-qualification;
- Preparation of financial elements of procurement documentation;
- Financial evaluation strategy;
- Evaluation of financial elements of submissions;

- Risk approach /strategy;
- Dialogue and negotiation support;
- Financial elements of approval processes;
- Financial close;
- Post-contract support and support in relation to negotiations with Consort.

Co-ordination / liaison issues may include:

- Working with other disciplines to agree overall procurement strategy and evaluation strategy;
- Working within agreed formats and structures for deliverables so they fit within overall project process;
- Agreement of roles in relation to payment mechanism drafting and calibration (which will involve liaison with the technical team preparing the performance framework and the legal team preparing Project Agreement (PA));
- Liaison with legal team on areas of PA requiring financial input;
- Liaison with NHSL finance team on issues of affordability and approval process requirements;
- The procurement project team will need to include the commercial and technical elements of the overall organogram, with NHSL and advisory staff forming the team. Team meetings will be geared to ensure good communication and understanding of respective roles.

2.6.7.3 Legal

The Board will be supported by **[insert name]** who have been appointed externally to provide legal advisory services for the pre-construction and procurement phases of the project. The purpose of the legal advisor function is to assist and advise the Board in respect of their legal obligations and entitlements, procurement advisory services and commercial deal structuring.

Further information to be provided

2.6.8 Equipment

A dedicated equipment work-stream has been identified to be responsible for determining the facility-wide equipment requirements. This group will be tasked with confirming the users' ultimate equipment requirements for inclusion within the procurement model. This role will also consider the replacement and transfer strategies in place within the RHSC and DCN facilities in the term leading up to facility hand-over.

The equipment work-stream is formed of NHSL staff with varying duties through the work-stream process. The main team consists of Graham Gillies, work-stream lead, and team members Neil McLennan, Douglas Coull and Mike Conroy providing the support for the process. Neil is providing constant daily support with Douglas and Mike as required.

Other NHSL contacts who are providing professional support and updated costs are as follows:

- Stewart Leitch – Anaesthetic Technical Services Manager;
- Steve Kesterton – General Medical Physics Equipment Manager, RIE;
- Dave Dewar – General Medical Physics Equipment Manager, WGH;
- Caoimhe McIntyre – X-Ray;
- Nick Weir – MRI & CT;
- Steve Pye – Ultrasound.

Key responsibilities & duties include:

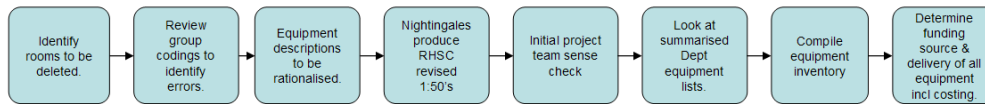
- Preparation of Equipment Briefing Requirements;
- Development of a detailed Equipment Responsibility Matrix;
- Procurement management of Board-specified equipment.

Co-ordination / liaison issues may include:

- Liaison and co-ordination with design team members;
- Liaison with NHSL teams in respect of briefing requirements ;
- Co-ordination with procurement work-stream in relation to procurement compliance;
- Interface with Design and Construction work-stream to ensure aligned requirements and outputs.

A draft Equipment Schedule Process is given below for reference:

RHSC



DCN

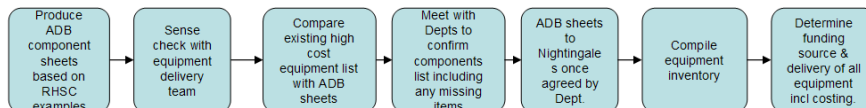


Figure 3: Draft Equipment Schedule Process

2.6.9 Business Case

The purpose of this work-stream is to deliver both the Outline Business Case and Full Business Case in accordance with key mile-stones.

This work-stream comprises the NHSL Finance Project Manager, NHSL Capital Planning Project Manager and EY Financial Adviser, with the NHSL Clinical Project Manager or Service Planning Project Manager and Technical Adviser and NHSL work-stream leads from relevant work-streams as required.

Information required is the output from:

- Reference Design Group and Equipment output turned into the financial case by the Commercial Group;
- Other revenue costs from NHSL Finance;
- Commercial Case from the Procurement Lead;
- Management Case.

2.6.10 Clinical Support

The purpose of this group is to ensure the clinical needs and interests of the project are fully incorporated, encompassing all elements of design, health planning and operation. Its function is to ensure that the key requirement of an efficient, practical, functional facility is achieved throughout both the reference and bidding design phases. The clinical team also represents the interests of the clinical user-groups in the D&C, FM and Equipment work-streams and provides an advisory service to the other elements of the project as necessary.

Key responsibilities & duties include:

- Reviewing and analysing design drawings, providing feedback to the Reference Design Team;
- Leading on the development, production and review of the clinical operational briefs;
- Leading on the development, production and review of the clinical output specifications;
- Reviewing of clinical pathways and flows to ensure SMART (Specific, Measurable, Attainable, Relevant, and Time-bound) working is incorporated;
- Providing support to the RHSC and DCN Clinical Management Team (CMT) on the clinical workforce planning;
- Providing support to the RHSC and DCN Radiology and Theatres CMT on all types of clinical modelling;
- Providing support in associated clinical enabling works in the RIE including A&E and Critical Care.

Co-ordination/ liaison issues may include:

- Interface with the FM, Equipment, Design and Construct and Business Case work-streams.
- Interface with CMTs (RHSC & DCN, Radiology, Theatres, Critical Care, Laboratories, CAMHS), Leads and deputies of Clinical Services, and Health Care Planners to set specifications and instruct work (through DL Project Manager);
- Liaison with Design Task Group members as needed, Workforce Planning Task Group and Bed Modelling Task Group.

2.6.11 Work-Stream Co-ordination Arrangements

Work-stream co-ordination is managed through the Project Management Executive team and lines of communication are outlined in the section 2.4 "Project Organisational Structure" and section 4.0 "Project Communications".

The work-stream structure is contained in Appendix D.

3. Project Meeting Strategy

3.1 Meeting Structure

The meeting structure covers various project work-streams and functions. These are summarised by the structure below, covering governance and project function:

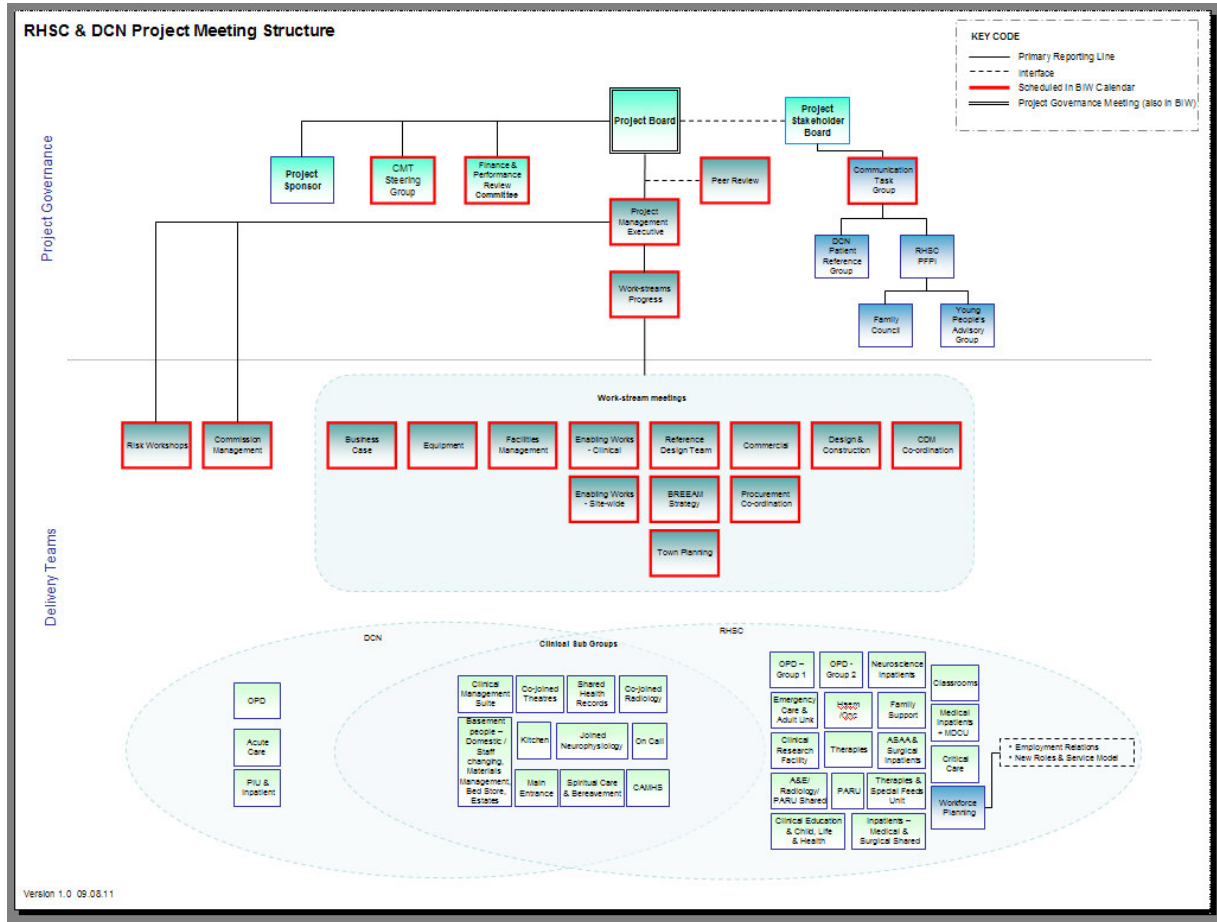


Figure 6: RHSC & DCN Project Meeting Structure

3.2 Meeting Terms of Reference

The meeting terms of reference, including abbreviations and meeting frequency, are illustrated below:

Governance	Project Board	The purpose of the Project Board is to inform and maintain open communication with a wide number of project stakeholders, internal and external to the project.	Monthly
	Project Management Executive	The function of the Project Management Executive will be to ensure overall management of the project including work-stream coordination.	2 Weekly
	Work-stream Progress Group	The Progress work-stream group meet monthly and their primary function is to monitor overall progress against programme, set and report tasks for each work-stream and agree work-stream co-ordination issues. This meeting is attended by work stream leads.	Monthly
	Peer Review	The Peer Review Group is made up of the Project Director and lead representatives from the Technical Advisory team. They will provide a strategic project advisory function.	Monthly
Project Delivery/Task Groups & Work-streams	Business Case Task Group	The Business Case group is held bi-weekly and chaired by the NHS Project Manager. The role of the group is to prepare and submit the compliant Outline Business Case in line with the programme parameters outlined in the accepted programme. Process to be re-introduced for Final Business Case.	2 Weekly
	Risk Workshop	Formal Risk Workshops take place on a monthly basis facilitated by the Project Manager. The purpose of the workshop is to review risk status and update on mitigation of risk management plans.	Monthly
	PFPI	The Patient Forum Public Involvement group (PFPI) input to the design process; this is key to the consultation process required for the planning application. The group is chaired by NHS Project Manager. PFPI ensure effective involvement of children, young people and their carers, taking account of equality and diversity, in all key aspects of the project and within each of the project groups as relevant.	Monthly
	Communication Group	The purpose of the group is to build a project specific communications strategy and deliverables based on current NHS communications strategy. The Communication Group is chaired by the Project Director.	Monthly
	Workstream Groups	The following work-stream groups have been established: Procurement, Commercial, Design & Construction, Reference Design, Facilities Management and Equipment. They are each responsible for the delivery and development of individual project elements for agreed programme.	As Required
	Commission Management (Finance)	Commission Management meetings are held bi-weekly, chaired by the Cost Analyst with a role to review and monitor overall project financial control (including capital costs appraisal, Life Cycle Cost, Whole life Cost and Site Develop costing issues).	2 Weekly
	Clinical Task Group	The purpose of the Clinical Design Task Group is to agree the strategic overview for joint design, ensure that agreed principles are delivered consistently, receive reports from design sub groups, resolve escalated issues from design sub groups. Membership includes Reference Design team leads.	As Required
	Workforce Planning Group	The Workforce Planning group is held quarterly and chaired by Director of Operations - Fiona Mitchell. The main purpose is to inform the workforce requirements for the new building and new mode of care.	Quarterly
	BREEM Group	The BREEM Group will be responsible for the management and monitoring of BREEM status including design and briefing interface.	As Required
	Planning Meeting	The Planning Meeting is chaired and managed by Montague Evans. The purpose of the meeting is to integrate the planning and transport departments of Edinburgh City Council into the design process and ensure that their comments are taken on board prior to the application.	As Required
Project Sub Work-streams	Procurement Coordination	Work-stream function to develop procurement elements including PQO, ITPD etc. Also responsible for developing procurement strategy and guidance.	Ad Hoc
	Design & Construction	Work-stream function to develop design and construction output specification and other design and construction related requirements, including interface with enabling works and Reference Design project elements.	Ad Hoc
	Facilities Management	Work-stream function to develop Facilities Management output specifications, including PM Service Level Specifications, Payment Mechanism and Interface Requirements.	Ad Hoc
	Commercial	Led by Ernst & Young the Commercial Group will prepare the Financial Model, financial elements of tender documents and financial appraisal procedures.	Ad Hoc
	Equipment	The Equipment Group will compile the Board's Equipment briefing requirements including the Equipment Responsibility matrix.	Ad Hoc
	Enabling Works (Clinical & Non-clinical)	Management and coordinator of enabling works. Ethical with RIE and external site enabling works elements to support combined scheme delivery to programme and in accordance with Design and Construction Requirements.	Ad Hoc

Figure 7: Meeting Terms of Reference

3.3 Meeting Matrix

The Meeting Matrix for the project is available on BIW. The purpose of the matrix is to identify and communicate the roles undertaken at each meeting and the distribution of information associated with the meeting. The matrix records the following by way of a letter coding system:

- The Meeting Chair (C);
- The Meeting Organiser (O);
- The Attendees (A);
- Distribution Group (circulation of all information associated with each meeting) (D).

The Meeting Matrix v2 is contained in Appendix E.

3.4 The Meeting Schedule

The meeting schedule for the project is stored within the BIW Project Calendar.

Why use BIW Project Calendar?

- BIW provides useful functionality that can store a high number of meetings in one shared calendar view. It can therefore provide visibility of all project meetings to its users - this ensures that everyone receives the same/consistent information;
- It is a "live" system, thereby providing 'real time' information directly to each user;
- It is a live electronic meeting schedule which avoids continual distribution of document revisions.

August, 2011						
Monday	Tuesday	Wednesday	Thursday	Friday	Sat/Sun	
1 15:00 - 16:30 - Sustainability and Carbon Emiss... 14:00 - 16:00 - Project Management Executive Me...	2 15:30 - 17:00 - SFT Independent Review Planning... 11:00 - 14:00 - Reference Design Work Stream - ...	3	4 13:00 - 15:00 - Project Sponsor Meeting	5 13:30 - 16:00 - Risk Workshop No. 1	6	7
8 11:00 - 12:00 - Procurement Co-ordination Work...	9 15:00 - 17:00 - Technical Cost 2 Overview	10 13:30 - 16:00 - Corporate Risk Workshop 09:00 - 12:00 - Finance & Performance Review Co...	11 09:00 - 17:00 - Clinical Task Group Meeting #2 10:00 - 12:00 - Design Task Group 2nd Meeting	12 09:30 - 12:00 - AEDET Review Workshop 13:00 - 15:00 - Project Board Meeting	13	14
15 14:00 - 16:00 - Technical Advisors' Meeting 13:00 - 14:30 - CMT Steering Group	16 11:00 - 14:00 - Reference Design Work Stream - ...	17 10:00 - 11:30 - Communication Task Group	18 11:00 - 13:00 - Commerical Work-stream	19 15:00 - 17:00 - HAI Scribe Workshop	20 10:00 - 12:00 - Young People's Advisory Group	21
22 13:30 - 16:30 - Monthly Work-streams Progress M...	23	24 13:00 - 14:00 - Pre-meeting for NHSL & Consort ... 14:00 - 17:00 - NHSL and Consort Design Teams	25	26	27	28
29 14:00 - 17:00 - NHSL and Consort Design Teams m...	30 14:00 - 16:00 - Project Management Executive 14:00 - 15:30 - Commission Review 11:00 - 14:00 - Reference Design Work Stream - ...	31	September 01	2	3	4

KEY: [] My Meetings [] Other Meetings [] Appointments [] Clinical Design Review Record [] Comment [] Contractor/Client RFI [] Design Submission Form [] Invitation to Tender [] Sub/Contractor Team RFI [] Tender Acknowledgement [] Tender Addendum [] Tender Query []

Figure 8: Example BIW Calendar

How does it work?

- It is similar to Outlook, involving 'adding a meeting' and completing the basic fields with information;
- Any user can input their team meetings or other *ad hoc* meetings;
- Meetings that individuals are required to attend are highlighted by a colour key.

What about Outlook?

- BIW Project Calendar will be used in parallel with Outlook. One does not replace the other for various reasons, but primarily because not everyone involved in the project is a BIW user;
- Outlook will continue to be the primary management tool for scheduling meetings in diaries. BIW Project Calendar is being used as a meeting communication tool for everyone involved in the Project;
- Note: Each meeting organiser will have their own approach to managing the entry of meetings into the attendee's diaries in Outlook or other (e.g. email with information, a meeting invite, verbal etc).

What meetings are included within the Project Calendar?

- The core, regular meetings are to be scheduled in the BIW Project Calendar;
- Any other *ad hoc* meetings should also be noted within the Project Calendar by the meeting organiser.

Who are responsible for the Project Calendar?

- The Project Co-ordinator (Naomi Lillie, DL) will take responsibility for maintaining the information within the BIW Project Calendar for regular project meetings and *ad hoc* meetings that are identified as relevant project-wide;
- All organisers of meetings are to add the Project Co-ordinator as an 'optional' attendee to ensure up-to-date information is communicated through Outlook Invitations, and include where updates are distributed by e-mail (NB the Project Co-ordinator will not attend these meetings, this is just for information purposes);
- Clinical Design Sub-Group Meetings are to be updated by Zuzana Stofankova, of the NHSL Project Team, who is responsible for all scheduling of the Clinical Design Sub Group level meetings;
- Each of the work-stream leads is responsible for inputting any *ad hoc* meetings specific to his / her own work-stream;
- Individuals are responsible for inputting and maintaining meeting information they choose to upload to the calendar.

3.5 Meeting Protocols

All meeting invitations should be formally issued via Outlook (or other diary system) where possible. This ensures that all attendees are updated with diary information simultaneously and avoids unnecessary duplication of effort.

Work-stream leads are responsible for chairing, recording and general co-ordination of work-stream meetings.

The agenda and minutes or action notes of the meeting are to be prepared and issued by the party responsible for chairing the meeting or a designated note taker.

Distribution of the meeting outputs for each meeting shall be recorded on the minutes or meeting note.

Agendas and meeting papers should be circulated at least 3 working days prior to the meeting.

The minutes should be issued to the distribution list within 96 hours of the meeting.

All parties attending meetings are responsible for noting their individual actions and progressing actions arising and should not rely upon the issue of minutes for progressing project matters.

All parties attending meetings are responsible for printing their own copy of meeting papers.

Each consultant will retain responsibility for convening meetings with appropriate third-parties to permit design development as the project proceeds, and to produce and circulate a formal minute or summary note of this meeting.

Individuals are responsible for sending their formal apologies for non-attendance at a meeting. This should be done as far as possible in advance of the meeting. Notice should be given to the Meeting Chair and / or Meeting Organiser.

4. Project Communication

4.1 Lines of Communication

The general lines of communication for the project are illustrated on Figure 1.0 – Project Organisational & Communication Structure in section 3 of this document.

Formally, the lines of communication for the project shall be as follows:

- Communication lines both formally and informally are to be in accordance with the Project Organogram in Section 2.4 of this PEP. All contractual lines are shown by the solid lines and all communication routes are shown by dashed lines;
- All formal communication between the Board and the technical advisors which constitutes any variation or amendment to the main contract will be formalised between the Board Project Director and the Commission Manager from Mott MacDonald. The Board's representatives within each of the work-streams will be responsible for requesting proposed changes to the Project Director and these will be formalised in accordance with the change control *pro forma* contained in Appendix C. Each of the work-stream leads will be responsible for notifying the Project Management Executive team of the changes requested;
- All work-stream leads will provide regular updates to the Project Manager (Davis Langdon). A formal progress report will be prepared by the work-stream leads on a monthly basis and issued one week prior to the monthly meeting;
- The Lead Project Manager will be responsible for the overall co-ordination and management of the work-streams. This will be managed via a monthly work-stream co-ordination meeting which will be chaired by the Lead Project Manager and attended by the work-stream leads, Commission Director and Project Director;
- The Lead Project Manager will be the first point of contact for the Project Director on all day-to-day issues. The lead Project Manager will meet regularly and keep the Commissioning Manager fully briefed to ensure he is fully aware of all project matters;
- In general terms the work-streams will communicate and function internally to their groups. Where cross work-stream communication and interface is necessary this will be facilitated via the leads of the work-streams. If required, co-ordination meetings will be arranged to address matters. Matters arising from the work-streams which need to be addressed by third parties or other NHSL consultees will be co-ordinated by the NHSL representative of that work-stream;
- The Lead Project Manager will be included in circulation lists for all project related correspondence where relevant. In order to ensure effective communication with parties involved, or affected by the Works associated with the project, a joint communications protocol will be developed for engaging and managing stakeholders;
- The Project Director will communicate with the Commission Director on all contractual matters and raise any concerns in relation to project matters;
- The NHSL Project Team will communicate with the design team members via DL for all formal matters in particular when instructing a change in brief;
- DL will require all formal changes to be instructed by the Commission Manager.

All communications are to be as clear and concise as possible and all parties are encouraged to verbally discuss issues. The use of e-mail correspondence / communication is to be encouraged; however, any documents relating to specific contract issues / mechanisms or legal documents, financial certificates, or where signed and witnessed signatories are required, hard-copies must be provided.

4.2 Project Contact Directory

A Project Contact Directory will be made available on BIW and is designed to be accessible to all parties to find the relevant persons to contact where necessary. The document is maintained by DL. Any updates required to the directory should be directed to Naomi Lillie.

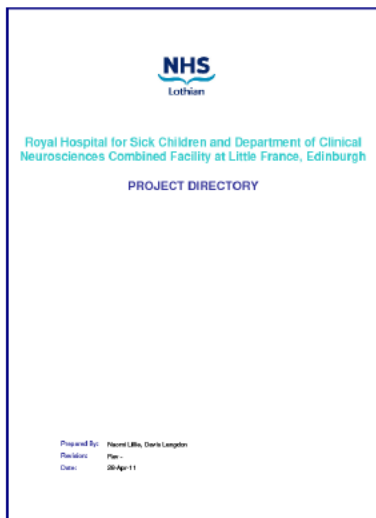


Figure 9: Project Contact Directory Example Pages

4.3 BIW Project Collaboration Tool & Document Control

4.3.1 The project utilises BIW as a channel for communication and storage of project documents and for all contract administration. BIW is the management tool for the following procedures/protocols:

- Design Management and storage;
- Risk Register;
- Data Room;
- Collation of Board policies and reference documents;
- Procurement and Contract documents.

It is planned that following Stage 1 (reference design and procurement set-up phases) BIW will be used for live data a tendering facility for bidding consortia in the Competitive Dialogue process.

4.3.2 BIW Administration Roles & Responsibilities:

Each project has users carrying out the following admin roles:


- Project Information Coordinator (PIC) - The PICs are responsible for requesting new companies and adding new users to the project and amending user rights accordingly. Any changes to the configuration of BIW must be authorised by a PIC. On this Project the PICs are Naomi Lillie and Amy Kam of DL;
- Company Administrator (CA) - At least one user per company should be nominated to be the CA for that company. This person can create new users for their company and edit existing user details and the rights of their company users. This is normally the user who attends the initial BIW training. This user will also be able to train other users within their own companies in the basic areas of the system. Company Administrators are as per the table below:

COMPANY	ADMINISTRATORS
NHS Lothian	Zuzana Stofankova (Christine McGeechan TBC)
Davis Langdon	Amy Kam
Mott MacDonald	David Stillie
Nightingale Associates	Sarah Menzies
BMJ	Cameron Smith
Arup	Jessica Lyall (Arup)
Hulley & Kirkwood	Brain Feeley

4.3.3 BIW Technical Assistance

System Administration & Helpdesk can provide information and assistance in regards to queries about the channel. Email: [REDACTED] or Tel: [REDACTED]

The Project BIW Consultant is Richard Moyle (Email) - [REDACTED]

System Help Guides – Help guides are available throughout the various screens in the channel. Clicking on  in any screen will take you to the relevant help guides for that particular section.

4.3.4 Use of BIW

The use of BIW is considered imperative for such means and all required parties are to obtain log-in details and publish documentation / drawings under the appropriate folders and as per the guidance outlined in the BIW Project Collaboration Tool Protocols Document available within BIW. It is expected that BIW should be utilised on a daily basis by the key members of the project team.

4.4 Change Control Procedure

NHSL, Mott MacDonald Limited and their sub-consultants will follow the change control procedures in accordance with the Head Contract Agreement. In addition all parties will adopt the following protocols:

Each sub-consultant will submit change requests to Mott MacDonald Limited if additional services or variations to their agreed scope of service are introduced. The following process should be followed dependent on the nature of the change:

Variation instructions notified by the sub-consultant to Mott MacDonald Limited:

Step 1 - The sub-consultant will raise a Change Control Form, outlining anticipated financial change, programme implications and consequences of the change

Step 2 - Mott MacDonald Limited will consider the implications of this change and submit a Change Control Order to NHSL for approval using the Change Control document contained in appendix C

Step 3 - Mott MacDonald Limited will return to the sub-consultant a signed off copy of their Change Control Form.

Variation instructions notified by Mott MacDonald Limited to the sub-consultant:

Step 1 - Mott MacDonald Limited will notify each sub-consultant when they require a change to the agreed scope of service and will instruct the sub-consultant to complete a Change Control Form. Mott MacDonald will provide sufficient briefing information within their request in order that the sub-consultant can confirm anticipated financial change, programme implications and record any associated consequences.

Step 2 - Mott MacDonald Limited will consider the implications of this change and submit a Change Control Order to NHSL for approval using the Change Control document contained in appendix C

Step 3 - Mott MacDonald Limited will return to the sub-consultant a signed off copy of their Change Control Request.

Mott MacDonald Limited will return comments on the proposed change order within five working days. Mott MacDonald will notify the sub-consultant to proceed and implement the change or reject the change within ten working days of transmittal. If no response is given within the ten working day period then the request for change will be deemed as approved. Change control requests will be submitted to Mott MacDonald from each sub-consultant via email. Each sub-consultant will retain a schedule of approved change orders.

All variation orders submitted by sub-consultants will be accompanied by a resource schedule. In the event that Mott MacDonald Limited instruct works to commence without cost and programme effects being agreed all costs reasonably incurred in relation to the variation will be recovered.

The Board's representatives within each of the work-streams will be responsible for notifying the Project Director of proposed changes. Each of the work-stream leads will be responsible for notifying the Executive Project Management team of the changes requested.

4.5 Stakeholders

There are many stakeholders involved in a project of this nature and these are to be identified under four main headings for ease of reference, as follows:

- NHS Lothian, comprising Lothian Partnership Forum, Executive Management Team, RHSC Re-Provision Clinical design Groups, Facilities Management;
- Statutory Authorities and Public Utilities including the Health & Safety Executive. This also includes government agencies such as Scottish Futures Trust (SFT) and other bodies such as Architecture and Design Scotland (A&DS) who are a statutory consultee through the planning process;
- Funding comprising Lothian NHS Board and the Scottish Government, PFPI (Child 7 family Advisory Board), patients, service users and charities;
- Other Stakeholders comprising National Education Services Scotland (NES), other Heath Boards, core NHS Lothian sections & others.

It is important to establish for each stakeholder, the role they have, their influencing factor, the impact they will have and how each communicates and engages with the project as a whole. This information is currently under development.

The Stakeholder Map will be stored within BIW.

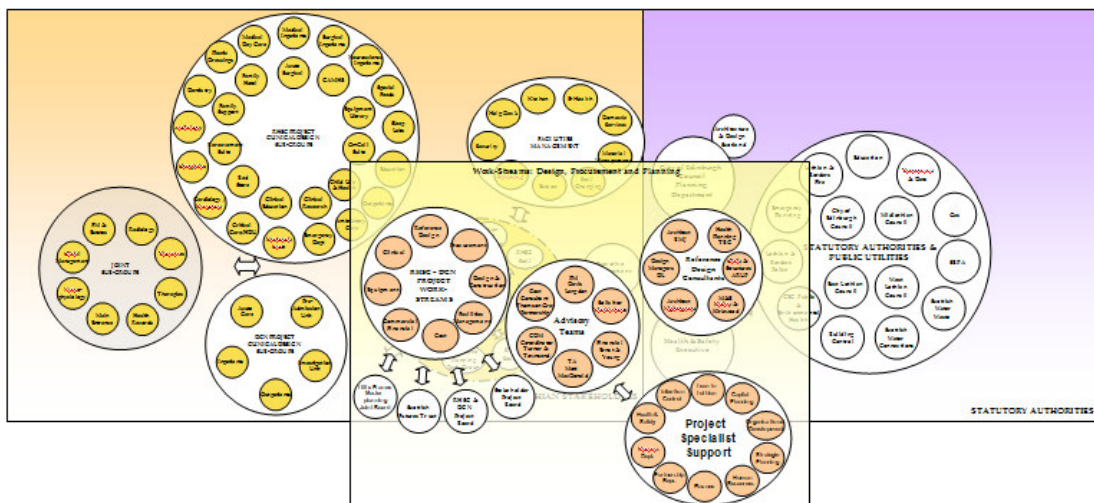


Figure 10: Example Stakeholder Map Diagrams

5. Programme, Progress & Reporting

5.1 Key Mile-stones

The key milestones of the project are detailed as follows:

Milestone:	Date:
Reference Design Brief	17/06/2011
Concept Design 1:500 & Approvals	09/09/2011
Scheme Design 1:200 & Approvals	03/02/2012
SGHD Approval of OBC	15/11/2011
SGHD Approval of FBC	10/07/2013
Planning in Principle Granted	09/11/2011
Detailed Planning Granted	19/08/2013
Car Park B Transfer Deadline	14/09/2011
Project Information Notice	18/10/2011
Bidders' Day	02/12/2011
Release OJEU Notice	15/11/2011
PQQ Period	31/01/2012
Select Short-list Bidders	27/03/2012
CD – Open Dialogue	06/04/2012
CD – Interim Process	27/11/2012
CD – Final Tenders	21/01/2013
CD – Evaluation	22/04/2013
Appoint Preferred Bidder	22/04/2013
Commercial Close	22/07/2013
Financial Close	23/07/2013
Construction Start	18/11/2013
Construction Work Complete	22/07/2016
Hospital Going Live	05/09/2016

DL will provide and update the programme for all Progress meetings tracking project development and identifying potential matters arising which may affect the identified milestones recorded above. In the event that changes to the programme are necessary these will be considered as part of the work-stream Progress Meeting and approved for implementation by the NHSL Board.

5.2 Progress Monitoring and Reporting

The diagram below illustrates the Progress Reporting Structure for the project. A work-stream lead has been identified within each of the service lines and will provide a summary of progress made for inclusion in the monthly Progress Report. This should be provided to the Project Manager 5 working days in advance of the meeting.

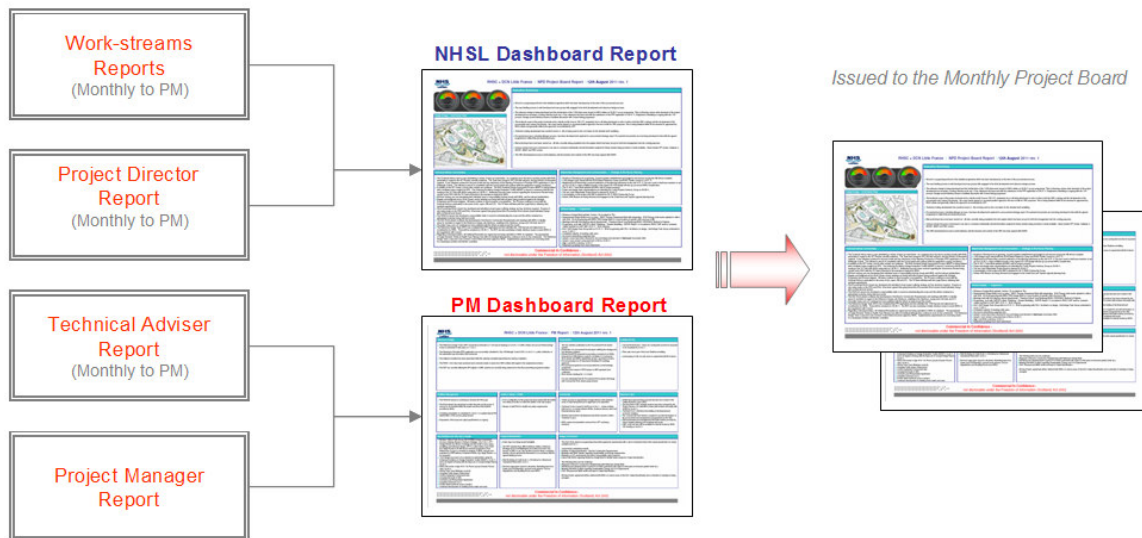


Figure 11: Project Reporting Structure

5.2.1 Project Management & Technical Advisory Report | Davis Langdon

DL will provide a monthly Project Manager’s Report for issue to the Project Commissioner. The purpose of the Project Manager’s Report is to fully inform the Project Director on the progress of the project, in relation to programme, design, cost, procurement and construction; in particular to highlight any areas of concern and critical activities to be undertaken by the Client Team, Project Board or other members of the project team. The Project Managers Report is a dashboard style report which forms part of the Monthly Steering Group Dashboard Report.

An example of the full NHSL Steering Group Dashboard Report is shown at Appendix B.

The progress report will contain:

- Summary of the overall progress made within the reporting period;
- Updated on the progress made by each work stream;
- Programme Summary and update;
- Identification of key issues;
- Summary of key risks and any changes in the risk profile.

5.2.2 Progress Reporting Schedule

The progress reporting schedule for the remainder of 2011 is shown below:



Progress Reporting - schedule of dates to end of 2011

Report to be prepared by	Issue to Davis Langdon	Report type	Frequency	Date of meeting	Report by	Input to
Work-stream Progress Report Work-stream leads	To: Fraser McQuarrie cc: Richard Park & Naomi Lillie	Work-stream Progress Report	monthly	03-Oct-11	26-Sep-11	Work-stream Progress Meeting
Project Board Report CM, PM, TA and CDM	To: Fraser McQuarrie cc: Richard Park & Naomi Lillie	Summary Report	monthly	14-Oct-11	07-Oct-11	Project Board Meeting
Work-stream Progress Report Work-stream leads	To: Fraser McQuarrie cc: Richard Park & Naomi Lillie	Work-stream Progress Report	monthly	31-Oct-11	24-Oct-11	Work-stream Progress Meeting
Project Board Report CM, PM, TA and CDM	To: Fraser McQuarrie cc: Richard Park & Naomi Lillie	Summary Report	monthly	11-Nov-11	04-Nov-11	Project Board Meeting
Work-stream Progress Report Work-stream leads	To: Fraser McQuarrie cc: Richard Park & Naomi Lillie	Work-stream Progress Report	monthly	28-Nov-11	21-Nov-11	Work-stream Progress Meeting
Project Board Report CM, PM, TA and CDM	To: Fraser McQuarrie cc: Richard Park & Naomi Lillie	Summary Report	monthly	09-Dec-11	02-Dec-11	Project Board Meeting

Figure 12: Progress Reporting Schedule for 2011

5.2.3 Reports & Documents

All documents prepared by the Project Management and Technical Advisory teams will be released containing the Mott MacDonald Limited and Davis Langdon, An AECOM Company logos. The document originator will use the agreed templates for all minutes, reports and letters. Changes to documents will be covered on the "Document Issue".

All documents should contain the following disclaimer statement:

"Commercial In Confidence - not disclosable under the Freedom of Information (Scotland) Act 2002"

5.3 Action Tracking

DL has introduced a centralised Action Log for the project. The purpose of the Action Log is to ensure that all key actions are managed and tracked through to completion. It adopts a proactive approach to the management of activities, and provides a useful *aide memoir* to the project teams. The Action Log will be updated and circulated 3 days in advance of the Progress work-stream meetings. The key elements are as follows:

- Any person can raise an action to be added to the log for tracking purposes;
- DL is responsible for maintaining the information within the log and communicating updates and additions to the log on a regular basis (minimum fortnightly basis);
- DL will report to the client team at weekly team meetings on the progress of actions, ensuring that any overdue actions are highlighted, and escalated if appropriate.

An example of the Project Action Log is shown below at Figure 10.0. Revisions of the Action Log are also available within BIW, filename "Project Action Schedule".

RHSC & DCN Little France

Action Schedule

Date 19 August 2011

KEY	DESCRIPTION
	Action required
	Action required in next 4 days
	Outstanding - immediate action required

No	Action Description	Date Matter Raised	Work-Stream	Action Owner	Date By	Status	Actions Taken
14	MP requires costings from IMcL in early August as it takes 2-3 weeks	31-May-11	Commercial	IMcL	05-Jun-11	Open	
15	MP to check how value-for-money will be evaluated	31-May-11	Commercial	MP	20-Jun-11	Open	Update 19.07.11 (BC, verbal): Awaiting SFT guidance.
20	BC to arrange NHSL document of roles and responsibilities and forward to NL	31-May-11	Commercial	BC	27-Jun-11	Open	
23	Briefs and Operational Policies are to be delivered on the 6th June	31-May-11	Reference Design	NMcL	06-Jun-11	Open	
24	Helipad and Kitchen specialist consultants may be required, AS to discuss with JB and TB and consider appointing through Nightingale Associates	31-May-11	Reference Design	AS	02-Jun-11	Open	Update 22.07.11 (NL): Helipad appointment covered by actions 210 & 245, kitchen appointment ongoing.
25	JB requested legal boundary clarification – BC to provide AS with information / instruction for an engineer.	31-May-11	Reference Design	DStI	03-Jun-11	Open	Update 15.07.11 (NL): Amended from BC action to DS to liaise with AS.
26	BC to update TB and JB with Reference Design requirements and Consort negotiations at Thursday's meeting	31-May-11	Reference Design	TB	02-Jun-11	Open	Update 15.07.11 (NL): Amended from BC action to TB.
27	BC to send Transport information to FMcQ to pass on to TB	31-May-11	Reference Design	FMcQ	02-Jun-11	Open	Update 15.07.11 (NL): Amended from BC action to FMcQ.
29	RC to request detailed methodology from Iain McLean to clarify cost workings – some detail has already been provided, but more explanation is required.	06-Jun-11	N/A	RC	10-Jun-11	Open	Update 08.08.11 (RC): This is to be reviewed with TC2. Action ongoing.
30	BC requested guidance of funding options from Mott MacDonald. AS to liaise with Graham Gillies.	06-Jun-11	N/A	AS	20-Jun-11	Open	
31	BC and Carol Potter to meet with the finance team at the Health Board, where the scope will be established. BC to issue scope when confirmed.	06-Jun-11	Commercial	BC	20-Jun-11	Open	

Figure 13: Example Project Action Log

6. Risk Management

6.1 Risk Management Approach

Risks will be identified through a combination of risk workshops, work-stream development activities, design and scoping production, policy requirements and through management activities. The risks identified are to be managed in pro-active manner in accordance with the mitigation strategy agreed for each risk identified. The risk register remains a live document which must be regularly reviewed and updated by all parties. Risk will be categorised and quantitatively scored in accordance with the probability and impact scoring matrix. Following identification and risk assessment each risk will be ranked to understand the key risks within the project, in order that these can be priority managed. Mitigation strategies will be developed for each of the key risks and will be assigned to individual work-stream leads for action. Risks will be reviewed and reported to DL on a monthly basis for inclusion within the updated register.

The outputs of the risk management process will also be considered by the commercial work-stream. Ernst & Young will be responsible for monitoring financial risk, and DL will be monitoring project risks and facilitate monthly risk management workshops.

Any new risk to the project should be raised via the appropriate notification system and assessed during future workshops.

6.2 Risk Register

The Risk Register will be stored within BIW for reference by all parties.

Risk Register | Version 4 | Category Filter / Assessment / Management Planning

Risk Identification		Pre Mitigation Assessment										Categoric				Risk Management								
No	Risk Description	Risk Type (Refer to SCIM guidance)	Probability (1-5)	Impact Cost (£'M)	Impact Program (1-5)	Risk Score Cost	Impact Cost £	Risk Score Program	Impact Program £	Total Risk Value (Program + Cost)	Average Risk Score (Cost & Program)	Risk Index	Quantifiable			Non-Quantifiable		Management Action Planned	Risk Owner	Action Date	Review Date			
													High NPI Risk	Medium NPI Risk	Low NPI Risk	High	Medium					Low		
1	TRAINING OPERATIONAL STAFF FOR... (Detailed description)	Design Construction	2	2	1	4		2		2	3		●											
2	CONSULTANT SELECTION... (Detailed description)	Procurement	5	1	5	3	115,000.00	15	45,000.00	115,000.00	4			●										
3	PLANNING FOR DESIGN... (Detailed description)	Design Construction	2	1	3	2		16			4			●										
4	INSTALL SERVICE... (Detailed description)	Design Construction	5	4	2	10	85,000.00	5	20,000.00	85,000.00	4			●										
5	SUPPLY DELIVERY... (Detailed description)	Procurement	5	1	4	3	688,000.00	12	271,200.00	688,000.00	7.5													
6	CRITICAL DELIVERY... (Detailed description)	Procurement	5	1	4	3	115,000.00	12	45,000.00	115,000.00	7.5													
7	BRUSH WITH IDENTIFICATION... (Detailed description)	Design Construction	3	2	4	10	115,000.00	24	45,000.00	115,000.00	10			●										
8	CONTRACT ADMINISTRATION... (Detailed description)	Design Construction	4	4	1	16	688,000.00	4	171,200.00	688,000.00	10			●										
9	PERFORM CONTROL... (Detailed description)	Design Construction	2	2	2	4	688,000.00	9	271,200.00	688,000.00	4			●										
10	INSTALL... (Detailed description)	Design Construction	2	2	4	4	115,000.00	2	45,000.00	115,000.00	6			●										
11	DESIGN... (Detailed description)	Design Construction	2	4	1	10	115,000.00	2	45,000.00	115,000.00	7.6			●										

Page 1

Figure 14: Example Risk Register

7. Design Management & Sign-Off Process

7.1 Design Sign-Off Protocol

A full Design Sign-off protocol has been developed by DL and agreed with all parties.

The design sign-off milestones are included within the Stage 1 Procurement and Exemplar Design work-stream Programme.


7.2 Design Monitoring / Design Issue Log

A design monitoring system will be implemented through the design development period which ensures all documents, drawings, schedule etc issued by the design team are properly checked and signed off by the NHSL Project Team on behalf of the clinical task groups. This will ensure that changes are tracked and provide a clear audit trail.

DL has introduced a master Design Issue Log to capture all design issues throughout the Exemplar Design process. The log is a live document and will be maintained by the Design Manager throughout the design process and released to the Project Manager on a weekly basis. Information, notes, comments and proposed changes will be recorded by the Design Manager at design team meetings and reported to the Project Management Executive. The PME will be responsible for accepting changes arising from these meetings. Special ad-hoc meetings may also be called to review and instruct proposed changes if required in timescales out with the bi-weekly PME meeting cycle. Revisions of the log will be published in BIW on a regular basis.

7.3 Client Instruction & Decision Log

DL has introduced a Client Instruction & Decision Log to ensure that any instruction or decision received from any member of the client team is verified by the Project Director prior to a formal instruction being raised via the contract. The log is maintained and issued by DL to the Project Director for approval on a regular basis. An example of the Client Instruction Log is to be included when underway. An example of the Client Instruction Log is shown below:



Royal Hospital for Sick Children and Department of Clinical Neurosciences

Project Log | Mott MacDonald Instruction Log

Date Issued:

CCF Ref	Instruction Owner	Action / Instruction Raised By	Instruction Raised By	Date of Request	Required By Date	CCF Title	Description	CCF Raised	Date of MML Instruct	Instruction Approved/Rejected	Financial Change	Programme Change	Comments
001	David Langdon	Scope Variant	ARUP	30-Jun-11	14-Jul-11	Bird Survey	Bird Survey in relation to future EIA required as part of the Planning in Principle process (OCC)	Yes	09-Aug-11	Approved	1,095.00	Nil	CCO Reference Matt MacDonald 003
002	David Langdon	Scope Variant	BHL/NA	06-Jul-11	20-Jul-11	Landscape Design	Landscape and Visual Impact Assessment in relation to future EIA required as part of the Planning in Principle process (OCC)	Yes	09-Aug-11	Approved	12,240.00	Nil	CCO Reference Matt MacDonald 005
003	David Langdon	Scope Variant	BHL/NA	06-Jul-11	20-Jul-11	Catering Consultancy	Provision of specialist catering consultant services	Yes	09-Aug-11	Approved	TBC	Nil	Client to be agreed
004	David Langdon	Scope Variant	Mott MacDonald	06-Jul-11	20-Jul-11	Planning Fee	Reimbursement of Planning Fee	Yes	09-Aug-11	Approved	8,875.00	Nil	
005	David Langdon	Scope Variant	David Langdon	06-Jul-11	20-Jul-11	Business Case Support	Provide draft business case for the Outline Business Case on the risk, contractual and project management areas	Yes					Overriding MPM advice
006	David Langdon	Scope Variant	David Langdon	12-Jul-11	24-Jul-11	Reference Design	Provide Reference Design to Stage C Architecture, CSE and PMB (including design management function)	Yes	09-Aug-11	Approved	1,404,000.00	Nil	CCO Reference Matt MacDonald 003 Approved by Mott MacDonald Design
007	David Langdon	Scope Variant	David Langdon	23-Jul-11	11-Aug-11	Reference Design	1500 design changes resulting from client brief in accordance with updated schedule of Accommodation reference: <i>Client Brief/Recommendation Summary 27 July 2011</i>	Yes	09-Aug-11	Approved	Nil	Nil	CCO Reference Matt MacDonald 006
008	Matt MacDonald	Client Instruction	Brian Currie	11-Aug-11	23-Aug-11	Design Acceleration - Consultant	Accelerate design to a detailed design sufficient for Consultant to check and approve to prepare reports for tender approval in the following areas: - A&E and First Floor Corridor construction - Hospital Square - A&E / Ambulance Drop Off and alternative to bus layover access off Little France Drive - Shared Cycle Drop Off + Parking - Public Transport Infrastructure Works (Bus Stancor, road widening, car terminus etc etc) - Fleet Provision Enhancement Works - HE Substation Provision - Cycle Park	Yes	17-Aug-11	Approved	TBC	Nil	Client to be agreed
	Matt MacDonald	Client Instruction	Brian Currie	06-Jul-11	20-Jul-11	Track Survey	Determine impact (if any) on existing track survey of current reference design. If no impact to avoid any re-survey.	No					Client to be agreed
	Matt MacDonald	Client Instruction	Brian Currie	06-Jul-11	20-Jul-11	A&E Design - Consultant	Design to consider that part of new A&E and Theatre Corridor also could be built by Jermans (Contract) rather than NPD Co. Design should incorporate an optional break point to allow for future design changes.	No					Client to be agreed
	Matt MacDonald	Client Instruction	Brian Currie	06-Jul-11	20-Jul-11	Enhance Kitchen Facility	Enhance kitchen facility to include a new service counter and storage area to improve the environment of current kitchen facility - NHSL to provide brief and information for early next week.	No					Client to be agreed
	Matt MacDonald	Client Instruction	Brian Currie	06-Jul-11	20-Jul-11	Marketing Brochure	Prepare a "marketing" brochure with optional paper to be used for a variety of purposes (internal or external communications).	No					Client to be agreed

Figure 15: Example Client Instruction Log

8. Budget & Cost Management

8.1 Cost Reporting and Control

Cost reporting will be undertaken through a comprehensive Financial Report issued by the Cost Advisers. This report will be issued monthly. A schedule of these dates is to be agreed between the Project Team and circulated by the Cost Advisers.

The content of such cost reporting is to include the following:

- Site Wide development cost update;
- Construction cost analysis;
- Reconciliation with client budget;
- Cash flow statements;
- Potential cost changes identified by the risk process.

9. Health & Safety

9.1 Construction (Design and Management) Regulations

During the period up until financial close the CDM client for the project will be NHS Lothian. After financial close the successful NPD organisation will be elected as CDM client and will be responsible undertaking client duties for the construction period which include the appointment of the CDM Co-ordinator and Principal Contractor.

The implementation of the CDM Regulations during the Reference Design and NPD procurement stage will comprise:

- The identification and provision of information that relates to health and safety by the designers. This will include identifying key issues within the reference design and also interface issues with the existing RIE and advanced works contracts undertaken by others.
- The development of requirements within the ITPD documentation that will enable the NPD tendering organisations to demonstrate that they have the necessary competence and understanding to undertake the CDM duty holder responsibilities after the NPD organisation has been elected as CDM client.

This will be followed by a review of the submissions as part of the evaluation process:

- The design that is being developed by the NPD tendering organisations is addressing the requirements of the CDM Regulations with regard to designer duties e.g. there is a process for design risk management in place and it is being implemented.
- Reviewing the design that is prepared between the appointment of the NPD organisation as preferred bidder and financial close for health and safety issues.
- There is a "data room" (which will be on BIW) in which all relevant health & safety information will be located - this will comprise the pre-construction information that will be transferred over to the NPD organisation.
- Addressing health and safety requirements in any survey or investigation works that are required as part of the project to inform the reference design or the NPD tendering organisations. This will include liaison with Consort and other third parties as appropriate to comply with their site rules and requirements for method statements.

10. Governance & Audit

10.1 OGC Gateway Reviews

The project will go through Key Stage Reviews (KSR) at certain pre-defined points during the procurement process (based on the competitive dialogue process). These reviews will be implemented at the following stages:

- In advance of OJEU Notice being released
- Pre release of Invitation to submit Final Tenders
- Pre NPD Co Appointment as Preferred Bidder
- Pre Financial Close

The reviews are based initially on self-assessment through the completion by the project team of the KSR questionnaires, this is based on Scottish Government standard questionnaire.

It is still to be determined if the project will undertake a voluntary KSR at the pre- ITPD (Invitation to Participate in Dialogue) stage.

Summary of KSR:

Advance of OJEU Notice:

This review should not be regarded as a pass/fail exercise. It is a tool to assist NHS Bodies to pause, and consider whether they are advanced sufficiently in their project development, considered rigorously project deliverability in order to proceed to issue of a project OJEU Notice to launch their procurement.

- Section 1 - Governance
- Section 2 - Scope
- Section 3 - Stakeholders
- Section 4 - Competition
- Section 5 - Procurement Risks
- Section 6 - Value for Money

Pre Invitation to submit Final Tenders

At this stage the Board will provide information outlining the proposed approach and methodology, including how they will approach the Competitive Dialogue phase.

- Section 1 - Update & Affordability
- Section 2 - Value for Money
- Section 3 - Commercial Issues
- Section 4 - Deliverability
- Section 5 - Data Room and Background Information

Pre Preferred Bidder Appointment

This review is required to check all actions have been taken to secure commitment from the prospective Preferred Bidder, its key contractors and its funders. Clarify the parameters of the commercial negotiations and any outstanding commercial terms. Provide transparency in terms of affordability testing. Establish status of risk profile in order to prevent reallocation of risk or adverse changes to the project risk profile.

- Section 1 - Project Update
- Section 2 - Affordability / Value for Money
- Section 3 - Financial / Risk
- Section 4 - Commercial Position
- Section 5 - Technical
- Section 6 - Deliverability

Pre Financial Close

The intention of the Pre-Financial Close Key Stage Review will be to assist the Board in considering what needs to be put in place in terms of staffing and resources ahead of the construction and operational stages of the project.

The above is guidance is an overview of Scottish Government Health Directorate guidance.

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10.2 AEDET Review


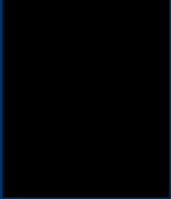
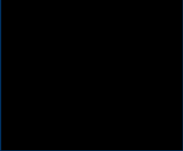

The Achieving Excellence Design Evaluation Toolkit (AEDET Evolution) assists the NHS, Trusts and other health authorities in determining and managing their design requirements from initial proposals through to post project evaluation. The toolkit is questionnaire based covering Functionality, Impact and Build Quality. These three headings are further divided into ten assessment criteria.


This design evaluation toolkit will be used to define NHS Lothian's briefing requirements on the RHSC & DCN Little France Project and will be revisited periodically to ascertain whether the developing design meets these predefined requirements.

Reviews will be carried out with a representative group of users and other stakeholders at the following stages.

- Initial Briefing Stage
- During Development of the 1:500 Layouts
- During Development of the 1:200 Layouts
- Completion of the Reference Design
- During dialogue with the Preferred Bidder
- Post Project Completion ie Operational Phase

Appendix A

NHSL Team		Team Roles & Responsibilities Overview	
NHS Lothian 			
NO IMAGE	<p>Jackie Sansbury Director of Strategic Planning and Modernisation</p> <p>Role Description <i>Jackie is an executive member of the NHS Lothian Board with a lead role for Strategic Service Planning and Modernisation. In addition she is a member of the National Planning Directors Group and has wide participation in reviews of services at national level.</i></p>	<p>Key Areas of Responsibility:</p> <ul style="list-style-type: none"> ■ ■ ■ ■ 	TBC
	<p>Brian Currie Project Director, Commercial Lead</p> <p>Role Description <i>Brian is responsible for directing the project management of the RHSC & DCN Little France project.</i></p>	<p>Key Areas of Responsibility:</p> <ul style="list-style-type: none"> ■ Leading Development Control Plan 1:1000/1:500 ■ Leading Corporate Governance ■ Consort Negotiations Liaison ■ Commercial Lead with Sorrel Cosens ■ Overseeing the project overall 	
	<p>Fiona Halcrow Service Project Manager</p> <p>Role Description <i>No information provided</i></p>	<p>Key Areas of Responsibility:</p> <ul style="list-style-type: none"> ■ Leading Clinical Operational Briefs; Departmental Layouts 1:500; General Arrangements Plans 1:200; General Arrangement Elevations and Sections; Generic Room Layouts 1:50; Key room Layouts 1:50; Decontamination and Control of Infection [HAI-SCRIBE]; Corporate Design Register; ICT Strategy; Clinical Service Planning ■ Supporting Schedule of Accommodation; Room Data Sheets; Fire Strategy; Interior Design Concepts; Fire Strategy Drawings 1:200; Lighting Aesthetics 	
	<p>Neil McLennan Capital Planning Project Manager, Reference Design Project Interface</p> <p>Role Description <i>No information provided</i></p>	<p>Key Areas of Responsibility:</p> <ul style="list-style-type: none"> ■ Leading Schedule of Accommodation; Room Data Sheets; Fire Strategy; Fire Strategy Drawings 1:200 ■ Supporting Departmental Layouts 1:500; General Arrangements Plans 1:200; General Arrangement Elevations and Sections; Generic Room Layouts 1:50; Key room Layouts 1:50; Flexibility and expandability; Decanting, Phasing; Security Strategy; Lift Usage Traffic Assessments; Corporate Design Register; ICT Strategy; Clinical Service Planning; PFPI + Communication 	
NO IMAGE	<p>Sorrel Cosens Project Manager, Business Cases & Commercial Lead</p> <p>Role Description <i>No information provided</i></p>	<p>Key Areas of Responsibility:</p> <ul style="list-style-type: none"> ■ Leading Non-Clinical Operational Briefs; Wayfinding Strategy; Flexibility and expandability; Decanting, Phasing; Security Strategy; Lift Usage Traffic Assessments; Clinical Enabling in RIE; PFPI + Communication ■ Supporting Equipment Schedules; Supplies, Storage, Distribution and Waste Management [Soft FM]; BREEAM, Traffic Impact Assessment and Traffic Management Plan; Energy Strategy + Schedules of Power, Heating and Cooling Loads; Commissioning and Testing; Non-Clinical Enabling 	
NO IMAGE	<p>Graham Gillies Capital Planning Project Manager, Equipment Lead</p> <p>Role Description <i>D&C: Responsible for raising between NHS Lothian and the D&C Workstream so that the workstream is aware of the NHS Lothian requirements and the D&C documentation accurately reflects the requirements of NHS Lothian.</i> <i>NHSL: No information provided</i></p>	<p>Key Areas of Responsibility:</p> <ul style="list-style-type: none"> ■ NHSL <ul style="list-style-type: none"> • Leading Equipment Schedules; Interior Design Concepts; Supplies, Storage, Distribution and Waste Management [Soft FM]; BREEAM; Geotechnical Site Investigation; Traffic Impact Assessment and Traffic Management Plan; Construction Strategy; Arch Civ/Struct Specifications; Services Infrastructure Plans 1:1000/ 1:500; Integration of new and existing services; M&E Strategy drawings and statements; Plant Room Layouts; Energy Strategy + Schedules of Power, Heating and Cooling Loads; Engineering Design Philosophy; Life Expectancies; M&E Eng Specifications; Commissioning and Testing; Lighting Aesthetics • Supporting Wayfinding Strategy; Decontamination and Control of Infection [HAI-SCRIBE]; Clinical Enabling in RIE ■ D&C <ul style="list-style-type: none"> • Liaison with the full D&C work-stream • Review of D&C documentation for compliance with NHSL requirements • Liaison within NHS Lothian on all matters relating to the D&C requirements 	

NO IMAGE	Iain Graham Project Manager	Key Areas of Responsibility: ■ TBC ■ ■ ■ ■
NO IMAGE	Andrew MacDonald Project Manager, Enabling Works Lead	Key Areas of Responsibility: ■ TBC ■ ■ ■ ■
NO IMAGE	Janice Mackenzie Project Clinical Director	Key Areas of Responsibility: ■ TBC ■ ■ ■ ■
NO IMAGE	James Steers Project Clinical Director	Key Areas of Responsibility: ■ TBC ■ ■ ■ ■
NO IMAGE	Carol Potter Project Manager	Key Areas of Responsibility: ■ TBC ■ ■ ■ ■ ■ ■
NO IMAGE	Dougie Coull Project Manager	Key Areas of Responsibility: ■ TBC ■ ■ ■
NO IMAGE	Christine McGeechan Project Administrator	Key Areas of Responsibility: ■ TBC ■ ■ ■
	Zuzana Stofankova Project Administrative Secretary	Key Areas of Responsibility: ■ TBC ■ ■ ■
Role Description <i>No information provided</i>		

NHS Partnership



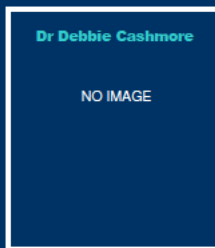
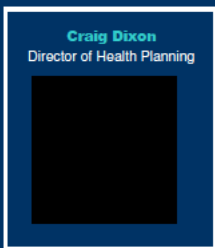
Partnership Role Description:

A trade unionist who has been nominated by NHSL partnership forum to work between staff, employers, involving Trade Unions and professional organisations. The purpose of partnership is to improve healthcare services and the wellbeing of the people of Scotland through engaging staff and their representatives at all levels in the early stages of the decision-making process in order to have improved and informed decision making, through achieving and maintaining a positive and stable employee relations culture and gaining commitment, ownership and consensus to decisions through joint problem solving.

Key Areas of Responsibility:

- Ensure compliance with Staff Governance Standard 2004
- Ensure Workforce are:
 - well informed
 - appropriately trained
 - involved in decisions which affect them
 - treated fairly and consistently
 - provided with an improved and safe working environment

Capita - Healthcare Planners



Partnership Role Description

Working with clinicians, end users and architects to ensure that the models of care are translated into a robust, patient focussed scheme design.

Key Areas of Responsibility:

- Development of the Design Brief
- Producing the Schedule of Accommodation
- Liaison with architects and clinicians to produce design excellence.

Technical Advisory Team		Team Roles & Responsibilities Overview	
Davis Langdon  An AECOM Company			
Davis Langdon - Project Manager			
	<p>Kevin Bradley Director (Head of PFI / PPP)</p> <p>Role Description Director in charge of the NPD project with overall accountability for the successful delivery of the project. As NPD Peer Review, Kevin is responsible for reviewing key documents and project deliverables associated with procurement through to construction and operation of the New Facility.</p>	<p>Key Areas of Responsibility:</p> <ul style="list-style-type: none"> ■ Client Liaison ■ Procurement Strategy ■ NPD Peer Review ■ NPD Advisory Service ■ Service Delivery Quality Assurance 	
	<p>Fraser McQuarrie Associate - Lead Project Manager</p> <p>Role Description Primary interface and first point of contact for the Project Director on all day-to-day issues affecting the project and principal liaison with the Commission Director and Commission Manager. Responsible for the overall project governance, structures, processes, lines of communication, programme monitoring and reporting. Also responsible for the co-ordination of all work streams under the NPD process.</p>	<p>Key Areas of Responsibility:</p> <ul style="list-style-type: none"> ■ Project Communications ■ Project Reporting ■ Programme Review ■ Project Governance ■ Client Liaison ■ Interface Between Technical Deliverable Work Streams ■ Project Management Representation at Meetings 	
	<p>Richard Park Senior Project Manager</p> <p>Role Description Supporting the Project Management team in terms of project wide liaison and management across the project work-streams. Responsible for routine reporting to the Project Management Executive via the Lead Project Manager.</p>	<p>Key Areas of Responsibility:</p> <ul style="list-style-type: none"> ■ Programme Management and Monitoring ■ Project Co-ordination ■ Project Communication ■ Project Reporting ■ Supporting the Work-Stream Interfaces ■ Project Management Representation at Meeting 	
	<p>Naomi Lillie Project Co-ordinator</p> <p>Role Description A key interface and co-ordination role between the Project Management Executive and the wider Delivery Team. Responsible for the collation and maintenance of key project information to produce reference material for the purpose of monitoring and controlling the project.</p>	<p>Key Areas of Responsibility:</p> <ul style="list-style-type: none"> ■ Project Management Administration ■ Management of Project Information & Control Tools including Action/Issue Schedules, Meeting Matrix, Project Directory, PEP and associated documents ■ Preparation of monthly Project Board Report ■ System Administration for BIW, including maintenance of the Project Calendar ■ Maintaining a clear audit trail for the project in terms of decisions and progress 	
	<p>Thomas Brady Associate – Reference Design Lead and Design Manager (M&E)</p> <p>Role Description Responsible for leading and managing the Reference Design team, including all sub-consultants and advisors, to produce a cohesive design. Responsible for the co-ordination of all design elements during the Reference Design stage and is the key interface between NHSLS clinical and estates user groups and the design team.</p>	<p>Key Areas of Responsibility:</p> <ul style="list-style-type: none"> ■ Overall responsibility for the Reference Design ■ Management and co-ordination of the design ■ Change Control – design element only ■ Interface with NHSLS clinical user groups and stakeholders ■ Interface with 3rd parties – CEC Planning and A&DS etc ■ M&E Design Manager 	
	<p>Denise Kelly Associate – NPD Procurement Manager</p> <p>Role Description Reporting to procurement lead on all day-to-day issues relating to the development and preparation of NPD procurement documentation and process. With input into the overall project, processes, programme monitoring and reporting. Performing a key role in procurement under the NPD process. Responsible for input into and the development and preparation of:</p>	<p>Key Areas of Responsibility:</p> <ul style="list-style-type: none"> ■ Procurement Programme ■ Preparation & evaluation of PQQ submissions ■ Invitation to Partake in Dialogue (ITPD) documentation ■ Arrangement of Bidders conference ■ Development of Competitive Dialogue Strategy ■ Compilation of Competitive Dialogue Documentation ■ Evaluation of Competitive Dialogue Documentation ■ Development and finalisation of ITSFB documentation ■ Management and coordination of Final evaluation process 	
	<p>David Cunningham Associate – Procurement Manager</p> <p>Role Description Reporting to procurement lead on day-to-day issues relating to the development and preparation of NPD procurement documentation and process. With input into the overall project, processes, programme monitoring and reporting. Performing a role in procurement under the NPD process. Responsible for input into and the development and preparation of:</p>	<p>Key Areas of Responsibility:</p> <ul style="list-style-type: none"> ■ Procurement Programme ■ Preparation & evaluation of PQQ submissions ■ Invitation to Partake in Dialogue (ITPD) documentation ■ Arrangement of Bidders conference ■ Development of Competitive Dialogue Strategy ■ Compilation of Competitive Dialogue Documentation ■ Evaluation of Competitive Dialogue Documentation ■ Development and finalisation of ITSFB documentation ■ Management and coordination of Final evaluation process 	
	<p>Simon McLaughlin Senior Consultant – Facilities Management Consultant</p> <p>Role Description Providing an advisory service to the FM Work-stream, part of the core team responsible for the delivery of facilities requirements for this project. Technical adviser on Facilities Management issues covering the following key areas:</p>	<p>Key Areas of Responsibility:</p> <ul style="list-style-type: none"> ■ Assistance in the development of FM Service Level Specifications ■ Advice on FM Costings ■ FM Input into PQQ documentation/ evaluation of responses. ■ FM Input into tender documentation ■ FM Input into competitive dialogue process ■ Evaluation of FM tender technical and commercial responses 	

	<p>Amy Kam Document Controller</p>	<p>Key Areas of Responsibility:</p>	<ul style="list-style-type: none"> ■ Provide an overarching document management role, including co-ordinating activities and liaising with individual DCs from each team ■ Assist the DLPM team in establishing the outputs/deliverables schedules for each stage of the design process ■ Assist the DLPM team in establishing the relevant document naming protocols to be used by each of the design team members ■ Provide liaison between design team members and EDMS provider to ensure that document filing structures continually meet the needs of the project ■ Regularly monitor and report on the progress of document commentary/approval actions required from all those involved in the project ■ Regularly monitor and report on document status and deliverables progress against the requirements of the project programme ■ Instigate quality assurance audits as required to ensure document policy compliance ■ Maintain overall control of the user rights assigned to BIW
<p>Mott MacDonald - Design & Construct</p>			
NO IMAGE	<p>Ian Courtney Peer Reviewer</p>	<p>Role Description</p>	<p>As NPD Peer Reviewer, Ian is responsible for carrying out regular peer reviews of the project development and status for compliance with best practise.</p>
NO IMAGE	<p>Richard Cantlay Commission Director</p>	<p>Key Areas of Responsibility:</p>	<ul style="list-style-type: none"> ■ Management of the TA appointment including of the sub-consultants ■ Lead Adviser for the Technical Advisory and Project Management Team ■ Agreeing procurement strategy and processes with NHSL ■ Directing and monitoring implementation of agreed strategies and processes by the TA team ■ Liaison with other NHS Lothian advisers including Financial and Legal
	<p>Andrew Scott Commission Project Manager, D&C Work-stream lead</p>	<p>Key Areas of Responsibility:</p>	<ul style="list-style-type: none"> ■ Agreement of all contractual matters with NHS Lothian ■ Agreement of all contractual matters with sub-consultants ■ Invoicing ■ Change control ■ Commercial reporting ■ Leading and managing <ul style="list-style-type: none"> - development of the D&C procurement documentation - D&C input to POQ documentation and evaluation - D&C input to Competitive Dialogue process - D&C input to evaluation and selection of Preferred Bidder - D&C input to review of PB's / Project Co's Proposal - RDD reviews ■ Liaison with other work-streams
	<p>David Stillie D&C Architectural Adviser, Reference Design Liaison</p>	<p>Key Areas of Responsibility:</p>	<ul style="list-style-type: none"> ■ Architectural input to <ul style="list-style-type: none"> - development of the D&C procurement documentation - POQ documentation and evaluation - Competitive Dialogue process - evaluation and selection of Preferred Bidder - review of PB's / Project Co's Proposal - RDD reviews
NO IMAGE	<p>Paul Hampson Work-stream Lead, Procurement and FM</p>	<p>Key Areas of Responsibility:</p>	<ul style="list-style-type: none"> ■ NEC Contract Administration (Supervisor Duties) ■ Development of procurement documentation including POQ and ITPD ■ Management and co-ordination of the Competitive Dialogue process, including evaluation of bidders proposals ■ Evaluation and shortlisting during POQ ■ Selection of preferred bidder and negotiations through to Financial Close
NO IMAGE	<p>Carol Thorburn Senior Facilities Management Consultant</p>	<p>Key Areas of Responsibility:</p>	<ul style="list-style-type: none"> ■ Scoping of FM services ■ Identification of FM interfaces with NHSL services (non-NPD) and adjacent RIE/Consort Healthcare facility ■ Development of FM output specifications ■ Contribute to costing of FM services ■ FM input into POQ and evaluation of responses ■ FM input into ITPD ■ FM input to Competitive Dialogue process ■ Evaluation of FM tender technical and commercial responses
NO IMAGE	<p>Simon Alderson Facilities Management Consultant</p>	<p>Key Areas of Responsibility:</p>	<ul style="list-style-type: none"> ■ Scoping of FM services ■ Identification of FM interfaces with NHSL services (non-NPD) and adjacent RIE/Consort Healthcare facility ■ Development of FM output specifications ■ Contribute to costing of FM services ■ FM input into POQ and evaluation of responses ■ FM input into ITPD ■ FM input to Competitive Dialogue process ■ Evaluation of FM tender technical and commercial responses

	<p>Andrew Duncan Assistant Project Manager, D&C Work-stream</p>	<p>Key Areas of Responsibility:</p>	<ul style="list-style-type: none"> ▪ Assisting and managing <ul style="list-style-type: none"> - development of the D&C procurement documentation - D&C input to PQQ documentation and evaluation - D&C input to Competitive Dialogue process - D&C input to evaluation and selection of Preferred Bidder - D&C input to review of PB's / Project Co's Proposal - RDD reviews
NO IMAGE	<p>Willie Stevenson D&C M&E Lead and Electrical Engineer</p>	<p>Key Areas of Responsibility:</p>	<ul style="list-style-type: none"> ▪ Electrical input to <ul style="list-style-type: none"> - development of the D&C procurement documentation - D&C input to PQQ documentation and evaluation - D&C input to Competitive Dialogue process - D&C input to evaluation and selection of Preferred Bidder - D&C input to review of PB's / Project Co's Proposal - RDD reviews
NO IMAGE	<p>Paul Kelly D&C Mechanical Engineer</p>	<p>Key Areas of Responsibility:</p>	<ul style="list-style-type: none"> ▪ Mechanical input to <ul style="list-style-type: none"> - development of the D&C procurement documentation - D&C input to PQQ documentation and evaluation - D&C input to Competitive Dialogue process - D&C input to evaluation and selection of Preferred Bidder - D&C input to review of PB's / Project Co's Proposal - RDD reviews
<p>Thomson Gray Partnership - Cost Consultants</p>			
	<p>Ron Thomson Director</p>	<p>Role Description A general over-view position.</p>	
	<p>Iain McLean Director</p>	<p>Role Description Iain will lead the cost advising process and co-ordinate reporting.</p>	<p>Key Areas of Responsibility:</p> <ul style="list-style-type: none"> ▪ Cost Consultancy advice in respect of RHSC/DCN capital value, life-cycle costing and Change Control Processes ▪ Advising in respect of FM costs ▪ Cost Consultancy advice in respect of overall affordability issues e.g. clinical and external enabling works, etc ▪ Input into business case preparation ▪ Input into pre-qualification issues and selection ▪ Participation in Competitive Dialogue as appropriate ▪ Input into project Financial Closure ▪ Advising NHSL Finance on project cashflow forecasts
	<p>James Gibson Director</p>	<p>Role Description James will support Iain in leading the cost advising process and co-ordination of reporting.</p>	<p>Key Areas of Responsibility:</p> <ul style="list-style-type: none"> ▪ Cost Consultancy advice in respect of RHSC/DCN capital value, life-cycle costing and Change Control Processes ▪ Advising in respect of FM costs ▪ Cost Consultancy advice in respect of overall affordability issues e.g. clinical and external enabling works, etc ▪ Input into business case preparation ▪ Input into pre-qualification issues and selection ▪ Participation in Competitive Dialogue as appropriate ▪ Input into project Financial Closure ▪ Advising NHSL Finance on project cashflow forecasts
<p>Turner & Townsend - CDM Co-ordination</p>			
	<p>Graeme Walker Associate Director</p>	<p>Role Description To lead the CDMC Work-stream during the development of the reference design and during the NPD procurement process up until Financial Close.</p>	<p>Key Areas of Responsibility:</p> <ul style="list-style-type: none"> ▪ Notification of the project to the HSE ▪ Development of pre-construction information during Reference Design ▪ Review of strategies and residual risk information produced during Reference Design ▪ Reviewing health & safety requirements of construction contracts e.g. additional GI ▪ Development of requirements within ITPD documentation to address Construction (Design and Management) Regulations ▪ Evaluation of NPD organisations' response during ITPD and tender e.g. competence requirements and approach to design hazard removal / mitigation ▪ Review of strategies and residual risk information produced during period up to Financial Close

Reference Design Team

Team Roles & Responsibilities Overview

Nightingale Associates - Concept Architect



Jamie Brewster
Project Director

Role Description

Jamie will be the project lead for Nightingale Associates and will be responsible for leading the conception and development of the scheme and providing the principal link between the Trust, their technical advisors and the architectural team. Jamie will adopt overall responsibility for the architectural design for the reference scheme and in particular will lead the engagement process with the planning department and Architecture & Design Scotland, and other key consultees.



Tom Groves
Project Architect

Role Description

Tom will support the team in both clinical and strategic planning/design development as well as assisting in the development of massing/external form proposals in order to allow CEC/A&DS engagement.

Boswell, Mitchell & Johnston - Clinical Architect



NO IMAGE

Robert Hedivan
Project Director

Key Areas of Responsibility:

- TBC
- TBC

Role Description

TBC



Sonia Scott
Project Director

Key Areas of Responsibility:

- TBC
- TBC

Role Description

TBC

NO IMAGE

Siobhan Davvit
Senior Architect

Key Areas of Responsibility:

- TBC
- TBC

Role Description

TBC



Robert Menzies
Senior Architect

Key Areas of Responsibility:

- TBC
- TBC

Role Description

TBC

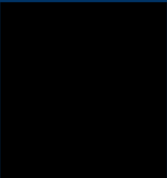
Arup Scotland - C&S Engineer



Alistair Wylie
Project Director

Role Description

Arup Director with responsibility for successful overall project delivery.



Jeremy Grant
Lead Project Engineer

Key Areas of Responsibility:

- Primary point of contact
- Civil and Structural Engineering Lead

Role Description

Lead Project Engineer and primary point of contact.
Overall responsibility for delivery of Civil and Structural Engineering aspects of the project.

NO IMAGE

Gordon Barbour
Associate - Civil & Structural

Key Areas of Responsibility:

- TBC
- TBC

Role Description

TBC

NO IMAGE

Gordon Diamond
Associate - Traffic & Transportation

Key Areas of Responsibility:

- TBC
- TBC

Role Description

TBC

NO IMAGE

Bethan McEwan
Senior Transport Planner

Key Areas of Responsibility:

- TBC
- TBC

Role Description

TBC

NO IMAGE

Martin Butterfield
Acoustics - Project Manager

Key Areas of Responsibility:

- TBC
- TBC

Role Description

TBC

NO IMAGE

Adam Monaghan
Associate Director - Fire Strategy

Key Areas of Responsibility:

- TBC
- TBC

Role Description

TBC

NO IMAGE

Simon Dent
Senior Engineer

Key Areas of Responsibility:

- TBC
- TBC

Role Description

TBC

Hulley & Kirkwood - Services Engineer



NO IMAGE

Michael O'Donnell
Project Lead Director

Role Description

Michael is a Chartered Engineer and Low Carbon Energy Assessor and will act as Project Lead Director.

Key Areas of Responsibility:

- M&E project planning
- Stakeholder management and communication
- Programme management
- Design management
- Financial control
- Change management
- Project co-ordination
- Internal resource allocation
- Setting out design concepts
-

NO IMAGE

David Stewart
Project Support Director

Role Description

David is a Chartered Engineer who will act as Project Support Director.

Key Areas of Responsibility:

- Strategic design issues in relation to all Electrical Services
- Support the Project Lead in all management areas

NO IMAGE

Ronald Nolan
Project Associate

Role Description

Ron is a Chartered Engineer who will act as Project Supervisor.

Key Areas of Responsibility:

- Overseeing the engineering and technical team relating to contract administration, drawing and document production to required deadlines

NO IMAGE

Jonathan McMillan
Design Engineer

Role Description

Jonathan's role will be as Assessor for the BREEAM Pre-Assessment checklist.

Key Areas of Responsibility:

- Undertake design of detailed dynamic simulation work as part of the Hulley SIM group
- Contribute towards the Low Carbon resolution and identification of best Low or Zero Carbon Technology

NO IMAGE

Brian Feeley
CAD Technician

Role Description

Brian will be the main CAD contact.

Key Areas of Responsibility:

- Drawing production
- Drawing issue
- Client liaison
- Technical queries in relation to CAD design

NO IMAGE

Michael Bryan
CAD Technician

Role Description

Michael will support Brian in all aspects of CAD matters and will cover client liaison and technical issues in his absence

Montagu Evans - Planning Consultant



Fraser Littlejohn
Lead Consultant

Role Description

Acting as planning advisers to NHS Lothian in relation to the proposed development. Providing planning advice on all aspects of the application for planning permission in principle, including in relation to planning conditions and any legal agreement, and the wider planning process

Key Areas of Responsibility:

- Providing planning advice
- Co-ordination of the preparation and submission of the application for planning permission in principle
- Primary liaison with the City Development department of the City of Edinburgh Council
- 'Project management' of the planning application process



Andrew Munnis
Lead Consultant

Role Description

Acting as planning advisers to NHS Lothian in relation to the proposed development. Providing planning advice on all aspects of the application for planning permission in principle, including in relation to planning conditions and any legal agreement, and the wider planning process

Key Areas of Responsibility:

- Providing planning advice
- Co-ordination of the preparation and submission of the application for planning permission in principle
- Primary liaison with the City Development department of the City of Edinburgh Council
- 'Project management' of the planning application process

Appendix B



Design Image - The Site Boundary



Executive Summary

Time

- A First Draft Strategic Programme follows indicating an operational date of May 2017 assuming a start on the reference design process on 16th May 2011. The critical path generating this period of some 6 years is the creation of a reference design, the completion and approval of an OBC, the successful selection of three bidders following a PQQ process through the OJEU, a Dialogue process to select a preferred bidder and eventual construction and commissioning. Satisfactory conclusion of all relevant issues with Consort Healthcare prior to submission of OBC is also essential.
- It should be noted that this programme will be under continuous review and any opportunity to bring forward the final operational date will be taken.
- Work is underway to develop and agree detailed programmes for all work-streams supporting this Strategic Programme and many more tasks and dependencies will be added during the next few weeks.

Cost

- A full cost update will follow in future Project Reports once sufficient information is available. This will build on the early cost forecasts contained within the Addendum to OBC issued to SGHD on 23rd March, 2011.

Quality

- The Technical Advisor and Financial Advisor have been successfully procured using the OGC Buying Solutions Framework and a team structure is attached identifying key named individuals. Unfortunately, a co-located project team office is not possible given financial constraints and the team will be based primarily in Mott MacDonald's and Davis Langdon's offices with clinical interface at Rillbank Terrace. A Legal Advisor remains to be secured.
- Project Governance procedures in relation to the Corporate Requirements, Project Team and Project Processes will be covered in the PEP (Project Execution Plan) currently being finalised for distribution and comment.
- A Project Brief comprising Operational Requirements, Adjacency Matrix, Accommodation Schedule and Assumptions has been prepared by NHSL and will be released to the designers on 16th May, 2011. However, much work remains to be done on associated work-streams necessary to close out essential clinical enabling works within the RIE.
- The Reference Design main deliverable is an approved architectural design fully illustrating clinical functionality in three dimensions with all known site and infrastructure constraints clearly stated. This design whilst being entirely credible in structural, fire and building services engineering terms will not seek to dictate solutions in this regard. The design team are currently developing the complete schedule of deliverables with NHSL whilst commencing the design process.
- The design process particularly in relation to the engagement with clinical and client management teams has been prepared and builds on the work done over the last 18 months (copy attached).

Technical Advisor Commentary

- The appointment of MML through the Buying Solutions Framework has now been completed with only the final wording of the Parent Company Guarantee to be agreed. The Sub-Consultant Agreements for TG and TTPM have been finalised. The agreement for the appointment of DL is to be finalised w/c 9 May 2011. Fee proposals have been received from the proposed Reference Design Team. These appointments to be made through DL will be finalised upon agreement of scope with the exception of the Healthcare Planning appointment which is to be subject to a further tendering exercise.
- The TA team has commenced work in developing the procurement programme and establishing the terms of reference for each of the work streams. The TA team also attended a workshop with NHSL on 3 May 2011 examining the programme for the procurement phase and agreeing the approach to developing roles and responsibilities for the Work-stream. The project execution plan is approximately 60%. MML has been working with NHSL to develop and agree the brief for the Reference Design.



Stakeholder Management and Communication / Strategic and Workforce Planning

- Staff Open Sessions programmed to commence w/b 9 May 2011.
- Re-provision Workforce Task Group meetings have been postponed since the latter stages of 2010. These will re-commence once project fully underway.

Clinical Update / Equipment

- Adjacency Relationship Matrix work being progressed with services.
- Draft Schedule of Accommodation prepared.
- Work progressing with the review of clinical and non-clinical operational procedures.
- Request with the TAs to finalise the 1:50 Detailed Design Process of the stand-alone building to allow completion of the Room Data Sheets.
- Reference Design Structure (NHS Lothian Internal) finalised and Sub Task Groups identified. Lead and Deputies being formalised.
- DCN equipment lists are being pulled together at this stage using the RHSC ADB sheets. Meetings will be arranged with users to confirm equipment.
- Meeting arranged with Capital Planning Equipment manager to pull together costs for equipment.

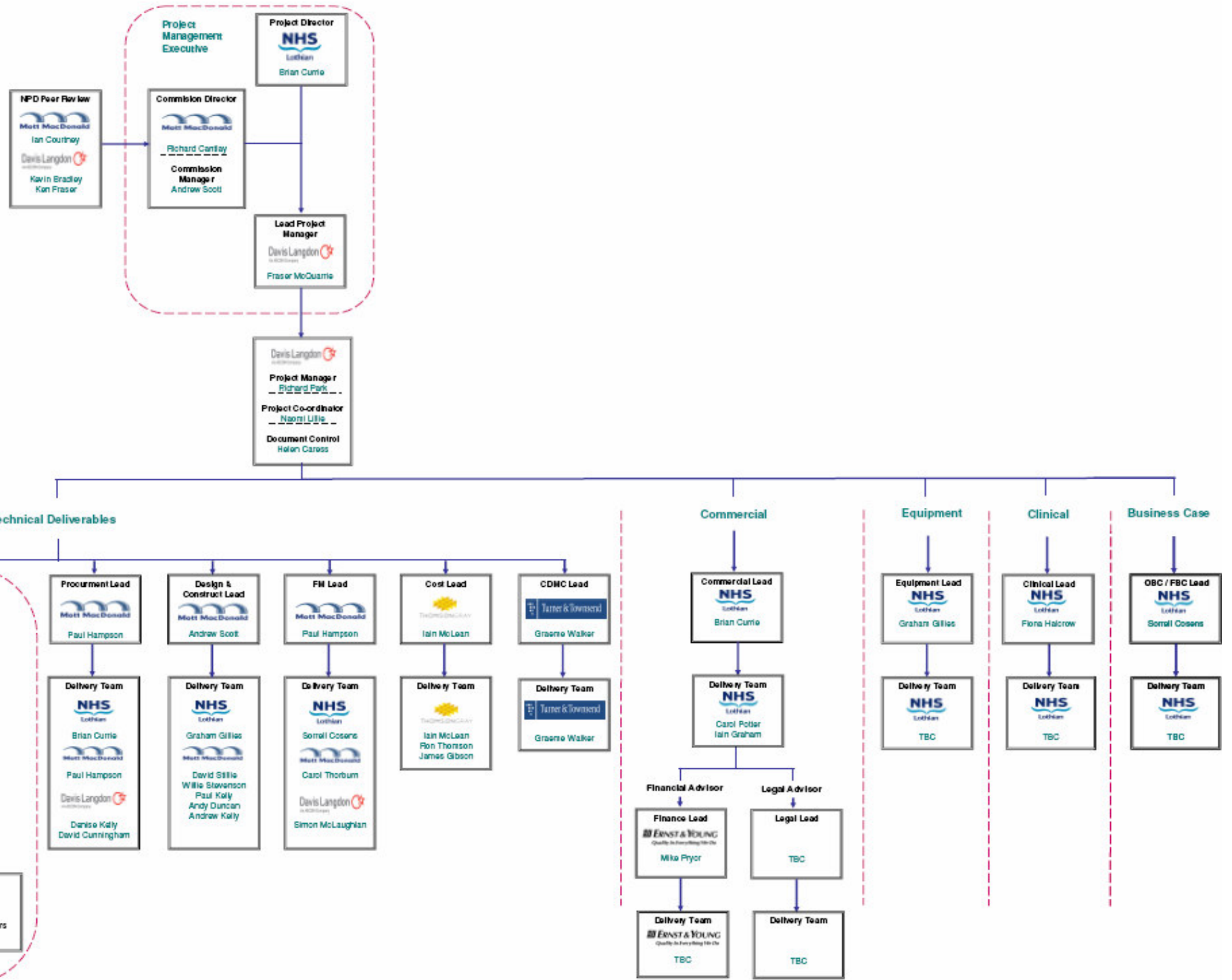


HFS - RHSC stand-alone scheme key milestones	
Concept Design - 1:500 sign off	08/03/2010
Scheme Design - 1:200 sign off	30/07/2010
Detailed Design - 1:50 sign off	20/11/2010
Cost Plan sign off	28/01/2011
Planning Submission	08/11/2010
Submit FBC to NHSL	07/02/2011
FBC Approval by NHSL	07/02/2011
Submit to CIG	08/03/2011
CIG Approval	14/03/2011
Construction Start	01/06/2011
Construction Work Complete	09/09/2013
Hospital Going Live	29/11/2013

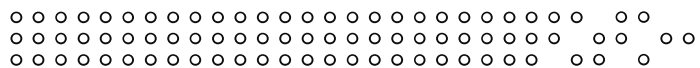
NPD - RHSC & DCN key milestones	
Reference Design Brief	02/05/2011
Concept Design 1:500 & Approvals	23/05/2011
Scheme Design 1:200 & Approvals	26/09/2011
SGHD Approval of OBC	15/11/2011
SGHD Approval of FBC	07/01/2014
Planning in Principle Granted	22/11/2011
Detailed Planning Granted	13/11/2013
Car Park B Transfer Deadline	21/12/2011
Project Information Notice	22/09/2011
Bidders' Day	26/01/2012
Release OJEU Notice	16/11/2011
PQQ Period	26/01/2011
Select Short-list Bidders	03/05/2012
CD – Open Dialogue	07/05/2012
CD – Interim Process	10/05/2012
CD – Final Tenders	07/12/2012
CD – Evaluation	22/02/2013
Appoint Preferred Bidder	15/07/2013
Commercial Close	10/09/2013
Financial Close	19/02/2014
Construction Start	01/03/2014
Construction Work Complete	01/03/2017
Hospital Going Live	01/05/2017



RHSC & DCN | Project Delivery Structure



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not disclosable under the Freedom of Information (Scotland) Act 2002



Reference Design

- DL approached the design team that worked on the previous stand alone RHSC scheme to appoint them directly as the Reference Design Team which would be 'ring fenced' in order not to preclude them from joining a bid team further down the procurement line.
- DL has now been given commitment from all designers that they do wish to join the Reference Design Team and have now submitted fee proposals to DL for acceptance.
- DL is currently liaising with the design team in regards to appointing them contractually on a back-to-back basis.
- DL has been asked to fulfil the management role previously undertaken by BAM to lead the design process. DL has appointed Tom Brady and Allan Martin as the design management team.
- NHSL requested a separate document-controller for the design process. This role will be undertaken by Helen Caress from DL.
- The Design Team has produced a programme showing a 12 month duration to complete the Reference Design, based on the schedule of deliverables issued via NHSL on 13/04/11 and on three rounds of consultation meeting with the clinical staff. This is currently being looked at in order to reduce the timescale to an eight month period, one agreement being that clinical consultation will be reduced to two rounds.
- NHSL has asked that the design team complete the 1:50 design stage from the previous RHSC stand-alone scheme; once appointed, DL will instruct accordingly.

Procurement

- An initial NPD Procurement meeting is being held on 11 May 2011 to discuss the NPD documents. In the interim, members of the Work-stream have been advising and agreeing the logic for the procurement programme and identifying issues that will require clarification and guidance for the legal advisers once appointed.

Design & Construct

- Information to follow once project fully underway.

Facilities Management

- Information to follow once project fully underway.

Health & Safety / CDMC

- An F10 notification for the project will be raised with the Health and Safety Executive shortly to reflect the details of the new project.

Commercial

- This section will be populated by Ernst & Young in conjunction with NHSL Finance when a sufficient level of information becomes available from the reference design process.

Business Case

- An Addendum to OBC was issued to SGHD on 23rd March 2011 and comment / query has been received. The relevant points, with the exception of some financial issues, have been dealt with.

Key Activities over the next 4 weeks

- Appoint TA support team - MMc
- Appoint Reference Design Team - DL
- Issue revised PEP - DL
- Agree strategic programme - All
- Finalise new meeting matrix - DL
- Finalise new roles & Responsibilities - DL
- Complete project brief and operational policies - NHSL
- Complete 1:50 exercise for previous stand-alone scheme - DL
- Refine design deliverables - NHSL/MMc
- Conclude Consort negotiations SA6 - NHSL

Project Administration

- The draft PEP can now be issued. DL awaiting input from other parties of the TA and NHSL teams.
- BIW web portal has now been established for the new joint RHSC & DCN scheme.
- Meeting held on 10th May between DL and NHSL to agree a Meeting Matrix.
- DL to issue new Project Directory.
- Design Team meetings will be held in DL Edinburgh office, work-space will be made available exclusively for the Design Team.

Enabling Works

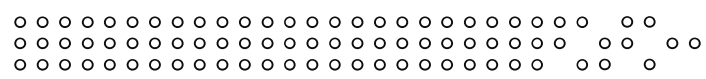
Project Management

- Car-park F bio-quarter plots 14-16 - This will provide 1,200 car parking spaces. Completion date is 17/06/2011, the project is on-target and within budget. There were initial delays due to poor weather over winter, but this should be absorbed. The most significant risk was temporary works to HV cables - these caused slight delay which has been absorbed in the programme and the issue closed out.

Consort

- Car Park F enabling work - The contractor is continuing to construct the bridge from the existing RIE site into the new car park F. Work is on programme for completion for the 17/6/11.
- Car Park F - The contractor is making reasonable progress with the car parking spaces, pavements and roads. The second bridge is also on schedule to be completed on the 17/6/11. The burn diversion is complete and the SUDs basin will be complete by the end of the week.
- Car Park B Diversions work - The contractor is slightly behind with the gas mains diversion. This is down to problems with locating the deep existing pipe work. The rest of the work is moving along to schedule.

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Appendix C



Contract Control Order No

290961/

Title

Dated

Project Title NPD Project for RHSC/DCN at Royal Infirmary Edinburgh for NHS Lothian

Source of Change

Description and Reason for Change

Consequential Changes

Effect on Programme / Schedule

Cost Summary (based on Schedule 2-3 of the Contract – Services and Fee Schedule)

Estimated change in Labour Costs:

Estimated change in Direct Costs:

Estimated change in Total Costs:

New estimated total project Costs:

(Currently all as contract.)

Payment for changed Ordered Services and Variations to be in accordance with Clause 43 of the Contract

Classification

This change is considered to comprise:

Additional Work

of present scope of work

A variation to existing work

work previously on

Clarification

Release of

This Notification of Change is issued for your information and record. Please sign and return one copy. Further information and details will be provided in due course. Please provide your comments in writing within 10 days after which we will assume that we have your approval to proceed with the above change.

Signed for Mott MacDonald Limited

Signed for NHS Lothian

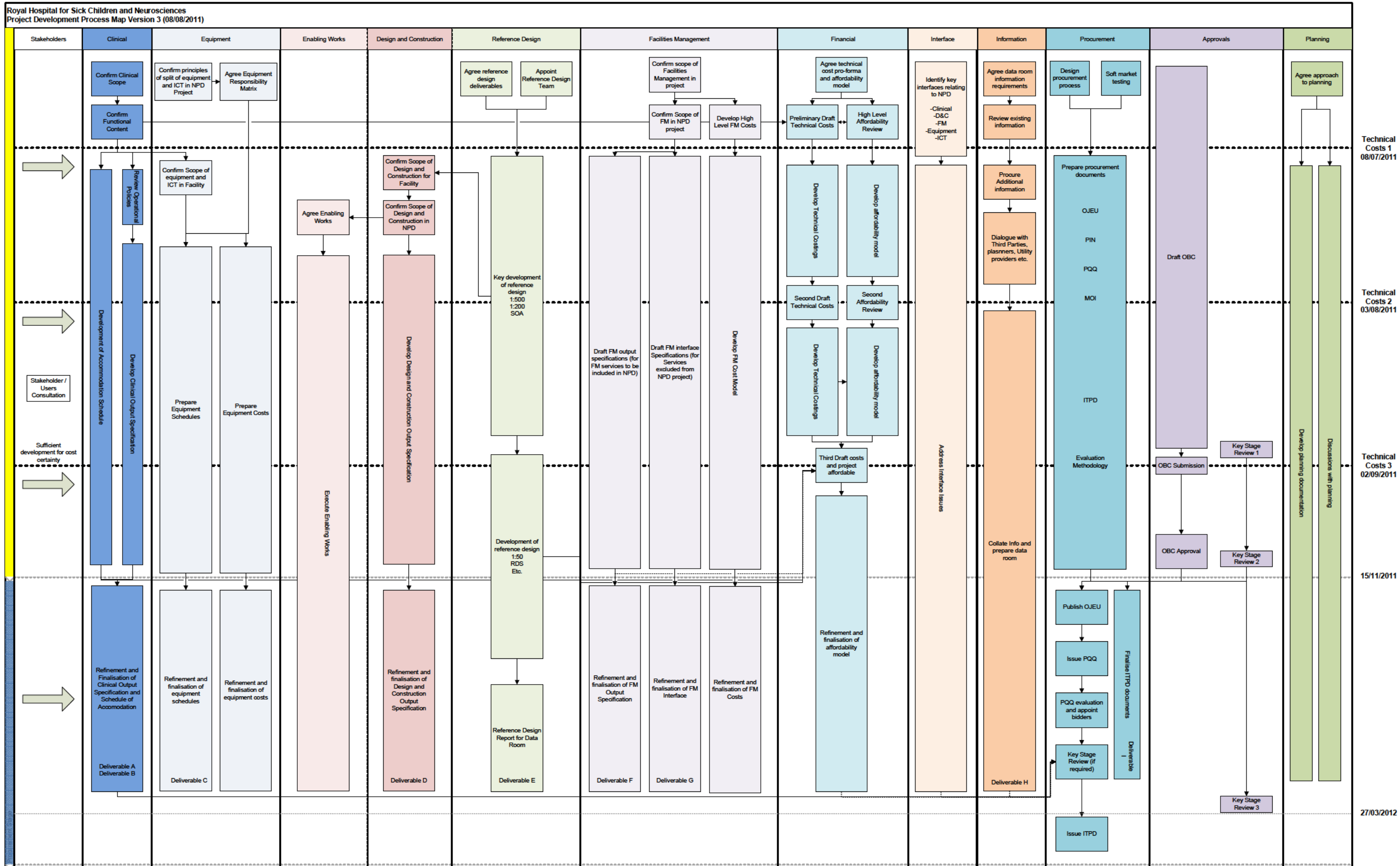
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Date:.....	Date:.....
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Distribution: NHSL (PD,PM); Relevant Sub Consultants; MML (PD,PM,PPW,Relevant Staff, PiMS CC)

Appendix D




Technical Costs 1 – Agreement of format of costing pro-formas and initial indication of "ball park" figures.

Technical Costs 2 – 1st formal draft technical costs based on detailed work carried out to that date.

Technical Costs 3 – 2nd formal draft technical costs based on detailed work carried out sufficient for OBC purposes.

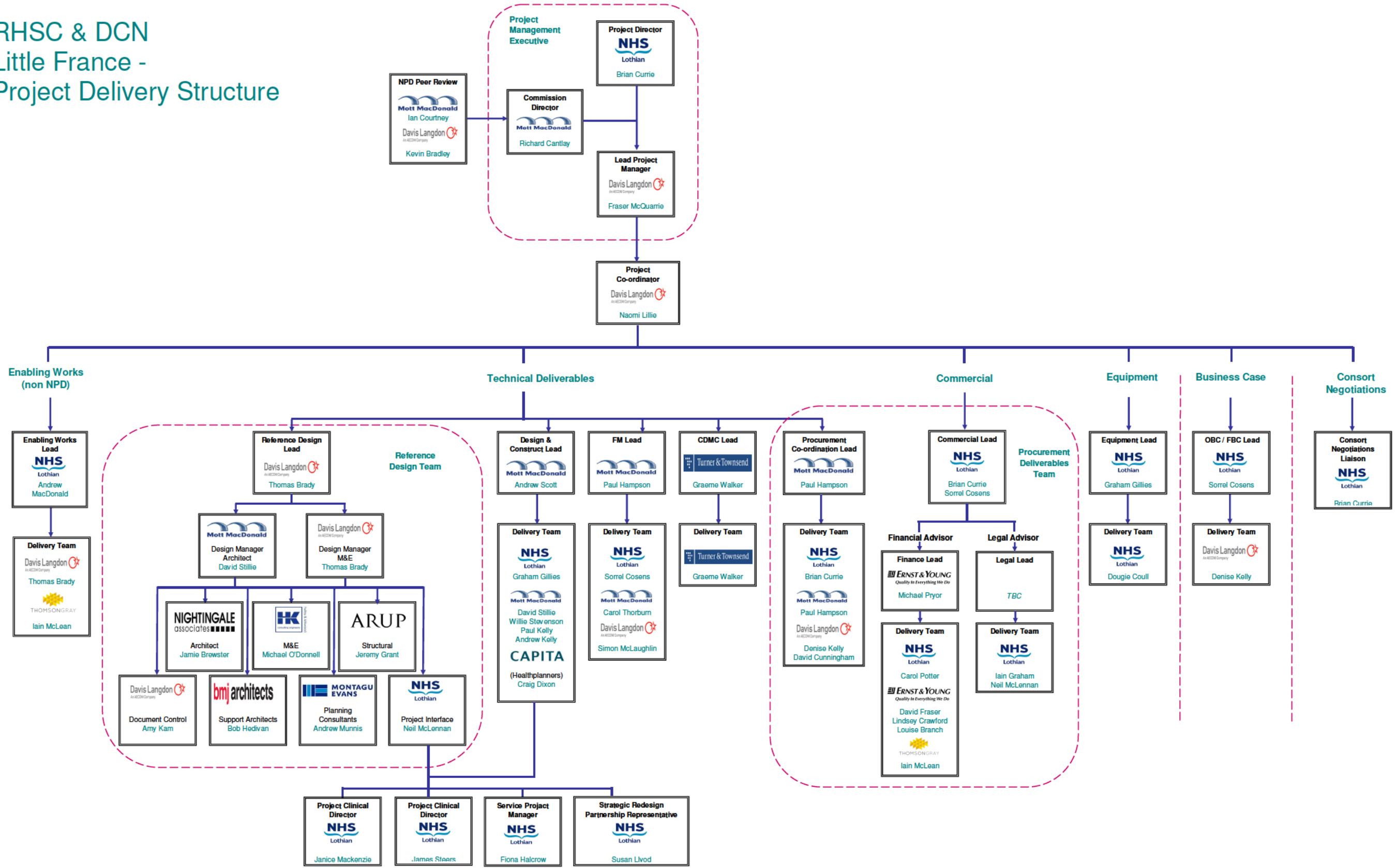
Appendix E

Meeting Matrix 28/06/2011	RHSC & DCN														
	PM Executive					Technical Deliverables						Commercial	Equipment	Business Case	
						Reference Design			Procurement Co-ordination	Design & Construct		Facilities Management	Work-stream	Work-stream	Work-stream
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Meeting Organiser:	NL	NL	NL	NL	NL	TB	TB	FL	PH	AS	AS	PH	CMoG	CMoG	CMoG
Frequency:	F	M	2-M	M	3-M	F (to Dec 2011)	TBC	W (to end July 2011)	F	F	Ah	F	F	F	F
Meetings Scheduled in BIW:															
Key to initials: W = Weekly F = Fortnightly M = Monthly Q = Quarterly Ah = Ad hoc C = Chair A = Attendee A(r) = Attendee, as required O = Organiser / primary point of contact D = Included in distribution for information	Project Management Executive	Work-stream Progress	Commission Management (finance admin)	Risk	Peer Review	Design Work-stream	BREEM Strategy	Town Planning	Procurement Co-ordination Work-stream	D&C Work-stream	Clinical & Non-Clinical Enabling Works (non NPD)	FM Work-stream	Commercial Work-stream	Equipment Work-stream	Business Case Work-stream
NHSL / USER GROUPS															
Andrew McDonald											A				
Brian Currie	A	A	A	A	D	A(r)	A	A			C		C		
Carol Potter	A	A	A	A				A							A
Christine McGeechan	D	D	D	D				D	D		D		D		D
Fiona Halcrow						A(r)									
Graham Gilles		A		A						A				C	
Iain Graham						A(r)							A		
James Steers															
Janice Mackenzie						A(r)									
Kenneth Ngai												A(r)	A		A
Neil McLennan			A			A	A					A(r)	A	A	
Sorrel Cosens		A		A								A(r)	A		C
Susan Lloyd (Partnership)	A	A		A							A				A
Zuzana Stofankova															
DAVIS LANGDON															
Allan Martin						A	C			A(r)					
David Cunningham									A						
Denise Kelly									A						
Fraser McQuarrie	C	C		A(r)	A			A			A(r)		A		
Helen Caress						A(r)									
Ken Fraser															
Kevin Bradley															
Naomi Lillie	O	O	O	O	O										
Richard Park				C		A(r)									
Simon McLaughlin												A			
Thomas Brady		A		A		C				A(r)	A				
MOTT MACDONALD															
Andrew Duncan											A				
Andrew Kelly											A				
Andrew Scott	A	A	A	A		A					C	A(r)			
Carol Thorburn													A		
David Stillie														A	
Ian Courtney								A							
Paul Hampson		A		A											
Paul Kelly									C					C	
Richard Cantlay	A	A	D	A	C										
Willie Stevenson											A				
THOMSON GRAY PARTNERSHIP															
Iain McLean		A		A		A(r)							A	A(r)	
TURNER & TOWNSEND															
Graeme Walker		A		A		A									
ARUP															
Alistair Wylie															
Bethan McEwan						A		A(r)							
Jeremy Grant						A	A	A(r)			A(r)				
BMJ ARCHITECTS															
Bob Hedivan						A	A								
Robert Menzies															
Sonia Scott						A	A								
HULLEY & KIRKWOOD															
Michael O'Donnell						A	A				A(r)				
Ron Nolan															
David Stewart															
NIGHTINGALE ASSOCIATES															
Jamie Brewster		A		A		A	A	A			A(r)				
TRIBAL Healthcare Planner															
Craig Dixon						A(r)	A(r)	A(r)		A(r)	A(r)			A(r)	

 Meeting Matrix 28/06/2011	RHSC & DCN														
	PM Executive					Technical Deliverables							Commercial	Equipment	Business Case
						Reference Design			Procurement Co-ordination	Design & Construct		Facilities Management	Work-stream	Work-stream	Work-stream
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Meeting Organiser:	NL	NL	NL	NL	NL	TB	TB	FL	PH	AS	AS	PH	CMcG	CMcG	CMcG
Frequency:	F	M	2-M	M	3-M	F (to Dec 2011)	TBC	W (to end July 2011)	F	F	A/h	F	F	F	F
Meetings Scheduled in BIW:															
Key to initials: W = Weekly F = Fortnightly M = Monthly Q = Quarterly A/h = Ad hoc C = Chair A = Attendee A(r) = Attendee, as required O = Organiser / primary point of contact D = Included in distribution for information	Project Management Executive	Work-stream Progress	Commission Management (finance admin)	Risk	Peer Review	Design Work-stream	BREEAM Strategy	Town Planning	Procurement Co-ordination Work-stream	D&C Work-stream	Clinical & Non-Clinical Enabling Works (non NPD)	FM Work-stream	Commercial Work-stream	Equipment Work-stream	Business Case Work-stream
ERNST & YOUNG															
Michael Pryor	A(r)	A		A					A(r)				A		
Legal Adviser TBC															
TBC	A(r)			A									A		
MONTAGUE EVANS															
Fraser Littlejohn						A(r)		C							

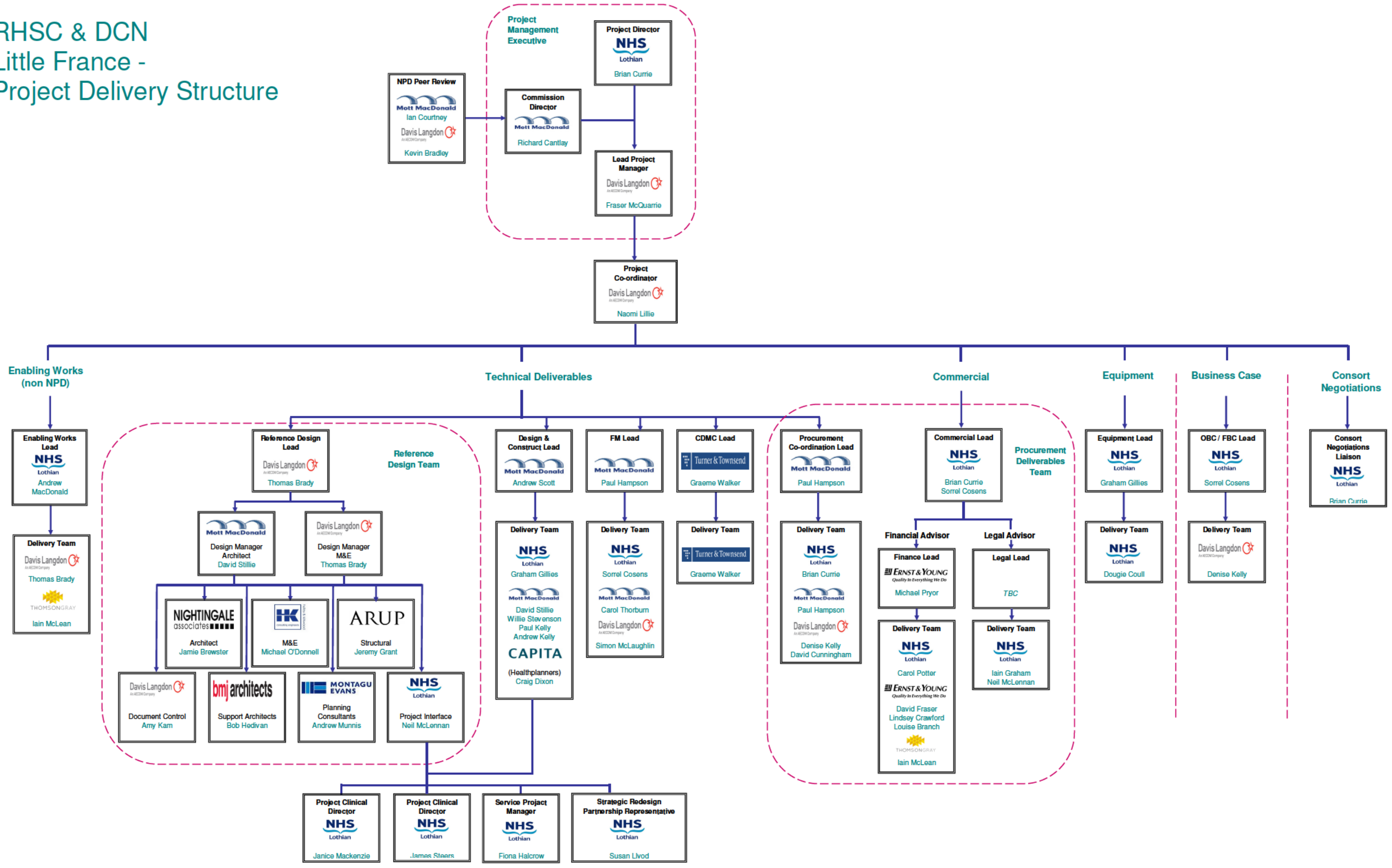
Appendix F

RHSC & DCN Little France - Project Delivery Structure

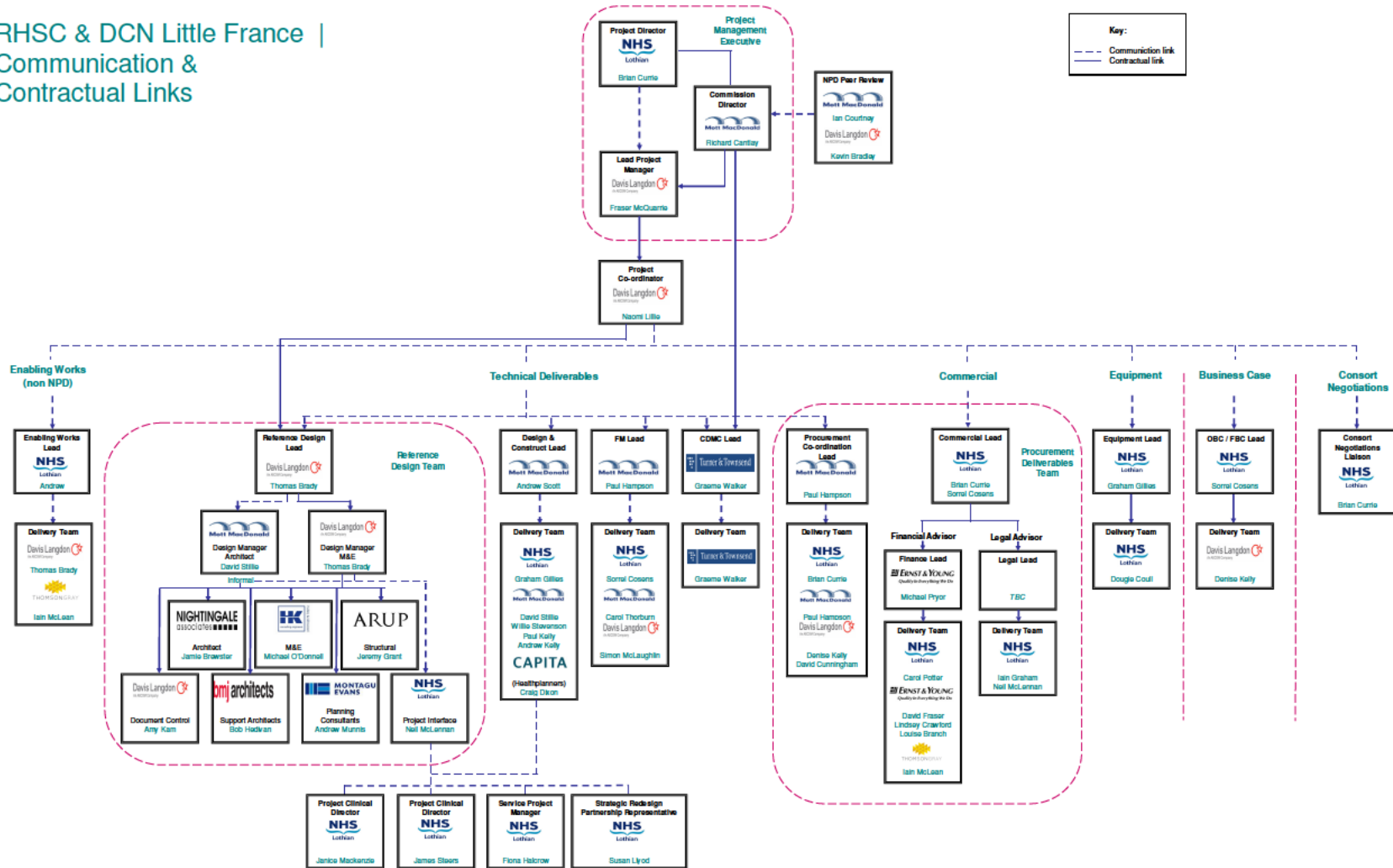


Appendix G

RHSC & DCN Little France - Project Delivery Structure



RHSC & DCN Little France | Communication & Contractual Links



From: [Victoria Bruce](#) [REDACTED]
To: [Andrew Bruce](#)
Subject: FW: Thank you
Date: 22 October 2011 16:31:47

Andrew

Please see below - for your information. I have amended the recommendations so that it is clear that all interface issues should be resolved **before the OJEU notice is issued**. Grateful if you could let me know if this isn't correct.

Many thanks

Vikki

Victoria Bruce
Infrastructure Investment Unit
The Scottish Government
AREA 3-B Victoria Quay
Edinburgh

Tel [REDACTED]
Mob [REDACTED]
E-mail [REDACTED]

I work Monday - Thursday.

From: Goldsmith, Susan [REDACTED]
Sent: 13 October 2011 15:43
To: Bruce V (Victoria)
Cc: Currie, Brian; Sansbury, Jackie; Baxter M (Mike) (Health)
Subject: FW: Thank you

Victoria

Many thanks for this – unfortunately it went to the wrong email address so I have just received today.

I have a few comments which I hope are helpful.

I am concerned about some of the language “ransom strip” and “danger” which would obviously not be helpful if it got into the public domain, however I am assuming this is just the first draft.

It terms of specific points:

3.5 we also made the point that the reference design allowed us to ensure that some of the investment in the detailed design for a standalone Childrens hospital was not lost following the announcement that the project was to be funded through NPD.

In terms of the bullet points on IIB conclusions:

As discussed at the meeting we are absolutely committed to ensuring that all the Interface issues are worked through with Consort and are aiming for the land transaction to be concluded by the 30/11

and the enabling works to be contractually agreed prior to commencement of competitive dialogue.

It would be helpful to have clarity from the IIB as to what is meant by the advice that all interface issues with the existing PFI contract are worked through before the "procurement process commencing" Is procurement the placing of the OJEU notice or is it entering competitive dialogue.

The 3rd bullet point then goes on to advise that the land deal, and all the enabling works are signed off by Consort and the Banks before the project is tendered. Specifically are both these similar pieces of advice about OJEU or competitive dialogue? If it is the former then the note of the meeting needs to acknowledge that there will be slippage – a further 6 months (after slippage of 3 years following the announcement of NPD funding for RHSC and DCN) if this route is followed rather than "could result in slippage".

In terms of IIB's emphasis on the importance of the funders believing there is a credible "Plan B" we advised the Committee that there is no Plan B. Clinically there is no alternative to the co-location of the services within the Project to be on the RIE site.

The comments on the project team were not made in our presence and so it is difficult understand the context for the recommendations. In particular the comments on the advisers being the "sole source of expertise on key parts of the project" are not recognized and I would be grateful if you could advise on what basis these were made.

The recommendations from the Gateway review have been accepted and indeed actioned.

We welcome the recommendation that the review assurance processes are reviewed by Scottish Government.

Regards

Susan

Susan Goldsmith
Director of Finance
NHS Lothian
Waverley Gate
2-4 Waterloo Place
Edinburgh
EH1 3EG

T: [REDACTED]
F: [REDACTED]
E- [REDACTED]

From: Currie, Brian
Sent: 13 October 2011 08:24
To: Goldsmith, Susan
Subject: FW: Thank you

Brian Currie
Project Director

LUHD - RHSC + DCN Reprovision

NHS Lothian
1 Rillbank Terrace
Edinburgh
EH9 1LN

T: [REDACTED]
F: [REDACTED]
M: [REDACTED]
E: [REDACTED]

From: Victoria.Bruce [REDACTED]
Sent: 11 October 2011 14:00
To: Currie, Brian; susan.goldsmith [REDACTED]
Cc: Mike.Baxter [REDACTED]
Subject: RE: Thank you

Brian, Susan

Thank you for participating in the IIB meeting on 26 September. Further to Kirstin's recent email, please find below draft conclusions from the discussion on the RHSC/DCN project. I should like to circulate the minutes, including conclusions from discussions, to IIB members on Thursday. It would be helpful to have any comments that you may wish to make before then. Subject to comments from IIB members, these conclusions will form the basis of a formal letter to the Senior Responsible Owner from the Chair of IIB: Alyson Stafford, DG Finance.

Please give me a call if you wish to discuss.

Best wishes

Victoria Bruce
Infrastructure Investment Unit
The Scottish Government
AREA 3-B Victoria Quay
Edinburgh

Tel [REDACTED]
Mob [REDACTED]
E-mail [REDACTED]

I work Monday - Thursday.

.....

- Royal Hospital for Sick Children and Department for Clinical Neurosciences
(Paper 260911-3 and Paper 260911-4)

3.1 IIB heard about the rationale behind the project, why the option to build a new-build, integrated RHSC/DCN at the Little France site had been chosen and the benefits that this would bring from a clinical perspective. NHS Lothian gave details of the timetable for taking forward the project, including the intention to issue an OJEU notice in January and to open the hospital in September 2016. It was noted that planning in principle for the project would be granted in November or December and that the reference design would be well progressed by then, so NHS Lothian was confident that this timetable was achievable.

3.2 IIB heard that negotiations between NHS Lothian and Consort regarding interface issues with the existing PFI contract had made progress, but that these were highly complex. The Amber/Red making from the Gateway Review undertaken in early September had largely been due to the criticality and unpredictability of the Consort situation. IIB expressed concerns that the nine or ten banks providing Consort with finance for the PFI project could act irrationally, thereby exposing the government to a “ransom strip” situation, and that this danger is increasing as the project progresses.

3.3 IIB noted that NHS Lothian’s Finance and Performance Committee, rather than the Project Board established for the project, had to date been leading work on scrutinising the Outline Business Case and providing most of the governance around the project. IIB heard that a project team was in place, which had work streams that met together on a fortnightly basis. The project team had two members of staff with some experience of revenue financed projects, and that the best advisers in Scotland had been recruited. NHS Lothian explained that a significant amount stakeholder engagement around the project that was taking place.

3.4 IIB noted that there had been a great deal of assurance around the project: Key Stage Review, peer review and Gateway Review, and that whilst this was generally viewed to be helpful to the progression of the project, this was seen to be quite onerous at times.

3.5 In relation to financing, IIB learnt that different costs that had been presented for the project: that £150.8 million was the capital cost for the NPD element of the project, and that, on top of that, there were enabling capital costs and significant medical equipment requirements, which increased the total capital value of the project to around £230 million. IIB was informed that a reference design was being prepared for the project in order to facilitate a speedy delivery and improve its attractiveness to potential bidders.

- **IIB welcomes the integration of Sick Kids and the Department for Clinical Neurosciences on the same site, as this should generate cost efficiencies as well as clinical synergies.**
- **IIB considers that it is essential that all interface issues with the existing PFI contract- land and all enabling works to allow the effective operation of the new hospital - are worked through before the procurement process commences subject to appropriate risk mitigation being put in place**
- **IIB welcomes the progress that has been made in relation to negotiations with Consort, but believes that it is important that the land deal and all the enabling works are signed off by NHS Lothian, Consort and the banks, before the project is tendered. Whilst IIB recognises that this could lead to slippage, IIB is concerned that otherwise the Scottish Government could be exposed to a “ransom strip” situation further down the line. IIB emphasises the importance of funders believing that there is a credible “Plan B” and that appropriate risk mitigation is put in**

place through step in rights.

- o IIB recommends that the wider project team should include personnel with in-depth and up-to-date skills and experience relating to the procurement and ongoing management of revenue-funded contracts. Given the size of the project, it is critical that this experience comes from the client team, as this team has to be able to manage advisory input to the project, both in terms of costs and strategic input, which becomes very difficult if the advisers themselves are the sole source of expertise on key parts of the project.
- o IIB recommends in line with the recommendations of the Gateway Review report that delegated powers for the Project Board for the project are clarified such that they can take decisions in the procurement process so that these do not always have to be referred to the NHS Lothian Finance and Performance Committee.
- o IIB recommends that Scottish Government review assurance processes for major projects such as the RHSC/DCN with a view to making these more streamlined.

From: Baker K (Kirstin)
Sent: 27 September 2011 11:44
To: brian.currie [REDACTED] susan.goldsmith [REDACTED]
Cc: DG Finance; Bruce V (Victoria); Baxter M (Mike) (Health)
Subject: Thank you

Susan, Brian

I wanted to thank you on behalf of the Infrastructure Investment Board for coming to present to us yesterday. Board members found the discussion of the Sick Kids project extremely useful and were impressed with the way you are tackling some challenging issues. I hope you also found the session useful. As I mentioned, we will be sending draft conclusions for you to review shortly.

many thanks

Kirstin

Kirstin Baker
Deputy Finance Director
Infrastructure Investment
Scottish Government



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**Royal Hospital for Sick Children/
Department of Clinical
Neurosciences**
Independent Design Review
Scottish Futures Trust

Page 567

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12 December 2011

Plan Design Enable

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This document has 83 pages including the cover.

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Rev 2.0	Updated draft – not issued	AEW			AEW	6/10/11
Rev 3.0	Updated draft – for SFT review	AEW			AEW	17/10/11
Rev 4.0	Final issue	AEW/GTW	IAS	IAS	IST	30/11/11
Rev 5.0	Finance section updated	AEW/GTW	IAS	IAS	IST	12/12/11

Client signoff

Client	Scottish Futures Trust
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Summary and Recommendations

The purpose of this Independent Review was to assess the design brief for the project to replace the Royal Hospital for Sick Children and the Department of Clinical Neurosciences (RHSC/DCN) on the Little France site. The review assessed the capacity of the project to deliver value for money by meeting the strategic aims of the programme; by making best use of space and opportunities for maximising sharing with other assets; and by minimising the whole-life costs.

The recommendations are intended to indicate actions which will help to de-risk the specification and the reference design as the project progresses towards OBC and the preparation of tender documentation and to improve value for money.

Strategic Fit and Appropriateness to Meet the Stated Need

The assessment of Strategic Fit did not form part of this review because of the advanced stage of planning of the project. In order to provide context against which to assess the proposals the objectives in the Initial Agreement documents were reviewed. In summary, the strategic intention of the project has been established in NHS Scotland's planning for some time through the approval of various business cases by the Scottish Government and is in line with general UK clinical policy of co-locating adult and children's acute services and to locate both of these with clinical neurosciences on site. There are benefits in the particular co-location of RHSC and DCN in the same building and in co-locating the new building with both the emergency department and the adult critical care services in the existing Royal Infirmary of Edinburgh (RIE).

The choice of site was established by various recorded options appraisals and feasibility studies.

Links between the RHSC/DCN and the existing Royal Infirmary

These strategic drivers throw focus on the physical links between the new building and the existing RIE. The strategy is to integrate the RHSC/DCN services with the existing hospital and to share some clinical services such as MRI (in the new building) and adult ITU/HDU (in the existing RIE). Support services such as pharmacy, mortuary and laboratories are being provided by expansion of existing RIE departments.

Recommendation 1:

A detailed specification of the requirements of the linking buildings between the new build and the existing RIE should be prepared, outlining the number and types of patient and staff journeys that will take place, both on first opening the building and as can be foreseen in the future. The termination points of the corridors in RIE and the routes to lifts and stairs should be identified and the design should avoid routes transiting clinical areas which are not served by the link or which are sensitive patient management areas. Other physical links such as pneumatic tube and IT links should also be carefully specified.

The advantages of a basement link were reviewed but we are advised that this is technically very difficult, has a high capital cost, and raises issues with regard to the current contractual arrangements on the existing site, and issues of interruption of clinical services during the build period. The life-cycle costs of NHS-L managing two delivery/collection yards on the same site over time therefore require to be identified. The lack of an internal FM services link means that any future integration of soft FM services on the site will be disadvantaged by the requirement to operate from two separate buildings with FM-type journeys taking place externally by van or wheeled transport trolleys.

Planning for Future Change

A second related point is the requirement to future-proof the buildings for flexibility in the future. The stated strategic plan to accommodate change and provide flexibility in the clinical services is to be able to flex services between the new building and the existing RIE. This will allow either expansion or contraction of services as needed. For this reason also the physical links between the two buildings require to be well-specified and to terminate in appropriate locations within the new building and in particular to connect well into the general and/or clinical circulation routes within RIE. Any departments where change can reasonably be anticipated should also be highlighted in the brief.

Recommendation 2:

Any elements of the building that are likely to require adaption or expansion in the future should be detailed within the output specifications.

Clinical Planning

The models of care for in-patients, day cases, operating theatres, radiology and emergency departments are sophisticated and thorough and incorporate appropriate benchmarked utilisation targets.

The assumptions underlying the outpatient and therapy departments are less clear and are still under discussion. For RHSC the proposed number of general consulting rooms would appear to match the projected OP attendance figures for core RHSC activity (not outreach) but detailed modelling of the individual specialist rooms has not been undertaken. DCN would appear to have more OP consulting rooms than required by the projected attendances.

Recommendation 3:

The functional units for out-patients and therapies require to be under-written by a capacity-modelling exercise similar to the Bed Modelling Exercise to provide certainty that the departments are sized correctly.

A number of detailed items of information for planning are lacking, thus preventing the assessment as to whether the proposals represent economically efficient areas. Two examples: – the numbers of patients waiting in various departments is not identified so an assessment cannot be made of the size of the space allowance for waiting, and the demand for the Family Hotel is not identified. The risk in not specifying the output requirement is that at the design stage the proposals may not match the service requirements as understood by the users.

Recommendation 4:

Add detail to specifications in the Departmental Design Briefs indicating what output activities are required to be delivered from all parts of the facilities.

Space Planning

In-patient Beds and Ward Planning:

Single Rooms

Within the current schedule of accommodation for RHSC there is a total 54% of rooms briefed as singles against a stated target in the design brief of 65%. The Glasgow project has taken a different approach to single-room provision with an overall proportion of 74% of rooms as single rooms. Single rooms contribute to the ability to manage beds flexibly for different age ranges and sexes and contribute to the control of healthcare acquired infections and to a reduced incidence of reportable errors.

The proportion of critical care beds for children that are briefed as single beds in the Glasgow project is 72% against 38% briefed in the Edinburgh project. Adult critical care units are looking towards 100% segregation of patients into single-bays or rooms.

Recommendation 5:

Review the current out-turn percentage of single rooms within the SoA as it is less than the stated target. Record the rationale for the proportion of single rooms within the design brief to assist bidding teams in understanding the derogation from guidance.

Bedrooms and en-suite areas

These are briefed at the absolute minimum area and may not work in practice to meet ergonomic requirements or to allow provision of a comfortable bed for parents accompanying the child. Work to test the assumptions at 1:50 scale is required, especially in the context of planning 4-bed and single rooms which often results in excess and useless space within corridors.

Recommendation 6:

Test the feasibility of the briefed areas for bedrooms/ensuites at 1:50 scale in the context of a typical ward plan to ensure the designed areas do not exceed the assumptions in the schedule of accommodation and that they provide adequate functionality.

Ward planning

The bed utilisation targets used in the clinical planning depend in part on the proportion of single rooms and also on beds being planned as a large “run” of beds rather than small individual “wards”. A larger “run” or “pool” of beds enables them to be used flexibly between specialties. The 1:500 plans were still in flux during our review but should be developed to ensure the maximum possible bed pool for best economy in use.

In terms of overall area per bed, RHSC Edinburgh is briefed at less area per bed than the new Glasgow children’s hospital but Glasgow has relatively less support accommodation and more space in rooms for direct patient care.

1:200 planning was not available for review.

Recommendation 7:

Test the distribution of support accommodation within a run of flexible beds on a ward floor plan at 1:200 to ensure the bed distribution is sufficiently flexible to deliver the utilisation assumptions and that the support accommodation is not over-specified.

Emergency Department

The overall space allowance relative to the number of treatment spaces is significantly less than those suggested by guidance or used in Glasgow. The out-turn design may be a highly efficient department but equally the design stage may demonstrate that the department is in fact under-briefed in terms of support areas.

Recommendation 8:

- 1 Consider modelling projected activity beyond 2013*
- 2 Provide more detail within the brief on intended operational policies and patient flows within the department.*
- 3 Review the brief for the Emergency Department in terms of staff rest rooms, offices, size of staff changing, storage, waiting, staff seminar/study areas and indicate within the design brief where these are to be provided elsewhere in RIE to assist bidding teams in understanding the requirements.*
- 4 Resolve the issue of the Paediatric outpatient department not being adjacent to the Emergency department for use in a Major Incident as currently described in the design brief.*

Operating Theatres

Operating Theatres benchmark appropriately to space standards and include a saving of space from the sharing of the facility between RHSC and DCN.

Radiology

Radiology benchmarks appropriately to space standards and includes a space saving from the sharing of the facility between RHSC and DCN, and further savings from the ability to cross-utilise facilities with RIE.

Outpatients

Increasing numbers of treatments are carried out in out-patient departments and it may be that the required number of treatment rooms may increase over time. The planning of inter-changeable rooms with standardised sizes would allow future such changes in practice.

Recommendation 9:

- 1 Provide more detail within the design brief on the operational policies for the out-patient areas.*
- 2 Consider standardised consulting/exam and treatment rooms to provide maximum opportunity for the introduction of new methods of treatments and specialist clinical staff.*

Therapies

Insufficient information is provided in the brief to enable an assessment of the appropriateness of the planned accommodation.

Recommendation 10:

- Provide more information on how the Therapy departments are to operate, for example, how patients are to be received, logged into the system and how the therapist is alerted to their arrival. Also detail what the intended purpose of each clinical room is and what large items of equipment each will contain.*

Clinical space planning generally

The standardisation of rooms is gradually being introduced through the project and this should be developed as far as possible including into 1:50 exemplar rooms. This will result in efficiencies during the design phase, and also in equipping the rooms and in their ultimate use by staff. As an example of this last point, the standardisation of design has been proven to reduce the level of clinical incidents.

NHS Lothian standards are generally less than guidance, but may well be quite functional. Again, a few 1:50 exemplars would under-write the assumptions being used and reduce the risk of later changes or a creeping increase in area driven by functionality.

Recommendation 11:

Identify key clinical rooms – likely to be 15-20 different types of room in total and provide an indicative 1:50 layout (straight from ADB or even in sketch form) in order to under-write the proposed square metre area for each room. Utilise these standard areas throughout the schedule of accommodation.

Support Services Planning

Soft and hard FM services require to have dedicated accommodation provided in the new building because the soft services provider will be NHS-L separately from the current arrangement for the existing RIE. Hard FM services will be provided through the NPD contract.

Catering for patients is currently stated as being by means of a full production kitchen, but the schedule of accommodation reflects a cook-freeze methodology. Both of these methods are in use by NHS-run catering services in Scotland. An option appraisal to determine the most economic method to provide catering in the new building will be undertaken by NHS Lothian. Non-patient catering is currently still being discussed within the Board.

Recommendation 12:

Undertake an option appraisal to determine the optimum catering methodology for patient and non-patient catering to deliver best value for money.

Other support services such as linen services and staff changing do not have sufficient information provided to enable an assessment of the economy of the planned areas.

Recommendation 13:

To ensure that best value for money will be delivered, the Board may wish to review the derivation of the scheduled areas and to record more detail on the proposed operation of the various areas. This will assist the design teams in understanding how the detailed design should be approached.

The proposals indicate that a number of existing RIE departments such as laboratories and pharmacy will be expanded or altered to accommodate the RHSC/DCN workload. This presumably increases the efficient utilisation of these departments and prevents duplication of facilities on the site, but we are not able to make an assessment of this element of the project.

Efficiency of Planning

The Schedule of Accommodation with which we were provided had been constructed to match costing by the DCAG methodology. Therefore we have reviewed it against that methodology and not against the current methodology as described in the Healthcare Premises Cost Guide 2010.

Departmental Circulation Allowance

There is a smaller allowance in the RHSC/DCN schedule for Departmental Circulation in total than is derived through the use of departmental norms as published in the Health Building Guidance. The sum of departments is 1,013.6 sq.m. or 2.9% less than that calculated using the allowances in the guidance. A systematic under-estimate of circulation areas can be a problem in that the out-turn designed areas are then more than the estimated areas and this has an impact on cost.

Recommendation 14:

The Board may wish to review this element with its technical advisors and healthcare planners to be confident the departments can be designed within the target areas.

Net to Gross Areas

The allowance for communication and plant within the current NHSL schedule is 38%. This is higher than the standard pre-design range assumption of 24%-35%. 38% may be appropriate given the requirement to link to the existing building and to accommodate two quite separate patient flows within the building. This element will move from a theoretical calculation to a measurable figure during the development of the Reference Design and should become increasingly accurate.

Recommendation 15:

1. NHSL should continue to target reduction in the figure for main corridor communication, lifts and stairs and plant by value engineering of the developing design.

2. NHSL to check whether Glasgow Southern General has a separate energy centre or whether the plant rooms are integrated into the building which could explain the higher 38.3%.

Reference Design

At the point of our review the Reference Design was relatively under-developed considering the stage of the project. There was no clear and settled building diagram. This means that:-

- The clinical adjacencies are not yet wholly resolved,
- There is not an understanding of how departments can be developed in detail within the current blocks.
- There is no resolved strategy which can be expressed in supporting diagrams for communication routes, segregation of flows or FM servicing.

Clarity about these issues will be crucial to the NPD design process to ensure that the facility delivers the desired clinical efficiencies and patient satisfaction.

As previously noted, a stated requirement for the Emergency Department to be adjacent to the Outpatient Department for the purposes of Major Incident Planning is not currently being achieved.

Recommendation 16:

1. Provide clinical planning diagrams now to determine the communication and circulation strategy as well as department adjacencies.

2. Resolve the circulation strategy within the Reference Design.

3. Match the adjacency matrix to the developed plan.

Reference Design (continued)

The site is complex and will be very highly developed. Space for future expansion is extremely limited. Risk areas in the overall site design will require to be well resolved before the project is tendered and the design of these areas to be carefully managed through the process to avoid additional costs.

Recommendation 17:

To provide as much detail as possible on the site diagram including the definition of the following elements:- pedestrian access to both services; public transport routes made clear, detailed ramps and turning circles for the basement; vehicle traffic routes to be well-segregated from pedestrian walkways and entrances.

There were no Departmental Layout drawings at 1:200 scale available for us to review, but the current 1:500 block planning includes shapes which are awkward to plan for the required function.

Recommendation 18:

The departmental planning at 1:200 scale should be thoroughly resolved prior to issue within the tender documentation.

Design Quality and Design Output Specifications

During the review process, NHS-L agreed that it would be helpful to clarify the Board's aspirations for the quality of design to be delivered, particularly in respect of those elements of evidence-based design that affect outcomes for patients and the environment for patients and staff. NHS-L intend to involve patients, carers and staff in the definition of the objectives and standards of the design. The results of the first AEDET underscore the need to develop these criteria.

Recommendation 19:

Provide within the brief an indication of the Board's aspirations towards the required quality of the design. This may be by a Design Statement similar to that recommended by Architecture and Design Scotland including an indication of "What success looks like" and detailing of the non-negotiables for patients, staff and relatives.

Capital Costs

The review included a high-level financial check on the Technical Cost Summary 4 NPD capital costs, FM allowances and life cycle costs for a project with a gross internal floor area of 48,188m². The review included assessing all of the information as detailed in Section 6.1 provided by NHS Lothian/ Thomson Gray dated 12 October 2011.

The overall current total Capital Cost per square metre of £3,214 per m² (including NPD site works) for the purposes of the Outline Business Case is considered to be within the expected range for a project of this size and scope, based on the SoA Version 5. As stated, however, there are certain elements which should be reviewed and challenged as the next stage of the project is progressed and these are summarised in section 6.17.

Based on a range of benchmark information the Life Cycle Cost per square metre per annum of £27/m², at 3Q 2011 prices, sits within the expected range of benchmarks.

Based on a range of benchmark information the FM allowance of £29/m²/year sits within the expected range of benchmarks, albeit slightly below the £34/m²/year midway point.

Recommendation 20:

NHSL to review the following:-

- 1. Post Financial Close NPD Co design development fees included at 10% by NHSL which are considered higher than other projects benchmarked.*
- 2. Review the Risk Register as the design develops and reduce accordingly as risks are mitigated and costs become more certain.*
- 3. Review design shape, specification and elemental cost plan against overall cost per square metre as the design develops during the next stage.*
- 4. Gross to Net floor area – target communication and plant area reduction and measure against South Glasgow Hospital with regard to the energy centre.*

1. Remit, Process and Approach

1.1. Remit

1.1.1. From SFT Invitation Letter - Independent Design Review, 1 August 2011

“To review the Design Objectives for the **Programme** :

To provide a focus for the independent review, it is important that it is targeted towards programme wide objectives. These are set out below:

- A design proposal that meets the strategic needs for efficient and effective long-term service delivery identified as part of the Initial Agreement and any other associated documentation.
- A design that eliminates unnecessary space maximises potential sharing of space between user departments and fully integrates with an efficient service strategy.
- A design specification that minimises the whole life costs of the building, including both the upfront capital cost per square metre and the ongoing maintenance and lifecycle costs. The design specification should also achieve the appropriate sustainability targets.”

1.1.2. From Appendix 1 to SFT Invitation Letter, 1 August 2011

“The Assessment of Value for Money: Step 3: Facility Efficiency

This aspect of the vfm assessment examines whether the actual proposal for the building design:

- Optimises the delivery of the clinical services;
- Results in an efficient building design in terms of the capital costs to construct. For example, plan efficiency and layout, siting, adopts appropriate sharing of space between departments, has an efficient approach to the specification of the facilities;
- Considers future proofing of the facility;
- Results in an efficient building design in terms of operational costs to manage and maintain;
- Deals efficiently with the interface with any existing facilities on the site and is consistent with potential future developments on the site.”

1.2. Process

From the SFT Invitation Letter dated 1 August 2011, the required support to SFT was described as follows:

- a) Review of documents including the Initial Agreement, options appraisals undertaken and design development decision making process;
- b) Carrying out a limited number of interviews with key members of the project and advisory teams;
- c) Review of comparisons with external benchmarks for space and unit (m²) costs made by the project team including the relevance of benchmarks selected, whether additional benchmarks would add value, and the completeness / consistency of reporting against benchmarks;
- d) Attendance at a workshop with the project team;
- e) Understanding and challenge of key design assumptions that drive space and specification / cost requirements;
- f) Feed back of review / challenge to the Project Team;
- g) Preparation of a brief report summarising observations made.

1.3. Approach

1.3.1. Review documents made available by NHS Lothian

Some 250-300 separate documents were supplied by NHS Lothian for review.

1.3.2. Elements of Specification of Facility

The Review was structured to address the individual elements that comprise the Design Brief for the facility. **See Figure 1 over**

1.3.3. Preparatory process for workshop

The elements for review were grouped into three and pre-meetings were held which covered these elements in detail. These allowed us to clarify certain elements of the written documentation and to seek further information on the approach which had been adopted.

Meeting 1 – Strategy, Model of Care, Activity Modelling, Derivation of Functional Units

Meeting 2 – Space Programme (Clinical and non-clinical); Whole System Brief

Meeting 3 – Reference Design

(A further informal meeting was held after the workshop on outpatients and therapy)

1.3.4. Workshop (“Workshop 2” in SFT protocol)

A workshop led by SFT was held on 24th August 2011. The purpose was to explore those issues which had emerged during the review of documents and the pre-meetings. The following actions were identified by SFT following the workshop.

1. Theatre Activity: further information to be provided by Capita.
2. Outpatients activity and space provision: separate discussion to take place between Aileen Walker and Graham Cumming,
3. Therapies: more information to be provided: to be taken along with Outpatients’ action.
4. Provision of independent energy centre and fm servicing yard to the RHSC/DCN : report to be prepared by NHSL for the Project Board on the qualitative analysis underpinning this agreed way forward.
5. Kitchen provision: option appraisal to be carried out by NHSL.
6. Non patient catering: NHSL to consider the options and identified a preferred route for provision.
7. Single rooms : percentage of beds within children’s hospital to be considered.
8. Single rooms (and relative en suites and circulation space) : NHSL to develop detailed drawings and mock up to consider how the single rooms will operate clinically and within the context of a ward configuration.
9. Support space in the context of the sizes of wards now developed: NHSL to consider potential to reduce support areas in the light of ward configurations.
10. Circulation flows: to be shown on drawings to assist design development.
11. Departmental Relationship: matrix to be checked against reference design.
12. Benchmarking of Costs (including benchmarking of communication and plant area) : to be carried out separately.

1.3.5. Cost Review

1.3.5.1. Information Exchange

A high-level review of the capital cost assumptions was carried out by Faithful and Gould (F&G). There was an initial information exchange with NHS Lothian which provided to F&G a copy of Technical Cost Summary and appendices. This was prepared by NHSL cost advisors Thomson Gray and is dated 12/10/11. A set of architectural drawings was also provided. Following review of this information a meeting was held on 25th October 2011 with SFT and NHSL. As an outcome of this meeting an additional set of information requirements were identified by SFT. This set was received by F&G on 11 November 2011 and it is on this information that our comments are based.

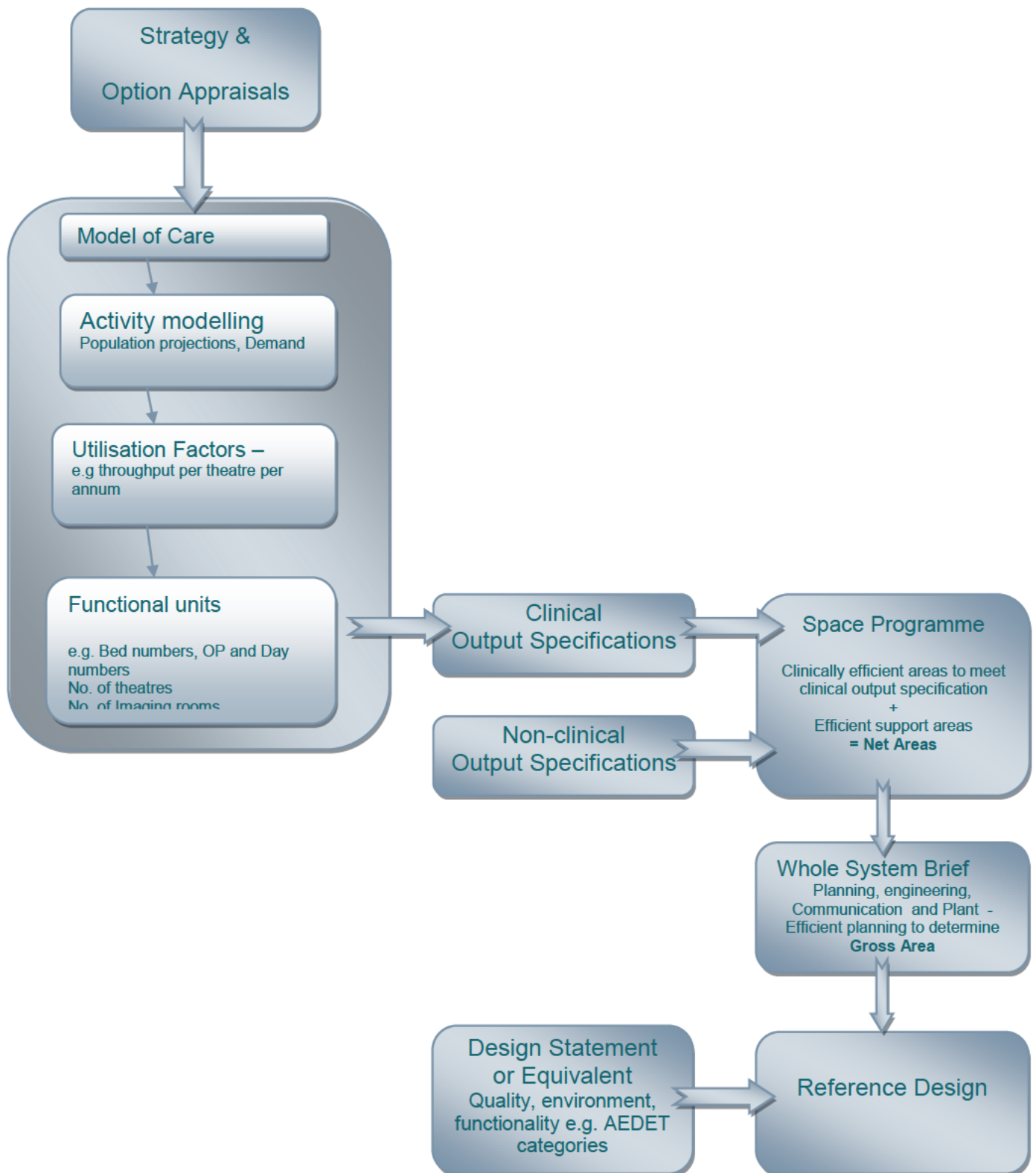
1.3.5.2. Benchmarking

The information was reviewed against benchmark information from 6 recent comparable health projects which had reached the stage of due diligence on the final capital cost. These projects were both English and Scottish in order to provide a wide basis for comparison.

1.3.6. Structure of elements for review

The following diagram (Figure 1) describes the healthcare planning process towards the production of a reference design and represents the elements that we assessed in our review of the project.

Figure 1 Structure of Elements for Review



2. Strategic Context

The Strategic Fit and Appropriateness to meet the Stated Need was reviewed to provide a context for the assessment of the current proposals.

2.1. Summary of Initial Agreements

The Initial Agreement for RHSC was prepared in May 2006 and for the DCN in 2008. Therefore they both pre-date the current guidance in the Scottish Capital Investment Manual (SCIM) to provide a detailed specification in the Initial Agreement of:

- Business/service objectives
- Sustainability objectives
- Design objectives
- Key service requirements
- Critical success factors
- Expected benefits

It was not possible therefore to make a point-by-point comparison of the proposals against the objectives. However these elements are covered in principle within the documents as follows:

2.2. RHSC – Information from the Initial Agreement

2.2.1. Current Paediatric Services in Lothian

NHS Lothian provides core children's services for the local population and a range of Regional and National Services for the wider population.

In-patient paediatric services are provided in the existing RHSC for children up to 13th birthday and at St John's Hospital at Howden.

Out-patient and community services are provided from a range of locations. In some cases these are appropriate, such as outreach services. In other cases these are inappropriately provided such as children's ophthalmology being provided with the adult service in the Princess Alexandra Eye Pavilion.

Current In-patient Bed numbers

RHSC – 94 beds, 26 day case, 15 crit care (6ITU, 6 HDU, 3 surgical neonatal)

St John's Hospital – 12 beds and 6 beds for GP referrals

Children's Services currently provided by NHSL beyond that of local population

National services	Regional services
Intensive Care Retrieval (with Glasgow)	Burns
Paediatric Intensive Care (with Glasgow)	HDU
Cleft Lip & palate	Neonatal surgery
Spinal Surgery/Scoliosis	Oncology/haematology
	Neurosciences

2.2.2. RHSC – Stated Objectives of the Project

Business/Service objectives

1. Co-location of children's specialist acute services with adult, maternity and neonatal services in line with the Kennedy report (*The Report of the Public Inquiry into children's heart surgery at the Bristol Royal Infirmary 1984-1995, published 2001*) and subsequent national policy statements. The Kerr report (2005): *Building a Health Service 'Fit for the Future'*, specifically committed to the rebuilding of children's hospitals in Glasgow and Edinburgh. This was re-stated in the National Delivery Plan - a Service Model for Scotland (2009), recommendation 84.
2. Service redesign as described in Delivering for Health and the subsequent detailed policy statements towards Managed Clinical Networks, tiered into local, DGH, Regional and National levels. The goals of service re-design are to provide sustainable core and specialist services in the region.
3. Service redesign – specific examples of intentions for the project
 - a. To ensure full provision of age-appropriate care – RHSC currently only able to accommodate children up to 13th birthday
 - b. Develop ambulatory care to reduce in-patient stays
 - c. Regional re-organisation of paediatric general surgery
 - d. Regional lead from Lothian for HDU centres
 - e. PICU to operate with Glasgow as single PICU on two sites
4. Avoid further expenditure on the existing RHSC buildings which are inadequate to meet current standards
5. Accommodate increased demand from demographic change (the expected increase in population of SE Scotland) and from improved survival of children with complex needs
6. In common with every area of the health service – meet the increased demands of evolving technology, the widening range of available treatments and increased expectations of patients and carers

Sustainability objectives

Sustainability objectives are not specifically stated in the IA – other than the aspiration to meet organisational change.

Design Objectives

The preparation of the IA pre-dates the establishment of the mandatory A&DS process to improve design quality in health buildings. This requires the preparation of a Design Statement at IA stage which identifies elements of design quality, functionality and non-negotiable aspects of the environment which the design will be required to achieve.

Expected Benefits

These are noted in the IA as –

1. Benefits to patients – improved quality of service (not defined further); accommodation for all age groups; improved “front-door” to reduce A&E waiting times and so on
2. Benefits to staff – improved working environment; synergy for research
3. Benefits to NHS-L – improved productivity; compliance; recruitment and retention

2.2.3. Summary of the Strategic Intention within the IA for RHSC

The existing RHSC buildings are too limited to deliver care to children up to and including age 16. It is in an unsuitable and inefficient building.

Children's services do require dedicated clinical facilities, but having children's services isolated from the full range of support services in the main acute and trauma centre adds to clinical risk. The key clinical benefit of co-locating with adult services rests in the potential to maximise staff cover in the emergency department and in anaesthetic cover and support. It is also beneficial to have specialist neuroscience investigations and treatment available on site to avoid duplication of these facilities and to maximise the availability of specialist staff.

"Back of house" services including important Clinical Support services such as Laboratories and Pharmacy do not require to be dedicated and can be shared with adult services.

2.3. DCN – Initial Agreement

The Initial Agreement for DCN is dated 30th July 2008

2.3.1. Summary of the Strategic Objectives of the Project, drawn from the IA

1. Co-location with emergency departments and other acute services (Ref The Society of British Neurological Surgeons (2000): *Safe Neurosurgery*)
2. Closer links to stroke medicine, critical care and orthopaedic trauma services to improve patient pathways and outcomes by increasing speed of cross-referral and facilitating communication between teams.

Stroke medicine - The co-location of acute stroke with neuro-radiology and neurology to improve outcomes for patients for whom accurate diagnosis, assessment and intervention is time-critical, and to smooth the pathway of care between these interdependent specialties.

Orthopaedics - The co-location of neurosurgery and orthopaedics to bring opportunities to develop spinal surgery. Shared training and experience across these two specialties will develop staff skills and improve care for patients.

Information technology - To provide a more robust base for the implementation of further digital image transmission and telemedicine links to allow the specialist services in neurosciences to share information in partnership with local services, in order to support clinical decision-making and remote care.

3. Co-location of adult and paediatric services

Clinical issues:

The Bristol Royal Infirmary Inquiry highlighted split site working as a major contributing factor to inadequate care, and like the *Review of Paediatric Neurosurgery* concluded that the safe delivery of paediatric services is supported by close proximity to acute adult neurosurgical services.

(Ref Kennedy (2001): *The Report of the Public Inquiry into children's heart surgery at the Bristol Royal Infirmary 1984-199*) and Youngson (2001): *Review of Paediatric Neurosurgery*)

Workforce issues:

The co-location of adult and paediatric neurosciences would improve patient safety in the increased cover that clinical staff will be able to provide, and efficiency through reduced time spent travelling between sites. Also contribute to meeting European Working Time Directive and Workforce development.

4. Fit with Edinburgh BioQuarter Development and promotion of links with the University of Edinburgh Academic and Research departments. Note NHS sharing of state-of-the-art imaging facilities, provided through research funding, in DCN.
5. Meet Increasing demand for services:
 - a. neurosurgery will continue to be emergency driven, with a year on year increase of 3% activity
 - b. the expanding older age group will place increasingly significant demands on neurosurgical services, particularly in respect of degenerative spinal surgery as well as hydrocephalus and tumour; and
 - c. that the 5% of head injuries requiring neurosurgical involvement at present will rise to 10-15% as other surgical specialities pass over responsibility for the care of these patients.
 - d. Furthermore, the survival rates of children with complex clinical needs associated with neurological and neurosurgical conditions have improved, also contributing to an increased demand on paediatric and adult neuroscience facilities.
6. Facilitating the National Managed Clinical Network - Neurosciences Implementation Group (NIG) (2008): *Report to Cabinet Secretary for Health and Wellbeing*
7. NHS Lothian Property Strategy - existing facilities achieve satisfactory rating for safety but physical condition and energy efficiency is unsatisfactory. Costs to upgrade and modernise are substantial and may not be achievable on existing site.

2.3.2. Sustainability and Design objectives

As with the RHSC IA, these are not explicitly stated in the Initial Agreement.

2.3.3. Expected Benefits

The expected benefits are described, much in line with the strategic objectives.

2.3.4. Summary of the Strategic Intention within the IA for DCN

Neurosciences will be optimally provided with both the main adult acute and children's facilities.

Full integration of DCN with the other adult clinical services on RIE site is required to achieve the maximum clinical benefits from co-location.

2.4. Integration of the Projects

2.4.1. Milestones in OBC and Option Appraisal

Figure 2: Milestones in OBC and Option Appraisal

Project	Milestone	Comment
RHSC as individual build	RHSC OBC submitted to SG and approved by CIG August 2008	Preferred option – Car Park B at Little France, capital funded option
	2010 – OBC superseded by proposals for Joint Build	
DCN as individual build	OBC approved by NHSL - November 2009, not submitted to SG	Preferred option – Little France, various site options were identified, capital funded
	2010 – draft OBC superseded by proposals for Joint Build	
2010 onwards – Revenue Funded Model Proposed	Benefits of co-location of RHSC/DCN identified	
	Davis Langdon – viability report – option appraisal and feasibility – Dec 2010	
	Business Case Addendum – March 2011	Option selected – Joint Build on Car Park B by NPD route

2.4.2. Benefits of Co-location – as drawn from the Business case Addendum of March 2011

Clinical

- The ability to deliver adult and child neurosurgery from the same theatre suite, maximising the utilisation of specialist equipment especially intra-operative MRI
- Joint-working and economies of scale in high-cost specialist clinical areas such as theatres, radiology and neurophysiology
- Better management of adolescent care in neurosciences

Non-clinical

- Economies of scale in sharing support accommodation and facilities such as health records, IT, staff changing and public space
- Minimising disruption to RIE site through having one build rather than two
- Preserving RIE expansion zone to accommodate future flexibility and growth
- Maximising the benefit of development work done to date such as existing design work

2.4.3. Site Option Selection

The Business Case Addendum, March 2011 summarised the findings in the individual option appraisals which selected the Little France site over the St John's Hospital site for both services and over the Western General Hospital site for DCN.

2.4.4. Project Options at Little France

Davis Langdon facilitated an Option Appraisal Exercise and prepared a Feasibility Report on site options at Little France. The outcome of this exercise was the selection of Car Park B as the preferred site for a joint RHSC/DCN new build.

2.5. Summary - Context for the Independent Review

The strategic objectives are in line with national and local strategy and with best practice, and the strategy has been approved by the Scottish Government. The proposals are to be designed to meet the stated Business and Service Objectives of the investment and to deliver the stated clinical and operational benefits.

Sustainability and design objectives were not explicitly stated in the IA and currently are being developed by NHSL.

Critical success factors were not specifically identified and may be developed through the joint Outline Business Case (in preparation).

The strategic drivers throw focus on the nature of the link between RIE and the proposed new building. The link requires to be sufficiently functional to allow the integration of certain clinical services now and to achieve some of the economies of scale which are anticipated.

2.6. Planning for Future Change – Future Proofing of the Design

Change is certain. The nature of clinical services and also the demand for services change regularly and often dramatically. A particular risk factor in planning children's services is the uncertainty around the continued appropriateness in the future of all health boards providing in-patient paediatric services. For DCN services, the demand is likely to increase in line with demographic factors and the ageing of the population.

A key element of the Board's forward strategic planning is to be able to flex services between the new building and the existing RIE. This means that the links between the two buildings will also require to accommodate changes in clinical services within both buildings as service profiles change.

Recommendation 1:

A detailed specification of the requirements of the linking buildings between the new build and the existing RIE should be prepared, outlining the number and types of patient and staff journeys that will take place, both on first opening the building and as can be foreseen in the future. The termination points of the corridors in RIE and the routes to lifts and stairs should be identified and the design should avoid routes transiting clinical areas which are not served by the link or which are sensitive patient management areas. Other physical links such as pneumatic tube and IT links should also be carefully specified.

Recommendation 2:

Any elements of the building that are likely to require adaption or expansion in the future should be detailed within the output specifications.

3. Clinical Planning

Performance and space optimisation for key clinical departments

In this section the development of the strategy into the service specification is considered. This involves five logical stages as described in Figure 1 above and summarised in the adjacent box.

The process begins with describing the Model of Care which is to be followed, then modelling Activity and Demand, establishing the utilisation assumptions (or how the facility can most efficiently be operated) and then calculating the out-turn Functional Unit on which the Space Programme can be based.

This section considers the key clinical departments on which the nature and scale of the rest of the hospital depends, and which in themselves tend to be the most cost- and staff-intensive:

- In-patients beds (including Critical Care Facilities) and Day Case facilities
- Paediatric Emergency Department
- Operating Theatres
- Radiology
- Outpatients and other ambulatory facilities such as Therapies

<p>Elements considered</p> <p>in assessing</p> <p>vfm in planned provision</p>
<ol style="list-style-type: none"> 1. Model of Care -> 2. Activity Modelling -> 3. Utilisation Assumptions -> 4. Functional units -> 5. Space allowance

3.1. In-patient beds and day case

3.1.1. RHSC Model of Care, Activity Modelling and Utilisation Factors

The basis for the modelling of in-patient bed numbers and day case is described in the report by Capita entitled *Planning Projections v1.6, 7th August 2011*

Figure 3: Capita Consulting: In-patient and Day Case Bed Modelling Methodology

Modelling Step	Summary approach
1 Extract 1 years activity data within the scope of the RHSC/DCN re-provision and generate HRG to establish baseline activity, patient mix, casemix and current LOS	The modelling has been undertaken three times for three different baseline years and includes the repatriation of activity from RIE and WGH sites (patients < 16 years of age)
2 Establish pathways to be modelled	Modelled medical emergency activity through an assessment ward (max stay 2 nights) and on to downstream specialty beds. Surgical emergency activity was modelled through a surgical assessment ward (max stay of 3 nights) and on to downstream beds
3 Apply GRO population projections to the patient mix (age/sex/HB residence) and current LOS to the baseline year	In the first two modelling rounds an additional 1% per annum growth was applied to GRO projections given the disparity between the actual and projected GRO annual birth rate. This assumption was removed from the third modelling round as activity has now converged with GRO projections (as advised by client). This was supported by comparing the reported activity and bed days used between the second and third round of modelling (9 % drop in activity and 15 % drops in OBDS). However, given the sensitivity and immediacy of impact of birth spikes to the potential demand on the service (33 % activity and 50 % of OBDS for < 3 years of age) , the latest bed modelling has included some buffering scenarios by modelling at the 99th percentile in peaks in demand across all bed pools (as well as the 95 th percentile) and by modelling a LOS of 1 for same day discharges
4 Establish bed pools and modelling occupancy rates based on peaks in demand analyses, -optimise use of overall capacity across specialties but ensure sufficient capacity to meet demand during the busiest periods of the year	The bed pools used in the modelling have been based on the appropriateness of individual specialties to share bed resources to better manage peaks in demand; and the modelling occupancies for these bed pools have been comparable across modelling rounds. The occupancy rate modelled to ensure sufficient flex up capacity during the winter months is around 75 %, but the overall utilisation rate (beds used/ funded beds) is around 80 % if 5 of the projected beds were open only for 6 months over the winter period. Following a review of the working occupancies which would need to be applied to model sufficient capacity to meet peaks in demand, Tribal were asked to revise the bed modelling pools to improve overall utilisation rates across specialties and to better fit with planned service models
5 Project inpatient and day case bed requirements from 3 and 4 for current LOS	Projected beds have been compared with the plan across a number of scenario years. The results of the third iteration have indicated that while there is sufficient planned bed capacity overall , there is a surplus of day only / assessment beds compared with the plans given current LOS
6 Benchmark LOS by HRG with an English Peer Group and project required inpatient and day case beds at the upper quartile in performance	Benchmarking with an English peer group did not show a significant reduction in projected beds but did show the potential to increase same day discharge rates and close more beds overnight

At the time of the review workshop, the assumptions to be used and the final proposed bed numbers were still to be fully endorsed by the senior management team. The working total at the time of the review was 168 beds including day-case beds and chairs.

Discussions are ongoing with respect to the feasibility of pooling beds and activity; the management of smallish bed pools such as the 12 for neurosciences; making changes in clinical practice to reduce lengths of stay to the benchmarked percentiles; and the choice of the appropriate level of utilisation to ensure adequate use of resources but yet to adequately allow for peaks and troughs in activity.

3.1.2. Summary of RHSC bed model

Activity Projections are from a baseline of 19,019 episodes and 29,409 OBDs in 2010. This means that the most up-to-date information is being used but NHSL have also taken account of the uncertainty around what appears to have been a spike in activity in 08/09. The following parameters apply to the bed model:

- 50% of activity is pre-school
- 20% activity is out-of-area.
- Bed occupancies are modelled at 95% and 99% occupied.
- Length of stay is modelled at 50th and 75th percentiles (against a benchmarking group of hospitals)
- Bed pools are all acute beds except neurosciences and haemato-oncology which have separate bed pools respectively.

3.1.3. RHSC Critical care

In the existing RHSC there is activity going through Level 1 beds which should be in level 2 and 3. The new model locates all levels within unit as per the National ITU audit.

3.1.4. RHSC Risk areas

Risk applies to all elements of the assumptions uses. A significant element of risk is in the continued sustainability of the in-patient paediatric services in adjacent smaller health boards.

(See also 2.6 above)

3.1.5. Proposed RHSC Bed Model Assumptions: Children and Young People's Service

Table 1. NHSL: Proposed Bed Model Assumptions: Children and Young People's Service

Area	Total	Single Rooms	Beds in 2 bed bay	Beds in 4 bed Bay	Comments
PARU (34)		65%			
Medical	23	15		8	1 Isolation Bed
Adolescent	2	2			
Short Stay	4			4	
Seasonal	5	5			
Sub-total	34	22		12	
Inpatient Area		47%			
Medical	23	15		8	3 Isolation Rooms/4Transitional Care (inc 1 isolation room)/3 Adolescent
Surgical	17	9		8	7 Adolescent Beds
ASAA	12	2		8	
Neuroscience	12	4		8	1 Isolation Bed
Sub Total	64	30		34	
Cancer Unit		100%			
Inpatient	7	7			4 Isolation Beds
Adolescent	3	3			
Sub Total	10	10			
Critical Care		42%			See below 9/24 = 38%
PICU	8	4		4	2 Isolation Beds
High Acuity HDU	6	2	4		2 Isolation Beds
Low Acuity HDU	6	2		4	
Surgical NNU	4	1		3	
Sub Total	24	10	4	10	Error in NHSL table – actual total is 9/24
CAMHS Inpatients		100%			
CAMHS	12	12			
Total	144	84	4	56	
Day Case					
Surgical	10				
Medical	5	2		3	
Oncology	7	3		4	+ 2 chairs
Total	22	5		7	+ 2 chairs

Source: NHS Lothian (June 2011)

3.1.6. DCN – in-patient beds and day case

The basis for the modelling of in-patient bed numbers and day case is described in

Tribal Consulting : Bed, Theatre and Radiology Planning for RE-provision of DCN and RHSC: Update on Projections. Report Version 1.5, 20th July 2011.

3.1.7. DCN Model of Care, Activity Modelling and Utilisation Factors

Base Date is 2009/2010 and activity was 5,529 episodes and 21,324 OBDs.

Activity is projected to increase because of demographic change and an increasing proportion of older people in the population.

33% of activity is from other Health Boards

Model of care changes include:

Spinal surgery currently in RIE moving to DCN

Thrombolysis out-of-hours moving to DCN (in-hours, thrombolysis delivered at RIE, WGH and StJ's.)

Utilisation assumptions are 66% HDU and 80% acute care with DCN bed activity pooled.

Programmed Investigation unit is modelled on 2 patients/day and to be located close to in-patient neurosciences

3.1.8. Proposed DCN Bed Model Assumptions

Table 2. Proposed Bed Model Assumptions : DCN

Area	Total	Single Rooms	Beds in 2 Bed bay	Beds in 4 Bed bay	Comments
DCN		100%			
Critical Care (RIE)	(11)				6 Level 3 Beds 5 Level 2 Beds
DCN Acute Care	24	24			
DCN In-Patient	43	43			
Sub-total DCN	67				
PIU (Day Case)	2				2 Beds and 4 Chairs
Inpatient Area	67+2		NIL	NIL	67+ 2 DC

Source: NHS Lothian (June 2011)

3.1.9. Summary of service specification and performance optimisation

In-patient (including critical care) and day case

The models of care, activity projections and bed modelling for both RHSC and DCN are well-established, sophisticated and thorough, and employ appropriate benchmarking and utilisation assumptions.

The changes to models of care which are described in the strategy have been incorporated into the modelling.

In order to achieve the utilisation assumptions, flexibility will be required in the management of beds. This has implication for ward design and departmental locations. (See under space programme.)

Recommendation 7:

Test the distribution of support accommodation within a run of flexible beds on a ward floor plan at 1:200 to ensure the bed distribution is sufficiently flexible to deliver the utilisation assumptions and that the support accommodation is not over-specified.

Future expansion or change of use in the in-patient beds will be achieved by re-organising bed usage within the RIE and the new building. This serves to highlight the need for the link between the two buildings to be suitable for different types of patient and staff transfer.

See Recommendation 1 and 2 (above) re

*Detailing of the link corridor for flexibility and
Identification of those facilities likeliest to require adaption in the future.*

3.2. Space optimisation in in-patient areas

3.2.1. Analysis of Bed Spaces in DCN

There are 67 new acute in-patient beds proposed, 100% in single rooms, all briefed at 19 sq.m. with a 4.5 sq.m. en-suite and isolation lobbies where required at 4 sq.m.

This provision is fully compliant with guidance.

Critical care beds (11 no.) are to be provided within an extension to the existing adult critical care unit within the RIE. This will facilitate the best utilisation of critical care facilities by allowing flexible use of the beds and concentration of appropriately trained staff in one location.

3.2.2. Analysis of Bed Spaces in RHSC – Single Rooms

RHSC In-patient beds are briefed as 144 in-patient and 22 day patient beds + 2 chairs as detailed above in Table 3.

3.2.2.1. Proportion of single-bed rooms

Overall there is a total of only 54% (90/168) v a target of 65% quoted in the Design Brief (ver 2 10 June 2011, page 12)

Table 3. RHSC Proportion of single-bed rooms

Type of bed	Number/total	% singles
General acute beds	54/98	55%
Haemato-oncology	10/10	100%
PICU/HDU	9/24	38%
day beds	5/24	21%
CAHMS	12/12	100%
Total	90/168	54%

3.2.2.2. Benchmarking of % of single rooms

Guidance – HBN 23 (2004) recommends a 50% minimum. However since this guidance was published the Scottish Government has published CEL (48) 2008 and CEL (27) 2010 which endorse 100% single rooms unless there are clinical reasons to diverge from this. In general the arguments are compelling for a high proportion of single rooms (see below) and most projects - new and refurbished - aim for as high a proportion as practical given the clinical models.

In the Glasgow project the overall percentage of single rooms is 74%.

See Table 6 over/

Table 4. Glasgow RSCH - Proportion of single-bed rooms

Glasgow RHSC Bed Complement				
Area	Total Beds	Single Rooms	%	Ref
General acute	180	152	84.4%	NMcL
Critical Care	22	16	72.7%	NMcL
23 Hour	22	12		
MDCU	10	0		
Theatre Recovery	8	0		
Child Psychiatry	6	3	50%	
Neonatal	(12)	Not in building		
OVERALL BED TOTAL	248(260)	183	74%	183/248

3.2.2.3. Comment

The number of single rooms in the current schedule of accommodation is less than the target of 65% overall as stated in the design brief. When special cases which require 100% singles such as CAHMS and Haemato-oncology are factored out, then only 55% of general beds are provided in single rooms.

The “correct” proportion of single rooms for children is a complex question and issues include the wide age range of patients to be accommodated, clinical choice to “cohort” patients with infections with the same organism, avoiding mixed-sex wards for older children, “wasting” space but having large bedrooms for caring for infants and younger children in cots and so on.

However it is well-established that a high proportion of single-rooms offers the greatest ability to flex the bed complement to meet varying demand – variables such as the relative proportions of males/females, older/younger children, diagnoses, pre-diagnostic risk such as risk of infectivity, needs of parents and accompanying family etc. A high proportion of single rooms has also been shown to reduce healthcare associated infection rates, and it is also a well-established principle that single-rooms reduce the incidence of reportable clinical incidents such as medication errors and so on.

Recent research has indicated that children dislike sharing with children of different ages to themselves. At younger ages, children are not particularly concerned by a mix of sexes in the ward, but this becomes very important for children of older ages and adolescents.

The Glasgow project has taken a different approach to single-room provisions with an overall proportion of 74% of rooms in single rooms against 54% in Edinburgh.

In adult critical care units, it is becoming established practice to have 100% single “bed areas” – these may not necessarily be full single rooms but would offer fixed glazed screening between patients with dedicated clinical wash-hand basins and work-stations. The proportion of critical care as singles in Glasgow is 72% against 38% in Edinburgh.

Overall, the Glasgow proposals are more in line with recent wider practice.

3.2.3. Analysis of Bed Spaces in RHSC – Room Sizes

The current proposed room areas as listed in the SoA 27 July 2011 have been analysed by Capita consulting who highlighted the divergence of the child single-bedroom size from current practice. We note the following comment from Capita:

“Single Bedroom: although HBN 23 sizes a Children’s inpatient single room at 15sqm, potentially there may be limited space for parent overnight stay in a 15sqm room. We realise that the Board has addressed this issue previously and understands that this area allocation may prove to be a challenge and will require confirmation of functionality at 1:50 level”.

Source: Jason Speck & Craig Dixon, Capita Report 17/8/2011

There is further comment in this document with respect to the size of the en-suite WC and shower:-

Ensuite WCs: the Board area is 4.5 sqm for single room ensuites.HBN 23 (as no equivalent SHPN) area recommendation is 6sqm) and Capita standard area is 6.5sqm. We understand that this issues is still under review by the Board and requires functionality to be tested via 1:50 drawings.

(Note: this issue does not apply to DCN en-suites briefed at 4.5 sq.m. where the corresponding 19 sq.m. within the single-bed room allows space to open WC doors out fully to allow use of mobile hoists.)

3.2.3.1. Benchmarking of room sizes

Table 5. Square Metre Allocation per bed-room and key clinical space

	RHSC - E	Glasgow	New-castle	HBN23 (2004)	Capita Standard	Capita exemplar
single	15	16.5	19.4 - 20	15		17
WC/sh (s)	4.5	4.5	4 - 4.5	6	6.5	
lobby	4	7		4		
4-bed	63	68		80		63
WC/sh (4)	6	7.5		7		
CAHMS	10 & 11.5	16.5		n/a		

For further comparison, the designed areas at the new Forth Valley Royal Hospital which is designed and operational are shown for comparison:

Table 6. Forth Valley Paediatrics for further comparison

Clinical Space	RHSC Edinburgh Sq.m.	FVRH Area Sq.m.
Single Bedrooms - large	15.0	19.0
Single Bedrooms -standard	15.0	16.0
Ensuite Shower/wash/WC	4.5	4.5
4-Bedded Bays	63	59.0
Ensuite Shower/wash/WC (4-bed)	6.0	6.5
Isolation Lobby for single bedroom	4.0	6.0

The combination of a restricted briefed area for the single-bed room and the minimum area for the ensuite WC will require to be proven at 1:50 level and in the context of an overall ward layout. A mix of single-beds and 4-bed rooms is notoriously difficult to plan economically. It may be that additional useful area within the bedrooms enables the departmental circulation to be less i.e. paying for bigger bedrooms means not paying extra for useless corridor space.

Bedrooms and en-suite areas are briefed at the absolute minimum square metre areas and may not work in practice to meet the ergonomic requirements of The Moving and Handling Regulations and health and Safety Requirements and Infection Control Standards.

3.3. Efficiency of “ward” briefing – Benchmarking area per bed in wards

3.3.1. DCN In-patient Wards Ward Area per bed – based in Net Areas

DCN Acute Care (24 beds) -	34.7 sq.m. per bed
DCN In-patients (43 beds)	32.5 sq.m. per bed
HBN 04-01(2010);100% singles in 24-bed ward	33.2 sq.m. per bed

DCN as a whole therefore benchmarks close to the guidance level. Design development may reduce the need for support accommodation and bring the area closer to benchmark.

3.3.2. RHSC In-patient Wards Ward Area per bed

As HBN 23 is somewhat out-dated, the ward areas were bench-marked against Glasgow as representative of current good practice.

Table 7. RHSC Areas per bed v Glasgow Project

RHSC Edinburgh						Glasgow
ref	Dept	bed nos	gross area sq.m.	area/ bed	note	
A3	PARU	34	1196	35.19		38.1
C1.1	Medical Inpatients - 23 Beds	23	946	41.13		41.4
C1.2	Surgical Inpatients - 17 Beds	17	711	41.85		41.4
C1.3	Neuroscience Inpatients - 12 Beds	12	689	57.41	rehab in Ed	41.4
C1.4	Haematology / Oncology Inpatients & Daycases - 17 Beds & 2 Chairs	19	936	55.07	based on 17	58.4
E1	Acute Surgical Admissions Area - 12 Beds	12	517	43.07		41.4
A3	PARU / Emergency / Radiology Shared Support	say 50%	100			
C1.5	Med / Surg / etc Shared Support		72			
C1.6	Adolescent Shared Accommodation		50			
C2	Wards Support Areas		136			
C3	Special Feeds Unit		63			
C4	Sleep Lab		118			
C5	Classrooms		114			
All general beds		117	5648	48.27	v	50.4
B1	PICU	24	1632	68.02	v	104.3
F1	CAMHS	12	1362	113.5	v	128
day	surg	10				
day	med	5				
		168				

From this table, RHSC Edinburgh benchmarks well against the equivalent Glasgow areas. However, it has already been noted that Glasgow has larger bedroom areas and many more single rooms. A detailed analysis of the different types of space was therefore carried out:- over/

Table 8. Proportion of direct patient bed/day space v "support" areas							
Ref	dept	bed nos	net area sq.m.	"bed/patient"	support	% "pt" areas	Glasgow
A3	PARU	34	867	691	176	80%	76%
C1.1	Medical Inpatients - 23 Beds	23	686	528.5	157	77%	80%
C1.2	Surgical Inpatients - 17 Beds	17	516	365.5	150	71%	80%
C1.3	Neuroscience Inpatients - 12 Beds	12	499	294	205.2	59%	71% cf cardio
C1.4	Haematology / Oncology IP& DC - 17 Beds & 2 Chairs	19	678	420.5	257.9	62%	67%
E1	Acute Surgical Admissions Area - 12 Beds	12	375	230	144.5	61%	80%
All general wards			3620	2530	1091	70%	75%
A3	PARU / Emergency / Radiology Shared Support		100		100		
C1.5	Med / Surg / Neuro / Haemo Shared Support		72		72		
C1.6	Adolescent Shared Accommodation		50		50		
C2	Wards Support Areas		136		136		
C3	Special Feeds Unit		63		63		
C4	Sleep Lab		118		118		
C5	Classrooms		114		114		
All general + support			117	4273	2530	1744	59%
B1	PICU	24	1166	624.5	541.5	54%	
F1	CAMHS	12	1009	420	589	42%	
day	surg	10					
day	med	5					
		168					

This table shows that although the Edinburgh schedule of accommodation appears to be more economic in briefed space, in fact, more support accommodation is briefed relative to the direct patient-care areas.

The briefing of larger, standardised wards in Glasgow may account for this difference.

3.4. Summary of Space Planning for Inpatient Wards

Single-rooms for RHSC

Overall there is a total of only 54% (90/168) against a target of 65% quoted in the Design Brief (ver 2 10 June 2011, page 12) The Glasgow project has taken a different approach to single-room provisions with an overall proportion of 74% of rooms in single rooms v 54% in Edinburgh.

The proportion of critical care as singles in Glasgow is 72% against 38% in Edinburgh.

The Glasgow proposals are more in line with wider practice.

Recommendation 5:

Review the current out-turn percentage of single rooms within the SoA as it is less than the stated target. Record the rationale for the proportion of single rooms within the design brief to assist bidding teams in understanding the derogation from guidance.

Bedrooms and en-suite areas in RHSC

These are briefed at the absolute minimum square metre areas and may not work together in practice to meet the ergonomic requirements of The Moving and Handling Regulations and Health and Safety Requirements and Infection Control Standards. Work to test the assumptions at 1:50 scale would ameliorate this risk. Ward planning is also advisable to avoid introducing non-functional space into corridors and circulation that would more usefully contribute to clinical functionality within the room.

Recommendation 6:

Test the feasibility of the briefed areas for bedrooms/ensuites at 1:50 scale in the context of a typical ward plan to ensure the designed areas do not exceed the assumptions in the schedule of accommodation and that they provide adequate functionality.

Ward briefing

In terms of overall area per bed, RHSC Edinburgh is briefed at less area per bed than the new Glasgow children's hospital. However this hides the fact that Glasgow has relatively less support accommodation and more space in rooms for direct patient care. The briefing of larger, standardised wards in Glasgow may account for this difference.

Recommendation 7: as above

Test the distribution of support accommodation within a run of flexible beds on a ward floor plan at 1:200 to ensure the bed distribution is sufficiently flexible to deliver the utilisation assumptions and that the support accommodation is not over-specified.

3.5. Emergency Department

3.5.1. Model of care summary – from NHSL Design Brief

1. Purpose: The emergency care of children aged 0 to 15 years inclusive who have been injured or become acutely un-well.
2. The department is complemented by community facilities including the Lothian Unscheduled Care service, the Minor Injuries Unit at WGH and the emergency department at St John's.
3. The Emergency Department will contribute to the NHSL capability to achieve the four hour unscheduled care target.
4. The new RHSC will be the designated receiving hospital for paediatric casualties in the event of a Major Incident. The design brief notes a required adjacency to Paediatric Out-patient department to fulfil this requirement. (In the drawings reviewed by us (those supplied for the Planning Submission) this adjacency was not being achieved.
5. The department is to be located adjacent to the RIE adult emergency department to improve the availability of staff for consultation and supervision.

A&E departments have various models of organisation. In this case no particular hierarchy of treatment spaces or patient and staff flows is described and segregation into major and minor treatment areas is not described. It would be helpful to include information on operational policies and patient flows within the Design Brief for the department.

3.5.2. Activity Modelling

Table 9. RHSC Emergency Department Activity Levels - ref Design brief A1

Source	2009 ("current")	Projected Activity 2013
RHSC ED	38,660	42,000
RIE ED 0-12 yrs	597	650
RIE ED 13-15 yrs	3,191	3,510
Total numbers	42,448	46,610

Commentary on the projections was not provided, nor modelling beyond 2013. It would be helpful to have this horizon match that of the in-patient bed modelling.

3.5.3. Utilisation factors

From Design brief A1:

The Emergency Department will provide a 24 hour / 7 day per week service.

Over 98% of patients will remain in the ED for less than 4 hours.

Average lengths of stay for individual rooms within the department will be:-

Resuscitation room	1 to 2 hours
Generic Treatment rooms	1 to 2 hours
Specialist rooms	½ to 1hour
Bereavement Suite	3 hours

3.5.4. Functional Unit and Space Programme - benchmarking

The Functional unit employed to size an emergency department is the number of attendances per annum. HBN 22 (2005) gives exemplar schedules for 40,000 and 50,000 attendances.

The key operational areas are the number of Assessment/Treatment spaces which may have various functions and descriptions and the number of Resuscitation Spaces.

The following table benchmarks the number of treatment spaces against the relevant Health Building Guidance for 40,000 and 50,000 attendances. The proposed provision for the Glasgow Children's Hospital is also provided.

Table 10. Emergency departments – treatment spaces and net departmental areas

	RHSC – proposed 46,000 attendances	HBN 22(2005) 40,000 attendances	HBN 22(2005) 50,000 attendances	Glasgow RHSC 40,000 attendances
Assessment/treatment spaces	16	12	16	24
Resuscitation Spaces	4	3	4	4
Sub-Dept area	803 sq.m.	865 sq.m.	1087 sq.m.	1203 sq.m.
Plaster suite	included	19 sq.m.	19 sq.m.	included
X-ray room	included	47.sq.m.	47.sq.m.	47.sq.m.
Dept area	803 sq.m.	884 sq.m.	1087 sq.m.	1250 sq.m.

The number of "treatment" areas proposed in the RHSC benchmarks appropriately to the guidance for the upper level of throughput (HBN 22, 50,000 attendances) that are required and allows for some increase in activity to occur over time. As noted above activity has not been modelled beyond 2013 and it is not clear if it is anticipated to continue to increase.

In terms of area, the RHSC proposal is less than both Glasgow and HBN 22. The difference between RHSC and the HBN areas is explained by inclusion in the HBN of the following elements:

117 sq.m. additional for staff rest-room, seminar, study area and overnight stay rooms – all provided elsewhere in RHSC and serving more than the emergency department.

- Increased areas for patients and visitors waiting and amenities
- Larger areas for staff changing
- Greater storage facilities
- More office space

3.5.5. Reference design

It is noted that within the current Reference design the outpatient department is not adjacent to the emergency department as requested in the departmental design brief. The purpose of this adjacency is to facilitate Major Incident Planning.

3.5.6. Summary: Emergency Department

The RHSC Emergency department is based on projected activity to 2013 but not modelled beyond this date.

The proposed number of treatment spaces is appropriate and will allow some flexibility for activity to increase in the future.

The overall space allowance relative to this number of treatment spaces is significantly less than those suggested by guidance or used in Glasgow. The out-turn design may be a highly efficient department but equally the design stage may demonstrate that the department is in fact under-briefed in terms of support areas.

Within the current Reference design the outpatient department is not adjacent to the emergency department as requested in the departmental design brief. The purpose of this adjacency is to facilitate Major Incident Planning.

Recommendation 8:

1 Consider modelling projected activity beyond 2013

2 Provide more detail within the brief on intended operational policies and patient flows within the department.

3 Review the brief for the Emergency Department in terms of staff rest rooms, offices, size of staff changing, storage, waiting, staff seminar/study areas and indicate within the design brief where these are to be provided elsewhere in RIE to assist bidding teams in understanding the requirements.

4 Resolve the issue of the Paediatric outpatient department not being adjacent to the Emergency department for use in a Major Incident as currently described in the design brief.

3.6. Operating Theatres

3.6.1. Activity Modelling

The basis for the modelling of theatre requirements is provided in:

Tribal Consulting : Bed, Theatre and Radiology Planning for RE-provision of DCN and RHSC: Update on Projections. Report Version 1.5, 20th July 2011.

- Two scenarios were modelled - 10 sessions per week and 13 sessions per theatre per week.
- Modelling assumptions – 3.5 hours per session, 7.5% cancelled sessions, 7.5% anaesthetic time
- Utilisation assumption is 90% utilisation of available time.
- Activity data – number of patients with procedure and operating time not provided, but projections quote 2017 and 2020.
- Projections are based on extrapolation of numbers of theatres currently in use
- The out-turn number of theatres is based on the higher utilisation rate (13 sessions/week); and assumptions that a combined theatre suite will provide efficiency in utilisation; future availability of “CEPOD” theatre and extended out-of-hours sessions for emergency work.

Combined operating theatre department

The economy of scale to be found in having a joint DCN/RHSC theatre suite has been factored in. NHS Lothian calculate a space saving of 222.2 sq.m. net area over the required area for separate theatre suites. The saving is achieved by reducing the number of support rooms.

Out-turn Functional unit: 9 theatres

3.6.2. Benchmarking of Combined Operating Theatres – Briefed Areas

RHSC/DCN

9 theatres + intra-operative MRI + Digital Angiography + day case unit –

Net departmental Area 2,810 sq.m.

Guidance

HBN 26 (2004): 8 theatres = 2283 sq.m. – pro-rata 2568 sq.m.

Add MRI and DA @ 217 sq.m. 2,785 sq.m.

Glasgow

9 theatres, larger day case unit, no interventional radiology

Glasgow Net Area adjusted by omission of Anaesthetic department &

23-hr ward and by addition of space for MRI and DA

Glasgow Net Area (adjusted) 2,581 sq.m.

RHSC/DCN is close to the Guidance Area. The difference between Edinburgh and Glasgow of 229 sq.m. is almost wholly explained by having 2 services using 1 set of theatres, as follows:

Table 11. Operating Theatres: comparison of briefed areas: Edinburgh and Glasgow

Theatre Sub- Areas	Edinburgh Sq.m	Glasgow sq.m.
Pre-op		
DCN	157	-
RHSC	289	317
Op Theatres	1027	1135
Post-op		
DCN	171	-
RHSC	397	392
Support	299	268
Staff support	252	263

This table illustrates the fact that the briefed areas for a children-only theatre suite in Glasgow are similar to the areas for the children's service in RHSC.

Despite the fact that space is needed to keep the two types of patients separate, there are still area savings in having a combined theatre suite. NHS Lothian note a saving of 222.2 sq.m. when the operating suites were combined in a single suite from the previously briefed two individual suites.

There will almost certainly revenue savings in running a single suite, in terms of staffing levels, stock levels, flexibility (say in having single CEPOD theatre) and so on. There will also be life-cycle savings in the reduced requirements for space and equipment and in lower energy costs.

3.7. Radiology

3.7.1. Activity Modelling

The basis for the modelling of radiology requirements is provided in:

Tribal Consulting : Bed, Theatre and Radiology Planning for RE-provision of DCN and RHSC: Update on Projections. Report Version 1.5, 20th July 2011.

- Activity Projections include current activity at RHSC + <16 years at RIE and WGH (excluding minor injuries (A&E) at WGH); all activity referred by DCN specialty across sites
- Activity growth assumptions of 5% per annum for MRI, CT and U/S
- Utilisation based on current time per procedure and normal working hours.
- Utilisation assumptions are 80% occupancy, available 52 weeks per year.
- The projected requirements based on this analysis are described in above report Table 4 Radiology page 35.
- Out-turn planning assumptions provide by NHS-L (June2011) match the projected requirement as described in the following table:

Table 12. Out-turn Planning Units Radiology

Modality	Paeds 2017 projected requirement	RHSC Brief	DCN 2017 projected requirement	DCN Brief
General Radiography	2.26	2	0.19	1
General ultrasound	2.05	2	0.40	1
MRI	1.82	2 (1shell)	2.42	3
Fluoroscopy	0.50	1 (multi-p)	0.20	0
CT	0.21	1	0.86	1
Specialist	0.75 (radionuclide)	1	0.85 (angiography)	1

3.7.2. Combined imaging department

It is proposed to co-locate the two radiology departments and to share accommodation where possible. NHS Lothian calculate a reduction of 271.3 sq.m. of net floor area by reducing the number of support rooms.

3.7.3. Future proofing

Interventional Imaging - a plan to modernise practice is exemplified by the provision of Interventional Imaging in the Operating Department including an intra-operative MRI.

The shell space for NHS MRI anticipates future increasing demand for this modality.

The link with RIE provides future flexibility in the use of radiology facilities.

3.7.4. Sharing with RIE

Some DCN patients will access RIE radiology for simple radiography and RIE patients will on occasion access specialised DCN radiology.

RIE patients will access the gamma camera in RHSC which will be the sole nuclear medicine department on site.

The recommendation to carefully detail the link between the new building and the RIE is noted again in this context, both for immediate practice and for future practice and flexibility.

3.7.5. Area benchmarking

Broad Brush benchmarking - Sq.m. per "room"

<u>Project</u>	<u>Radiology department area per Imaging room (sq.m.)</u>
Edinburgh	170.0
Forth Valley	139.9
Glasgow	237.0

3.8. Ambulatory Care

3.8.1. Outpatients – RHSC

Information was provided within the *Departmental Design Briefs* for:

D1	General outpatients
D2	Cardiology and respiratory specialist
D3	Orthoptics
D4	Audiology
D5	Paediatric dentistry
D7	Plastics dressings clinic
D8	Social work
D10	Ambulatory care shared support

3.8.1.1. Model of Care

There are relatively few explicit references in the Design Brief to outpatient models of care, service redesign, modernisation or specific patient pathways such as the streamlining of reception facilities, or co-ordinating physiological measurement.

D2 Cardiology describes a “one-stop” shop approach to link investigations to consultation and treatment-planning

D4 Audiology describes alternative patient pathways

3.8.1.2. Comment

As these are the key documents which allows designers to understand the clinical requirements it would be useful to have some information within them.

3.8.1.3. Activity Modelling

Activity Information Available from Design Briefs:

Only D7 gives an indication of expected activity

D7 Plastics dressings clinic – the P.D.C. sees an average of 160 patients per month.

Tribal Consulting (17/7/09) – RHSC –Schedule of Accommodation Review – Appendix 1

Mention of 11,450 new and 32,000 follow up attendances but no base date given.

Correspondence with NHS-L (Fiona Halcrow and Grahame Cumming) identified current baseline activity and proposed efficiencies through re-design of services. Actions include work through Shifting the Balance of Care, LEAN in Lothian and the 18 week RTT initiatives to change how clinics are organised and how accommodation is used. For example, much of the proposed shift in activity can occur if HEAT target performance for DNAs and for new to Review ratios can be achieved. Nurse-led and AHP clinics that can be provided off the RHSC site are being developed which should reduce demand on the central clinic space.

On the other hand, acute speciality activity currently takes place off-site and a new holistic model for children’s services would integrate these services which include orthopaedics at RIE, Dermatology and ENT at Laurieston and Ophthalmology at PAEP.

Table 13. Base Outpatient Data

Activity	2020/11 activity
Existing RHSC	53,700
Activity at other sites	15,742
Overall total	69,442
25% reduction	17,360
Net capacity	52,082
Source: G Cumming	

Note: these figures do not yet include an analysis of impact of population projections and change in age range.

3.8.1.4. Comment

Outpatient planning is always a complex issue, but the high number of sub-specialties within paediatrics and the relatively small numbers of patients involved make the margin of error very large. Additional services tend to spring up very regularly as a result of new initiatives e.g. specialist epilepsy nurse appointed who requires consulting facilities in addition to medical consulting for the specialty.

Work is on-going within NHS-L to continue to re-design OP services and to under-write the Activity Assumptions.

3.8.1.5. Utilisation Assumptions

Reference: *Tribal Consulting (17/7/09) – RHSC – Schedule of Accommodation Review – Appendix 1 to: Modelling assumptions*

- 50 weeks/year
- 15 sessions/week
- 3 hours/session
- 85% utilisation of rooms
- New appointments = 45 minutes
- Follow-up appointments = 30 minutes

These assumptions have not been adopted by NHSL in planning the department.

The individual design briefs contain some commentary on opening hours and numbers of staff, patients and carers. As an example:

D1 General Out-patients

Extended working day, Monday to Friday, 8am (first appointment 8.30am) until 7.15pm (last appointment 6.30pm).

Child protection medical examinations may take place out of working hours.

Maximum number who would be within the OPD (all suites) at a given time on a normal, busy day: 210 (including staff, patients and carers), of which 40 staff

3.8.1.6. Comment:

Applying these utilisation to 52,082 attendances per annum gives an out-turn of 16.43 rooms

3.8.1.7. Functional Units

Current proposal

From the *Joint Build Accommodation Summary 27 July Version 2*

General consulting/examination rooms	17 no.
General treatment rooms	3 no.
Cardiology/Respiratory Specialist Rooms - patient	6 no.
Orthoptic Specialist Rooms - patient	4 no.
Orthoptic fields test	1 no.
Audiology Specialist Rooms – patient	4 no.
Dental Surgeries	4 no.
Plastic Dressings clinic	2 no.

3.8.1.8. Comment:

The number of general consulting rooms would appear to match the projected OP attendance figures, however detailed modelling of the individual specialist rooms was not possible because of insufficient data.

Note that an increasing numbers of treatments are carried out in out-patient departments. It may be that the proposed number of treatment rooms may not be adequate at 3.

It would be advisable to consider more inter-changeable rooms with standardised sizes to allow future changes in practice. For example in the new Stobhill Hospital, consulting rooms and treatment rooms are standardised at 16 sq.m. and can be used for either function with the minimum of alteration.

3.8.2. DCN Outpatients, Pre-admission clinic (PAC) and Programmed Investigation Unit (PIU)

3.8.2.1. Information provided:

Departmental Design Briefs: M1 DCN outpatients and M3 DCN PIU

3.8.2.2. Model of Care

There are references to new ways of working within *Design Brief M1 and M3*:

Neurovascular outpatient visits are 'one stop' whenever possible, at which all investigations and assessments required are combined in a streamlined single clinic visit.

The neurosurgical Pre-admissions Clinic shares accommodation with OPD

Outpatients will contribute to DCN and NHSL capability to achieve:

- *The 18-week referral-to-treatment standard by delivering the outpatients standard in the patient pathway*
- *Reduction in first outpatient attendance 'DNA' rates*
- *Reduction of review to new outpatient appointment ratios*

Meeting 1 comment from staff:

OP activity will continue on WGH site and there is an intention to continue to drive activity more locally where possible.

3.8.2.3. Activity Modelling

Outpatients

Design Brief M1: 21,000 attendances – base date not given

A reference to increasing activity is made, but not modelled.

PIU - Activity does not appear to be modelled

3.8.2.4. Utilisation Assumptions

No utilisation assumptions provided

The individual design briefs contain some commentary on opening hours and numbers of staff, patients and carers. For example:-

M3 *PIU has the facilities and workforce to accommodate up to six patients.*

3.8.2.5. Functional Units

Current proposal

From the *Joint Build Accommodation Summary 27 July Version 2*

General consulting/examination rooms	14 no.
Consulting/examination rooms – multi-disc	2 no.
General treatment rooms	2 no.
PIU – treatment area (6 places)	1 no.
PIU – treatment room	1 no.

3.8.2.6. Comment

Without information on activity projections and clarity regarding utilisation assumptions it is impossible to assess the appropriateness of the proposed functional units. 16 rooms would theoretically be able to deal with 51,000 attendances per annum, over against the current (?) number of 21,000.

3.8.3. RHSC Therapies

3.8.3.1. Information provided:

Departmental Design Briefs: D6 RHSC Therapies

3.8.3.2. Model of Care

There is no particular reference to new Models of Care within the design brief. There is an historic reference in *Final Report of Proposed Redesign of Patient Pathways 2007* as follows:

For children and young people with complex needs, (for example, neuro rehabilitation), an Assessment and Treatment Centre should be established. This Centre would be a focal point for therapy services, with skilled personnel and excellent facilities, providing young people with expert care from experienced staff.

It is unclear if this is the proposed Therapy department.

3.8.3.3. Activity Modelling

Design Brief D6 - No activity stated

Tribal Consulting (17/7/09) – RHSC – Schedule of Accommodation Review – Appendix 1

Mention of 17,700 attendances but no base date given

Projections of future activity – “model assumes 20% increase” – over what time period?

No other activity information is provided.

3.8.3.4. Utilisation Assumptions

Design Brief D6

The Therapies department will be staffed from 8am to 6pm, with peak staffing levels from 8.30 am to 5 pm.

The number of rooms is based on an assumption that each will be utilised 90% of the available time.

An appointment will normally be for 40-50 minutes, a session will constitute 3.5 -4 hours, and each day will comprise 2 sessions.

Maximum number who would be within the unit at a given time on a normal, busy day:

35 Patients 65 Visitors 92 Staff

Reference in *Tribal Consulting (17/7/09) – RHSC – Schedule of Accommodation Review – Appendix 1* to:
Modelling assumptions:

- 50 weeks/year
- 10 sessions/week
- 3.5 hours/session
- 85% utilisation of rooms
- All appointments = 45 minutes

Comment: Not clear which assumptions have been adopted by NHSL in planning the department?

3.8.3.5. Functional Units

Current proposal

From the *Joint Build Accommodation Summary 27 July Version 2:-*

Treatment Rooms – various 14 no.

5 of these rooms would appear to be sized for more than 1 patient – Rehabilitation Room @ 30 sq.m.

Tribal Consulting (17/7/09) – RHSC – Schedule of Accommodation Review – Appendix 1 based on utilisation assumptions described above modelled 11 patient rooms/treatment spaces

3.8.3.6. Comment:

Without more information on activity projections and clarity regarding utilisation assumptions it is impossible to assess the appropriateness of the proposed functional units.

3.8.4. DCN Therapies

3.8.4.1. Information provided:

Departmental Design Brief: M2 DCN Therapies

3.8.4.2. Model of Care

Models of Care are briefly described. There are no particular modernisation proposals described and the design briefs are still described separately for OT, physiotherapy and SALT rather than describing an integrated service.

3.8.4.3. Activity Modelling

Design Brief M2: 2009-2010 Activity data is provided, although there are no projections of future activity.

3.8.4.4. Utilisation Assumptions

Hours of work are described but not utilisation factors

3.8.4.5. Functional Units

Current proposal

From the *Joint Build Accommodation Summary 27 July Version 2*

OT ADL suite	1 no.
Physio multi-purpose room (occupancy not stated)	1 no.
Physio individual treatment room	1 no.
Dietetics consulting/examination room	2 no.
SALT treatment rooms	2 no.

It is surprising not to see any mention of multi-disciplinary treatment rooms, although clearly some accommodation does require to be dedicated for particular purposes.

3.8.4.6. Comment:

Without clarity regarding utilisation assumptions, and ideally projection of anticipated workload it is difficult to assess the appropriateness of the proposed functional units.

For example: OT activity is stated as follows:

OP Total contacts	6
IP Total contacts	4523

The relevance of these number is unresolved within the brief, for example:

How many of these patients required ADL assessment?

Depending on the proportion involved, is a full ADL assessment suite justified? Could the RIE suite be better utilised?

The design briefs are written as separate therapy disciplines. There is no evidence of a move to multidisciplinary working and sharing of rooms.

3.8.5. Summary of Service and Space Planning for Ambulatory Care

3.8.5.1. RHSC Outpatients

RHSC out-patient activity is subject to on-going review. The model of care is changing in order to increase efficiency in the service by reducing the proportion of DNAs and the number of return visits per new visit. Additional services are being re-located from non-children's hospitals to within the new RHSC which will increase demand. The resulting workload assumptions are still tentative.

Formal utilisation assumptions have not been adopted, but using standard assumptions it would appear that the proposed number of rooms is appropriate for the target assumptions. The proportion of rooms described as treatment rooms might usefully be reviewed, or an approach to more standardisation in room sizes that would allow future flexibility.

3.8.5.2. DCN Outpatients

DCN outpatient numbers have not been modelled. The proposed number of rooms appears greater than the current out-patient attendance figures would suggest.

3.8.5.3. RHSC Therapies

Activity figures and projections (particularly for individual specialist activities such as ADL assessments) are not provided. Tribal Consulting modelled "current" (2007/8?) activity which suggests there may be more treatment spaces planned than required but this is a tentative suggestion without the necessary information being available.

3.8.5.4. DCN Therapies

DCN therapies are difficult to assess because workload figures for individual specialist activities are not provided. There is not a description of a multi-disciplinary approach or use of shared rooms, and indeed the design brief continues to describe separate services. It is not clear if the therapy departments in RIE are at full capacity or if any future integration of adult therapy services is proposed.

3.8.6. Recommendations to strengthen proposals for outpatients and therapies

Recommendation 3:

The functional units for out-patients and therapies require to be under-written by a capacity-modelling exercise similar to the Bed Modelling Exercise to provide certainty that the departments are sized correctly.

Recommendation 9:

1 Provide more detail within the design brief on the operational policies for the out-patient areas.

2 Consider standardised consulting/exam and treatment rooms to provide maximum opportunity for the introduction of new methods of treatments and specialist clinical staff.

Recommendation 10:

Provide more information on how the Therapy departments are to operate, for example, how patients are to be received, logged into the system and how the therapist is alerted to their arrival. Also detail what the intended purpose of each clinical room is and what large items of equipment each will contain.

3.9. Opportunities for sharing accommodation

3.9.1. Within RHSC/DCN

Within the analysis of the key clinical areas it has been noted that combining the RHSC and DCN Operating Theatres and Imaging Departments has resulted in requiring 1 theatre less and 1 imaging room less plus savings in support accommodation. These savings are 222.2 and 271.3 sq.m. respectively

Neurophysiology has also been briefed as a combined RHSC/DCN department resulting in a saving of 50.9 sq.m.

3.9.2. Economies of integration with existing hospital

The following table shows where departments are intended to be built new and where the intention is to use or extend existing RIE departments.

Table 14/over

Table 14. Table of RHSC/DCN Services and Departments and Proposed Location

Category	Service/ Department	RHSC new	DCN new	RIE existing/ amended	Comment
Clinical	Emergency department	X		X (adult/DCN)	
	In-patient beds & day case	X	X		
	Critical care	X		X (DCN)	Key link
	Outpatients	X	X		
	PIU		X		
	Therapy	X	X		
Clinical Support	Radiology - general	X		X (DCN)	
	MRI – specialist radiology	X	X		
	Operating theatres	X	X		
	Neurophysiology	X	X		
	Cardiology investigations			X	
	Laboratory services			X	Pn. tube
	Mortuary			X	Key link
	Pharmacy			X	Pn. Tube+link
	Health records	X	X		
	Equipment library	X			
	Bed and toy store	X			
	ICT	X	X	X	Node rooms-new
	Medical physics			X	
	Medical photography			X	
Patient & visitor support	Main entrance	X	X		
	Bereavement suite	X		X (DCN)	
	Spiritual & pastoral care	X		X (DCN)	
	Family support	X		X (DCN)	O/N stay
	Family Hotel - RMcD	X			
	Family Hotel - CLIC	X			
Academic	Child Life & health	X			
	Clinical research facility	X		X (DCN)	QMRI
	Clinical education suite	X		X (DCN)	Chancellor's
staff	On-call	X			n/r DCN
	Clinical/management offices	X	X		
	Staff changing	X	X		
	Staff restrooms	X	X		
	Staff Dining			X	
	Occupational Health			X	
FM	Catering	X	X		
	Domestic services	X	X		
	Linen & laundry	X	X		
	Materials management	X	X		
	Estates	X	X		

3.9.3. Commentary on Table

3.9.3.1. Built new – specialist, requires to be dedicated

All the RHSC clinical accommodation will be built new because a service for children requires dedicated facilities specifically designed for them.

3.9.3.2. Built new - no capacity or other expansion potential in RIE

DCN clinical accommodation is built new in the main because there is no available spare capacity in RIE. It will make best use of specialist radiology and so on to integrate DCN IP and OPs in the same building.

Clinical support departments which require additional capacity and/or there are specialist requirements include Radiology, Theatres and Neurophysiology and so are built new.

3.9.3.3. Support Services – could be integrated but built new - no capacity or expansion potential in RIE

Those Support Services which are not specialist and could be wholly integrated but are being built new for reasons of lack of capacity or an inability to expand at RIE include: Health records, Offices, Staff changing and Staff Restrooms and Academic departments for children's services.

3.9.3.4. Support Services – able to be integrated in RIE

1. Adult Critical Care – Levels 2 and 3 will be accommodated in the expanded RIE department
2. Labs – in the process of redesigning across Lothian
3. Pharmacy - redesigning within RIE for additional capacity
4. Mortuary/PM will cope in current accommodation, already use existing from off-site for RHSC
5. Other adult specialist investigations e.g. DCN in-patients to cardiac investigation, DCn in-patients to simple radiology
6. Medical physics
7. Medical photography - redesigning within RIE
8. DCN – spiritual care, relatives overnight stay – all in RIE
9. DCN research and academic – using QMRI and Chancellor's building
10. Main staff dining and other non-patient catering – remains under consideration

The wide variety in nature of transfers between new RHSC/DCN and RIE again puts a focus on the nature of the link between the two buildings and its ability to provide for all these services.

3.10. Clinical Space Planning – General Comments

3.10.1. Use of standardisation of room sizes

The standardisation of rooms is gradually being introduced through the project and this should be developed as far as possible including into 1:50 exemplar rooms. This will result in efficiencies during the design phase, and also in equipping the rooms and in their ultimate use by staff. As an example of this last point, the standardisation of design has been proven to reduce the level of clinical incidents.

NHS Lothian have a set of standards which differs from guidance and is generally less than guidance. As an example waiting is generally briefed at 1.5 sq.m. per person waiting rather than 1.7 sq.m. per person and open-plan office areas at 4.1 sq.m. per person rather than 5 sq.m. per person. (Based on HBN 00-03 2010)

Although the NHS Lothian standards are generally less than guidance, they may well be quite functional. Again, a few 1:50 exemplars would under-write the assumptions being used and reduce the risk of later changes or a creeping increase in area driven by functionality.

Recommendation 11:

Identify key clinical rooms – likely to be 15-20 different types of room in total and provide an indicative 1:50 layout (straight from ADB or even in sketch form) in order to under-write the proposed square metre area for each room. Utilise these standard areas throughout the schedule of accommodation.

4. Support Services Planning

4.1. Soft FM

Soft FM services will be provided by NHS-Lothian who are therefore required to incorporate a means of providing these services on site. RIE services are provided in the main by Consort Healthcare.

4.1.1. Catering

The current schedule of accommodation represents a cook-freeze facility for patients' meals with traditional preparation of snacks and meals for staff.

However the stated operational policy is to provide a traditional kitchen for reasons of quality of output. NHS Lothian agreed that it would be worthwhile to undertake an option appraisal of the alternative methods of providing patient meals within an NHS-run service. Methods such as cook-freeze are in wide use within services provided directly by NHS staff. The capital and revenue costs of the various methodologies vary quite widely. No further comment is provided until completion of the option appraisal.

The optimum method to provide non-patient catering is still under discussion within the health board.

Recommendation 12:

Undertake an option appraisal to determine the optimum catering methodology for patient and non-patient catering to deliver best value for money.

Other support services such as linen services and staff changing do not have sufficient information provided to enable an assessment of the economy of the planned areas.

4.1.2. Domestic Services

The new building is sufficiently large to allow management of an efficient service from within the building with minimal central accommodation being required other than the storage of materials and a management office.

Linen services are covered under this heading within the design brief and an area of 90 sq.m. net is proposed for a "linen pool". The nature of the service is not specified in great detail but the laundry is taken off-site and can presumably be delivered daily with limited requirements for buffer storage. It is not possible to make an accurate assessment of the area without more information. The service is in the central belt of Scotland with good transport links so a large buffer store may not be required

4.1.3. Materials Management

Materials Management (Supplies and, Waste collection)- It is proposed to provide a full service from within the new building, including the provision of a new external delivery point and holding store. Suppliers will therefore deliver to two separate points on the RIE site. The current RIE delivery point is managed by NHS Lothian and excluding the delivery of linen, materials are delivered and collected by NHS staff.

NHS-L will therefore be providing two separate services on-site with de-facto duplication of back-up supplies such as medical gas cylinders, laundry stock, buffer stores etc.

4.2. Other support services

These were not reviewed in detail as there was a lack of supporting information in the documentation provided. For example - the number of health records to be stored is not identified; derivation of the requirements for family accommodation in the Hotel is not stated.

Recommendation 13:

To ensure that best value for money will be delivered, the Board may wish to review the derivation of the scheduled areas and to record more detail on the proposed operation of the various areas. This will assist the design teams in understanding how the detailed design should be approached.

5. Efficiency of Planning

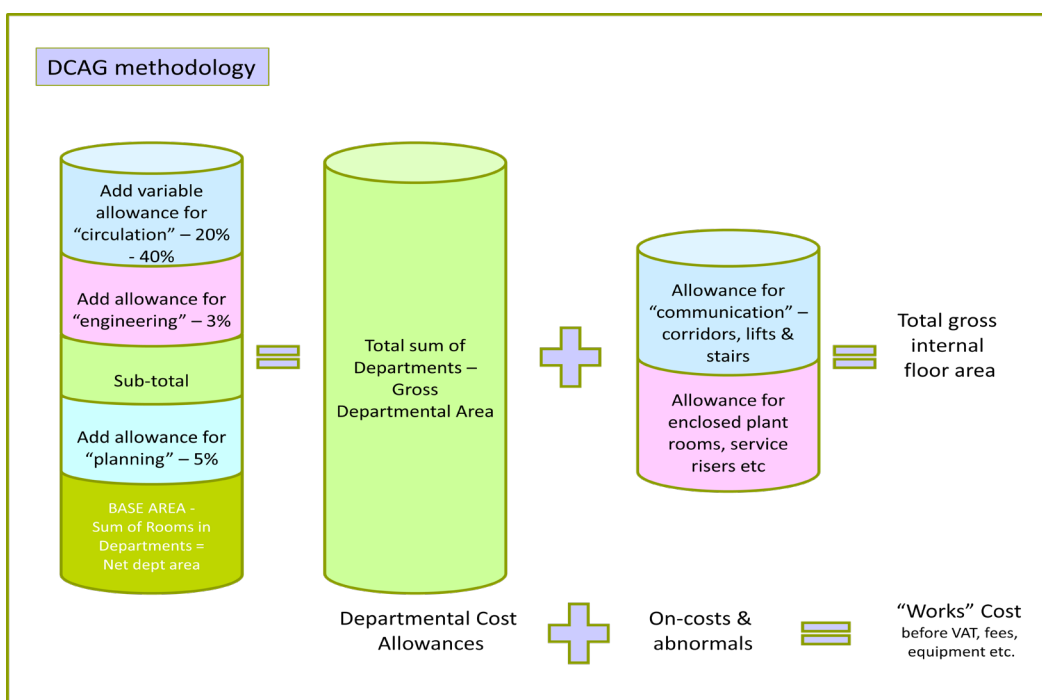
5.1. Gross Area Benchmarking – Healthcare Planning Perspective

5.1.1. Reference documents

How to Cost a Hospital (2005) – now superseded by:
Health Premises Cost Guides (2010)

The following diagram illustrates the previously approved DCAG methodology for estimating the total area of a proposed healthcare building. Both the RHSC project and the DCN project began life under the earlier system and **the current NHSL schedule of accommodation is compiled on this basis.**

Figure 4: DCAG methodology



5.1.2. Gross Areas of Departments – our understanding

Health Building Notes and Scottish Healthcare Planning Notes usually include an indicative Schedule of Accommodation for a typical department, listing the required rooms and the recommended area of each room for its function.

In recent years, the SoAs have demonstrated the addition of an allowance for **planning** and **engineering** at 5% and 3% respectively. These allowances cover flexibility in design, internal partitions and an engineering zone to allow for the distribution of services within the department, radiators and small vertical ducts.

An additional allowance for departmental **circulation** is also indicated – generally around 25%-30%, (but sometimes as much as 40%) to allow the design of corridors.

The sum of these inter-departmental areas represents the **Gross Departmental Areas**. (A reference diagram in SHPN04 (2010) para 5.13 describes this approach which was in general use until last year.)

5.1.3. Total Gross Internal Floor Area of the Hospital

In order to estimate the gross area of the hospital, the individual departments are summed and then an additional allowance is made for energy centre, communication – main corridors, lifts, stairs etc. and for engineering – main ducts and shafts. In recent years this allowance has tended also to include main internal plant areas, allowing as estimate of the Gross Internal Floor Area of the building prior to its design. (The GIFA is useful in estimating revenue and life-cycle costs at this stage.)

I am not aware of any guidance in the DCAG methodology for the scale of these elements. In Atkins we generally indicate a range of between 25% and 35% additional area for these elements at the planning stage. These allowances are based on the out-turn of a range of projects that we have been involved in. The lower figure is useful for small-scale projects with few technically complex departments. The upper range is appropriate for complex projects with a greater number of highly-serviced technical departments.

The actual area required for communication and plant is not known until the out-turn of the design and planning process.

5.1.4. Healthcare Premises Cost Guides (2010)

This new guidance changes the methodology as described above and gives explicit guidance on the areas to be included. However its application necessitates ordering of each schedule of accommodation and differentiating its elements into public, clinical and staff zones. NHS Lothian have not undertaken this exercise on the Schedule of Accommodation.

5.2. Information provided by NHS Lothian on Gross Area Benchmarking

- 1) SoA Joint Build Accommodation Summary 27 July Version 2.xls
Email SC – 5th August 2011
- 2) Commentary on Benchmarking – email and CD, David Stillie, 5th August 2011
Mott MacDonald, Area, Quality and Cost Benchmarking – especially Item 3 – Gross Area Benchmarking (reference RM)
Reference is made to both departmental circulations and to communication and plant and a comparison is made with the Glasgow Sick Children's Hospital project.
- 3) Glasgow Sick Children's Hospital Schedule of Accommodation (dated 27/5/2010)

5.3. Analysis – Gross Departmental Areas

The basis for reaching Gross Departmental Areas is not totally explicit within the documentation, however the Mott MacDonald commentary indicates that the standard elements of 5% planning and 3% engineering were applied.

The derivation of the percentages for departmental circulation is not described, although the departmental design briefs indicate which guidance document should be complied with e.g. SHPN 22 for Emergency Department.

An audit was undertaken of the circulation percentages indicated in the SoA against the percentages listed in the relevant guidance documents. The results of this audit are shown in Appendix 1

See Appendix A - RHSC/DCN Departmental Circulation v SHPN/HBN guidance

5.4. Commentary on RHSC/DCN departmental circulation v SHPN/HBN guidance

In only a small minority of cases does the out-turn area in the RHSC/DCN schedule exceed that of the guidance and never by more than 2.1%.

On the other hand most departments in the RHSC/DCN schedule are estimated at less than the guidance would suggest. In general departments are between 3% and 8% under the gross area indicated by guidance figures.

The departments where problems tend to occur are wards, outpatients, theatres and imaging. The following table summarises the findings for these areas

Table 15. Key departmental circulation allowances

Department	RHSC/DCN	SHPN/HBN	Glasgow	RHSC/DCN v SHPN/HBN
In-patient wards/ PARU	30%	35%	34%	- 5.5%
Outpatients	28%	35% (HBN23) or 33% (HBN 12)	31%	- 6.1% to -7.5%
Operating theatres	30%	25%	30% (was 25% but required uprating)	2.1%
Imaging	30%	27%	30% (was 27% but required uprating)	0.5%

5.4.1. In-patient wards

It was proposed earlier in this report that an indicative ward plan be drawn up as soon as possible to resolve issues of room sizing that are likely to exacerbate the problem of designing within the scheduled area.

5.4.2. Out-patients

The large number of small spaces may make this department difficult to design efficiently and the designed area of this may come to exceed the estimate.

5.4.3. Operating Theatres

NHSL has included an uprated allowance for operating theatres based on the requirement to separate flows for children and adult DCN patients.

5.4.4. Imaging

NHSL has included an uprated allowance for operating theatres based on the requirement to separate flows for children and adult DCN patients.

5.4.5. Departments overall

A systematic under-estimate of circulation areas is generally a problem in that designed areas are greater than estimated areas and have an impact on cost. In this project overall there is 1,013.6 s.m. (2.9%) less in the RHSC/DCN schedule than the area derived through the use of the departmental norms.

This may be sufficient to have an impact on the cost model if the design development cannot match the targeted areas while meeting the demands of functionality.

Recommendation 14:

The Board may wish to review this element with its technical advisors and healthcare planners to be confident the departments can be designed within the target areas.

5.5. Analysis – Gross Internal Floor Area

5.5.1. Comment on allowances made for Communication and Plant at planning stage:

Healthcare planners generally give an indication at IA/early feasibility to assist with cost estimates until design commences and measurement of these areas can commence. Atkins uses an indicative range of 25-35% as described above. Within the commentary provided by Mott MacDonald, the figures used by Tribal Consulting are quoted as 25-35% which is identical to the range used by Atkins.

5.5.2. Current NHSL approach

NHSL prepared a report entitled “Plant Communication Allowance Analysis – Technical Advisory Paper” on the 8 November 2011. This report was submitted to SFT on the 11 November 2011. The report notes that the areas are based on Schedule of Accommodation 6 (SoA 6) and a 1:200 design and not SoA 5 - 1:500 design on which Technical Cost Summary 4 dated 12 October 2011 is based, (See Section 6.0 of our report)

The report highlights that the current revised total communication area is 13,352m² which represents 38.8% of the SoA 6 departmental total (34,333 m²). The Gross Internal floor area of SoA 6 amounts to 47,685m² which is 503m² less than Technical Cost Summary 4’s Gross Internal floor area of 48,188m² (excluding nib area). It should be noted that external plant areas and particularly the separate Energy centre are not included within the above percentage of 38.8%. The internal area of the energy centre as noted in TCS 4 is 1,000m².

NHS Lothian highlight within their report that the original ‘Framework Scotland’ Phase (RHSC-Only) included 38% for communication allowance noting the following:-

“the current reference design in the context of previous iterations of the scheme (Framework Scotland phase), particularly where the reference design brief / Schedule of Accommodation has taken the previous iteration as a starting point. Identifying abnormal and peculiarities of the site / brief that applied during the prior phase, and continues to be relevant, is therefore important and these are referred to as follows:

Connections to RIE – a ground - and first-floor hospital street connection to the existing Royal Infirmary Edinburgh (RIE) was required;

Basement – a small basement containing plant and linking via a service tunnel was a previous requirement;

‘O-Zone’ – the original scheme was founded on the concept of a generous internal amenity space, which became known as the ‘O-Zone’. Although not strictly ‘communication’ space, the area associated was included and was sized at 450m²”

NHS Lothian highlight within their report that the current 'Reference Design' Phase (RHSC+DCN) includes 38.8% for communication and plant allowance including brief alterations are noted below:-

Helipad – this is a new requirement for the scheme and requires a dedicated vertical circulation core to serve it and allow the required connections to the emergency department;

Autonomous Energy Centre – the introduction of an autonomous energy centre (previously not a requirement for the proposed development site) has limited the available ground space, upon which previously it was easier to locate proximity car-parking, service yard and associated departments, and good quality external amenity space;

DCN – the introduction of the DCN is a key addition in terms of the development of the scheme from the previous RHSC-only iteration. The need to consider careful separation of adult and children patient groups inherent with the integration of the DCN is not a factor that applied previously and necessitates a proportion of additional communication allowance to allow such separation;

Full Production Kitchen – in the prior RHSC-only phase, the scheme was not autonomous in terms of its catering provision and was to be served from the main RIE facilities. The current scheme now includes a full production catering facility which therefore attracts a proportion of dedicated communication space within it as well as the functional accommodation.

For full details of these points please refer to NHS Lothian's full report dated 8 November 2011.

It should be noted that Atkins and Faithful+Gould have not received a copy of SoA 6 or of the 1:200 designs during the course of the preparation of our report.

5.5.3. Benchmarking

NHSL'S report includes a benchmarking exercise based on nine projects. They have stated that the average communication allowance for these projects is 32.6% although this includes the "rogue" North Wales Alltwn project which had an allowance of 57.4%.

Faithful+Gould have checked this total and our average total amounts to 34.5% including the outlier North Wales Alltwn project which included the design of a large, covered 'winter-garden' / atrium within this area. If this project is omitted the average percentage decreases to 31.7% over eight projects.

Apart from the Alltwn project the only benchmarked project with a comparable communication allowance percentage is the Glasgow Southern General Hospital with 38.3% communication space. The communication percentage is again higher than the average figure and may be explained by the inclusion of a large internal atrium of approximately 1,500m².

NHSL confirmed that benchmarking has also been discussed with the health planners, Capita Consulting, who were also instrumental in developing Schedules of Accommodation for the previous RHSC-only phase. Capita have confirmed that in their experience of this type of facility, they would expect a figure of approximately 35% to be applied as a communication percentage.

5.5.4. Net to Gross Areas - Summary

The allowance for communication and plant within the current NHSL schedule is 38.8%. This is higher than the standard pre-design range assumption of 24%-35%. 38.8% may be appropriate given the above noted alterations and the requirement to link to the existing building and to accommodate two quite separate patient flows within the building. This element will move from a theoretical calculation to a measurable figure during the development of the Reference Design and should become increasingly accurate.

Recommendation 15:

1. NHSL should continue to target reduction in the figure for main corridor communication, lifts and stairs and plant by value engineering of the developing design.

2. NHSL to check whether Glasgow Southern General has a separate energy centre or whether the plant rooms are integrated into the building which could explain the higher 38.3%.

6. Review of Capital Cost

6.1. Introduction

This report reviewing the capital cost of totalling £154,900,000 (comprising a cost ex VAT of £152,700,000 and NPD site works of £2,200,000) , prepared by Thomson Gray on behalf of NHS Lothian for the project has been based on the following information:-

NHS Lothian Brian Currie email received on the 13 October 2011 including answers in response to Faithful+Gould's questions dated the 6 October 2011 and the 19 October 2011 and the following attachments:

Technical Cost Summary 4 - 12/10/11 prepared by Thomson Gray

Appendix 1 - Elemental Cost Model – 12-10-11

Current Departmental Schedule of Accommodation Version 5 amounting to 48,380.6m² adjusted to delete 193m² of A&E nib stated as not forming part of the NPD contract = 48,188m² GIFA SoA arithmetic not checked by Faithful+Gould. Thomson Gray confirmed this area excludes the GIFA area of the Energy Centre although the cost of the Energy Centre is included within the above total

Appendix 2 – Back-up to Elemental Cost Model – 12-10-11 for 48,188m²

Appendix 3 – Life Cycle Cost Breakdown

Appendix 4 – Inflation Figures

Appendix 5 – Cash Flow Forecast Arithmetic not checked by Faithful+Gould

Appendix 6 – Risk Register V10 – 12-10-11 - Arithmetic not checked by Faithful+Gould

Appendix 7 - Equipment Schedule (costed) Arithmetic not checked by Faithful+Gould

Nightingale Associates and BMJ Architects Drawings received on the 24 October 2011:

NA/10727/L (25) B/01 Rev B Proposed Reference Design : Basement Plan

NA/10727/L (100)G/02 Rev B Proposed Reference Design : Ground Floor Plan & Site Layout

NA/10727/L (251) 1/01 Rev B Proposed Reference Design : First Floor Plan

NA/10727/L (251) 2/01 Rev B Proposed Reference Design : Second Floor Plan

NA/10727/L (251) 3/01 Rev B Proposed Reference Design : Third Floor Plan

NA/10727/L (251) 4/01 Rev B Proposed Reference Design : Fourth Floor Plan

6.2. Technical Cost Summary 4 (TCS4)

Technical Cost Summary 4 was issued by Thomson Gray on the 12 October 2011 including all supporting appendices. Appendix 1 Elemental Cost Model is shown below. This is based on the latest Gross Internal Floor Area of 48,188m².

TSC4/ over

Table 16. Technical Cost Summary 4 (TCS4)

EDINBURGH ROYAL HOSPITAL FOR SICK CHILDREN AND DEPARTMENT OF NEUROSCIENCES

TECHNICAL COST SUMMARY 4 – APPENDIX 1 ELEMENTAL COST MODEL

GROSS INTERNAL FLOOR AREA		48,188m	2	518,696
			m2	ft2
ELEMENT	COST	COST/M ²	COST/FT ²	
	£	£	£	
0.5	DEMOLITIONS AND DOWNTAKINGS	0	0	0
1	SUBSTRUCTURE	14,663,640	304.3	28.27
2	SUPERSTRUCTURE	28,263,417	586.52	54.49
2.1	Frame & Helipad	11,960,386	248.2	23.06
2.2	Upper Floors (included in 2.1)	0	0	0
2.3	Roof	3,614,533	75.01	6.97
2.4	Stairs	763,256	15.84	1.47
2.5	External Walls	2,571,228	53.36	4.96
2.6	Windows and External Doors	3,125,531	64.86	6.03
2.7	Internal Walls and Partitions	3,638,982	75.52	7.02
2.8	Internal Doors	2,589,501	53.74	4.99
3	FINISHES	7,891,505	163.76	15.21
3.1	Wall Finishes	3,518,392	73.01	6.78
3.2	Floor Finishes	2,787,654	57.85	5.37
3.3	Ceiling Finishes	1,585,459	32.9	3.06
4	FITTINGS AND FURNISHINGS	3,380,748	70.16	6.52
5	SERVICES INSTALLATIONS	41,142,360	853.79	79.32
5.1	Sanitary Appliances	1,462,123	30.34	2.82
5.2	Services Equipment	2,529,870	52.5	4.88
5.3	Disposal Installations	1,155,313	23.98	2.23
5.4	Water Installations	3,794,805	78.75	7.32
5.5	Heat Source	354,182	7.35	0.68
5.6	Space Heating and Air Treatment	2,985,247	61.95	5.76
5.7	Ventilating Systems	5,302,630	110.04	10.22
5.8	Electrical Installations	14,408,311	299	27.78
5.9	Gas Installations	0	0	0
5.1	Lift and Conveyor Installations	1,134,000	23.53	2.19
5.1	1 Protective Installations	910,753	18.9	1.76
5.1	2 Communication Installations	758,961	15.75	1.46
5.1	3 Special Installations	5,869,298	121.8	11.32
5.1	4 Builders Work in Connection with Services	476,868	9.9	0.92
5.1	5 Builder's Profit and Attendance on Services	0	0	0
			0	0

	Building Sub-Total	95,341,670	1,978.54	183.81	
6	EXTERNAL WORKS	9,441,915	195.94	18.2	
6.1	Site Works	2,642,042	54.83	5.09	
6.2	Drainage & surveys	604,873	12.55	1.17	
6.3	External Services	5,250,000	108.95	10.12	
6.4	Minor Building works	945,000	19.61	1.82	
		104,783,585	2,174.47	202.01	
7	PRELIMINARIES	12,574,030	260.94	24.24	12.00 %
		117,357,615	2,435.41	226.26	
8	DESIGN FEES	10,824,912	224.64	20.87	9.20%
		128,182,527	2,660.05	247.12	
9	RISK ASSESSMENT + CONTRACTORS FEES O/P	9,861,544	204.65	19.01	7.70%
		138,044,071	2,864.70	266.14	
10	OUTTURN INFLATION	14,599,287	302.97	28.15	10.60 %
		152,643,358	3,167.66	294.28	
11	EQUIPMENT COSTS	0	0	0	0.00%
		£152,643,358.0			
	TOTAL COST	0	3,167.66	294.28	
		1Q 2015			

INFLATION TO 1Q 2015 MID POINT

1Q 2015

152,700,000	3,168.84	294.39
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6.3. Review Meeting

A meeting was held on the 25 October 2011 in SFT's Edinburgh office with the following in attendance:-

- Donna Stevenson - SFT
- Colin Proctor – SFT
- Gordon Wilkinson – Faithful+Gould
- Brian Currie – NHS Lothian
- Carol Potter – NHS Lothian
- Stuart Gray – Thomson Gray
- James Gibson – Thomson Gray
- Michael Pryor – Ernst & Young

6.4. Clarifications received at Review Meeting

6.4.1. Elemental Cost Model

Thomson Gray confirmed at the meeting on the 25 October 2011 that Appendix 1 Elemental Cost Model was derived from Supporting Documentation Appendix 2 – Back-up to Elemental Cost Model and took full cognisance of the building shape, design, site constraints, and measurement of external works noted within the drawings highlighted in 6.1 above.

6.4.2. A&E nib

It was confirmed at the meeting on the 25 October 2011 that the 193m² of A&E nib stated as not forming part of the NPD contract will be funded from a separate capially funded traditional enabling contract.

6.4.3. Equipment

Referring to the Technical Cost Summary 4 Section 1.0 Introduction on page 2/8 – FF&E and NHSL response to SFT question 2.3 dated 24 October 2011 it was confirmed by NHS Lothian that the following TCS 4 FF&E allowance of

Group 1 - £2,950,000

Group 2 - £150,000

Is superseded by the current Appendix 2 combined figure of £3,036,600 excluding artwork.

Group 2 supply and Groups 3 and 4 supply and fit is excluded from cost.

6.5. Gross Internal Floor Area

Referring to the Technical Cost Summary 4 Section 2.0 Gross Internal Floor Area (GIFA) on page 2/8 5 it is noted that the area has increased from the Technical Cost Summary 2 (TCS 2) dated August 2011 of 46,601m² to 48,188m².

This 48,188m² area has increased 530m² from TCS 3 and 1,587m² from TCS 2. It is noted that this area has increased due to the following:-

single bedrooms in accordance with current requirements – 15m² increased to 17m²
 client additions in relation to non patient catering
 associated increased kitchen area
 gamma camera provision
 general design development.

It is noted that in respect of the kitchen and catering provision an option appraisal is being carried out by NHS Lothian.

6.6. Schedule of Accommodation

It should be noted as per our report Section 5.5.2 that SoA 6 has now been prepared and superseded SoA 5 on which this Cost Review is based.

Schedule of Accommodation 6 (SoA 6) is based on 1:200 design drawings and not SoA 5 - 1:500 design drawings on which Technical Cost Summary 4 dated 12 October 2011 is based.

The Gross Internal floor area of SoA 6 amounts to 47,685m² which is 503m² less than Technical Cost Summary 4's Gross Internal floor area of 48,188m² (excluding nib area). A breakdown of this reduction in area, 1:200 drawings and SoA 6 should be forwarded to SFT.

It should be noted that Atkins and Faithful+Gould have not received a copy of SoA 6 or 1:200 designs for the preparation of our report

6.7. Capital Costs

Referring to the Technical Cost Summary 4 Section 3.0 Capital Cost on page 3/8, Thomson Gray confirmed at the meeting dated 25 October 2011 that the cost is based on mid construction point at (1Q 2015).

6.7.1. NPD Site Works

Thomson Gray confirmed that the £2.2m NPD site works in TCS item 8.4 is additional to the site works in the Appendix 1 Elemental Cost Model within the £152,700,000 figure excluding VAT.

NHS Lothian / Thomson Gray confirmed that these works, which include pedestrian areas, and landscaping works were included within Consort's enabling works but were now brought into the NPD works envelope. The enabling works breakdown works was submitted to SFT by NHSL on the 11 November 2011.

6.7.2. Preliminaries

Referring to the Technical Cost Summary 4 Section 3.0 Capital Cost on page 3/8 and NHSL response to SFT question 5 dated 13 October 2011 regarding the preliminaries, it is noted from NHSL response to question 5 that during the RHSC Standalone stage, BAM and Thomson Gray agreed a strategy for Market Testing preliminaries which involved extensive contact with the Sub Contract market and analysis of Main Contractor management time. However once BAM were no longer involved on the project Thomson Gray independently concluded the preliminaries cost exercise without contractor involvement.

Thomson Gray confirmed at the meeting on the 25 October 2011 that many of the TCS 4 preliminaries costs were based on the previous scheme including scaffolding, temporary accommodation etc. and were confident that that they have utilised the correct market tested information.

It is also noted that the Construction start date has changed from November 2013 to January 2014 although the construction completion date remains at July 2016.

6.7.3. Exclusions

Referring to the Technical Cost Summary 4 Section 3.0 Capital Cost on page 3/8 and NHSL responses to SFT question 2.7 dated 24 October 2011 and question 6 dated 13 October 2011, it is noted that the £152,700,000 cost excludes:-

- Group 2A supply and 3 and 4 supply and fit of equipment
- Optimism Bias
- Clinical enabling works
- External enabling works
- Potential town planning issues

6.7.4. Finance Matrix

NHS Lothian forwarded the project Finance Matrix FMAT008 Summary and enabling works REVISED 091111 – Appendices 1 and 2 on the 11 November 2011. This is the confidential draft Finance Summary Matrix is included for SFT's review of the project and includes-

Appendix 1

Non NPD current projected spend including equipment (medical and non medical), clinical enabling works, external enabling works, Town Planning work, Reference design costs (B1)
 Reference Design Cash flow projection – (B2) – by Ernst & Young
 Unitary payment versus Indexing costs (B3) – by Ernst & Young
 25 year NPD costs (B4) – by Ernst & Young
 Risk Register Version 10 – (B5)
 Unitary Charge Summary (B6) – by Ernst & Young
 Base Case 92017/18) and Sensitivities (B7) – by Ernst & Young
 Recurring / non recurring revenue (5 year plans) – (B8)
 Indicative NHS Board Shares based on 2010/11 payments – (B9)

Appendix 2

Enabling works summary

Appendix 1 and 2 are for SFT's review and Faithful+Gould has not made any comment within this high level review on costs.

6.8. Cost Estimate Base

Referring to the Technical Cost Summary 4 Section 4.0 Cost Estimate Base on page 3/8

It is noted that the NHS Lothian / Thomson Gray estimate has been prepared using the HPCG's guidance and that the cost assessment has been made for HPCG's system on the basis of the reference design and knowledge gained from previous market testing on the previously proposed standalone RHSC Development.

Thomson Gray, at the meeting on the 25 October 2011, did not fully explain how they used both HPCG's and "Market tested costs" to prepare TCS 4. It was unclear on what split was used in preparation of the cost.

The original RHSC scheme's rates and costs should have been the basis of TCS 4 with new market tested costs obtained from element unit quantities without the requirement to use HPCG's.

For the next stage measured elemental costs will need to be used which will be fully market tested. This will provide robust check on each element as some elements like external walls appear to be low when reviewing against the drawings stated in 6.1 above.

Faithful+Gould requested that NHSL provide a detailed breakdown of the original market tested RHSC Target Cost elemental summary and 1:500 site and floor plans for comparison with the current RHSC/DNS combined scheme drawings in 6.1 to check whether the original cost per m2 was in line with the current estimate and whether plan shape of the original scheme was similar.

NHSL provide the following drawings on the 11 November 2011 and noted that the equivalent market tested cost for the original Standalone scheme (notionally adjusted to include for an Energy Centre and Heli-Pad, and keeping the percentages for fees, inflation, risk etc, as per the joint build) is just over £3,000/m²:-

AR-XX-RF-PL-200-296 Roof Plan Rev A
 AR-XX-ML-EL-251-201 Elevations Sheet 2
 AR-XX-ML-EL-251-200 Elevations Sheet 1
 AR-XX-BL-PL-200-510H - A1 Basement

AR-XX-04-PL-200-295 Fourth Floor – 200 - Plan Rev A
 AR-XX-03-PL-200-294 Third Floor – 200 - Plan Rev A
 AR-XX-02-PL-200-293 Second Floor – 200 - Plan Rev A
 AR-XX-01-PL-200-292 First Floor – 200 - Plan Rev A
 AR-XX-00-PL-200-291 Ground Floor – 200 - Plan Rev A

It should be noted that only the overall cost per m2 was submitted and that no detailed cost breakdown was received.

A high level review of the original scheme highlights that it would appear to have a simpler plan shape than the current scheme.

6.9. Back-up to the Elemental Cost Model

Reference is made to Appendix 2 – Back-up to the Elemental Cost Model:-

Appendix 2 comprises the Feasibility Cost Estimate based on the Schedule of Accommodation Version 5 amounting to 48,380.6m2 adjusted to delete 193m2 of A&E nib stated as not forming part of the NPD contract = 48,188m2

Reconciliation of allocation of costs in Appendix 2 cost model –“Allocation of Elemental Cost Model”

The Appendix 2 elemental reconciliation of costs measured against Appendix 1 Elemental Cost Model was provided in the Allocation of Elemental Cost Model submitted by NHS Lothian / Thomson Gray on the 11 November 2011. It is noted that Appendix 2 elements match the sub totals for Appendix 1 although some elements should be coded under different elements .

For the purposes of this high level review Faithful+Gould has not checked any of the quantities It is noted that on many elements the original “Market Tested” RHSC project has been used as a basis and adjusted in line with the combined project GIFA

Some elements have been adjusted in line with the new combined footprint

Some elements have had approximate measures

Some elements have been adjusted in line with the façade area

It is noted in page 8/16 Bathroom Pods include en-suite complete Sanitary pods. Reviewing Appendix 7 FF&E there are Group 1 costs allowed for WHB's/ WC's and showers. NHS Lothian / Thomson Gray confirmed at the meeting dated 25 October 2011 that there was an element of double counting. NHS Lothian formally confirmed on the 11 November 2011 Item 8 that the amount of potential double counting equates to circa £200,000 (£150,000 of equipment plus percentages for prelims, fees and inflation). The overall cost has not been adjusted to reflect this currently.

Faithful+Gould's high level reconciliation, at this stage, has not allowed for a number of small arithmetical anomalies, in total amounting to under £2,000, within Appendix 2 as it is assumed that these are formulae related to separate related spreadsheets and the total is minor in relation to the overall cost

6.10. Fees

Referring to the Technical Cost Summary 4 Section 5.0 Fees on page 3/8, it is noted that TCS 4 has an allowance for design fees of 10% associated with NPD Design development post Financial Close and that design costs prior to FC are assumed to be included in SPV set up costs.

NHS submitted their fee response below in conjunction with their fee diagram on the 11 November 2011:-

Breakdown and benchmarking of post financial close design fees :

“at present, there is an amount that equates to 15% of the capex in the shadow bid model to cover all fees, whatever they may be.

this would, therefore, cover all design fees, advisor fees (financial, technical, legal), set up costs for the SPV, diligence & model audit, success fee for the SPV team, all of which would be included in the borrowing requirements of the SPV and thus included in the unitary charge.

this is split 10% fees post-financial close, as per TG's TC4, and 5% as per the SFT guidance advising that NHSL should include 3-5% in the shadow bid model for bid costs.

NHSL have chosen to set this value at the top end of this range because of the complexity of the project, the constraints that the NPD SPV will have to work within on the site and the Consort interface, which NHS Lothian state will generate a considerable amount of extra work during the procurement. It is not entirely clear what the 3-5% is intended to include, but NHSL have assumed that it includes all of the cost headings above - there are no other sums in NHSL model to cover fees of any sort outside of the 10% and 5% values.

the amount attributed to development of the reference design equates to around 2% of the capex. This is incurred by NHS Lothian and addressed in the wider affordability model - it is not included in the shadow bid model.

further, NHS Lothian's own procurement costs are excluded from the shadow bid model but dealt with in the wider affordability model

if we add together the 2% incurred on reference design, the 10% post-financial close and assume that 2% of the 5% within the shadow bid model relates to design, then a figure of 15% is reached".

Faithful+Gould's comment on fees at this stage of the project is that based on our experience of similar hospital projects we would expect design fees to be in the region of 9% to 10% for the full design works pre and post contract.

The 15% figure stated above from NHSL would be higher than we have seen in projects of a similar nature.

6.11. Planning Contingency

Referring to the Technical Cost Summary 4 Section 6.0 Planning Contingency on page 4/8

Reconciliation of quantification of risk allowance for risks transferred to NPD (totalling £9,861,544)

It is noted that the V10 Risk Register is the current register and the NPD Project level total of £9,861,544 is included in TCS 4. It is also noted Client changes are excluded from this figure.

For a scheme moving towards OBC, which should be between the end of outline design and in detail design, we believe that the risk / contingency level based on our experience is within the acceptable range of our benchmarks ie between 5% and 10%. This project is currently at 7% of the £152,700,000 excluding the risk amount.

However as we have only had access to the drawings listed above and have had no review of the 1:500 drawings this risk / contingency level may be low if the scheme is not at the above stage, unless it is very well understood.

We note that Optimism Bias is not included within the above figure.

Overall the Risk Register would appear to cover the right aspects in terms of content.

6.12. Inflation

Referring to the Technical Cost Summary 4 Section 7.0 Inflation on page 4/8

It is noted that the BCIS Five year Forecast 2011, September 2011 has been used to calculate inflation costs to midpoint of construction assumed as 1Q 2015. These BCIS figures would appear to be above the trend of the current tenders received in the local market.

It is also noted that the Construction start date has changed from November 2013 to January 2014 although the construction completion date remains at July 2016.

6.13. BREEAM

Reference is made to the Technical Cost Summary 4 Section 8.0 BREEAM on page 4/8 which states: Assumed target to achieve “excellent” rating under the BREEAM 2008 guidance or a “very good” rating under the BREEAM 2011 guidance.

6.14. Net to Gross Ratio

The current Net to Gross Area Ratio: explanation (with relative areas) of elements which NHS Lothian consider greater than "standard" position is included in Section 5.5.

6.15. FM and Life Cycle Costs

Referring to the 9.0 and 10.0 FM and Life Cycle Costs, the following are the Faithful+Gould comments with the NHS Lothian responses noted in bold.

6.15.1. FM allowances:

Based on a range of benchmark information, the FM allowance of £29/m²/yr sits within the expected range of benchmarks, albeit slightly below the £34/m²/yr midway point.

1. FM cost advice provided to Thomson Gray by Davis Langdon.
2. No indication on provided schedule as to what “General” service comprises although 10% of FM budget. - **The term General Services is based on the DOH SLS terminology and is deemed to cover costs associated with general management costs.**
3. Arrangements for space cleaning and grounds maintenance? - **The NPD contractor will be responsible for external façade cleaning, and lifecycle of external hard landscaping. “Soft” FM elements of the Hard Landscaping e.g. Litter picking, sweeping, general cleaning etc are retained by NHSL as this is deemed to demonstrate best value.**
4. What level of demarcation exists between authority and FM provider for the responsibilities for maintaining healthcare equipment – budget appears to wholly exclude this based upon our benchmark data. - **All specialist healthcare equipment will be maintained by NHSL.**
5. Can we confirm the data excludes cost of utilities provision and simply allows for utilities management role? - **Confirmed**
6. No indication as to basis of FM provider appointment. This needs to identify any risk transfer and associated commercial risk, which if applies what is the sensitivity of these commercial and technical performance parameters for impact upon adequacy of identified budget. Also needs to identify basis of maintaining cost adequacy over the 30 year term (benchmarking, RPI / etc) - **NHSL will contract with the NPD contractor on the basis of the Project Agreement (PA). However our costs are on the basis that the FM provider shall have a separate Facilities Management Agreement (FMA), which is a direct step down of the PA with appropriate headroom (based on expected market positions) between the PA and FMA in terms of thresholds for Warning Notices, Termination etc.**

6.15.2. Life Cycle Costs

Based on a range of benchmark information the Life Cycle Cost per square metre per annum of £27/m², at 3Q 2011 prices, sits within the acceptable range of benchmarks.

6.16. General Project Benchmarking

Referring to the 11.0 General Project Benchmarking, TSC 4 included three of the following benchmarked projects summary for comparison:-

NHS Fife - New Acute Hospital: £170m - GIFA 51,444m² - £3,506.35/m²

NHS Forth Valley - New Acute Hospital: £293m - GIFA 95,115m² - £2,880.70/m²

New South Glasgow Hospital: £487m – 171,000m² - £2,850 /m²

NHS Lothian / Thomson Gray's comparable figure for the proposed RHSC+DCN: £3,169 / m² (excluding NPD site works).

Faithful+Gould has not received detailed back up for these to check construction costs build ups, Gross Internal Floor areas, fee percentages, base dates etc and can only make the following comment on the inflation calculations.

Based on the dates presented and using the BCIS September 2011 five year forecast the inflationary increase is 4.98% for Forth Valley and 17.13% for NHS Fife.

6.17. Executive Cost Summary and Conclusions

The overall current total Capital Cost per square metre of £3,214 per m² (including NPD site works) included in Technical Summary 4 for the purposes of the Outline Business Case is considered to be within the expected range for a project of this size and scope, based on the SoA Version 5. As stated, however, within our report there are elements which should be reviewed and challenged progressing to the next stage of the project including:-

1. 10% Post Financial Close NPD design development fees
2. Current design shape measured against the cost per square metre
3. Specification measured against the cost per square metre
4. Planning contingency Risk Register
5. Inflation allowances
6. Although the global figure cost per square metre is within the expected range individual elemental sections require further review where they appear to low eg the external walls element or high including FFE bathroom pods and the substructure element even allowing for the basement car park
7. Further review of the net to gross floor ratio

Based on a range of benchmark information the Life Cycle Cost per square metre per annum of £27/m², at 3Q 2011 prices, sits within the acceptable range of benchmarks.

Based on a range of benchmark information, the FM allowance of £29/m²/yr sits within the expected range of benchmarks, albeit slightly below the £34/m²/yr midway point.

Recommendation 20:

NHSL to review the following:-

1. *Post Financial Close NPD Co design development fees included at 10% by NHSL which are considered higher than other projects benchmarked.*
2. *Review the Risk Register as the design develops and reduce accordingly as risks are mitigated and costs become more certain.*
3. *Review design shape, specification and elemental cost plan against overall cost per square metre as the design develops during the next stage*
4. *Gross to Net floor area – target communication and plant area reduction and measure against South Glasgow Hospital with regard to the energy centre.*

7. Reference Design

The aim of this section of the review is to assess value for money in the creation of the environment for patients and staff.

7.1. Design Quality Statement

The project was instigated before the incorporation into the procurement process of the guidance from Architecture and Design Scotland (A&DS) on ensuring design quality in healthcare buildings in Scotland. However the objectives of this process still apply to the project and it will be monitored by A&DS. A&DS recommend the preparation of a Design Statement.

A&DS describes the function of the Design Statement as follows:

The Design Statement is a means of setting out the Board's objectives for an individual project in a series of agreed statements of intent and then defining benchmarks for how the physical result of the project will help deliver those objectives. The third part of the Design Statement is a plan of action for how the objectives and benchmarks (as can be found in our database Pulse) established for the project will inform key decisions throughout the project. At later stages the emerging design is then assessed against the requirements and standards in the Design Statement and related healthcare specific guidance primarily as part of the Board's own self assessment, but also by the NDAP in order to provide advice to decision makers within the board, and the CIG, regarding the extent to which the project is on track to deliver on the standards established.

<http://www.ads.org.uk/healthierplaces/guidance/introduction-to-design-statements-2>

Comment

At Meeting 3, it was agreed that it would be helpful to clarify the Board's aspirations of the quality of design to be delivered, particularly in respect of those elements of evidence-based design that affect outcomes for patients and the environment for patients and staff.

At the Workshop, NHS-L indicated their wish to involve patients, carers and staff in the definition of the objectives and standards of the design, and although a Design Statement in the manner of A&DS is not mandatory to this project, it would be a useful means of creating a consensus on the design outcomes for the project.

7.2. AEDET

7.2.1. Use of AEDET

The Achieving Excellence Design Evaluation Toolkit (AEDET Evolution) is published by the Department of Health. It has strong external validation and is used throughout the NHS to assist health service bodies in design development and in particular in benchmarking the developing design. It is an evaluation and benchmarking tool rather than a briefing and planning tool such as the Design Statement process from A&DS.

From the AEDET website:-

The AEDET Evolution toolkit evaluates a design by posing a series of clear, non-technical statements, encompassing the key areas of impact, build quality and functionality. It is a benchmarking tool (and) The NHS has worked closely with the University of Sheffield, the Commission for Architecture in the Built Environment (CABE), the Construction Industry Council (CIC) to develop evaluation criteria which ensure that design takes place within a common industry-wide framework.

http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_082089

7.2.2. RHSC/DCN AEDET

NHS Lothian undertook an AEDET on 12th August 2011. Attendees at the workshop were 16 NHS staff (mixed clinical and management) and 2 patient representatives. There was no external facilitation.

The results of the first AEDET are shown in the following table. **Results of First AEDET on RHSC/DCN, 12th August 2011**

Results summary:

A:	? Character and innovation						4.4	5 of 5 scored
B:	? Form and materials						3.5	4 of 5 scored
C:	? Staff and patient environment						4.0	3 of 8 scored
D:	? Urban and social integration						5.7	3 of 4 scored
E:	? Performance							0 of 4 scored
F:	? Engineering							0 of 5 scored
G:	? Construction							0 of 7 scored
H:	? Use						3.5	2 of 7 scored
I:	? Access						4.7	3 of 7 scored
J:	? Space							0 of 6 scored
		1	2	3	4	5	6	

NOTE: A filled traffic light dot [?] in the table above indicates a valid average score, a hollow dot [?] indicates that one or more statements have been marked as 'unable to score'.

7.2.3. Scored and Un-scored Elements

A number of elements are unable to be scored at this stage because the design is insufficiently developed. In particular performance, engineering and construction cannot be scored at this stage.

However, some of the elements which have not been scored are surprising, for example:-

- Space – circulation distances, segregation of space could be commented on
- Access – pedestrian routes are not commented on although these are well-developed
- Staff and Patient environment – patient privacy and dignity, staff facilities all have some elements already present in the design but are not scored.
- Urban and social integration – sensitivity to neighbours could be commented upon but is not scored.

It may be that the reluctance to score elements results from the need to be more explicit in the design brief about objectives and expectations.

7.2.4. AEDET findings

There are a number of important comments from the AEDET group which echo a number of points raised at Meeting 3 and at the workshop. Note there are many positive scores.

A.04 The building appropriately expresses the values of the NHS

“Overall felt did express values of NHS, with the exception of CAMHS as felt should not be placed in an acute hospital as this was not social inclusion and it should be part of the community”

A.05 The building is likely to influence future designs

“DCN Acute area - not all single rooms, needs to be some bed bays for clinical safety reasons (medical staff & DCN patient reps)”

B.03 Entrances are obvious and logically positioned in relation to likely points of arrival on site

“The access to RHSC and DCN entrances need to be clearly defined. There is a concern that the RHSC entrance will be used by DCN. Patient flow for both entrances need to be clearly defined”

C.03 Patients and staff have good access to outdoors

“Important to have quiet space for parents away from children (use of Drop in Centre). Outdoor areas must be controlled to ensure no smoking. Need to ensure where there are courtyards that there is access to them.”

C.05 The building is clearly understandable

“Signposting to car parks needs to be clear. Signage to basement car park needs to be clear and access into the hospital for both patient groups.”

H.05 The building is sufficiently adaptable to respond to change and to enable expansion

“Concerns re clinical expansion. RIE - there are underutilised areas which could possibly be used however concerns about appropriateness for this. Potential for MRI expansion. Highlighted potential for upward expansion.”

H.07 The layout facilitates both security and supervision

“Car parking - patient safety - basement car park needs controlled access. Lighting externally around building and to car parks required.”

I.01 There is good access from available public transport including any on-site roads

“Concerns re bus routes. Possible bottle neck at Car Park A. Cul de sac at RIE a concern”

I.02 There is adequate parking for visitors and staff cars with appropriate provision for disabled people

“Experience from WGH not good in terms of parking, blocking of basement parking needs to be managed. Will there be Mother/Child parking”

Recommendation 19:

Provide within the brief an indication of the Board's aspirations towards the required quality of the design. This may be by a Design Statement similar to that recommended by Architecture and Design Scotland including an indication of “What success looks like” and detailing of the non-negotiables for patients, staff and relatives. AEDET can be used as a validated measure of achieving the stated objectives.

7.3. Development Control Plan

7.3.1. Choice of Site

The choice of site was assessed by option appraisal but the key drivers were the clinical requirement to co-locate the adult and child emergency departments, and to relate DCN acute care to the emergency and receiving facilities in RIE, and to the existing adult critical care unit. There is an AEDET comment above on the appropriateness of CAHMS being located on the acute site. Clinical models for CAHMS vary as to the appropriate location for the service. Glasgow is intending to provide it on the acute of the new Glasgow RHSC.

7.3.2. Scale of Development

The aim would be for an appropriate balance of built form and green space. The design fills almost the entire site with either the built form or with roads and accesses. There is relatively little opportunity for development of green-space or expansion areas. We were informed that the building already has as many stories as will be acceptable to the urban planners.

7.3.3. Physical expansion of the building

There is little opportunity for external expansion in the future. There is a limited possibility on the edge of radiology (identified as potential future expansion of MRI) and outside DCN OPD; CAHMS could be relocated if the clinical model allowed for this thereby freeing up a corner of the building on the ground floor.

7.3.4. Access, entrances and drop-off

The AEDET comments reflect our concerns about the lack of clarity of entrances and the proposals to avoid mixing children and adult patients. This is being addressed in the current revision of the plan.

The AEDET also reflects our concerns re proximity/convenience of bus stops and taxi rank to the entrances.

AEDET comments also reflect our concerns with respect to drop-off & disabled parking areas which are required at both RHSC and DCN Main Entrances. We were advised that this would be provided in the basement car park but the drawing does not demonstrate this approach in terms of drop-off.

The main entrance to the children's hospital is currently shown alongside the ramp to the basement. This will require careful treatment to avoid creating a hazard.

The emergency entrances demonstrate a good segregation of ambulance arrivals from paediatric ambulant and again from adult ambulant. There is a limited amount of parking at both ambulant entrances. Note that the onward parking is relatively remote. This emergency arrangement has been shown without resolution of the 1:200 planning of the department. It is notoriously difficult to make these arrangements work and so the site arrangement remains a risk area.

7.3.5. Service access

A separate ramped access for service traffic to a basement turning circle is shown. Considerable design development is required to meet all the requirements of turning arcs, turning circles and control of noise and exhaust fumes in a confined area close to in-patient wards.

7.3.6. Summary of DCP comments

Unresolved design issues represent risk items (and thus potential cost) at this stage. The design requires to be developed sufficiently to engineer out as many risks as possible. There is also a risk that resolution of the civil engineering requirements may impact on clinical departments and clinical functionality. These risks should be resolved or at least clarified before acceptance of the reference design.

Recommendation 17:

To provide as much detail as possible on the site diagram including the definition of the following elements:- pedestrian access to both services; public transport routes made clear, detailed ramps and turning circles for the basement; vehicle traffic routes to be well-segregated from pedestrian walkways and entrances.

7.4. Link between RHSC/DCN and RIE

The importance of effective links between the new RHSC/DCN building and the existing RIE in order to fulfil clinical operational assumptions has been emphasised previously. At the workshop the potential uses of the link were discussed and identified as follows:-

7.4.1. Ground Floor Link – on completion of RHSC/DCN

Patients:

- Adult DCN admissions from RIE emergency department
- Adult DCN patients to RIE main radiology department
- Adult RIE patients to specialist MRI in DCN
- Bodies of children and DCN patients to the RIE mortuary

Materials management

- Pharmacy supplies from RIE pharmacy to RHSC/DCN
- Small numbers of pathology specimens not suitable for pneumatic tube transport
- (No general supplies, linen or food to be transferred between buildings – completely separate materials management infrastructure.)

Staff

- Specialist staff reviewing patients in either building e.g. neurologist assessing patient in medical in-patient ward of RIE; cardiologist visiting patient in DCN wards
- Staff to/from main staff dining within RIE?

7.4.2. First Floor Links

For Patients

- DCN to ITU/HDU
- Neonates to RHSC from Simpson
- Flex management of theatres

7.4.3. Future Links

Potential future uses

- Future flexibility in use of the building, changing requirements of specialties
- Expansion of either DCN or children's services by displacement of services into RIE

7.4.4. Importance of Detailed Specification

These links were not demonstrated on the current drawings, nor were the “arrival” points for the connections within the existing building demonstrated. We were advised that on the ground floor the general corridor circulation of the new building will connect to a general staff and patient communication street within RIE. By this means patients and staff can reach the required departments without passing through another clinical department. We were advised that this connection would allow access to a vertical circulation core within the RIE which would then connect to mortuary, pharmacy, laboratories and so on.

On the first floor we were advised that the entry point would be to a corridor between theatres and critical care which would be a staff-only area but would not traverse a clinical department. If so, this would be appropriate for the proposed use in transferring high dependency patients on bed or in an incubator. It would not be appropriate for any other use.

In our view it is absolutely critical to understand all the current and future requirements of this link and to detail its design requirements in terms of functionality (width, finishes etc.) design for privacy and dignity, for control of infection and for segregation of flows.

7.4.5. Basement Link and Other Levels

Basement

The advantages of a basement link were reviewed but we are advised that this is technically very difficult to achieve, has a high capital cost, and raises issues with regard to the current contractual arrangements on the existing site. There would also be disruption to clinical services.

There would be an advantage in having this link to enable NHS-L to have a single delivery yard at the existing RIE and to manage a single supplies delivery and collection service through both existing and new buildings. (NHS currently uses portering services to deliver goods (except linen) within RIE.)

There is an additional capital cost in providing the second service yard for the new building and in the infrastructure to support it and potentially additional life-cycle costs of NHS-L managing two delivery/collection yards on the same site over time.

The life-cycle costs of NHS-L managing two delivery/collection yards on the same site over time therefore require to be identified. The lack of an internal FM services link means that any future integration of soft FM services on the site will be disadvantaged by the requirement to operate from two separate buildings with FM-type journeys taking place externally by van or wheeled transport trolleys.

Other levels

Connections at levels above first floor were examined but these are technically very difficult as the RIE has only plant rooms at higher levels and no hospital circulation routes to link into.

Recommendation 1: As previously noted

A detailed specification of the requirements of the linking buildings between the new build and the existing RIE should be prepared, outlining the number and types of patient and staff journeys that will take place, both on first opening the building and as can be foreseen in the future. The termination points of the corridors in RIE and the routes to lifts and stairs should be identified and the design should avoid routes transiting clinical areas which are not served by the link or which are sensitive patient management areas. Other physical links such as pneumatic tube and IT links should also be carefully specified.

7.5. Environment for Patients and Staff

There is no design strategy yet for elements such as the orientation of patient bedrooms for sunlight and connection to the natural environment. There has been minimal consideration as to the introduction of green-space, or usable courtyards or for offices to have daylight and so on. Evidence-based design features were discussed with the design team and it is recommended that these form part of the developing design brief prepared by NHS Lothian.

The north element of the building is still under significant development. It will require to provide a suitable environment for the family hotel, for staff offices and for the main out-patient departments and so is also of key importance.

As discussed under AEDET, these elements require to be significantly strengthened in the brief for the NPD design teams or considerably further developed in the reference design.

Recommendation 19: As previously noted

Provide within the brief an indication of the Board's aspirations towards the required quality of the design. This may be by a Design Statement similar to that recommended by Architecture and Design Scotland including an indication of "What success looks like" and detailing of the non-negotiables for patients, staff and relatives.

7.6. 1:500 Block Planning

We were advised that the 1:500 departmental relationships drawings that we were supplied with are in the process of being updated.

7.6.1. Design of Hospital Circulation

7.6.1.1. Approach to the Hospital Diagram

This is relatively under-developed and we were not able to demonstrate a fully cohesive approach to segregation of flows between visitors/general traffic and patients in beds or trolleys/staff. This requirement is complicated within this building by the wish to keep adult DCN traffic relatively separate from children's traffic.

7.6.1.2. Patient Journeys

Routes from the entrances are currently being developed and cannot be finally reviewed. Separate vertical cores are proposed for RHSC visitors and out-patients and for DCN visitors. These are complemented by a "hot" core which is primarily designed to take patients from the emergency department to in-patient wards, ITU/HSU and operating theatres.

This circulation diagram appears to work fairly well on Level G and on 3, the latter being RHSC departments only.

On level 1, there may be a crossover between child patients being transferred from theatres to critical care and visitors attending DCN in-patients. On level 2 there is a crossover for RHSC patients going to Neurophysiology with DCN patients being transferred from ITU in RIE which is probably of no significance, giving the numbers of patients involved and timing of journeys, but acceptance of the cross-over should be noted. Certain routes seem circuitous and may result in patients opting to use the "wrong" core – e.g. route for DCN patients from front door to DCN therapies.

7.6.1.3. Staff routes

These are not clearly identified. It would be useful to detail staff journeys from either the parking areas or public transport drop-off points to the staff changing areas and on to the various departments. Careful planning is necessary to avoid staff using unfortunate desire lines through clinical departments. It is assumed that the route for staff to the main hospital will be externally across the bus route to the existing RIE entrance, or to the Chancellor's building or the research building.

7.6.1.4. FM circulation

A linking corridor is shown at basement level in the new building and we understand that the intention is to service each zone of the building through the vertical cores. This should be a successful means of efficiently delivering food and supplies and collecting waste. However we note that the DCN core is not shown as connecting to this corridor system at basement level.

7.6.1.5. Comment

We are aware that the proposals are currently being developed and that lift positions may change and affect the diagram, and that the above comments may no longer apply. However the circulation diagram is absolutely critical to the safe and efficient operation of the hospital. It affects clinical risk, staff efficiency and patient privacy and dignity. It should be carefully reviewed after each change to the 1:500 plan.

7.6.2. Departmental Adjacencies

7.6.2.1. Departmental Relationship Matrix

The current departmental relationships appear to meet most of the adjacencies described in the Matrix. As a good number of departments are currently being re-located, and as some of the smaller departments are not identified on the 1:500 plan, a detailed assessment of how the plans meet the Matrix has not been carried out.

Normally one would assess the percentage of requirements being met, but the situation is currently too fluid to make this meaningful. This is useful piece of information to have if bidders propose an alternative design and can demonstrate where the reference design out-performs the alternative or vice-versa.

7.6.2.2. Ward planning

Ward planning is still under discussion. As noted above the assumptions regarding bed modelling, efficiency in support provisions and the staffing model all depend on having flexibility in the management of beds. This implies that the beds should be designed as a “run” of beds rather than small discrete wards which are more expensive to staff and which do not offer flexibility to match peaks and troughs in demand for particular specialties.

Recommendation 16:

1. *Provide clinical planning diagrams now to determine the communication and circulation strategy for the building.*
2. *Resolve the circulation strategy within the Reference Design in addition to achieving the required department adjacencies.*
3. *Match the adjacency matrix to the developed plan prior to issue of tender documents.*

7.7. Departmental Planning

No 1:200 drawings were available for review but there would appear to be some significant problems to be resolved as the design matures. A few examples:

- Ward shapes and spans look difficult to plan with a mix of single and 4-bed rooms
- Radiology is very deep plan
- DCN outpatients is very deep plan
- Theatres split by DCN core and corridor

Recommendation 18:

The departmental planning at 1:200 scale to be well-resolved prior to issue within tender documentation

7.8. Building Services and Progress to BREEAM

The approach to building services design and progress towards a high BREEAM score was not assessed as it anticipated this will form part of the technical monitoring of the project by both the Scottish Government and HFS.

Appendix A. RHSC/DCN Departmental Circulation v SHPN/HBN Guidance

L	DCN In Patient Pathway / Ward Care																	
L1	DCN Acute Care - 24 Beds	1,000.5	38	380.2	1,380.7	SHPN04 (2000)	SHPN04 (2010)	50.0	1,050.5	31.5	25%	270.5	1,352.6	28.1	2.1%			
L2	DCN Inpatients - 43 Beds	1,399.5	38	531.8	1,931.3	SHPN04 (2000)	SHPN04 (2010)	70.0	1,469.5	44.1	25%	378.4	1,891.9	39.4	2.1%			
	Sub-total	2,400.0		912.0	3,312.0													
M	DCN Out Patient Departments																	
M1	DCN Outpatients	586.5	35	205.3	791.8	HBN 12 (2005)		29.3	615.8	18.5	33%	209.3	843.6	-51.8	-6.1%			
M2	DCN Therapies	363.1	35	127.1	490.2	SHPN08 (2009)		18.2	381.3	11.4	23%	90.3	483.0	7.2	1.5%			
M3	Programmed Investigations Unit	78.0	35	27.3	105.3	SHPN52-3 (2001)		3.9	81.9	2.5	28%	23.2	107.6	-2.3	-2.1%			
	Sub-total	1,027.6		359.7	1,387.3													
N	DCN Support Space																	
N1	DCN Entrance	23.5	28	6.6	30.1	-	as children?	1.2	24.7	0.7	40%	10.2	35.6	-5.5	-15.5%			
	Sub-total	23.5		6.6	30.1													
O	Combined Neurophysiology																	
O1	Neurophysiology	302.6	35	105.9	408.5		as OPD?	15.1	317.7	9.5	33%	108.0	435.3	-26.7	-6.1%			
	Sub-total	302.6		105.9	408.5													
P	Combined Theatres																	
P1	Operating Theatres & RHSC Day surg	2,810.6	38	1,068.0	3,878.6	SHPN52-1 (2001)		140.5	2,951.1	88.5	25%	759.9	3,799.6	79.0	2.1%			
Q	Combined Radiology																	
Q1	Radiology	1,724.9	38	655.5	2,380.4	SHPN06 (2004)		86.2	1,811.1	54.3	27%	503.7	2,369.2	11.2	0.5%			
	Sub-total	1,724.9		655.5	2,380.4													
R	Office / Admin Support Services																	
R1	Clinical / Management Suite	1,785.5	30	535.7	2,321.2		basic circn	89.3	1,874.8	56.2	25%	482.8	2,413.8	-92.6	-3.8%			
R2	Health Records	483.8	28	135.5	619.3		basic circn	24.2	508.0	15.2	25%	130.8	654.0	-34.8	-5.3%			
	Sub-total	2,269.3		671.1	2,940.4													
S	Combined Facilities / Infrastructure Support Services																	
S1	Kitchen	295.5	28	82.7	378.2		no info	14.8	310.3	9.3	25%	79.9	399.5	-21.2	-5.3%			
S2	e-Health infrastructure	40.0	28	11.2	51.2		no info	2.0	42.0	1.3	25%	10.8	54.1	-2.9	-5.3%			
S3	Domestic Services	114.7	28	32.1	146.8		no info	5.7	120.4	3.6	25%	31.0	155.1	-8.2	-5.3%			
S4	Materials Management	130.0	28	36.4	166.4		no info	6.5	136.5	4.1	25%	35.1	175.7	-9.3	-5.3%			
S5	Central Staff Changing	352.0	28	98.6	450.6		no info	17.6	369.6	11.1	25%	95.2	475.9	-25.3	-5.3%			
S6	Estates	188.0	25	47.0	235.0		no info	9.4	197.4	5.9	25%	50.8	254.2	-19.2	-7.5%			
	Sub-total	1,120.2		308.0	1,428.2													
T	Combined Plant																	
T1	Node Rooms / UPS	168.0	33	55.4	223.4		no info	8.4	176.4	5.3	25%	45.4	227.1	-3.7	-1.6%			
	Sub-total	168.0		55.4	223.4													
	Total Internal Floor Area	24,936.1		8,824.9	33,761.0								34,774.6	-1,013.6	-2.9%			
							Not specified - area for energy centre						estimate	450.0				
							specific additional area for O-zone							450.0				
	Plant & Communications		36.7		12,840.3		main corridor communication - 10%-15%				7%		5,911.7					
							enclosed plant rooms and service risers				7%		5,911.7					
	OVERALL FLOOR AREA				46,601.3		gross internal floor area						47,498.0	-896.7	-1.9%			

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Validation of Revenue Funded Projects:

The Key Stage Review Process

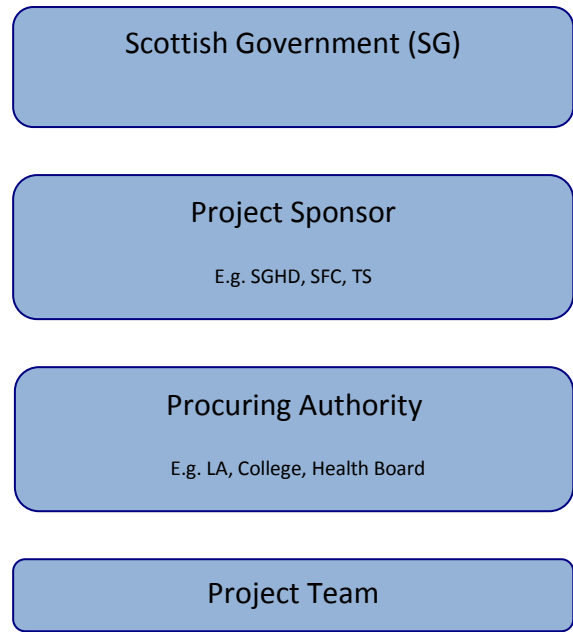
Information Note to Projects

December 2011

Revenue Funded Projects
Key Stage Review -process

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1.1. Background

This paper has been written to provide an overview of the Key Stage Review (KSR) process. Its aim is to explain the process to Project Sponsor/Senior Responsible Officers involved in revenue funded projects.

It is a condition of Scottish Government (SG) funding support that all projects in the revenue funded programme are, in addition to any existing project approvals processes, externally validated by SFT. SFT undertakes validation by carrying out Key Stage Reviews (KSRs) of projects at key stages of the procurement. The KSR process is designed to support the successful delivery of revenue funded projects whether delivered through the non-profit distributing (NPD) model or the hub initiative as Design Build Finance and Maintain (DBFM) projects by providing an assessment of the readiness and application of best practice (including SFT Value for Money (VfM) guidance) of projects before they move onto the next stage in the procurement process.

1.2. Purpose and Timing

Before a revenue funded project can enter procurement or be submitted to hubCo, an outline business case (or sector-specific equivalent such as Initial Agreement from SGHD / CIG) must be approved by the Project Sponsor, and, ultimately, by the Scottish Ministers as funders of the programme. SFT's role is to carry out a high level review of the outline business case. In relation to centrally funded health projects SFT may conduct a detailed review of the proposed design and specification and provide comment to the Scottish Ministers or Project Sponsor in order to inform their own approval processes. SFT's role in that regard is part of its general project support function and does not form part of the KSR. The KSR process starts after the outline business case (or sector-specific equivalent) has been approved. The process is a tool for assessing a project's readiness to commence and proceed through the various stages of procurement. It is also used to periodically verify compliance with or satisfaction of the conditions of SG revenue funding support, as contained in the outline business case approval or funding award letter.

The KSR process usually involves three standard reviews at the following stages:

- 1. Pre-issue of OJEU notice or Pre-submission of a New Project Request for hub DBFM projects;**
- 2. Pre-Close of Dialogue (or Pre-Stage 1 Submission Approval); and**
- 3. Pre-Financial Close (or Pre-Stage 2 Submission Approval).**

In some cases, where it becomes apparent that projects are not developed enough to receive a full sign off following a standard KSR, additional follow-up reviews may need to be carried out in advance of

- **Pre-issue of Invitation to Participate in Dialogue; and/or**
- **Pre -Preferred Bidder Appointment.**

Each review is an assessment of whether the project is suitably developed in terms of:

- **Project readiness**
- **Affordability**
- **Value for Money**
- **Commercial robustness**

1.3. Process

The reviews will be carried out at no cost to the Procuring Authority by the member of the Scottish Futures Trust team who normally provides support to the project (Reviewer). The process involves the assessment of the readiness of projects against a pro-forma list of questions at each key stage of the procurement. In the run up to each review point, the Reviewer will consider the status of the project against the relevant pro-forma list on the basis of information obtained in his/her day to day dealings with the project and will seek, where required, contributions from the project team to allow completion of the list and prepare a written draft report with comments and recommendations. No formal submission, as such, will be required from the Procuring Authority, but the project team will be required to provide the Reviewer with information to allow him/her to complete the list and compile his/her report. The Reviewer may also ask the project manager to specifically confirm certain points or that there are no outstanding issues that would impede the progress of the project to the next stage of the procurement process.

The Reviewer will also prepare a short report and make recommendations as to whether in his or her view the project is ready to proceed to the next stage of procurement and what actions may be required to achieve the appropriate state of readiness either to proceed to the next stage or in advance of the next review. Once completed by the Reviewer, the list and draft report will be scrutinised by a member of SFT's senior management team before being issued to the relevant Project Sponsor / SG and copied to the Procuring Authority. The relevant Project Sponsor and/or SG will, as part of its overall sign-off, determine whether and on what basis the project should proceed to the next stage taking into consideration any recommendations made in the KSR report.

The precise timeframe for completing the review and submission of SFT's report will be pre-agreed with the Project Sponsor and/or SG to integrate with other project approvals processes.

Projects that are also subject to Gateway Reviews will in future follow a single Integrated Project Assurance Model (IPAM) process. This process is currently under development. In respect of projects forming part of the Revenue Funded programme, IPAM reviews will be led by SFT and the Reviewer will liaise with the Gateway Review Team as appropriate. Under IPAM the KSR element of the review will follow the format outlined above with the exception of the final report for each stage forming part of a single overall assurance response and set of recommendations. The approach is currently being piloted on a transport project and in the meantime both processes will apply.

1.4. Impact on project teams

SFT staff members supporting individual projects will at the start of each project jointly review the list and explain to project teams what information the Reviewer requires to see in order to recommend projects for approval. The overall role of the Reviewer is to ensure that best practice and relevant guidance are applied and to advise projects in this regard throughout the procurement process. Once all relevant information has been made available the Reviewer will complete the list and outline any areas where further action may still be required. Once the Reviewer's report has been scrutinised by a member of the SFT's senior management team, it will then be submitted to the Project Sponsor and/or SG and copied to the Procuring Authority. The Procuring Authority will also be asked to confirm that they are not aware of additional information that would materially change the report or recommendations made therein.

1.5. KSR Sign-Off

The relevant Project Sponsor and/or SG will receive a completed KSR report at agreed stages aligned with their normal sign-off processes. The Project Sponsor / SG will need to consider the report and decide what, if any, action is required before the project can proceed to the next stage. Procuring Authorities are required to seek formal approval from the relevant Project Sponsor and/or SG following each KSR before proceeding to the next stage.

1.6. Further Information

Project teams and Project Sponsors should direct any queries about KSR process and requests for copies of the KSR lists to their SFT contact or contact the SFT's validation team on [REDACTED].

From: [Donna Stevenson](#)
To: [Baxter M \(Mike\) \(Health\)](#)
Subject: RHSC /DCN Project SFT Design Review : A&DS
Date: 28 December 2011 09:19:19
Attachments: [NPD Project Review Report RHSC DCN 20111222.docx](#)
[NPD RHSC DCN Project Report 5 0 Final_SFT_RHSCDCN issued 20111215.docx](#)

Mike

In August Colin, Viv and I met with Bettina and Heather of A&DS and Peter Henderson of HFS to discuss the relationship between the SFT design review and the input of A&DS and HFS to the project review. At the meeting we agreed that we would send A&DS and HFS the independent design review report once it was completed and they will consider the gaps which still need to be covered. At the time we sent on the remit of the review to Heather.

In view of the time which has elapsed since then (as the costing information became available) I do not know whether matters have developed. Perhaps when you are back after the festive season you could let me know whether you wish me to send on the report or whether you wish to do so in the context of any other discussions which may have taken place.

Regards

Donna

Associate Director
Scottish Futures Trust

Mobile [REDACTED]

Direct [REDACTED]

Email [REDACTED]

Videoconference facilities available

Address 11-15 Thistle Street, Edinburgh, EH2 1DF. Main [REDACTED] Fax [REDACTED]

www.scottishfuturestrust.org.uk -----Original Message-----

From: Donna Stevenson

Sent: 22 December 2011 15:53

To: 'Sansbury, Jackie'

Cc: Currie, Brian; Andrew Bruce; Mike.Baxter [REDACTED]; Cosens, Sorrel; Graham, Iain; Goldsmith, Susan; McBain, Eileen; Peter Reekie; Colin Proctor

Subject: RE: RHSC /DCN Project SFT Design Review

Jackie

Further to earlier correspondence I am pleased to enclose our report on the Project Review together with a final version of the report from Atkins.

I would be happy to clarify any issue and I look forward to receiving your response in due course.

Regards

Donna

Associate Director

Scottish Futures Trust

Mobile [REDACTED]

Direct [REDACTED]

Email [REDACTED]

Videoconference facilities available

Address 11-15 Thistle Street, Edinburgh, EH2 1DF. Main [REDACTED] Fax [REDACTED]

www.scottishfuturestrust.org.uk -----Original Message-----

From: Sansbury, Jackie [REDACTED]

Sent: 29 November 2011 18:40

To: Donna Stevenson

Cc: Currie, Brian; Andrew Bruce; Mike.Baxter [REDACTED]; Cosens, Sorrel; Graham, Iain; Goldsmith, Susan; McBain, Eileen

Subject: RE: RHSC /DCN Project SFT Design Review

Thanks very much for the update.

Regards

JACKIE

-----Original Message-----

From: Donna Stevenson [REDACTED]

Sent: 29 November 2011 14:59

To: Sansbury, Jackie

Cc: Currie, Brian; Andrew Bruce; Mike.Baxter [REDACTED]; Cosens, Sorrel; Graham, Iain; Goldsmith, Susan

Subject: RE: RHSC /DCN Project SFT Design Review

Jackie

As I mentioned to Brian when I spoke with him earlier today, Gordon Wilkinson of Faithful & Gould has now had the opportunity to consider the final clarifications on Technical Cost 4 which Brian provided to us. I will shortly be able to let you have SFT's report following the Design Review to which we will attach a copy of Atkins' final report.

You have already seen an earlier draft of Atkins' report which contains a number of recommendations. The final report will also contain some recommendations as to costs, for example we remain of the view that the design fees element is higher than has been seen in similar projects.

I appreciate that you are finalising your draft OBC and using TCS4 as the basis of it. I therefore wanted to let you know that we will be able to agree that overall NHSL's capital cost of the works to be included within the NPD contract of £154.9m is reasonable at the OBC stage.

The capitally funded cost (such as the enabling works) have not been reviewed by Atkins and I understand that Peter commented on the level of optimism bias at the Project meeting last week.

Regards

Donna

Associate Director

Scottish Futures Trust

Mobile [REDACTED]

Direct [REDACTED]

Email [REDACTED]

Videoconference facilities available

Address 11-15 Thistle Street, Edinburgh, EH2 1DF. Main [REDACTED] Fax [REDACTED]

www.scottishfuturestrust.org.uk -----Original Message-----

From: Donna Stevenson

Sent: 20 October 2011 10:22

To: Sansbury, Jackie
 Cc: Currie, Brian; Walker, Aileen E; Andrew Bruce; gordon.wilkinson [REDACTED]
 Mike.Baxter [REDACTED]; Cosens, Sorrel; Graham, Iain
 Subject: RE: RHSC /DCN Project SFT Design Review

Dear Jackie

As I reported to the Project Board, we have raised number of issues on Technical Cost 4, which was provided towards the end of last week in the context of the cost benchmarking element of the Design Review which SFT has been undertaking. I have arranged to meet with Brian next Tuesday, along with advisers with a view to bringing the cost benchmarking exercise to a conclusion as soon as possible.

Thereafter, SFT will provide a report to NHS Lothian to set out the conclusions and recommendations of the review as a whole. We will attach to that report the report to be provided to SFT, which we receive from Atkins, who as you are aware are our technical advisers for the purposes of the review.

I appreciate that work is proceeding apace in preparation of the Outline Business Case and I thought that it would be helpful to share with you a draft of the Atkins' report to SFT as it currently stands, for information. This is enclosed.

As you will appreciate the draft report reflects the information which was provided at the time that the review and workshop was undertaken and I appreciated that you have been working on a number of issues which were highlighted in the issues list issued after the workshop. The draft will be updated to reflect the conclusions of the cost benchmarking exercise. The draft report draws out areas where good practice has been followed as well as providing recommendations designed to improve values for money and to derisk the specification and reference design as the OBC is finalised and the tender documentation developed.

As previously discussed, the report reflects those issues which were discussed at the Design Review Workshop and in the note which I circulated shortly at it, as set out below.

I hope that this is helpful and I would be happy to discuss the draft report with you.

Regards

Donna

From: Donna Stevenson
 Sent: 25 August 2011 15:50
 To: Cosens, Sorrel
 Cc: Currie, Brian; Walker, Aileen E; Andrew Bruce; Sansbury, Jackie
 Subject: RE: RHSC + DCN | SFT Design Review Workshop

Sorrel

Further to the Workshop, as we said we will be working with Aileen on the report which will set out the issues which were covered and the conclusions and recommendations reached as soon as possible.

Meanwhile, I thought it might be helpful if I let you have a note of some of the key actions points which we agreed as a number related to further information to be provided or to work streams upon which the Project team is already pursuing.

1. Theatre Activity: further information to be provided by Capita.
2. Outpatients activity and space provision: separate discussion to take place between Aileen Walker, Fiona Halcrow and Graham Cumming,
3. Therapies: more information to be provided: to be taken along with Outpatients' action.
4. Provision of independent energy centre and fm servicing yard to the RHSC/DCN : report to be prepared by NHSL for the Project Board on the qualitative analysis underpinning this agreed way forward.
5. Kitchen provision: option appraisal to be carried out by NHSL.
6. Non patient catering: NHSL to consider the options and identified a preferred route for provision.
7. Single rooms : percentage of beds within children's hospital to be considered.
8. Single rooms (and relative en suites and circulation space) : NHSL to develop 1:50 scale drawings with

ergonomic spaces included (hoist turning circle etc.) to consider how the single rooms will operate clinically and within the context of a ward configuration.

9. Support space in the context of the sizes of wards now developed: NHSL to consider potential to reduce support areas in the light of flexible ward configurations.

10. Circulation flows: NHSL clinical requirements to be determined and proposals to be illustrated on Reference Design

11. Departmental Relationship: matrix to be checked against reference design.

12. Benchmarking of Costs (including benchmarking of communication and plant area) : to be carried out separately.

13. NHSL are intending to prepare Design Quality Statement including requirement for evidence-based design for inclusion in bid documents.

14. Functional requirements of links to RIE to be detailed.

Regards

Donna

Donna Stevenson
Associate Director
Scottish Futures Trust

Mobile [REDACTED]
Direct [REDACTED]
Email [REDACTED]

Videoconference facilities available
Address 11-15 Thistle Street, Edinburgh, EH2 1DF. Main [REDACTED] Fax [REDACTED]
www.scottishfuturestrust.org.uk -----Original Message-----

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Validation of Revenue Funded Projects:

The Key Stage Review Process

Information Note to Projects

December 2011

Revenue Funded Projects
Key Stage Review -process

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Scottish Government (SG)

Project Sponsor

E.g. SGHD, SFC, TS

Procuring Authority

E.g. LA, College, Health Board

Project Team

1.1. Background

This paper has been written to provide an overview of the Key Stage Review (KSR) process. Its aim is to explain the process to Project Sponsor/Senior Responsible Officers involved in revenue funded projects.

It is a condition of Scottish Government (SG) funding support that all projects in the revenue funded programme are, in addition to any existing project approvals processes, externally validated by SFT. SFT undertakes validation by carrying out Key Stage Reviews (KSRs) of projects at key stages of the procurement. The KSR process is designed to support the successful delivery of revenue funded projects whether delivered through the non-profit distributing (NPD) model or the hub initiative as Design Build Finance and Maintain (DBFM) projects by providing an assessment of the readiness and application of best practice (including SFT Value for Money (VfM) guidance) of projects before they move onto the next stage in the procurement process.

1.2. Purpose and Timing

Before a revenue funded project can enter procurement or be submitted to hubCo, an outline business case (or sector-specific equivalent such as Initial Agreement from SGHD / CIG) must be approved by the Project Sponsor, and, ultimately, by the Scottish Ministers as funders of the programme. SFT's role is to carry out a high level review of the outline business case. In relation to centrally funded health projects SFT may conduct a detailed review of the proposed design and specification and provide comment to the Scottish Ministers or Project Sponsor in order to inform their own approval processes. SFT's role in that regard is part of its general project support function and does not form part of the KSR. The KSR process starts after the outline business case (or sector-specific equivalent) has been approved. The process is a tool for assessing a project's readiness to commence and proceed through the various stages of procurement. It is also used to periodically verify compliance with or satisfaction of the conditions of SG revenue funding support, as contained in the outline business case approval or funding award letter.

The KSR process usually involves three standard reviews at the following stages:

- 1. Pre-issue of OJEU notice or Pre-submission of a New Project Request for hub DBFM projects;**
- 2. Pre-Close of Dialogue (or Pre-Stage 1 Submission Approval); and**
- 3. Pre-Financial Close (or Pre-Stage 2 Submission Approval).**

In some cases, where it becomes apparent that projects are not developed enough to receive a full sign off following a standard KSR, additional follow-up reviews may need to be carried out in advance of

- **Pre-issue of Invitation to Participate in Dialogue; and/or**
- **Pre -Preferred Bidder Appointment.**

Each review is an assessment of whether the project is suitably developed in terms of:

- **Project readiness**
- **Affordability**
- **Value for Money**
- **Commercial robustness**

1.3. Process

The reviews will be carried out at no cost to the Procuring Authority by the member of the Scottish Futures Trust team who normally provides support to the project (Reviewer). The process involves the assessment of the readiness of projects against a pro-forma list of questions at each key stage of the procurement. In the run up to each review point, the Reviewer will consider the status of the project against the relevant pro-forma list on the basis of information obtained in his/her day to day dealings with the project and will seek, where required, contributions from the project team to allow completion of the list and prepare a written draft report with comments and recommendations. No formal submission, as such, will be required from the Procuring Authority, but the project team will be required to provide the Reviewer with information to allow him/her to complete the list and compile his/her report. The Reviewer may also ask the project manager to specifically confirm certain points or that there are no outstanding issues that would impede the progress of the project to the next stage of the procurement process.

The Reviewer will also prepare a short report and make recommendations as to whether in his or her view the project is ready to proceed to the next stage of procurement and what actions may be required to achieve the appropriate state of readiness either to proceed to the next stage or in advance of the next review. Once completed by the Reviewer, the list and draft report will be scrutinised by a member of SFT's senior management team before being issued to the relevant Project Sponsor / SG and copied to the Procuring Authority. The relevant Project Sponsor and/or SG will, as part of its overall sign-off, determine whether and on what basis the project should proceed to the next stage taking into consideration any recommendations made in the KSR report.

The precise timeframe for completing the review and submission of SFT's report will be pre-agreed with the Project Sponsor and/or SG to integrate with other project approvals processes.

Projects that are also subject to Gateway Reviews will in future follow a single Integrated Project Assurance Model (IPAM) process. This process is currently under development. In respect of projects forming part of the Revenue Funded programme, IPAM reviews will be led by SFT and the Reviewer will liaise with the Gateway Review Team as appropriate. Under IPAM the KSR element of the review will follow the format outlined above with the exception of the final report for each stage forming part of a single overall assurance response and set of recommendations. The approach is currently being piloted on a transport project and in the meantime both processes will apply.

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SFT staff members supporting individual projects will at the start of each project jointly review the list and explain to project teams what information the Reviewer requires to see in order to recommend projects for approval. The overall role of the Reviewer is to ensure that best practice and relevant guidance are applied and to advise projects in this regard throughout the procurement process. Once all relevant information has been made available the Reviewer will complete the list and outline any areas where further action may still be required. Once the Reviewer's report has been scrutinised by a member of the SFT's senior management team, it will then be submitted to the Project Sponsor and/or SG and copied to the Procuring Authority. The Procuring Authority will also be asked to confirm that they are not aware of additional information that would materially change the report or recommendations made therein.

1.5. KSR Sign-Off

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1.6. Further Information

Project teams and Project Sponsors should direct any queries about KSR process and requests for copies of the KSR lists to their SFT contact or contact the SFT's validation team on [REDACTED].

Project Title NPD Project for RHSC/DCN at Royal Infirmary Edinburgh for NHS Lothian

Source of Change

NHS Lothian

Description and Reason for Control Order

AEDET Review required for 1:200 stage.

Meeting to take place on 8th March 2012, 0930-1230 hours.

Activities include:

- Input into preparation of AEDET presentation
- Attendance at Workshop
- Post Workshop update of AEDET spreadsheet and issue

Consequential Changes

Nil

Effect on Programme / Schedule

None

Cost Summary (based on Schedule 2-3 of the Contract – Services and Fee Schedule)

Estimated change in Labour Costs:		£3,067.39
Estimated change in Direct Costs:		-
Estimated change in Total Costs:		£3,067.39
New estimated total project Costs:	Section A	
(Currently all as contract.)	Section B	
Payment for changed Ordered Services and Variations to be in accordance with Clause 43 of the Contract	Section C	£3,067.39
	Section D	

Classification

This Control Order is considered to comprise:

Additional Work Clarification of present scope of work
A variation to existing work Release of work previously on hold

This Control Order is issued for your information and record. Please sign and return one copy. Further information and details will be provided in due course. Please provide your comments in writing within 10 days after which we will assume that we have your approval to proceed with the above change.

Signed for Mott MacDonald Limited

Signed for NHS Lothian





Date: 15 Mar 12

Date: 19th April, 2012

Distribution: NHSL (PD,PM); Relevant Sub Consultants; MML (PD,PM,PPW,Relevant Staff, PiMS CC)

RHSC & DCN Reference Design Team Meeting Nr 13

Commercial In Confidence - not disclosable under the Freedom of Information (Scotland) Act 2002

Date: 10 January 2012 **Time:** 11.00 – 15.00 **Location:** Davis Langdon, Tanfield, Edinburgh

Purpose Reference Design Team Meeting 6

Present	Neil McLennan Brian Currie James Steers Andrew MacDonald (Part time) Jeremy Grant Brian Morrell Tom Groves (Part time) Bob Hedivan Michael O'Donnell Rod Shaw David Stillie Tom Brady	NHS Lothian (NHSL) NHS Lothian (NHSL) NHS Lothian (NHSL) NHSL Lothian (NHSL) Arup Arup Nightingale Associates (NA) BMJ Hulley & Kirkwood (HK) Thomson Gray (TG) Mott MacDonald (MML) Davis Langdon – Chair (DL)
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Apologies:	Andrew Munnis Carol Thorburn Jamie Brewster	Montagu Evans (ME) Mott MacDonald (MML) Nightingale Associates (NA)
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Distribution: As above
 Fraser McQuarrie (FMcQ)

Next meeting: 24th January 2012 @ 11.00 – Mott MacDonald Offices Edinburgh

	Action	Target date
1.00 Apologies		
1.01 Apologies received from persons indicated above		
2.00 Review Previous Minutes / Actions		
2.01 The previous minutes were acknowledged as an accurate note of the meeting		
2.02 Confirmation of completed actions from previous minutes		
Item 7.25 Meeting 11: Design Deliverables – DL to issue Deliverables schedule to RDT. Schedule to log what deliverables have been completed to date. - Complete		
Item 3.03 Meeting 12: Updated RDT programme to issued – v4 of programme Issued on 13 December - Complete		
Item 6.01 Meeting 12: Pneumatic Tube Stations – HK requested a finalised list of PTS stations – RFI to be raised - Complete		
Item 6.02 Meeting 12: Creche Facility – NA/BMJ raised the issue regarding the land that will become available if the crèche is		

		Action	Target date
	<ul style="list-style-type: none"> Works associated with Anne Rowling drop off Car Park D Access 		
5.00	Meeting Schedules		
5.01	<p>Reference design team meetings to be held fortnightly, refer to project calendar on BIW for dates.</p> <p>TB reiterated to all parties that all meetings that require the attendance of RDT members, need to be coordinated with Rebekah Wendes of Davis Langdon to ensure that the BIW meeting calendar is kept up to date at all times</p>	Note	
5.02	Planned Meetings as follows:	Note	
	<p><u>Fire Meeting with NHSL</u></p> <ul style="list-style-type: none"> Date : Prior to 23rd Jan Time : TBA Location : TBA RDT Attendees : DL, Arup Fire, NHSL User Team representative, Clive Armstrong, Billy Hamilton H&K and NA/BMJ representative 		
	<p><u>Fire Meeting with CEC Building Control & Lothian Fire Brigade</u></p> <ul style="list-style-type: none"> Date : After 23rd Jan Time : TBA Location : TBA RDT Attendees : DL, Arup Fire, NHSL User Team representative, Neil Dinwoodie, H&K and NA/BMJ representative 		
	<p><u>1:50 Key Room Meeting</u></p> <ul style="list-style-type: none"> Date : Various Time : Various Location : Various RDT Attendees : NA / BM + TB or DS 		
	<p><u>CEC Planning Meeting</u></p> <ul style="list-style-type: none"> Date : 11th Jan 2012 Time : 1400 hrs Location : CEC RDT Attendees : Arup 		
	<p><u>Helipad Meeting</u></p> <ul style="list-style-type: none"> Date : 13th Jan 2012 Time : TBA Location : NHSL, 1 RBT RDT Attendees : David Stillie 		
	<p><u>Creche Land Use Workshop</u></p> <ul style="list-style-type: none"> Date : 24th Jan 2012 Time : 0900 – 1100 hrs Location : Mott MacDonald Offices, Edinburgh RDT Attendees : All 		

		Action	Target date
	<p>SHTM 81 Part 3 Implications. It was agreed that the following Fire engineering solutions were to be incorporated into the following documentation.</p> <ul style="list-style-type: none"> Smoke Control – Words to be incorporated in to the 1:200 Scheme Design Report Sprinklers – Drawings to be produced highlighting which areas of the building will be afforded with sprinkler protection 60 min fire construction of theatre envelope to be captured on the fire strategy drawings 	<p>HK</p> <p>HK</p> <p>NA</p>	<p>23rd Jan 2012</p> <p>23rd Jan 2012</p> <p>23rd Jan 2012</p>
7.03	Security Strategy – DL to issue drawings to NHSL	DL	11 Jan 2012
7.04	<p>1:200 Sign off process – Sign off Register updated 10th January. The following departments await formal sign off. NHSL have returned comments on a number of these departments. NA/BMJ to update accordingly to allow NHSL to sign off.</p> <ul style="list-style-type: none"> C1.3 C1.6 C5 G2 H3 K1 K2 (NHSL verbally confirmed that this dept is signed off) L1 S7 	<p>NA / NHSL</p> <p>NA / NHSL</p> <p>BMJ / NHSL</p> <p>NA / NHSL</p> <p>BMJ / NHSL</p> <p>BMJ / NHSL</p> <p>BMJ / NHSL</p> <p>NA / NHSL</p> <p>NA / NHSL</p>	<p>13th Jan 2012</p> <p>13th Jan 2012</p> <p>13th Jan 2012</p> <p>13th Jan 2012</p> <p>13th Jan 2012</p> <p>13th Jan 2012</p> <p>13th Jan 2012</p> <p>13th Jan 2012</p> <p>13th Jan 2012</p>
7.05	NDAP Review – MML confirmed that a meeting is scheduled to take place on 20 th Jan between SFT/HfS/A&DS/Scottish Government . The outcome of this meeting will determine if the NDAP review is required for NPD contracts	Note	
7.06	Drainage Impact Assessment – Arup to ensure that the drainage impact assessment will be available by 16 th January	Arup	16 th Jan 2012
7.07	1:500 Concept Design Report Approval – Signatures have been received from NHSL and Davis Langdon. Final signature required from MML	MML	17 th Jan 2012
7.08	Basement Layout – TG confirmed by email on 5 Jan that the depth of excavation for the basement was no longer required	Note	
7.09	Vehicle Movements Basement - Vehicle track route to be identified on the basement drawing once RFI has been answered.	NHSL / Arup / NA	13 th Jan 2012
7.10	<p>Room Data Sheet Production Process – DL confirmed that the room data sheet production programme has been issued to all parties on 9 Jan 2012.</p> <p>NMcL confirmed that the component list will not be issued until Close of Business on 11th Jan 2012. This will delay the start of the process and the end date.</p> <p>DL to update the programme taking into account the delay.</p>	<p>Note</p> <p>Note</p> <p>DL</p>	<p></p> <p></p> <p>11th Jan 2012</p>
7.11	<p>Radio Lollipop Trailer – NHSL requested a formal note from NA/BMJ stating why the Radio Lollipop trailer has not been accommodated in the current basement area.</p> <p>NA/BMJ confirmed that the space for same was not included in the SoA, hence it has not been provided.</p>	BMJ	17 th Jan 2012
7.12	Schedule of Accommodation – MML confirmed that the Theoretical	Note	

		Action	Target date
7.21	HK Drawings		
	List of schematics to be published.	HK	13 th Jan 2012
	List of layouts to be published.	HK	13 th Jan 2012
7.22	Creche Land.		
	BC explained the situation regarding the potential usage of the land that may become available if the Creche is removed. BC confirmed that whilst the removal was not agreed legally, the likelihood is that it will be concluded in the near future.		
	BMJ advised that if the land was to become available to the NPD bid teams then the shape and form of the facility may be different from the current reference design proposal.		
	BC advised that the reference design proposal is the preferred option for NHSL and that the NPD teams should be basing their proposals on same.		
	It was agreed that to ensure that NHSL understood the potential possibilities of change that a design workshop be convened to look at this in greater detail.		
	The design workshop is to be held on 24th Jan 2012		
	For this workshop, NA are to undertake a study of the options for using the Creche land. The study shall include		
	Potential options	NA	19 th Jan 2012
	Cost and programme implications of each option	DL	19 th Jan 2012
	Capital Cost implications	TG	23 rd Jan 2012
7.23	Basement Car Park – NHSL requested conformation on the number of car parking spaces currently provided and a breakdown of the size of spaces provided, i.e. the number of disabled spaces, parent child spaces and the size of a standard parking bay	NA	13 th Jan 2012
7.24	Zone A Ground Floor Reconfiguration		
	Due to the requirements for a 4400mm wide and 750mm wide external service zones to be provided at the NW and NE corner of Zone A respectively Zone A will need to be reconfigured.		
	BMJ tabled the latest ground floor Zone A drawing which indicates that the required external services zones (and a minimum main atria width of 3500mm can be achieved, if the shape of Zone A is altered slightly.		
	NHSL accepted the proposed ground floor drawing on the understanding that the clinical functionality of Zone A is not compromised. BMJ to progress the new layout and issue same for sign off.	BMJ	17 th Jan 2012
7.25	Zone A Third Floor Reconfiguration		
	Due to Clic Sargent withdrawing from the scheme, space has become available on the 3 rd floor.		
	NHSL require the RDT to produce options on how best to utilise this space. The options to be considered are;		

NIGHTINGALE
associates ■■■■■

RHSC DCN: Little France Edinburgh				
CCF 40 – AEDET WORKSHOP				
Ref	Activity	Hours		
		Studio Director (JB)	Project Architect (TG)	Architectural Assistant (TMcV)
01	Preparation of AEDET presentation		15	7
02	Attendance at Workshop		3	
03	Post Workshop update of AEDET spreadsheet and issue		4	
04				
	Total Hours		22	7
	Rate		68	49
	Cost		1496	343
	Total Cost (Exc. VAT)		1839	
NOTES				
Above excludes expenses (pending confirmation of workshop date and whether it can be incorporated with other meetings)				



RE-PROVISION OF THE RHSC AND DCN AT LITTLE FRANCE

A project to re-provide the services from the Royal Hospital for Sick Children, Child and Adolescent Mental Health Service and the Department of Clinical Neurosciences in a single building adjoining the Royal Infirmary of Edinburgh at Little France

OUTLINE BUSINESS CASE

Approved by NHS Lothian Board
25 January 2012

Version 4.0 (for publication)

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

AEDET	Achieving Excellence Design Evaluation Toolkit
BREEAM	Building research establishments environmental assessment method
CAMHS	Children and Adolescent Mental Health Services
CDM	Construction Design Management
CIG	Capital Investment Group
DBFM	Design build finance maintain
DCN	Department of Clinical Neurosciences
ED	Emergency Department
ESA	European System of Accounts
FBC	Full Business Case
HDU	High dependency unit
HMT	Her Majesty's Treasury
ICT	Information and communications technology
ICU	Intensive care unit
IFRIC	International Financial Reporting Interpretations Committee
ITPD	Invitation to participate in dialogue
MGDD	Manual on Government Deficit and Debt
NDAP	NHSScotland design assessment process
NES	National Education Services Scotland
NHS	National Health Service
NHSL	National Health Service Lothian
NPC	Net present cost
NPD	Non Profit Distributing
NPV	Net present value
NSD	National Services Division
OBC	Outline Business Case
OGC	Office of Government Commerce
PARU	Paediatric acute receiving unit
PEP	Project Execution Plan
PFPI	Patient focus and public involvement
PICU	Paediatric intensive care unit
PPP	Public Private Partnership
PQQ	Pre-qualification questionnaire
PSC	Professional Services Contractors

PSCP	Principal Supply Chain Partner
PwC	PricewaterhouseCoopers
RHSC	Royal Hospital for Sick Children
RIE	Royal Infirmary of Edinburgh
SA6	Supplemental agreement 6 (with Consort Healthcare)
SCIM	Scottish Capital Investment Manual
SFT	Scottish Futures Trust
SJH	St John's Hospital
SoPC	Standardisation of PFI Contracts
SPV	Special purpose vehicle
VFM	Value for money
WGH	Western General Hospital

1 EXECUTIVE SUMMARY

Introduction

- 1.1 This document is NHS Lothian's outline business case for the project to re-provide the services from the Royal Hospital for Sick Children (RHSC), Child and Adolescent Mental Health Service (CAMHS) and the Department of Clinical Neurosciences (DCN) in a single building adjoining the Royal Infirmary of Edinburgh at Little France.
- 1.2 An Outline Business Case (OBC) for the RHSC Re-provision, including CAMHS, was submitted to the Scottish Government and approved by the Capital Investment Group in August 2008.
- 1.3 An Initial Agreement (IA) for the re-provision of DCN was approved by the Scottish Government in July 2008. An OBC was approved by NHS Lothian in December 2009, but did not proceed to Scottish Government because of availability of capital. The preferred option of that OBC was a joint RHSC and DCN build at Little France.
- 1.4 The RHSC was previously envisaged as being delivered through the Health Facilities Scotland framework as a design and build project. To that end BAM were appointed in 2010 as the principal supply chain partner, with the architectural design work being undertaken by Nightingales Associates.
- 1.5 The Scottish Government Draft Budget published in November 2010 announced that both projects would be delivered using the Non Profit Distributing (NPD) revenue funded model, once again linking the RHSC and DCN projects. This represents a fundamental change to the procurement method for the project.
- 1.6 In March 2011 NHSL submitted a Business Case Update to supplement the RHSC OBC and the DCN IA, setting out the options for delivering both re-provision projects on the Little France site using an NPD procurement route.
- 1.7 The preferred option for the project, a joint build RHSC and DCN, was identified in the Business Case Update and approval received from the Scottish Government to develop this OBC in July 2011. This OBC has been written in accordance with Scottish Capital Investment Manual guidance.

The Preferred Option

- 1.8 The preferred option is a new hospital for children and young people, integrating the department of clinical neurosciences into the same new build, on car park B at Little France. The facility will stand-alone in terms of infrastructure and facilities management, with its own energy centre and goods delivery yard. It will link in to the RIE at ground and first floor to ensure clinical functionality, particularly in the interfaces between emergency departments, theatres and critical care on site. It will have a helipad on the roof to provide emergency access to all adult and paediatric specialties on site.

Strategic context

- 1.9 Services for children and young people and for adult neuroscience patients will meet national aims and ambitions laid out in the:

- 2010 NHSScotland Quality Strategy;
 - National policy to have two paediatric intensive care units in Scotland;
 - Stated aims to deliver neurosurgery on the same site as an Emergency Department;
 - Stated aims to deliver adult and paediatric neurosurgery on the same hospital site.
- 1.10 The 2008 OBC and its 2011 update outline the common drivers for RHSC and DCN re-provision. These reflect the quality ambitions for NHSScotland to provide appropriate services for all, at the right time, in a suitable environment with minimal waste or harm. They are:
- The need to deliver high quality, clinically effective and sustainable services;
 - The inadequacy and unsuitability of existing premises and facilities;
 - To ensure the most efficient and effective use of resources to support service modernisation and development;
 - The need to manage the impact of changes in workforce availability, particularly doctors in training.
 - The need to deliver sustainable specialist services whilst meeting the challenge of relatively small numbers of patients and the small number of expert clinicians.
 - The need to maintain strong relations with the University of Edinburgh's College of Medicine and their developments at Little France, ensuring patients have access to appropriate clinical trials.
- 1.11 The preferred site for RHSC and DCN is at Little France, alongside the existing RIE which is provided via a PFI contract with Consort Healthcare (ERI) Ltd. Negotiations to secure the land and progress enabling works required before the project can be built are underway. A full briefing on the current position with these negotiations between NHSL and Consort Healthcare is attached at Appendix 1.
- 1.12 The Little France site is part of the 'south-east wedge' of Edinburgh, an area of regeneration, and this project will further contribute to social and economic improvements, infrastructure development, transport enhancement and social inclusion in the neighbouring areas which have been recognised as socially excluded for many decades.

The Ethos of a Joint Build

- 1.13 NHSL recognises that the RHSC at Sciennes is a stand-alone hospital for children and young people and that moving to Little France to integrate into a wider site including adult services will be a change of environment. The ethos and culture of a children and young people's hospital needs to be evident in the purpose-built facility in their joint build with DCN.
- 1.14 For users of RHSC, CAMHS and DCN, NHSL aims to provide age appropriate facilities in a safe, caring and healing environment. This ranges from suitable facilities for very young children, an adolescent inpatients zone, and accommodation for the adult population of DCN.
- 1.15 Effective services rely on close adjacencies between related specialties and disciplines. The design brief specifies these and also that routes between departments should minimise travel time and distances for patients and staff in order to maximise clinical safety and efficiency.

- 1.16 The design will incorporate clearly identifiable, friendly and secure children's entrances to their outpatients and ward areas. Recreation space and public facilities outwith the wards will also be segregated as far as is desirable and practical.
- 1.17 A joint build gives NHSL the opportunity to deliver economies of scale in clinical departments with high-tech and high-cost equipment such as radiology and operating theatres. While patient pathways do not cross in these areas, staff pathways are made more efficient by co-location of the RHSC, CAMHS and DCN components.

Clinical Service Model and Bed Model

- 1.18 The RHSC provides local and regional acute inpatient and outpatient paediatric and young people's services to the South East of Scotland and Tayside as well as a number of national specialty services.
- 1.19 The DCN provides specialist neurology and neurosurgery assessment and treatment for adults from the South and South-east of Scotland. One weekend in two the DCN provides interventional neuroradiology cover for the whole of Scotland.
- 1.20 Planning for the re-provision has engaged patients, carers, staff and other stakeholders such as regional referring Boards in reviewing existing clinical services and planning for the future.
- 1.21 Service developments in the RHSC, CAMHS and DCN, explained in more detail in chapter two, include:
- Expanding RHSC to accommodate patients from age thirteen up to their sixteenth birthday, and eighteenth in some cases
 - Integrated emergency services for children, young people and adults in adjacent, linked RHSC and RIE Emergency Departments
 - Acute medical support for child and adolescent mental health inpatients, such as young people with eating disorders
 - Dedicated 24/7 emergency theatre access, protecting elective capacity and activity
 - Maximised day case surgery and day of surgery admissions for elective patients
 - A sustainable neurosurgery (adult and paediatric) workforce and service
 - A single adult spinal surgery referral, assessment and treatment pathway, transferring workload from RIE orthopaedics to DCN
 - A single point of assessment and the initial treatment of acute stroke patients in DCN
- 1.22 The OBC updates the 2008 RHSC OBC and 2009 DCN work on bed modelling using the latest activity data, benchmarking information and population projections.
- 1.23 NHSL has undertaken a systematic review of the number of beds required and the OBC includes a bed model benchmarked to the upper quartile performance for length of stay with equivalent peer services. The bed model is summarised in figure 1, and more detail provided in chapter 2, the strategic case for the project and in Appendix 7 on activity modelling.
- 1.24 The bed numbers:
- Take account of current inpatient and day case activity delivered by RHSC, CAMHS and DCN.
 - Incorporate agreed service developments and 'new' activity not currently delivered.

- Reflect redesigned models of care.
- Include efficiencies in length of stay as a result of benchmarking at 75th percentile performance.
- Are calculated to manage peaks and troughs in activity, at appropriate bed occupancy levels.
- Are future-proofed, taking account of the latest population projections to 2020/21.
- Have been planned in collaboration with external consultants (Capita).

Hospital for Children and Young People				
Bed type	Number of beds			Expected average bed occupancy
	Approved 2008 OBC	Proposed in this OBC		
		Build	Open 2016	
Inpatients	126	120	110	74%
Day cases	25	22	22	-
Critical care	24	24	24	76%
Total bed spaces	175	166	156	75%
Department of Clinical Neurosciences				
Bed type	Number of beds			Expected average bed occupancy
	Approved 2009 OBC	Proposed in this OBC		
		Build	Open 2016	
Inpatients	67	67	62	82%
Day cases	1	2	2	-
Critical care	12	11	11	75%
Total bed spaces	80	80	75	81%

Figure 1: Proposed bed model

- 1.25 NHSL continues to analyse current activity and future requirements and to benchmark its performance in these services against peers in order to refresh the bed model annually.
- 1.26 All new inpatient accommodation in DCN will be provided in single rooms with en suite facilities, in accordance with Scottish Government policy.¹
- 1.27 The previous OBC for RHSC was approved in 2008 with a mixture of single and shared accommodation for children following consultation with children and families, to meet the specific needs of this age group. 58% of inpatient beds, including all adolescent, mental health and oncology beds, will be in single rooms with en-suite toilet and shower facilities, and designed for a parent to stay with their child.
- 1.28 The national review of single room accommodation provision included a submission from NHSL on the views of clinical staff, patients and families on accommodation for children and young people's services. The NHSL review was quoted by the Scottish Government Steering Group in their 2008 report².
- 1.29 The building design includes the capacity to develop in response to changing demands on services. Examples of future-proofing include planning day case areas that could be converted into inpatient beds, and providing the infrastructure to a number of bed spaces that could be upgraded to take more critically ill patients. There are also opportunities for some activity to be delivered from the RIE in future, for example, back surgery.

¹ Scottish Government; CEL 48 (2008) and CEL 27 (2010) on *Provision of Single Room Accommodation and Bed Spacing*

² Scottish Government (2008); *Single Room Provision Steering Group Report*

- 1.30 The new building will include eight surgical operating theatres providing for the paediatric specialties and adult neurosurgery, plus a dedicated emergency theatre. They currently have seven theatres between them and no emergency time in DCN.
- 1.31 NHS Lothian aims to lead and embrace technological advances in order to improve patient care; for example, intra-operative MRI within the joint theatre complex for RHSC and DCN will allow more effective operative treatment of brain tumours for both children and adults. .
- 1.32 Projected future MRI scanning requirements demonstrate a need for five NHS scanners on the Little France site, in addition to the intra-operative equipment in theatres, to meet the combined RIE, RHSC and DCN demand, where there are currently three.
- 1.33 The new facility will include a roof-top helipad for the transfer of patients to and from Little France by air, recognising the tertiary nature of the services NHSL provides on site.
- 1.34 Physical links to the existing RIE at ground and first floor levels are required for access between adult and paediatric emergency departments, theatres, and critical care, and between all acute clinical departments in RIE, RHSC and DCN and the helipad.

Partnership working

- 1.35 NHSL is committed to partnership working. Throughout the earlier separate RHSC and DCN projects and in developing this joint OBC, close working and communication with NHSL partnership colleagues has been a key element of the process. This has been achieved through:
- Representation on the Project Board
 - Strategic Redesign Partnership Representative is integral to the Project Team
 - Partnership involvement in working groups and workshops
- 1.36 NHSL has also demonstrated commitment to working with partner NHS Boards with a stake in children's and clinical neuroscience services, through review and redesign workshops, and developing the service model outlined in this OBC and membership of the Project Board.
- 1.37 This commitment will continue beyond OBC through to completion of the project and post-project evaluation.

Public Involvement and Consultation

- 1.38 NHSL has demonstrated its commitment to working with stakeholders prior to the establishment of this joint RHSC, CAMHS and DCN project. NHSL will continue to inform, engage and consult stakeholders for the duration of this project, such as in the ongoing development of service models and clinical design, and plans to involve them in post-project evaluation.
- 1.39 The communications and engagement plan for the project, developed in conjunction with the Scottish Health Council, details the plans for involving and informing staff, patients, other stakeholders and the public.

- 1.40 This includes linking in to the RHSC Family Council, and also two groups set up specifically for the re-provision projects, the RHSC Young People’s Advisory Group and the DCN Patient Reference Group.

Summary of Capital Costs

- 1.41 The new building will be revenue funded through the Scottish Government’s Non Profit Distributing (NPD) Model. Capital funding will be required for external enabling works and town planning requirements on the Little France site; clinical enabling within the existing RIE; and to equip the facility.
- 1.42 The capital costs associated with the NPD procurement have been quantified at £154.9m. These costs will be funded by the NPD partner, with the revenue consequences funded jointly by SGHD, NHS Lothian and other NHS Partner Boards.
- 1.43 There are five key components to the non NPD capital costs which will require SGHD project specific capital funding, via the Board’s Capital Resource Limit:
- Equipment (medical and non medical);
 - Clinical enabling works for internal areas within the existing Royal Infirmary;
 - External enabling works on the Little France site
 - Town planning requirements on the Little France site
 - Reference design fees
- 1.44 The total capital cost has been quantified at £72.1m.

Summary of Revenue Costs

- 1.45 The table in figure 2 summarises the revenue impact of the new facility, taking account of the revenue implications of the capital investment (both NPD and public capital), soft FM services, other costs and the availability of existing budgets to offset these costs. Clinical workforce changes are not included in the costs; however it is recognised that activity is projected to increase over the coming years and that this will inevitably impact on staffing levels. This will be recognised as a financial planning issue and will be considered during the annual planning cycle, between now and the new facility being opened.
- 1.46 It is important to note that the SGHD funding for construction, development costs, SPV running costs and lifecycle are subject to a capped budgets, based on the OBC analysis. Where these costs increase during FBC stage and / or at Financial Close of the agreement the residual risk remains with NHS Lothian.

	2011/12 £000	2012/13 £000	2013/14 £000	2014/15 £000	2015/16 £000	2016/17 £000	2017/18 £000
Recurring Revenue Position							
Unitary Charge						█	█
Soft FM							2,791
Consort LCC/FM (SA6)							█
Consort LCC/FM (enabling)							█

	2011/12 £000	2012/13 £000	2013/14 £000	2014/15 £000	2015/16 £000	2016/17 £000	2017/18 £000
Capital Charges (equipment)					786	3,640	3,640
Capital Charges (enabling works)					█	█	█
Utilities						526	1,052
Rates						534	1,067
Total recurring					█	█	█
Non Recurring Revenue Position							
Excess Travel					20	40	40
NHS Project Team	695	695	695	695	695	695	
Professional Fees	1,236	1,775	1,036	200	200	100	
Other	25	5	5	5	5	5	0
Total non-recurring	1,956	2,474	1,735	900	920	840	40
Cost v Funding							
Total Revenue Cost	1,956	2,474	1,735	900	█	█	█
SGHD contribution (UC)						█	█
Existing NHSL Budget (Capital Charges)							(361)
Existing NHSL Budget (Facilities)							(1,659)
Existing NHSL Budget (Rates)							(233)
Existing NHSL Budget (Utilities)							(571)
Existing NHSL Budget (NHS project team)							(471)
Affordability gap	1,956	2,474	1,735	900	█	█	█

Figure 2: Summary of estimated revenue impact (incremental costs only)

Contribution from Partners

- 1.47 The net revenue impact of █m will be managed across all NHS partners and will be distributed across each of the Boards using the East Coast Costing Model (ECCM).
- 1.48 Key charity partners including █ are currently engaged in the OBC process. No charity contributions have been assumed at this key milestone, however it is anticipated that funding may be provided. Details on these contributions and the extent to which these provide one off capital, or ongoing revenue support will be further developed post OBC.

- 1.49 NHSL is working with the University of Edinburgh on re-providing academic accommodation in the project at Little France. The contribution of the University will be confirmed and included in the Full Business Case.

Key Risks

- 1.50 Risks associated with the project have been identified and quantified, and the risk management process is described in chapter six. The highest risks to the organisation and the project identified are outlined below.

1.51

[REDACTED]

- 1.52 The risks of a major construction project on a live acute hospital campus need to be addressed.

- There is risk of disruption to ongoing services, particularly in the Emergency Department and theatres, with an impact on NHSL performance against waiting times targets, [REDACTED]
- Traffic management to maintain 24/7 access to the RIE Emergency Department has to be a priority for NHSL, particularly when interface works between the buildings are underway.
- Live services also need to be protected from the dust and disruption from a construction site, to minimise the impact on hospital cleanliness and maintain control of infection.

- 1.53 The clinical service models for the project are dependant on redesign of clinical services and accommodation within the RIE in advance of the 2016 commissioning date. These all require agreement with Consort Healthcare:

- Emergency department redesign
- Pharmacy redesign
- Critical care, including the renal and transplant high dependency beds
- Laboratories services redesign

- 1.54 There is considerable risk to be managed in relation to the transfer of medical equipment from existing sites to the new build, and in ensuring that NHSL has functional emergency services for RHSC and DCN throughout the commissioning period.

Procurement Strategy

- 1.55 As announced by the Scottish Government in November 2010, the project will be a revenue-funded project. NPD partners will be procured through competitive dialogue.

- 1.56 The procurement strategy is described in detail in chapter six. The OJEU notice for the procurement is programmed to be published on approval of this OBC.

Project Management Arrangements

- 1.57 NHS Lothian Board retains overall responsibility and decision making for the project.
- 1.58 NHSL have appointed technical, legal and financial advisers to support delivery of this NPD project.
- 1.59 Scottish Futures Trust (SFT) provide support and advice to NHSL and to the Scottish Government in the procurement of this NPD project. They will lead Key Stage Reviews for assurance and approval to proceed at critical points in the project. SFT provide support to NHSL in project governance, business case development and the procurement process.

Governance Processes

- 1.60 **Key Stage Reviews** by Scottish Futures Trust commenced with Key Stage 1, a review of the design strategy and costs between August and October 2011. Their design recommendations have been received and are being addressed at the appropriate stages of the project.

1.61

[REDACTED]

- 1.62 NHSL acknowledges these areas for development, all of which were planned to be completed, or scheduled into the commissioning programme, for the Full Business Case. The progress against each recommendation to date is detailed in Appendix 2.

- 1.63 The final cost recommendations from this review are still to be shared with NHSL.

1.64

[REDACTED]

1.65

[REDACTED]

[REDACTED]

1.66 The project was subject to **Gateway Review 2**, an Office of Government Commerce assessment of the project readiness to deliver at the stage of preparing to submit the OBC, in September 2011.

1.67

[REDACTED]

1.68

[REDACTED]

Recommendation	NHSL Response
1 [REDACTED]	[REDACTED]
2 [REDACTED]	[REDACTED]
3 [REDACTED]	[REDACTED]
4 [REDACTED]	[REDACTED]

Figure 3: Gateway Review 2 Recommendations and NHSL Actions, September 2011

1.69 The Director of Finance and Project Director presented the project to the **Scottish Government Infrastructure Investment Board** in September 2011. Recommendations in relation to strategy, governance and finance were received on 17 November 2011. NHSL's response to these recommendations is included in Appendix 4.

1.70 The reference design and development of the final design with the preferred bidder will both be subject to a range of reviews as work progresses. To date these have included the following, and findings from each have influenced the ongoing design development:

- Architecture + Design Scotland workshops
- AEDET – a design evaluation tool for stakeholders to assess the architects' output
- HAIscribe – infection control
- Health Facilities Scotland NDAP – design assessment

³ Gateway Review Team (September 2011)

Timescales

1.71 Key milestones in the project programme are detailed in figure 4.

Stage	Start Date	Date By
OJEU notice (dependent on SA 6 approval)	End Feb 2012	End March 2012
Determine shortlist	End April 2012	End June 2012
Competitive dialogue	July 2012	March 2013
Receipt of final tenders		April 2013
Evaluate final tenders	April 2013	July 2013
Announce preferred bidder		July 2013
Finalise contract	July 2013	October 2013
FBC approval and award of contract		October 2013
Construction	February 2014	September 2016
Commissioning	August 2016	November 2016
Hospital opens		November 2016

Figure 4: Project plan key milestones

Confirmation of Status

- 1.72 This OBC was approved by NHSL Finance and Performance Review Committee on 14 December 2011 for submission to the Scottish Capital Investment Group.
- 1.73 This OBC was approved by NHSL Board on 25 January 2012, subject to the conclusion of arrangements for the site and enabling works with Consort Healthcare.
- 1.74 NHSL is working with partner organisations, including:
- regional NHS Boards who utilise RHSC, CAMHS and DCN services
 - University of Edinburgh

Letters of support for the OBC have been requested and will be forwarded to the Scottish Capital Investment Group.

- 1.75 The Reference Design for the project at Little France was submitted to the City of Edinburgh Council planning department in July 2011. Planning in Principle was approved on 8 December 2011 subject to Section 75 legal agreement.

Statement of Affordability

- 1.76 NHS Lothian confirms that the financial consequences will ultimately be managed as part of their financial and capital plan process; with support from the Scottish Government, NHS Boards and charity partners. This will be fully explored as part of the Full Business Case stage.

2 THE STRATEGIC CASE

Strategic context and organisational overview

2.1 Launched in May 2010, the **Healthcare Quality Strategy for NHSScotland**⁴ aims to maximise the contribution that the NHS could make to the national goals; NHSScotland will make improvements to support everyone to live longer, healthier lives and to participate more productively, both economically and socially. The Quality Ambitions integral to the strategy and providing focus for all improvements are:

- Mutually beneficial partnerships between patients, their families and those delivering healthcare services which respect individual needs and values and which demonstrates compassion, continuity, clear communication and shared decision-making.
- There will be no avoidable injury or harm to people from healthcare they receive, and an appropriate, clean and safe environment will be provided for the delivery of healthcare services at all times.
- The most appropriate treatments, interventions, support and services will be provided at the right time to everyone who will benefit, and wasteful or harmful variation will be eradicated.

2.2 NHS Lothian's principal purpose is to deliver the objective of a Healthier Scotland; however, the other national strategic objectives are also all reflected in **NHS Lothian's strategic goals**.

NHS Lothian has five high-level strategic goals that reflect the National Outcomes⁵ for Scotland:

- To deliver and sustain high quality care and treatment;
- Improving health and reducing health inequalities;
- To embrace advances in medicine, technology and information;
- To be at the forefront of research and leadership; and
- To be an exemplar employer.

NHS Lothian aims to be one of the top 25 healthcare providers in the world.

2.3 The business strategy and aims of NHSL in re-providing the RHSC, CAMHS and DCN reflect the quality ambitions for NHSScotland to provide appropriate services for all, at the right time, in a suitable environment with minimal waste or harm.

- The need to deliver high quality, clinically effective and sustainable services;
- The inadequacy and unsuitability of existing premises and facilities;
- To ensure the most efficient and effective use of resources to support service modernisation and development;
- The need to manage the impact of changes in workforce availability, particularly doctors in training.
- The need to deliver sustainable specialist services whilst meeting the challenge of relatively small numbers of patients and the small number of expert clinicians.
- The need to maintain strong relations with the University of Edinburgh's College of Medicine and their developments at Little France.

⁴ Scottish Government (May 2010): *NHSScotland Quality Strategy - putting people at the heart of our NHS*

⁵ <http://www.scotland.gov.uk/About/scotPerforms/outcomes>

2.4 Specific factors driving the need for change in **children’s and young people’s services and clinical neuroscience services** in Lothian are:

- The need to deliver sustainable specialist services whilst meeting the challenge of relatively small numbers of patients and the small number of expert clinicians;
- The national policy for Paediatric Intensive Care Units in Scotland, which have been commissioned under NHS National Services since 2007, sited in two children and young people’s hospitals;
- The need to deliver neurosurgery on the same site as an Emergency Department⁶;
- The need to deliver adult and paediatric neurosurgery on the same hospital site⁷;
- The need to maintain strong relations with the University of Edinburgh’s Division of Clinical Neurosciences and their planned Institute of Neurosciences at Little France.

2.5 Clinical benefits of integrating the two services into one building, supporting NHSL and national strategic ambitions, include:

- The ability to deliver paediatric and adult neurosurgery in the same theatre suite, maximising the utilisation of specialist equipment (e.g. intra-operative MRI) and expert staff, with direct internal access to age-appropriate critical care and wards.
- Joint-working and economies of scale in high-cost specialist clinical areas such as theatres and radiology.
- The opportunity to improve emergency access to services by incorporating a helipad on the roof of the new build.

Commercial Context: Non-Profit Distributing Model

2.6 As a result of the 2010 UK Spending Review, capital resources made available to the Scottish Government were reduced by 36%. In response to this, in the Scottish Government Draft Budget of November 2010 both the RHSC and DCN projects were highlighted as projects to be procured under the Non Profit Distributing (NPD) revenue funded model. The draft budget stated that “the new pipeline of NPD investment will help support key projects across core public services, [including:] Health projects, the Royal Sick Children’s Hospital and Department of Clinical Neurosciences in Edinburgh (c£250m)”⁸. Within the capital resources available, RHSC and DCN re-provision projects would not have been able to proceed without changing to NPD procurement.

Commercial context: Little France Site

2.7 The Little France site comprises NHSL services in the Royal Infirmary of Edinburgh, University of Edinburgh teaching and research buildings, and the BioQuarter research and development park.

2.8 The Royal Infirmary of Edinburgh facility was procured as a PFI contract between the former Royal Infirmary of Edinburgh NHS Trust and Consort Healthcare (ERI) Ltd. The RIE

⁶ The Society of British Neurological Surgeons (2000): *Safe Neurosurgery*

⁷ Kennedy (2001): *The Report of the Public Inquiry into children’s heart surgery at the Bristol Royal Infirmary 1984-1995*. Youngson (2001): *Review of Paediatric Neurosurgery*.

Kerr (2005): *Building a Health Service ‘Fit for the Future’*

⁸ Scottish Government, 17 November 2010: <http://www.scotland.gov.uk/News/Releases/2010/11/17144523>

Project Agreement was signed in August 1998 and covers a 25 year period from 2003 when RIE opened until February 2028. The RIE facility was financed, designed and built by Consort Healthcare, and a range of soft and hard facility management services are also provided through the PFI RIE Project Agreement.

- 2.9 The site is leased to Consort Healthcare Ltd for a term of 130 years, thus any site development requires Consort Healthcare approval and changes to the project agreement.
- 2.10 A Supplemental Agreement (SA6) to the RIE Project Agreement which will provide a framework for the land swap and the delivery of this project will be reached in December 2011. This is to be signed off by Consort fund holders in January 2012.

Investment Objectives

- 2.11 The key objectives for investing in change in the project are listed below:
- To provide an environment that supports clinical effectiveness, meeting of national standards and targets and facilitates the implementation of best evidence based practice leading to improved treatment outcomes for patients. Additionally, this project allows NHSL to maximise synergies in clinical care through co-locating on the same site:
 - adult and paediatric emergency departments
 - paediatric and neonatal surgery on the same campus, reducing the need to transfer ill babies off site
 - adult and paediatric neurosurgery on the same campus, maximising the sustainability of limited expertise
 - mental health services on the same site as acute hospital services for children and young people, supporting the physical as well as psychological care
 - acute neuroscience care alongside the emergency department
 - adult spinal surgery in DCN and orthopaedics supporting the provision of an improved spinal service
 - paediatric and adult spinal surgery supporting the provision of an improved spinal deformity service
 - To provide an environment where clinical service arrangements can be delivered to a standard and timeframe that represents best possible outcome for patients, in conjunction with best value for money.
 - To provide a physical environment the quality of which promotes the health and well being of the building's users.
 - To provide a service environment that will easily allow engagement and involvement with research and service development opportunities with our partner higher education institutes. To make research, treatments and interventions, and their potential benefits, available to patients. Attracting highly capable staff with progressive research interests will improve patient care and service delivery.
 - To provide a scheme option that results in the minimum possible disruption to patients and allows the continued delivery of clinical services over the duration of the construction, leading to a solution that provides a more efficient and effective clinical service delivery environment.

- To provide services that will be safely accessible to patients, visitors and staff by public and private transport.
- To optimise the efficient use of energy, water, waste management and in so doing reduce lifetime recurring revenue costs whilst also reducing the carbon footprint by minimising pollution generation.
- To future-proof the capacity of both services.

Existing Arrangements

2.12 Existing services for **children and young people** in the RHSC at Sciennes Place are summarised in figure 5, below.

Specialist children and young people's services based in RHSC		
Emergency Department	General surgery	Outpatient services
Ambulatory paediatrics	Genetics	Ophthalmology
Audiology	Haematology / oncology	Liaison psychiatry / psychology
Anaesthesia	Inherited metabolic disease	Pharmacy
Burns	Paediatric intensive care	Physiotherapy
	Paediatric high dependency	Plastic surgery
Cardiology (inpatients in RHSC Glasgow)	Infectious diseases	Radiology
Child protection	Intensive care retrieval (NSD contract)	Paediatric respiratory medicine
Chronic pain service	On-site laboratories – haematology / biochemistry	Renal medicine (outreach from RHSC Glasgow)
Cleft lip and palate surgery (NSD MCN)	Maxilo-facial surgery	Rheumatology (outreach from RHSC Glasgow)
Day surgery	Paediatric medicine	Pain management
Dentistry	Neonatal surgery	Speech and language therapy
Dermatology	Neurosciences (neurology/ neurophysiology/ neurosurgery)	Spinal deformity surgery
Dietetics	Occupational therapy	Specialist neuro-developmental paediatrics
Endocrinology & diabetes	Oral surgery	Theatres
Ear, nose & throat	Orthopaedics	
Gastro-enterology	Orthotics	
Services provided off site to support children and young people's services at RHSC		
Hospital Sterilisation and Decontamination Unit, RIE	Ophthalmology outpatients, Princess Alexandra Eye Pavilion	Spinal deformity surgery outpatients, RIE
Microbiology, Laboratories, RIE	Pathology, RIE	Virology, Laboratories, RIE
Neuropathology, Laboratories, WGH		

Figure 5: Range of services provided by NHS Lothian for children and young people at RHSC

2.13 The RHSC currently takes all new patients up to their thirteenth birthday and continues to see young people receiving ongoing care up to age sixteen. NHS Lothian recognises that

- national guidance states that care for children and young people up to age 16, and age 18 for mental health and some complex and chronic conditions, should be provided in age-appropriate facilities⁹; however, the RHSC has been developed to its maximum capacity on the existing site.
- 2.14 The NHSL Property and Infrastructure Strategy for 2011-15 recognises that the RHSC requires significant improvement and that it would be uneconomic and highly disruptive to adapt the existing site. It concludes that the current buildings are no longer appropriate as healthcare facilities in the 21st Century and that re-location of the RHSC to Little France, next to the Royal Infirmary of Edinburgh, would ensure that NHSL provided the safest possible hospital care for children.
- 2.15 Overcrowding was also found to be a problem reported in the Property and Infrastructure Strategy for 2011-15 for RHSC. The Strategy referred to the report by the Scottish Child Health Support Group in 2003, that ‘continued investment’ (in the RHSC) would be unproductive in the long term and it is clearly no longer fit for purpose’.
- 2.16 The Property Asset Management Strategy gave RHSC the highest possible risk score in terms of the amount of backlog maintenance required, at a total cost of £11.392million. This was considered to be giving rise to poor condition and performance.
- 2.17 The age and fabric of the building and the layout of patient facilities, including limited single rooms, makes it difficult to achieve the required infection control standards, to provide adequate isolation or barrier nursing facilities and to maintain standards of cleanliness.
- 2.18 The geographical spread of clinical facilities and poor clinical adjacencies result in inefficient patient and staff flows. For example, patients often require access to a number of services that are located in separate buildings on the hospital site. Therapies and a range of other services are located in buildings adjacent to the hospital; as there is no covered approach to these buildings patients and families have to go outside to access them in all weather conditions.
- 2.19 Existing services for **clinical neurosciences** in DCN at the Western General Hospital are summarised in figure 6 below.
- 2.20 Key issues for DCN re-provision, included in the Property and Infrastructure Strategy for 2011-15, were that outdated existing facilities did not meet patient expectations of ‘fit for purpose’, and that there was pressure on existing DCN services and facilities to meet activity demand, e.g. increased referrals.
- 2.21 Against health and safety criteria the accommodation narrowly achieved a satisfactory rating; the physical condition and energy efficiency of the build was judged unsatisfactory. The projected cost of upgrading the existing accommodation to an acceptable standard was over £14million at 2007 costs.
- 2.22 Scottish Government directives on single rooms¹⁰ further support the case for new accommodation. At present approximately 20% of DCN beds are in single rooms, and all are in spaces less than current recommendations of 19m² per patient bed.

⁹ Scottish Government (May 2009): *Hospital Services for Young People*

¹⁰ Scottish Government; CEL 48 (2008) and CEL 27 (2010) on *Provision of Single Room Accommodation and Bed Spacing*

Neuroscience / specialist services based in DCN		
Diagnostic Neuroradiology	Neurophysiology	Pre-Admission Clinic
Dietetics	Neuropsychiatry	Programmed Investigation Unit
Edinburgh Centre for Neuro-oncology	Neuropsychology	Physiotherapy
Neurosciences High Dependency Unit	Neurosurgery	Speech and Language Therapy
Interventional Neurovascular Radiology	Occupational Therapy	Theatres and Anaesthesia
Neurology	Outpatients Department	
Other NHSL services provided on WGH site for DCN		
Chronic Pain Service	Pharmacy, WGH	Intensive Care Unit, WGH
Health Records		
Services provided off site to support DCN		
Biochemistry, Laboratories, RIE	Microbiology, Laboratories, WGH	Virology, Laboratories, RIE
Hospital Sterilisation and Decontamination Unit, RIE	Neuropathology, Laboratories, WGH	

Figure 6: Range of services provided by NHS Lothian in DCN

- 2.23 NHSL has experienced a considerable increase in referrals to DCN outpatients, with a corresponding impact on radiology, theatre and inpatient services; neurology referrals increased by 53% over the period 2006-2009 and neurosurgery by 84% in the same period. Redesign within the service has resulted in waiting times for inpatients and outpatients reducing to below 12 weeks each, however, there is limited scope within the current facilities to maintain the standard of 18 weeks total wait.
- 2.24 Projections from the General Register Office for Scotland show an increase in the population across the DCN catchment area from 2010-2013. This will put even greater pressure on the resource for secondary and tertiary services provided in DCN.
- 2.25 A major challenge to effective patient care in the existing model is the distance of the Intensive Care beds in the WGH from the rest of DCN. The patient journey to and from this area, to access critical care, theatres or radiology in an emergency, can take in excess of twenty minutes and goes through public areas of the hospital. Specialist staff urgently needed in one unit may be engaged in the other, and the distance between the departments does not support efficient management of the workforce.
- 2.26 In summary, while RHSC, CAMHS and DCN successfully provide safe and effective specialist clinical care, the ongoing delivery and development of these services is limited by the challenges posed by outdated accommodation that cannot be adapted to modern medicine.

Future Business Needs

- 2.27 Planning for the re-provision has engaged staff, patients and other stakeholders such as regional referring Boards in reviewing existing clinical services and planning for the future.

Children and Young People's Services

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- 2.28 The future service needs for children and young people were described in the RHSC Re-provision OBC, approved in August 2008. These are summarised below and supporting detail can be found in Appendix 5.
- 2.29 The new hospital will have sufficient space for the increased age range of patients in the RHSC, from age 13-16 for all young people, and to age 18 for people with some complex care needs in line with national specialist services for children.
- 2.30 The 2008 OBC for RHSC was approved to have a mixture of single and shared accommodation for children, to meet the specific needs of this age group. 58% of inpatient beds, including all adolescent, mental health and oncology beds, will be in single rooms with en-suite and facilities for a parent to stay with their child.
- 2.31 By joining the RHSC to the RIE Emergency Department, NHSL can deliver integrated emergency services for all ages on the Little France site, including planning for major incidents and decontamination. With adult and paediatric neurosurgery on site too, the combined facilities at Little France will meet the criteria of a major trauma centre.
- 2.32 A paediatric acute receiving unit will manage acute medical admissions for up to 48 hours, separating these from elective patients and ensuring the most effective management of beds.
- 2.33 Paediatric surgical pathways are being redesigned now to increase day cases and day of surgery admissions, and to separate short- and long-stay patient pathways. This redesign and the efficiencies in staffing and bed management will be maximised through purpose-built accommodation in the future.
- 2.34 Paediatric neurosurgery and neurology will be based on the same site as adult services. This will support the best use of specialist neurosurgical and neurophysiology facilities and staff, sustainable surgical rotas, and access to intra-operative MRI and neuroradiology for children and young people, ensuring that NHSL is best placed to deliver paediatric neurosurgery services in future.
- 2.35 Co-location of paediatric and adult spinal deformity services will focus clinical and radiological expertise as well as access to radiological and theatre equipment and facilities.
- 2.36 Co-location of Child and Adolescent Mental Health Services (CAMHS) with the hospital for children and young people delivers acute medical support for patients who also require the specialist input of an acute service. This meets the recommendation from the ombudsman in 2006 that NHSL *'should ensure that inpatient mental health services for patients with eating disorders have access to acute in-patient medical services with the specialist knowledge and expertise needed to treat patients with eating disorders.'*¹¹ NHSL is commissioning an Eating Disorders Unit at St John's Hospital for patients over 18 years of age; children and adolescents up to age 18 requiring mental health inpatient treatment will be seen in CAMHS, with medical support from acute specialties at RHSC.
- 2.37 The design will enable the development of fit for purpose flexible inpatient accommodation to allow for seasonal differences in the incidence of respiratory illnesses in children.

¹¹ Scottish Public Services Ombudsman (June 2006): *Case number 200400447*

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- 2.38 Shifting the balance of care to community premises and facilities closer to home continues with the move of more outpatient services off the acute site. Outpatient clinics and day case surgery is also transferring back to hospitals in other Board areas.
- 2.39 The design will incorporate a clearly identifiable, friendly and secure children's entrance to the outpatient departments and ward areas.
- 2.40 Co-location on the adult site will enable the development of seamless transition pathways for adolescents into adult care, which is an important time for children with chronic diseases.

Clinical Neurosciences

- 2.41 The proposed service model for clinical neurosciences maximises the opportunity to deliver clinical neurosciences on the same site as specialist emergency adult and paediatric services. This is summarised below and supporting detail can be found in Appendix 6.
- 2.42 It is anticipated that location of DCN on the same site as Edinburgh's Emergency Department and other emergency surgical services would support rapid specialist assessment, diagnosis and decision-making for major trauma patients. It will also reduce the time taken to commence surgery or interventional radiology, or access specialist critical care.
- 2.43 The service model includes a neurosciences 'front door', or acute receiving and assessment area, for patients referred to DCN from across the region. This unit will be the focus of an experienced multi-disciplinary team caring for the sickest and least stable patients, and will separate emergency patients from elective pathways.
- 2.44 Co-location of acute stroke on the same site with neuroradiology and neurology is designed to improve outcomes for patients for whom accurate diagnosis, assessment and intervention is time-critical. For example, thrombolysis would be delivered in the acute receiving and assessment area, clot extraction performed in interventional neuroradiology, or decompressive craniotomy in neurosurgical theatres.
- 2.45 All inpatient beds in DCN will be in single rooms with en-suite shower and WC facilities. This meets the recommendation of the Scottish Government made in 2008 and 2010, to enhance patient privacy and dignity, and improve infection control and clinical outcomes.
- 2.46 A single spinal surgery referral pathway integrating neurosurgical and orthopaedic specialist resources would provide an equitable and efficient service, where shared training and experience would develop staff and improve care for patients. This will also improve the safety and quality of care for patients with unstable cervical fractures.
- 2.47 Intensive care and high dependency beds for neurosciences would be cohorted in ward 118 of the RIE, becoming a part of the overall adult critical care complement in the RIE, supporting sustainability, flexibility and patient safety. This is in line with NHSL's commitment to maintaining three critical care units across Lothian hospitals.
- 2.48 A link between DCN and the RIE would provide access for emergency patients and potentially improve upon the current geographical challenges posed by the distance and route between DCN and the Intensive Care Unit at the WGH.

- 2.49 While neurosurgical procedures do not lend themselves to day case surgery or less than 24 hour stays, day of surgery admission for elective procedures will maximise the utilisation of beds.
- 2.50 Neurological investigations and therapies that can be treated as day cases will be done so in a Programmed Investigations Unit, thereby reducing the use of inpatient beds and unnecessary overnight admissions.
- 2.51 Paediatric neurosurgery and neurology would be based on the same site as adult services, providing the opportunity to ensure more effective transition planning for young adults.
- 2.52 DCN will continue to develop outpatients' clinics in the community and in other hospitals in Lothian and beyond. Neurology clinics will remain at the WGH to serve the North Edinburgh population.

Innovation and other opportunities

- 2.53 NHS Lothian aims to lead and embrace technological advances in order to improve patient care; for example, intra-operative MRI within the joint theatre complex for RHSC and DCN will allow more effective operative treatment of brain tumours for both paediatric and adult patients.
- 2.54 The new facility will include a roof-top helipad for the transfer of patients to and from the Little France site by air. The existing helipad for the RIE, built before the latest guidance and Civil Aviation Authority (CAA) regulations were in place for landing on hospital sites, does not meet current standards.
- 2.55 To incorporate the RHSC, CAMHS and DCN workload into the existing pharmacy footprint at RIE, NHSL will be installing robotics for the storage and dispensing of medicines. As well as maximising the use of accommodation available, the automated system will be supported by redesign of working practices and the workforce.
- 2.56 Proposals supporting the innovative delivery of facilities management services will be welcomed from bidders during the competitive dialogue procurement stage in 2012. A possible example of this is the robots installed at the new Forth Valley Royal Hospital opened in 2011.
- 2.57 The project will include a full production kitchen that will prepare patient meals on site and that will also supply a staff and public dining room.
- 2.58 NHSL policies on sustainable development are having an impact on the procurement of new buildings. The new building programme has at the centre of its design processes a focus on sustainability, carbon reduction and renewable energy.

Flexibility and future-proofing

- 2.59 Projected activity has been calculated, and will be refreshed annually, using the latest activity data and population projections for effective planning of services in the new building.

- 2.60 NHSL requires accommodation that could be adapted to meet changes in demand in the future, both for flexible management of unexpected peaks in activity and for long-term changes to clinical and service models.
- 2.61 Day case beds that, with appropriate staffing, could be used flexibly as overnight beds at times of pressure on the services are included in the initial design.
- 2.62 In addition to this, day case facilities that could be converted into inpatient wards with minimal building and infrastructure work are planned, should this be required in the future.
- 2.63 DCN Acute Care includes four bed spaces with services required to support ventilated patients, should this change in clinical model be required in the future
- 2.64 The planned surgical capacity in the theatres exceeds the activity projected for 2016, and with additional revenue funding NHSL would be able to meet an increase in demand without requiring further capital build.
- 2.65 Space for a further scanner has been included in the radiology footprint to provide for future expansion.
- 2.66 Adult spinal surgery is planned to be delivered in DCN, releasing space in orthopaedics wards and theatres in the RIE. However, this position could be reversed should demand for space in DCN be prioritised over that in orthopaedics in future.

Clinical Scope and Service Requirements

- 2.67 The functional brief for the project includes inpatient beds, outpatient clinics, rehabilitation, emergency care, day case facilities, child and adolescent mental health inpatient and day case services, operating theatres, radiology and physiology departments and associated support functions.
- 2.68 In summary, the overall accommodation requirement is approximately 48,000m². For comparison, the DCN footprint in the 2009 OBC was 13,000 m², and the RHSC stand-alone design was 36,000 m² when it was halted in November 2010.

Bed Model

- 2.69 NHSL has undertaken a systematic review of the number of beds required in partnership with the Clinical Management Teams. This OBC includes a bed model based on projected demand for beds in the proposed service models for children and young people and for clinical neurosciences.
- 2.70 The baseline inpatient and daycase activity for children and young people intended to be treated in the RHSC at Little France was 19,019 episodes in 2010. In 2016/17, this activity is projected to increase to 19,190 episodes (by 0.9%) and to 19,590 episodes (3% on the baseline) by 2020/21.
- 2.71 The baseline inpatient and daycase activity of DCN in 2010/11 was 5,493 episodes. On a like-with-like basis, i.e. excluding new developments, the baseline DCN activity is projected to increase by 5.5% by 2016/17 and 10.0% in 2020/21. Taking into consideration the additional spinal surgery and acute stroke, DCN at Little France is projected to see 6,530 inpatient and day case episodes in 2016/17 and 6,790 in 2020/21.

2.72 The bed model is summarised in figures 7 and 8 below, and in more detail in Appendix 7.

Hospital for Children and Young People			
Specialty / Department	Number of beds		Expected average bed occupancy
	To build	To open in 2016	
Paediatric Acute Receiving and Assessment Unit	34	26	74%
Surgical / Medical / Neurosciences	64	63	77%
Oncology	10	9	58%
Critical Care	24	24	76%
Child and Adolescent Mental Health	12	12	80%
Total inpatients beds	144	134	75%
Day Case Beds	22	22	-
Total bed spaces	166	156	75%

Figure 7: Proposed bed model for the RHSC

Department of Clinical Neurosciences			
Specialty / Department	Number of beds		Expected average bed occupancy
	To build	To open in 2016	
DCN Acute Care	24	24	82%
DCN Inpatients	43	38	82%
Total inpatients beds in the new build	67	62	82%
Day Case Beds	2	2	-
Total bed spaces in the new build	69	64	-
DCN Critical Care – in RIE	11	11	75%
Total bed spaces at Little France	80	75	81%

Figure 8: Proposed bed model for the DCN

2.73 Benchmarking was undertaken against seven peer hospitals for RHSC and nine for DCN.

NHS Lothian – Children’s services	NHS Lothian - Clinical Neurosciences
Birmingham Children’s Hospital NHS Trust	Brighton & Sussex University Hospital Trust
Central Manchester & Manchester Children’s University Hospitals NHS Trust	Cambridge University Hospitals
	Hull & East Yorkshire Hospitals
Newcastle Upon Tyne Hospitals NHS Foundation Trust	Newcastle University Hospitals NHS Trust
	Nottingham University Hospitals NHS Trust
Nottingham University Hospitals NHS Trust	Oxford Radcliffe Hospitals
Royal Liverpool Children’s NHS Trust	Plymouth Hospitals NHS Trust
Sheffield Children’s NHS Foundation Trust	Sheffield Teaching Hospitals Foundation Trust
United Bristol Healthcare NHS Trust	South Tees Hospitals NHS Trust

Figure 9: Peer hospitals using for performance benchmarking

2.74 For RHSC, day case rates and lengths of stay were benchmarked. The RHSC day case rate is currently 77%, ranking third amongst eight peers. Benchmarking length of stay to the 75th performance percentile of peers indicates a reduction of four inpatient beds for elective activity and ten inpatient beds for emergency and transfer activity. Benchmarking

also indicated that an additional two day case beds and ten day only assessment beds are required in the new build. In summary, the impact of benchmarking in planning for the RHSC is a shift in accommodation from overnight stays to day case beds.

- 2.75 For DCN, benchmarking at the 75th percentile indicated a reduction in one bed for elective activity and seven for non-elective activity.
- 2.76 These bed numbers have informed the design and costs in this OBC. NHSL continues to analyse current activity and future requirements, and benchmark its performance in these services against peers. A final bed model, including phased commissioning of the new build, will be included in the full business case in 2013.

Theatres Model

- 2.77 The new building will include eight surgical operating theatres, five for the paediatric specialties and three for adult neurosurgery, plus a dedicated emergency theatre. They currently have seven between them and struggle to meet demand, with emergencies impacting on elective service delivery and routine maintenance difficult to accommodate. The theatres suite will also accommodate an intra-operative MRI and the interventional neuroradiology suite. The modelling for theatre requirements is explained in Appendix 7.
- 2.78 It is intended that the RHSC and DCN will each have their own surgical admissions areas and theatres pathways in order that conscious patients will not encounter one another, while the sharing of staff and equipment 'behind the scenes' can be maximised. This will include use of the new intra-operative MRI and the interventional neuroradiology (angiography) suite.

Radiology Model

- 2.79 Modelling for the radiology requirements is explained in Appendix 7. The NHSL approved provision for the new build, alongside existing facilities in RIE, is summarised in figure 10.

	RHSC	DCN	RIE
MRI	1	2	2
MRI Intra-operative (in theatres)		1	0
MRI Research scanner (university)	0	1	1
CT	1	1	2
CT Research scanner (university)	0	0	1
Emergency Department tubes	2	0	2
General Radiography	2	1	10
General Ultrasound	2	1	4
Fluoroscopy	1	0	2
Image Intensifiers	2	1	7
Radionuclide Imaging Gamma Cameras	2 – in the new build, for the whole site		
Interventional neuroradiology (angiography)	0	1	0

Figure 10: Proposed Radiology services at Little France from 2016

- 2.80 Projected future MRI scanning requirements demonstrate a need for five NHS scanners on the Little France site to meet the combined RIE, RHSC and DCN demand. The current number across these services is three, plus some access to a university scanner for NHS workload at DCN. The OBC includes space for four suites in the new build and costs the purchase of four scanners, while NHSL is exploring the option of putting one of these MRI

scanners at St John's to shift activity back to West Lothian and improve the facilities at this site. This proposal has the added benefit of leaving a shelled space to future-proof the Little France site.

- 2.81 DCN also provides services for other patients at WGH. Provision for these patients after DCN moves to Little France is being planned with the Radiology Clinical Management Team and will be detailed in the Full Business Case.
- 2.82 NHSL has been advised in a recent Radiation Protection review that it must decrease the number of sites on which radionuclide imaging is delivered, and with the move of RHSC to Little France, the RIE gamma camera will be relocated to the new build. Pathways in the RHSC and DCN joint radiology department that separate paediatric and adult patients attending for diagnostics and treatment is a key priority for the next stage of the design.

Adjacencies and pathways

- 2.83 Effective services rely on close adjacencies between related specialties and disciplines. The design brief specifies that routes between departments should minimise travel time and distances for patients and staff in order to maximise clinical safety and efficiency. As well as relationships within RHSC and within DCN, it is essential to provide links with the RIE Emergency Department, theatres and critical care departments for the transfer of critically ill patients.
- 2.84 Physical links to the existing RIE at ground and first floor levels are required for access between adult and paediatric emergency departments, theatres, and critical care, and between all acute clinical departments and the helipad.
- 2.85 For users of RHSC, CAMHS and DCN, NHSL aims to provide age appropriate facilities in a safe, caring and healing environment. At all times, the ethos and environment of a specialist hospital for children and young people has been considered in planning departmental relationships and patient pathways. For example, while the layout of surgical theatres and radiology allows shared space for staff and support functions behind the scenes to be maximised, conscious paediatric and adult patients will not cross paths in these departments. Recreation space and public facilities outwith the wards will be segregated as far as is practical.

Helipad

- 2.86 The RIE site currently has a ground-level helipad behind the hospital with limited hours of access due to changes in the regulations since it was built, and which requires an ambulance to transport a patient and medical team between the landing site and the hospital.
- 2.87 NHSL Senior Management Team approved the inclusion of a roof-top helipad for the transfer of patients to the Little France site by air. The justification for improved helicopter access, and the options reviewed by NHSL are included in Appendix 8.

Family facilities

- 2.88 There will be a 33-room family hotel for carers and relatives, or patients the night before admission for an elective procedure, as a part of the RHSC accommodation.

- 2.89 There is provision in the reference design for patients and families to have access to gardens or courtyards for external play and social space.

Facilities Management Scope and Service Requirements

- 2.90 The services brief for the new hospital recognises that it will be designed as a stand alone facility, separate from the existing RIE building and its PFI contract arrangements. In this respect separate arrangements will be put in place for Hard and Soft Facilities Management (FM), and the procurement and provision of energy and medical gases. The new hospital will also be configured to receive deliveries separately from the RIE.
- 2.91 In line with national policy, it is planned that all soft FM services will be provided by NHS Lothian. It is anticipated that hard FM will fall under the NPD arrangements for the building, and NHSL has included proposed accommodation for this in the brief. The planned delivery of FM services by NHSL and by the NPD partners is detailed in Appendix 9.
- 2.92 Output specifications for FM services will be based on standard form Scottish Government NHS specifications, adapted for this project as required.
- 2.93 FM service requirements and associated specifications will recognise site-wide issues associated with the Little France site, including flood prevention measures, transport and car parking strategies, landscaping, interfaces with facilities and services associated with the existing RIE facility and its operations and interfaces with other services that will be not form part of the NPD contract.

Design Scope and Requirements

- 2.94 NHSL, supported by Technical Advisors, has developed a Reference Design to take to the market for NPD procurement. The prime purpose of the Reference Design is to mandate and fix those aspects of the design that will satisfy NHSL's clinical functionality requirements. The scope of the clinical functionality requirements is based on the definition given to clinical functionality in the SGHS Standard Form Project Agreements¹². The parts of the Reference Design that will be outlined as the mandatory clinical functional requirements will comprise:
- Access
 - Traffic management
 - Relationships between buildings
 - Adjacencies between clinical departments and between rooms
 - Schedule of accommodation areas
 - Certain room layouts
- 2.95 The secondary purpose of the Reference Design is to provide the following for the project approval and procurement processes:
- OBC capital and operational expenditure costing

¹² SGHS Standard Form Project Agreements, Non-profit Distributing (NPD) Model: Version 1

- Robust clinical functionality solutions (i.e. to confirm feasibility from a services perspective).
- Developed discussions with third parties (ie charities, other stakeholders)
- Statutory consents (ie Planning Permission in Principle)
- Tested output specifications
- Scoped enabling works
- Information to bidders

2.96 The principles of NHSL's clinical functionality requirements, based on clinical and design briefing by NHSL, will be mandated through the Reference Design within the following components.

- Schedules of accommodation
- Room data sheets (including equipment lists)
- Drawings at 1: 1000 and 1:500 scale, indicating access arrangements, relationships between buildings and adjacencies between clinical departments
- Drawings at 1:200 scale, indicating clinical requirements with adjacencies between rooms within clinical departments. For key clinical departments, the relationships and layouts specified in the reference design will be non-negotiable for bidders.
- Drawings at 1:50 scale, indicating requirements for generic rooms and key clinical rooms in the reference design. For example, the layouts of operating theatres, radiology suites and inpatient bedrooms will be fixed at this stage to ensure clinical functionality.

2.97 The other elements developed as part of the Reference Design will be used to supplement NHSL's construction requirements in the ITPD and information to be made available to Bidders in the Data Room. It will comprise:

- Topographical information and site boundaries;
- Planning Permission in Principle drawings / documentation;
- Site Infrastructure;
- Enabling works records;
- Interconnections with the existing buildings;
- Geotechnical information;
- Traffic impact and assessment plan; and
- Services interconnections.

Funding Scope

2.98 Public funded capital investment will be required for enabling works on the Little France site and within the existing RIE, and for equipping the new building. The capital requirement is explained in detail in chapter five.

2.99 The new building will be revenue-funded through the Scottish Government's Non-Profit Distributing model.

2.100 The Scottish Government Health Directorates' letter of 22 March 2011¹³ defines the level of revenue support to be made available for each aspect of an NPD project. Figure 11

¹³ Scottish Government (22 March 2011): Funding conditions for delivering projects through the Non Profit Distributing Model

sets out all cost headings, and identifies those which are within the funding scope of the NPD model, and the extent to which SGHD revenue funding will be provided to meet these costs over the life of the facility. The OBC analysis will set the cap on the SGHD revenue funding support.

Cost	NPD		Non NPD	
		SGHD funding support	Capital	NHSL Revenue
Construction	√	100%		
Private Sector Development Costs	√	100%		
Financing Interest and Fees	√	100%		
SPV Running Costs - Construction	√	100%		
SPV Running Costs - Operational	√	100%		
Clinical Enabling			√	
External Enabling			√	
Town Planning Requirements			√	
Car Park F			√	
Other Professional Fees				√
Equipment			√	
Hard FM	√	0%		
Soft FM				√
Lifecycle – RIE			√	
Lifecycle – RHSC and DCN	√	50%		
Utilities	√	0%		
Clinical Services				√

Figure 11: Funding sources for elements of the project

Benefits Criteria

- 2.101 The criteria used for the non-financial benefits appraisal of project options followed the NHS Lothian benefit criteria for improvement and change projects that have been in use since 2007. These translate to the investment objectives set out in the Scottish Capital Investment Manual (SCIM) published in 2009, and the project investment objectives outlined in paragraph 2.11 above.

NHS Lothian Benefit Criteria approved 2007	SCIM Investment Objectives as published April 2009
Clinical effectiveness	Clinical effectiveness, meeting standards, evidence-based
Sustainability	Efficient use of resources and revenue
Accessibility	Safely accessible services
Quality of environment	Physical environment to promote health and wellbeing
Research and education	Research, education and service development
Ability to implement	Delivered to standard and timeframe, with value for money
	Delivered with minimal disruption

Figure 12: NHSL Benefit Criteria mapped against SCIM Investment Objectives

2.102 These benefit headings were used to develop details of the essential and desirable criteria for various option appraisals over the course of this project. A history of the outcome of these appraisals is included in chapter three of this OBC.

Strategic Risks

2.103 Following approval of the preferred option to develop the NPD project, risk workshops have identified the project risks.

2.104 Risks have been identified, quantified, and the management of this process and its ongoing monitoring is described in chapter six.

2.105



2.106 166 risks were identified; a summary across the categories is included in figure 13.

Category	Number
Business / Reputation / Service	12
Political / Policy / Legislative	9
Clinical	33
Procurement / Funding	21
Design / Construction	63
Operation / Performance	24
Technology	4
Total	166

Figure 13: Project risks identified by category

2.107 The strategic risks relate to those falling within the first four categories in figure 13. Of the 75 risks falling into these four categories, seven were identified as being high risk, and these are summarised in figure 14.

High Scoring Strategic Risks	Risk score (maximum 25)	Risk Register ID
BUILDING INTERFACE – RIE THEATRES Building connection at theatre areas. Disruption to ongoing delivery of service.	25	136
BUILDING INTERFACE – RIE RESUSCITATION Loss of, or impact on, resuscitation rooms / clinical space.	25	158
NEURO-INTERVENTIONAL ROOM Double running / equipment transfer of Neuro-Interventional in DCN at Western General. Life expectancy of Equipment 7-8 years.	20	162
EQUIPMENT TRANSFER - RHSC (DOUBLE RUNNING) Equipment transfer - non-active kit in RHSC. Loss of function / service.	20	163

TRAFFIC ACCESS TO THE EMERGENCY DEPARTMENT Single point of access to the Emergency Department at RIE. Loss of 24/7 access. Access to Primary PCA.	18	128
INFECTION CONTROL - RIE ICU Clinical / infection risk at access from RIE ICU and Theatres to DCN (HAI SCRIBE).	18	148
INFECTION CONTROL - CLINICAL ENABLING WORKS Clinical / infection risk throughout all clinical enabling works.	18	149

Figure 14: High risk strategic risks to the project

2.108 Risk scores from two other categories also identified high risks:

High Scoring Design and Construction Risks	Risk score (maximum 25)	Risk Register ID
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
CONTRACTOR ISSUES Issues with contractors, eg service connections, interface of buildings.	17.5	90
High Scoring Technology Risks		
MEDICAL PRACTICES Changes / advances in practices which impact on the equipment, building layouts and services. Impacts programme and operation.	20	117
CLINICAL EQUIPMENT Technological advances in relation to equipment specifications, eg MRI scanners and other ICU / theatre / radiology equipment.	20	128

Figure 15: Other high risks to the project

2.109 The risks of a major construction project on a live acute hospital campus need to be addressed.

- There is risk of disruption to ongoing services, particularly in the Emergency Department and theatres, with an impact on NHSL performance against waiting times targets [REDACTED]
- Traffic management to maintain 24/7 access to the RIE Emergency Department has to be a priority for NHSL, particularly when interface works between the buildings are underway.
- Live services also need to be protected from the dust and disruption from a construction site, to minimise the impact on hospital cleanliness and maintain control of infection.

- 2.110 The clinical service models for the project are dependant on redesign of clinical services and accommodation within the RIE in advance of the 2016 commissioning date. These all require agreement with Consort Healthcare:
- Emergency department redesign
 - Pharmacy redesign
 - Critical care, including the renal and transplant high dependency beds
 - Laboratories services redesign
- 2.111 There is considerable risk to be managed in relation to the transfer of medical equipment from existing sites to the new build, and in ensuring that NHSL has functional emergency services for RHSC and DCN throughout the commissioning period.
- 2.112 An overall risk management plan has been developed with allocated risk owners and management actions identified. A copy of the risk register included as Appendix 12

Dependencies and Constraints

- 2.113 The success of the project is dependent on:
- The availability and condition of the site.
 - The existing RIE clinical and support services having the capacity to support the new building on site, for example, pharmacy, decontamination and laboratories.
 - Provision of replacement and new car-parking for the expanded Little France site, and
 - Implementation of an integrated Transport Strategy for the expanded Little France site.
- 2.114 The project is constrained by the following requirements:
- Compliance with statutory requirements.
 - Delivery within the agreed timescales.
 - Delivery within the agreed financial envelope.
 - The RIE Project Agreement with Consort Healthcare Ltd.
 - Planning constraints.
 - Architecture and Design Scotland requirements.
 - Achievement of BREEAM 2011 rating, which is more onerous than the BREEAM 2008 requirements for the previous stand-alone RHSC scheme.
 - Management of any disruption to the RIE services and the Chancellors Building during the construction phase.
 - Delivery of the clinical enabling works within the Royal Infirmary Edinburgh, including changes in critical care, pharmacy and laboratory services.

3 THE ECONOMIC CASE

Critical Success Factors

3.1 SCIM suggests that the following critical success factors should be used in conjunction with the investment objectives to evaluate the long list of possible options for a project.

- Business needs – how well the option satisfies the existing and future business needs of the organisation.
- Strategic fit – how well the option provides synergy with other key elements of national, regional and local strategies.
- 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 VFM (economy, efficiency and effectiveness).
- 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.
- Supply side capacity and capability – the ability of the market place and potential suppliers to deliver the required services and deliverables.
- Potential affordability – the organisation’s ability to fund the required level of expenditure – namely, the capital and revenue consequences associated with the proposed investment.

Main Business Options

3.2 The RHSC OBC included the 2007 appraisal of two site options for a new build against the ‘do minimum’ baseline.

3.3 In both the non-financial and the economic evaluations the same option scored highest; the preferred and approved location for a new RHSC was Little France.

Option Appraisal Measure	Ranking		
	Option 1	Option 2	Option 3
	Do Minimum	Little France	St John’s
Non-financial benefits score	3	1	2
Financial appraisal	1	2	3
Economic Appraisal	3	1	2
Risk Assessment	3	1	2

Figure 16: Outcome of RHSC site option appraisals, 2007

3.4 In 2008 the DCN Re-provision project assessed three site options for a new build against the ‘do minimum’ baseline.

- 3.5 In both the non-financial and the economic evaluations the same option scored highest; the preferred and approved location for a new DCN was Little France.

Option Measure	Appraisal	Ranking			
		Option 1	Option 2	Option 3	Option 4
		Do minimum	New build at the WGH	New build at Little France	New build at St Johns
Benefit score		4	3	1	2
Financial appraisal		4	3	1	2
Economic Appraisal		4	3	1	2
Risk Assessment		4	3	1	2

Figure 17: Outcome of DCN site option appraisals, 2009

Preferred Way Forward

- 3.6 The preferred way forward for NHS Lothian, in relation to non-financial and economic appraisals and all of the critical success factors was to find a solution that accommodates both of these services on the Little France site.
- 3.7 Little France would meet NHSL business needs and strategic fit for both services, offering:
- The ability to retain paediatric neurosurgery, which in turn sustains paediatric intensive care in Edinburgh.
 - Concentration of neurosurgery on the major trauma site.
 - Conjoined emergency departments, supporting 'major trauma' status of the site.
- 3.8 Little France also proved to be the most economic, efficient and achievable of all sites for both the project.
- 3.9 Masterplanning for Little France, which involved NHSL, the University of Edinburgh and Consort Healthcare as major stakeholders in the site, identified:
- one feasible location for RHSC, on Car Park B, and
 - a number of possible locations for the DCN.
- 3.10 A pre-requisite for any development on car park B was for NHSL to secure alternative car parking for the site and to protect the interests of Consort Healthcare as outlined in their RIE Project Agreement. Land was purchased from Scottish Enterprise in 2010 to create parking on the Edinburgh BioQuarter site to the east of the RIE. The new land replaces car park B with additional spaces to meet the project's needs.
- 3.11 Following approval of the RHSC Re-provision OBC in 2008, a Principal Supply Chain Partner (PSCP) and Professional Services Contractors (PSCs) were appointed from the HFS Framework to develop a capital-funded, stand-alone scheme at Little France. By November 2010 NHSL were ready to submit designs for RHSC on car park B for detailed planning consent.

- 3.12 The Scottish Government Draft Budget published in November 2010 announced a fundamental change to the financing and procurement method for the project, including the relationship with the PSCP and PSCs previously contracted to work on the RHSC.
- 3.13 Work to produce an OBC for DCN in 2008-10 had developed the various options for the location of clinical neurosciences at Little France; as a stand-alone facility, as an extension of the RIE, embedded within the existing RIE, or as part of the new RHSC building. Appendix 13 details the options for delivering DCN at Little France that had been appraised up to November 2010.

Short-listed Options

- 3.14 Until December 2009 NHSL had been developing a joint RHSC, CAMHS and DCN design, which was considered to deliver the most benefits in terms of business needs, strategic fit, efficiency, effectiveness and potential achievability. Design development for a joint build stopped in December 2009 with confirmation that DCN would not be capital-funded.
- 3.15 When the capital-funded project for the stand-alone RHSC halted in November 2010, NHS Lothian had the opportunity to revisit options for delivering RHSC and DCN simultaneously.
- 3.16 Given the desirable clinical integration of RHSC, CAMHS and DCN, and the efficiency gains to be had from re-providing them together, a feasibility study as to whether the two facilities could be integrated into a joint build was conducted. RHSC design had moved on from 2009 when this was last considered, and the site needed to incorporate an energy centre and facilities management infrastructure to make the development independent of the RIE.
- 3.17 The March 2011 OBC update detailed the appraisal of the two feasible site options for delivering the project at Little France:
- a joint build on car park B, or
 - RHSC on car park B, with DCN being mostly new build at the end of the RIE ward arc.
- 3.18 There were two possible procurement routes that NHSL were asked to consider for the joint build option; these were differentiated in the appraisal carried out for the 2011 Business Case Update as options 1a and 1b. Option 1a would be procured through NPD, option 1b would be a joint venture with NHSL's existing PFI partner for the RIE at Little France.
- 3.19 The scale of the development is such that the project must go to the open market. For this reason the consideration of option 1b, which was to deliver the project with a specific provider, was discontinued after the March 2011 Business Case Update.
- 3.20 The two options considered for this OBC are:

Option	Option Description	Procurement Routes
1	RHSC & DCN: joint build on car park B	NPD
2	RHSC: on car park B DCN: RIE extension	RHSC: NPD DCN: Most likely extension of PFI

Figure 18: Options for the delivery of the project at Little France

Benefits Appraisal

- 3.21 The process for the appraisal of options 1 & 2 above is summarised here.
- 3.22 The following stakeholders were invited to appraise the non-financial benefits of project options 1 and 2 on the Little France site:
- RHSC Clinical Management Team.
 - DCN Clinical Management Team.
 - NHS Lothian Partnership Redesign Lead.
 - A representative each of Critical Care, Medicine, Theatres and Anaesthetics, and Radiology CMTs.
 - NHS Lothian Director of Capital Planning.
 - Project Director.
- 3.23 The question to be answered was whether DCN integrates better either with the existing adults' hospital or with the new children's and young people's hospital. For this reason, the benefit criteria for the DCN project were proposed for this appraisal, to be scored from the perspective of each stakeholder.
- 3.24 Reflecting the information available to differentiate between the options, the benefit criteria for the project were reviewed and updated by the participants, and the weighting revised.
- 3.25 The stakeholder group agreed that the project options to be scored would deliver no significant difference with regard to research and education. The detailed criteria and weighting used for this scoring are included in Appendix 14.
- 3.26 Details of the scores for each option against each criterion are included in Appendix 14. The total weighted scores for the benefits each option would deliver were as summarised in figure 19.
- 3.27 The scoring clearly demonstrates that the joint building (option 1) is the best option in terms of satisfying the non-financial needs of NHSL in delivering these projects.

Benefits Criteria	Weight-ing	Weighted Scores	
		Option 1	Option 2
		Joint build RHSC & DCN	Stand-alone RHSC; DCN as RIE Extension
Clinical Effectiveness Efficient patient and staff pathways.	35	138.1	114.7
Ability to implement Timescales; minimising disruption to service.	25	100.0	68.1
Quality of environment Functional, safe and efficient working environment	15	62.1	42.9
Sustainability Sustainable services and workforce; energy efficient; flexible and future-proof.	15	66.3	48.8
Accessibility Ease of access to hospital services.	10	37.5	40.0
Research and Education Relationship with R&D activity.	0	0.0	0.0

Score		404.0	314.4
Rank		1	2

Figure 19: Benefit criteria scores for project options 1 and 2 scored in December 2010

Non-financial Risk Assessment

- 3.28 A qualitative risk assessment of these options was carried out in 2009 and refreshed in March 2011 to be submitted as a part of the business case update. A summary of the risk scores is shown in figure 20.

	Option 1	Option 2
	Joint build RHSC & DCN (NPD)	Stand-alone RHSC; DCN as RIE Extension
Risk score	415	475
Risk Ranking	1 Lowest risk	2 Highest risk

Figure 20: Risk scores for project options 1 and 2 scored in January 2011.

- 3.29 In terms of revenue affordability, Option 2 was judged to be very high risk, as opposed to option 1 being high risk. This difference in score reflected the constraints of the existing PFI contract in relation to DCN and the need to enter into a separate NPD contract as well for RHSC. Option 1 would require negotiation of a single contract for the joint build.
- 3.30 As the option with the lowest risk score overall, Option 1, the joint building, is the best option in terms of exposing NHSL to risk.

Preferred Option – Non-financial Appraisals

- 3.31 The outcome of the benefits and risk appraisals in March 2011 identified that a joint build for the project on Car Park B at Little France, through an NPD arrangement, was the preferred option for this project.
- 3.32 Clinical integration and operational efficiencies, delivering both NHSL and NHSScotland strategic improvements, are possible with a joint re-provision of RHSC, CAMHS and DCN.
- 3.33 Clinical benefits of integrating the two services into one building, supporting NHSL and national strategic ambitions, include:
- Efficiency and effectiveness through the ability to deliver paediatric and adult neurosurgery in the same theatre suite, maximising the utilisation of specialist equipment (e.g. intra-operative MRI) and expert staff, with direct internal access to age-appropriate critical care and wards.
 - Joint-working and economies of scale in high-cost specialist clinical areas such as theatres and radiology.
 - Proximity of paediatric and adult neurology services for the large adolescent patient group transferring to age-appropriate care.
 - The opportunity to improve emergency access to services by incorporating a helipad on the roof of the new build.

- Minimising the disruption to adult clinical services and patient pathways at RIE through the build and commissioning.

3.34 Non-clinical benefits of integrating the two services into one building include:

- Economies of scale in sharing support accommodation and facilities such as health records, IT and staff changing.
- Some economy of scale in the provision of public space, whilst preserving the ethos of a hospital for children and young people, segregated from adult services where necessary. Minimising the disruption to the functions of the RIE site through the build and commissioning.
- Preserving RIE expansion zone to accommodate NHSL business needs for future flexibility and growth.
- Maximising the benefit of development work undertaken to date including design

3.35 In July 2011 the Scottish Government acknowledged the OBC update for the RHSC and DCN projects and invited NHSL to develop an Outline Business Case for the preferred option of a joint build.

Financial Assessment

3.36 Financial assessment of options 1 and 2 in March 2011 used shadow financial models to produce a unitary charge for each option. The assumptions and outputs for these models, developed with financial advisers Ernst and Young, were detailed in the business case update.

3.37 The conclusion of the economic appraisal carried out in 2011 was that option 1 achieved better value for money and a lower unitary charge than option 2. This is summarised in figure 21.

	Option 1	Option 2
	Net Present Value	Net Present Value
NPD Model (£000)	████████	████████
PPP Model (£000)	████████	████████
Overall NPV (£000)	████████	████████
Ranking	1	2
Non Financial Benefits Score	404	314
NPV per benefits score (£000)	████████	████████
Ranking	1	2

Figure 21: Cost / benefit appraisal of Options 1 and 2 at March 2011

3.38 It must be noted that the model used in this appraisal was based on assumptions and costs known at March 2011, and the financial case in chapter 5 of this OBC is based on the subsequent work to develop the preferred option and the shadow financial model.

Preferred Option

- 3.39 In summary, the opportunity to locate the RHSC, CAMHS and DCN on the Little France site in a single build delivers:
- The greatest capital efficiency of the options available.
 - Procurement savings.
 - The opportunity to develop shared theatres for adult and paediatric neurosurgery, including intra-operative MRI and angiography, promoting joint working and improving patient pathways.
 - Economies of scale in combining radiology for RHSC and DCN, with some capital benefits and opportunities for workforce development across the specialties.
 - Economies of scale in some shared public spaces and facilities, whilst preserving the distinct services and spaces of the children's and adult hospitals.
 - The opportunity to develop shared non-clinical support facilities such as clinical management and staff accommodation.
 - The opportunity to build a helipad on the roof of the new build with direct access to adult and children's emergency services in RHSC, DCN and the RIE.
 - Minimal disruption to the 'live' clinical services on the RIE site in the construction and commissioning phases.
- 3.40 In July 2011 the business case update, recommending a joint build RHSC, CAMHS and DCN, was approved by the Scottish Government.

4 THE COMMERCIAL CASE

Scope and Services

- 4.1 This section describes the scope and services for the NPD agreement, and confirms that these are in full compliance with the conditions set out in the SGHD letter of 22 March 2011.
- 4.2 The project will be procured via the Scottish Government's revenue financed Non Profit Distributing (NPD) model. A preferred bidder for the contract will be selected via Competitive Dialogue (CD) as part of the procurement process, which is described in more detail in chapter six. The appointed private sector partner will build, finance, operate and maintain the new clinical facility, which will accommodate the RHSC and the DCN.
- 4.3 The new building will be located adjacent to the existing RIE on the Little France site. The intention is that the project will be a separate, standalone facility on the Little France site as far as is practically possible. It is anticipated, however, that there will be a number of common interfaces with the RIE / Consort Healthcare facility, associated mainly with infrastructure for ICT, security / fire alarm systems and the pneumatic tube delivery system employed by NHS Lothian within the RIE site.
- 4.4 The concession will be for a 25 year contract period post completion of construction and commissioning. This will specifically exclude the provision of all clinical services and soft facilities management which will remain with the NHSL. It is currently anticipated that the NPD agreement will include the following enabling requirements:
- Hospital square
 - Specified road works
 - Emergency Department link
- 4.5 The funding and programme for other clinical and external enabling works on the Little France site form part of the discussions underway with Consort Healthcare, to be regulated by SA6 for the existing PFI contract for the Royal Infirmary of Edinburgh and subsequent RIE Project Agreement variation. See Appendix 1 for the current position.
- 4.6 Other areas not within the scope of the NPD agreement are set out in figure 11 in paragraph 2.91.
- 4.7 The NPD agreement will reflect the SFT Standard Project Agreement issued in June 2011. The NPD model set out in this agreement is defined by three core principles:
- Enhanced stakeholder involvement in the management of projects;
 - No dividend bearing equity; and
 - Capped private sector returns
- 4.8 Projects funded using NPD principles will pay a fixed return to the holders of the subordinated debt of the single-purpose vehicle (SPV). All other distributions to equity (i.e. the holders of the shares and subordinated debt of the SPV) will be prohibited. Surpluses arising after satisfying all precedent lines in the cash cascade, subject to any agreed prudent reserve, will either be payable to the Authority (NHSL) either in lump sums as they arise or used to reduce the future service payments. Other key features of the NPD model are:

- **Corporate structure:** NHSL will contract with an SPV (referred to in the Standard Project Agreements as “Project Co”) which will be majority owned and controlled by the private sector investors. NHSL will own a “golden share” in the SPV which gives it certain controls over the corporate, governance and management structures within the SPV. The SPV’s articles of association must incorporate the mandatory NPD articles, produced by the SFT, that enshrine the fundamental principles of the NPD model.
- **Public Interest Director:** One of the SPV’s directors will be appointed by the SFT. The Public Interest Director will bring an independent voice to the SPV’s board and ensures a greater degree of transparency and accountability.
- **Refinancing:** Under the NPD model the Public Interest Director has the right to instigate a refinancing of senior debt, but not of subordinated debt, on broadly the same basis as NHSL may instigate a refinancing under SoPC4 guidance.

4.9 SFT have provided a suite of contractual documents, comprising a NPD Project Agreement and memorandum and articles, that will be adopted for use in this project, appropriately amended for project and NHS-specific issues.

Risk Allocation

- 4.10 As part of the risk workshops undertaken during the OBC stage, a risk allocation matrix was prepared. This confirmed the proposed allocation of risks between NHS Lothian, SFT and the private sector. The standard PPP Risk Allocation Matrix within the SCIM was used to determine which risks were acceptable to transfer and retain.
- 4.11 Following advice from SFT, the risk of a change in interest rates will be retained by Scottish Government at programme level; all other risks will follow the standard allocation for an NPD project.
- 4.12 NHS Lothian will via the NPD Project Agreement transfer the relevant risks to the private sector. As part of the ITPD documentation, potential bidders will be required to confirm their agreement to the proposed risk allocation.
- 4.13 A copy of the risk register, which includes the risk allocation matrix, is included as Appendix 12. The risk management approach for the project is explained in detail in chapter six.

Charging Mechanisms

- 4.14 This section describes the charging mechanisms that are proposed that will govern the payments made by NHS Lothian to the NPD operator.
- 4.15 Such arrangements are controlled under NPD and similar projects by a payment mechanism that forms part of the contractual documentation. SFT have provided a standard form payment mechanism for use in NPD projects. However, this has been designed on a generic basis for any type of accommodation project and would need to be amended for use in NHS schemes.

4.16 The mechanism has the following key features:

- The mechanism calculates the amount per month that will be paid to the operator, based on the annual unitary charge, indexed as agreed in the contract, converted to a monthly sum from which various deductions may be made if applicable.
- Deductions are made where the operator fails to perform services as specified in the contract documents, these being a fixed amount per failure based on the severity of the failure.
- Deductions are made where an area of the facility is deemed to be unavailable, or unsuitable for use in terms of, for example, temperature, safety, lighting. The size of the deduction is dependent on the importance placed on the area in question, with the facility being divided up into areas each of which is given its own weighting.
- The whole facility can be made unavailable if a certain proportion of areas are unavailable. If the NHS continues to use an area that is deemed unavailable, there is a lower level of deduction.
- The operator is given a period of time to rectify the problem before a deduction is made
- Deductions ramp up if there is a repeated occurrence.
- Insurance premiums, energy, rates and water charges are treated as pass-through costs.

4.17 The NPD mechanism differs from payment mechanisms in use within the NHS in one key respect. The NPD standard assumes that the Facilities will not be required to be available 24/7 and operates Deductions on the basis of whole days rather than several sessions within a day. This is unlikely to be workable in an operational hospital that is in use constantly and so the NPD standard will need to be revised in this respect.

4.18 The Scottish Futures Trust standard form of NPD contract and the payment mechanism within it are consistent with the project assets being statistically classified as non-government in the National Accounts as defined in the European System of Integrated Economic Accounts (ESA95). This classification is a requirement for revenue support funding from Scottish Government under the NPD programme.

Site Disposals

4.19 The project will release the land and buildings at the existing RHSC. Given the ongoing delivery of other clinical services on the WGH site, there is no assumption that there will be capital receipts associated with the DCN.

4.20 CEL 32 (2010): *Arrangements for the Management of NHSScotland Capital Resources after 2010-11* confirmed that for those capital receipts not already identified as supporting projects with approved Outline Business Cases the capital element of receipts will accrue to SGHD and be used to support the overall capital programme. Any element of an asset disposal that scores as revenue income (profit on disposal) will be left with NHS Board where the capital receipt arose.

4.21 This business case, therefore, does not include any capital receipt as a funding source for the project, as the capital element of the disposal proceeds will be returned to SGHD. This assumption has been made on the understanding that all of capital costs associated with the project i.e. the non NPD elements such as equipment and enabling will be funded by an SGHD project specific allocation. Any revenue benefit arising from a profit on disposal will be used to support any non-recurring implementation costs for the project.

- 4.22 As part of the previous work on the OBC for the RHSC standalone project, Montagu Evans, Edinburgh, were appointed as professional valuers and property advisers, to assist with the marketing strategy for the disposal of the existing RHSC premises at Sciennes. Given the nature of the properties and in particular the statutory listings in place, discussions took place with City of Edinburgh Planning officials and representatives from Historic Scotland. In order to maximise and confirm the potential of the properties for alternative uses, primarily residential, and thereby ensure best value, it was recognised that a development brief should be prepared in conjunction with the City of Edinburgh Council Planning Department. This work will be taken forward as part of the development of the Full Business Case for the project.
- 4.23 As the RHSC is owned partly by the NHS and partly by Edinburgh & Lothian's Health Foundation (the working name of the Lothian Health Board Endowment trustees), the disposal of the site will need to take cognisance of the Trustee's interests in the disposal proceeds. The endowment properties include the terraces leading towards the Meadows from the main hospital and are therefore integral to the prospects of the whole redevelopment.
- 4.24 It is recognised that given the historic site and piecemeal development of the RHSC over a long period that there may be title anomalies. Such issues will need to be addressed with the Keeper of the Land Registry in advance of formal marketing.

Personnel Implications

- 4.25 NHSL staff in RHSC, CAMHS and DCN will move to the new site under organisational change arrangements.
- 4.26 For hard FM services that are to be delivered by the NPD contractor, there will be an opportunity for NHSL staff to TUPE if they wish. Staff in these services who choose to remain employed by NHSL will be treated in accordance with employment and organisational change policies. Where staff do not wish to TUPE, redeployment within NHSL would be supported.

Implementation Timescales

- 4.27 A detailed project plan (Strategic Development Delivery Programme version 1.0) has been prepared and is included at Appendix 15. A summary of the key milestones is included in figure 22 below.

Stage	Start Date	Date By
OJEU notice (dependent on SA 6 approval)	End Feb 2012	End March 2012
Determine shortlist	End April 2012	End June 2012
Competitive dialogue	July 2012	March 2013
Receipt of final tenders		April 2013
Evaluate final tenders	April 2013	July 2013
Announce preferred bidder		July 2013
Finalise contract	July 2013	October 2013
FBC approval and award of contract		October 2013
Construction	February 2014	September 2016
Commissioning	August 2016	November 2016
Hospital opens		November 2016

Figure 22: Key milestones from the Strategic Development Delivery Programme**Accountancy Treatment**

- 4.27.1 Accounting treatment that is likely to apply to assets created by the project is explained in chapter 5, the Financial Case, from paragraph 5.50.

5 THE FINANCIAL CASE

Overview

- 5.1 All relevant current guidance has been followed in constructing the financial appraisal, principally, the *Scottish Capital Investment Manual (SCIM)*.
- 5.2 To support the OBC two financial models were developed:
- A **Shadow Bid Model** was prepared by Ernst & Young LLP, as the Board's appointed financial advisers. This model provides an estimate of the likely unitary charge which will be payable to the private sector partner to design, build, finance and maintain the facilities. The Scottish Futures Trust (SFT) has provided key assumptions to be adopted in the shadow bid model as well as the sensitivities which should be run to understand the wider affordability envelope.
 - An **Affordability Model** was prepared internally, with an oversight by Ernst & Young, to forecast the wider financial implications of the project to NHS Lothian and its partners. It utilises the output from a number of key elements of the project, including outputs from the NPD Shadow Bid model, workforce planning and design to establish the capital and revenue cash flow implications; ultimately to assess and confirm overall affordability.

Shadow Bid Model

- 5.3 In a note dated 27 May 2011, SFT provided a set of assumptions to be used within the modelling process to determine the likely unitary charge impact of the capital costs of the NPD element of the project. In previous PPP business cases, these assumptions were provided by the Board's financial advisers. This guidance from SFT is set out in figure 23 below.

Variable	Assumption
RPI	2.5%
Indexation	Proportion of Unitary charge indexation in line with estimated proportion of project company's indexing costs relative to total costs. In the model, 21% of the unitary charge is indexed.
LIBOR Swap Rate	Rate + 0.5% buffer
MLA & Swap premium	0.35%
Margins	2.25%
Sub-debt return	13%
Debt Service Cover Ratio	1.175
Loan Life Cover Ratio	1.2
Tail on senior debt	12 months
Tax Rate	27%
VAT rate	20%
SPV set-up costs	3-5% of capital costs depending on size of project and level of design development by bidders. 5% has been used in the model
SPV operating costs and insurance	0.5% of capital costs

Figure 23: SFT shadow bid model assumptions

- 5.4 A further assumption was provided by SFT on 9 September 2011, advising that the duration of operations for the contract in the shadow bid model should be 25 years, rather than the previous standard form contract which was for a period of 30 years.
- 5.5 In addition to the assumptions provided by SFT, Ernst & Young have included the following in the financial model that they have developed to estimate the unitary charge for the project:

Variable	Assumption
Operational period start	August 2016
Operational period end	July 2041
Duration of operations	25 years
Gearing	90% senior debt, 10% sub debt
Base LIBOR rate	4.02%
Accounting basis	Contract debtor

Figure 24: Ernst & Young shadow bid model assumptions

Affordability Model

- 5.6 The overall affordability model is driven by key assumptions including:
- Estimated capital costs.
 - Revenue costs (pay and non-pay) associated with existing services which are to be maintained, i.e. baseline costs.
 - Changes to revenue costs associated with service redesign as a direct result of the re-provision.
 - Projected capital charges.
 - Unitary Charge derived from the Non Profit Distributing Financial Model.
 - VAT at 20% where not recoverable by NHS Lothian.

NPD Capital Costs

- 5.7 Technical costs for the NPD aspects of the project were provided by the appointed Cost Advisers, in their report Technical Cost Summary 4, dated 12 October 2011.

Cost input	Value	Notes
Capital cost	£154.9 million ██████████ ██████████████████ ██████████████ ██████████████ ██████████████ ██████████████ ██████████████	Based on a building with Gross Internal Floor Area (GIFA) of 48,188m ² , per Schedule of Accommodation version 5. Value at mid-point of construction Q1 2015 Cost estimate prepared using the Department of Health “Health Premises Cost Guides” (HPCGs) Excludes VAT Cost estimates based on ‘excellent’ rating under BREEAM 2008 guidance or a ‘very good’ rating under BREEAM 2011 guidance Construction start date November 2013; completion in July 2016
FM cost	██████████	██████████
Life cycle cost	██████████	██████████

Figure 25: NPD Capital Costs

- 5.8 The development of the Project Risk Register included a quantification exercise to place a value on the likely risks which the NPD bidders may include in their submissions. This is highlighted in the table above, as a cost of ██████████ prior to any mitigation.

NPD Shadow Bid Model results

- 5.9 The modelling process, taking into account the inputs described above, and based on Technical Cost Summary 4, produces a unitary charge payment stream over the project period as set out in figure 26.

Year ending	£ million
31 March 2017	██████████
31 March 2018	██████████
31 March 2019	██████████
31 March 2020	██████████
31 March 2021	██████████
31 March 2022	██████████
31 March 2023	██████████
31 March 2024	██████████
31 March 2025	██████████
31 March 2026	██████████
31 March 2027	██████████
31 March 2028	██████████

31 March 2029		
31 March 2030		
31 March 2031		
31 March 2032		
31 March 2033		
31 March 2034		
31 March 2035		
31 March 2036		
31 March 2037		
31 March 2038		
31 March 2039		
31 March 2040		
31 March 2041		
31 March 2042		

Figure 26: NPD Unitary Charge

- 5.10 This payment stream has an NPV of [REDACTED] using the HM Treasury discount rate of 3.5% real. The NPD costs over the life of the contract are [REDACTED]

Scottish Government NPD Revenue Support

- 5.11 As highlighted in Chapter 2, the Scottish Government Health Directorates' letter of 22 March 2011 defines the level of revenue support to be made available for each aspect of an NPD project. Figure 11 within Chapter 2 sets out all cost headings, and identifies those which are within the funding scope of the NPD model, and the extent to which SGHD revenue funding will be provided to meet these costs over the life of the facility.

- 5.12 This is summarised below:

- 100% of the cost of construction and the resulting cost of finance
- 50% of life cycle costs
- 100% of private sector development costs and running costs of the project company

All other costs are to be funded by NHS Lothian and partners.

- 5.13 Ernst & Young have provided a calculation of the revenue support that can be expected from Scottish Government based on the qualifying costs described above. The support thus calculated is set out in Figure 27 below, which also shows the unitary payable in each year and therefore the balance of funding that NHS Lothian will have to provide to support the unitary charge: this essentially consists of 50% of life cycle costs and all hard FM costs. In addition the Scottish Government will be funding 100% of the insurance costs of the facility.

Year ending	Unitary charge	SGHD revenue support	NHSL funded element
	£million	£million	£ million
31 March 2017			
31 March 2018			
31 March 2019			
31 March 2020			
31 March 2021			

Year ending	Unitary charge	SGHD revenue support	NHSL funded element
	£million	£million	£ million
31 March 2022			
31 March 2023			
31 March 2024			
31 March 2025			
31 March 2026			
31 March 2027			
31 March 2028			
31 March 2029			
31 March 2030			
31 March 2031			
31 March 2032			
31 March 2033			
31 March 2034			
31 March 2035			
31 March 2036			
31 March 2037			
31 March 2038			
31 March 2039			
31 March 2040			
31 March 2041			
31 March 2042			

Figure 27: Analysis of Unitary Charge Revenue Support

NPD Sensitivity Analysis

- 5.14 In order to test the robustness of the modelling process and the importance placed on it in assessing affordability, a range of sensitivities have been applied to the model and new outputs derived. The sensitivities carried out are those prescribed by SFT, with one additional scenario. The sensitivities and results are set out in Figure 28 below.

Sensitivity	Resulting base unitary charge £million	Difference to base case £million
RPI at 2%		
RPI at 3%		
RPI at 5%		
Swap rate increases by 0.5%		
Swap rate increases by 1%		
Swap rate decreases by 0.5%		
Swap rate decreases by 1%		
Capital and operating costs increase by 10%		
Risks retained by NHSL (of [redacted]) are realised and increase the UC - see Appendix 12 for these risks		

Figure 28: Unitary Charge Sensitivity Analysis

Capital Requirement

- 5.15 There are five key components within the capital costs for the project, which are out with the scope of NPD. These are illustrated below:

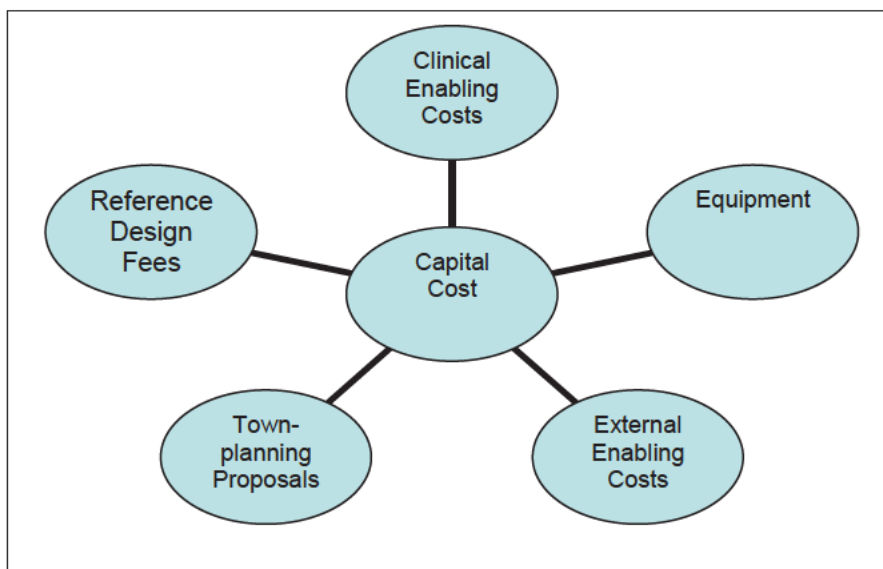


Figure 29: NPD capital cost components

- 5.16 Key Cost Drivers (non NPD areas)

- **External Enabling Works** – These costs are based on estimated requirements to the areas out with the joint build’s ‘red line’ area and include the removal and diversion of services, revised road infrastructure, and alterations to the existing storm water sewer on the Little France site. Whilst some of these costs are indicative and not yet based on detailed proposals from Consort Healthcare, six works packages have been more fully scoped and initial estimated costs were provided by Consort Healthcare on 7 November 2011. These works are being undertaken through the Trust Additional Works Order (TAWO) process and whilst good progress has been made to develop these costs, discussions remain ongoing with Consort Healthcare on the programme for delivery as well each element of cost
 - VIE plant relocation (medical gases storage separate for each)
 - Service Diversions (remaining services from car park B)
 - Flood defence works (and service diversions)
 - Road infrastructure amendments (for public transport re-routing)
 - Link to RIE (A+E level and theatres level)
 - Road infrastructure amendments (hospital square and A+E areas)
- **Clinical Enabling Works** – These costs include changes to internal areas within the existing Royal Infirmary, including laboratory services, pharmacy, theatres, Emergency Department and the relocation of Renal & Transplant HDU. Whilst this work is already subject to discussion with Consort Healthcare, the costs remain indicative at this time and are not based on detailed costed proposals from Consort Healthcare.
- **Town Planning Proposals** – Based on initial discussions with local authority planners, there are a number of alterations required on the Little France site, such as way finding, landscaping and flood protection enhancements. These costs are again very

much a best estimate at this time, and are not based on detailed or fully costed proposals from Consort Healthcare;

- **Equipment** (medical and non medical) – Any moveable equipment, which has not reached the end of its useful life will be moved where feasible and practical. At this stage an assumption has been made that 20% (of the gross value) of the equipment will transfer to the new facility. The equipment requirements have been developed by the Project Team, with input from clinical and service managers. In addition to the capital investment required, there are subsequent revenue implications (depreciation, staffing, maintenance, consumables); at this stage of the project, these costs are not fully developed and will add an additional revenue funding requirement. Through the development of the project to Full Business Case stage, alternative funding options for equipment such as managed services and leasing will be fully considered. In addition, further work will be undertaken to review the timing of the equipment purchases.
 - **Reference Design Fees** – these costs are based on the scope of works required to deliver the joint build reference design during the current financial year, as part of the OJEU process and NPD procurement. The accounting treatment of these costs (ie as capital expenditure) is currently being tested by SGHD and will require confirmation by the Board's external auditors.
- 5.17 SGHD and SFT have both confirmed that the capital cost estimates for the NPD Model must not include optimism bias (given that a detailed risk evaluation process is undertaken). However, optimism bias must be applied to the non NPD capital costs, in order to meet the requirements of the Treasury Green Book guidance. This is particularly important, in view of the level of further work required to gain cost certainty on the works to be delivered via Consort Healthcare.
- 5.18 The optimism bias methodology was applied to the enabling works (clinical and external) as well as the costs of the town planning requirements, for each package of works, including those which have estimated by Consort Healthcare. Figure 30 below provides a summary of the optimism bias applied to each package of work.

	Indicative Cost £000	Optimism Bias %	Optimism Bias £000	Total Cost £000
Clinical Enabling work				
Laboratory services	██████████	██████████	██████████	██████████
Pharmacy stores/distribution	██████████	██████████	██████████	██████████
Pharmacy aseptic service	██████████	██████████	██████████	██████████
Pharmacy dispensary	██████████	██████████	██████████	██████████
Pneumatic Tube System	██████████	██████████	██████████	██████████
DCN Critical care	██████████	██████████	██████████	██████████
Renal and Transplant HDU	██████████	██████████	██████████	██████████
Medical Photography	██████████	██████████	██████████	██████████
External Enabling				
Removal and diversion of services from Car Park B and extension of site	██████████	██████████	██████████	██████████
Revise road infra structure for RHSC	██████████	██████████	██████████	██████████
VIE replacement	██████████	██████████	██████████	██████████

Alterations to RIE Build	██████	██████	██████	██████
2 nd phase of Service Diversions sewers to south	██████	██████	██████	██████
3rd phase of Service Diversions for new build	██████	██████	██████	██████
4th phase services diversions - services on wrong side of berm	██████	██████	██████	██████
Fire Strategy	██████	██████	██████	██████
Security Strategy	██████	██████	██████	██████
Helicopter RIE building proofing	██████	██████	██████	██████
Other	██████	██████	██████	██████
Townplanning				
Form cycle path link	██████	██████	██████	██████
Way finding enhancements for RIE	██████	██████	██████	██████
Flood protection enhancement	██████	██████	██████	██████
Total Enabling Works	██████	██████	██████	██████

Figure 30: Optimism Bias on non-NPD project works

5.19 In relation to equipment for the new facility, the budgeted cost of Group 2A, 2B and 3 equipment (at Quarter 3 2016 prices) is £34.238m. Group 2A refers to equipment normally fixed to the building fabric and / or attached to, or forming part of the building services, fitted by NPD Co but supplied under arrangements separate from the contract, by NHS Lothian. Group 2B refers to equipment normally fixed to the building fabric and / or attached to, or forming part of the building services, supplied and fitted under arrangements separate from the contract by NHSL. Equipment is also required for the clinical enabling works; with an indicative cost of £2.161m.

5.20 A summary of the total capital requirements are shown in Figure 31 below:

	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	Total
	£000	£000	£000	£000	£000	£000	£000
Equipment	-	-	-	7,862	5,707	22,830	36,399
Clinical Enabling Works	-	-	-	██████	██████	██████	██████
External Enabling Works	██████	██████	██████	██████	██████	██████	██████
Town Planning	-	██████	██████	██████	██████	██████	██████
Reference Design Fees	██████	██████	██████	██████	██████	██████	██████
Optimism Bias	-	██████	██████	██████	██████	██████	██████
Estimated non NPD capital expenditure	██████	██████	██████	██████	██████	██████	██████

Figure 31: Non NPD Capital Costs

- 5.21 To facilitate the new build on the site of Car Park B within the wider Little France site, a replacement car park (Car Park F) has been built using public capital. The land purchase and construction costs have already been incurred, using NHS Lothian formula capital funding and are not included within this Outline Business case.

Sources of Capital Funding

- 5.22 The following sources of funds were explored as part of the OBC process to support the capital requirements identified in above.
- Project specific funding via Scottish Government (Capital Resource Limit)
 - Charitable contributions
 - Capital receipts from sale of existing fixed assets
- 5.23 NHSL shared indicative capital requirements with SGHD in July 2011, to inform the Spending Review for 2012/12. At that time, these costs remained estimates: no optimism bias had been applied to the enabling and town planning costs, and a number of works packages had not been scoped. In addition, there was no assumption at that time that the Reference Design costs could be capitalised. Discussion on overall capital support is ongoing, to agree the level of overall capital support available as 'project specific funding', which will be incorporated into the Full Business Case.
- 5.24 Key charity partners including [REDACTED] [REDACTED] [REDACTED] are currently engaged in the OBC process. No charity contributions have been assumed at this key milestone, however it is anticipated that funding may be provided. Details on these contributions and the extent to which these provide one off capital, or ongoing revenue support will be further developed post OBC.
- 5.25 As described in paragraph 4.20 this business case does not include any capital receipt from asset sale as a funding source for the project. It is assumed that all capital costs associated with the project, ie the non NPD elements such as equipment, enabling and reference design will be funded by an SGHD project specific capital allocation.

Revenue Requirement

- 5.26 The revenue implications of the project are largely been driven by the NPD unitary charge and depreciation costs of the capital enabling works and equipment investment.
- 5.27 The unitary charge estimate from the Ernst & Young Shadow Bid Model differs year on year as a result of indexation applied in accordance with SFT guidance. Figure 32 provides a summary of the charge over a period of years. Based on the funding scope detailed in Chapter 2, and guidance received from SFT on 13 September 2011, the revenue support from SGHD has also been highlighted in the table, to determine the remaining revenue impact for NHS Lothian.

	Part-year impact in 2016/17	Full year impact in 2017/18	Peak impact in 2040/41	Final year impact in 2041/42	Average over 25 years
	£000	£000	£000	£000	£000
Unitary Charge	██████	██████	██████	██████	██████
SGHD Total	██████	██████	██████	██████	██████
SGHD % share	████	████	████	████	████
NHS Total	██████	██████	██████	██████	██████
NHS % share	████	████	████	████	████

Figure 32: Summary of the unitary charge

5.28 There are a number of high level assumptions which have been applied in determining the non NPD revenue costs within the Affordability Model for the project:

Revenue Cost	Assumptions
Clinical Workforce	<ul style="list-style-type: none"> All baseline budgets / costs are based on full year impact at 2011/12 (May 2011) price levels. The future workforce plan is being developed with the service. Further work will be done post OBC.
Facilities Management	<ul style="list-style-type: none"> In view of current Scottish Government policy, there is an underlying assumption that catering, domestics, logistics and estates will be provided in house rather than via the NPD. A matrix of all FM services has been developed by the FM workstream for the project. Work will continue through the NPD procurement process to clarify the position for a number of services which can potentially sit within the scope of either Soft or Hard FM; and to develop robust budgetary requirements. Utilities will be provided via the NPD Co; estimated costs for the 'pass through' charges have been developed by the technical advisers
Rates	<ul style="list-style-type: none"> A high level assumption has been made for Rates based on the current cost for the RIE site and the relative size of the new facility compared to the RIE.
Capital Charge (Depreciation)	<ul style="list-style-type: none"> The useful economic life of enabling works is 50 years. The average useful economic life of equipment is 10 years. Existing capital charges budgets from the current 'RHSC property' will be 'ringfenced' to offset the additional costs of the project. Depreciation on the enabling works is assumed to be effective from 2015/16, with the capital costs held as Assets under Construction until this point

Revenue Cost	Assumptions
Lifecycle and Hard FM (SA6 – Car Parking)	<ul style="list-style-type: none"> Consort have provided indicative lifecycle and hard FM costs for the work associated with the renunciation of Car Park B and replacement at Car Park F. Whilst there is an expected <i>reduction</i> in lifecycle costs, there are additional hard FM implications.
Lifecycle and Hard FM (Enabling works)	<ul style="list-style-type: none"> Consort have provided indicative lifecycle and hard FM costs for the six packages of work highlighted in section 5.16. Lifecycle and hard FM for the other packages have not yet been estimated
Other Recurring Costs	<ul style="list-style-type: none"> Running costs, including maintenance and additional staffing, for new technology and equipment will need to be scoped as part of the detailed work on equipping for the new facility. To date, these costs remain unquantified.
Non recurring costs	<ul style="list-style-type: none"> Professional fees, including technical, legal and financial advisers which cannot be capitalised. In house project team. Excess travel, in line with the NHSL current policy. Other non recurring expenditure such as double running costs and removal / transfer costs will be fully quantified as part of the development of the Full Business Case.

Figure 33: Revenue Assumptions

Workforce

5.29 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 and the capital charges for the existing infrastructure and equipment.

5.30 Figure 34 below summarises the existing workforce budget:

	RHSC WTE	RHSC £'000	DCN WTE	DCN £'000	Joint Build Total £'000
Direct Costs	775.22	38,508	200.77	9,670	48,179
Clinical Support Costs	147.57	4,518	See note 2	See note 2	See note 2
Facilities Costs	75.13	1,659	See note 2	See note 2	See note 2
Total	997.92	44,685	200.77	9,670	48,179

Notes:

- 1) All WTE and baseline budget figures for services have been extracted from the ledger as at M2, 2011/12
- 2) Clinical support and facilities budgets plus WTE figures associated with DCN cannot be extracted from the ledger as these are embedded within the Western General Hospital cost centres; these will be developed with service managers post OBC.

Figure 34: Workforce baseline budgets

- 5.31 For the purposes of the OBC, future clinical workforce costs remain at current budgeted level, taking no account of future service redesign or savings requirements as part of the wider NHSL efficiency target. It is noted that activity is projected to increase over the coming years and that this will inevitably impact on staffing levels. This will be recognised as a financial planning issue and will be considered during the annual planning cycle, between now and the new facility being opened.

Facilities Management Services

- 5.32 Through consideration of the current average cost for soft FM services within NHSL and other available benchmarks, the likely additional costs have been quantified, largely based on the additional floor area of the new facility. This is illustrated in figure 35 below.

	£
Domestics Services	1,593,160
Catering Services	493,118
Logistics	567,253
Estates	86,000
Materials Management	51,000
Total	2,790,531
Budget as at Month 2 2011/12	1,658,716
Net Additional Cost	1,131,815

Figure 35: Soft Facilities Management Services

- 5.33 Whilst Hard FM services are expected to be delivered via the NPD Co, there are a number of potential services which may be retained by NHS Lothian, such as Grounds Maintenance and Landscaping. These costs have not yet been quantified and will require to be managed within the overall affordability of the project.
- 5.34 Indicative costs have been established for energy, with input from NHSL Facilities Department and technical advisers. The existing utilities budget of £570k for the RHSC site has been assumed as releasable to offset the cost of the new facility, with effect from 2017/18.

Rates

- 5.35 The existing rates budget for the RHSC site is £233k. It is assumed that this budget will be released to offset the increased rates costs for the new joint facility. Indicative costs for the new build have been estimated at £1.067m

Capital Charges

- 5.36 Capital charges represent the revenue impact of standard capital expenditure. Figure 36 summarises the current capital charges for the existing RHSC building.

	Capital Charge £000
Existing RHSC – NHS owned buildings	361

Figure 36: Existing capital charge

- 5.37 Figure 37 summarises the full year revenue impact of enabling works (ie. clinical enabling works, external enabling works, town planning) and equipment:

	Capital Charge £000
Depreciation - Enabling Works	█
Depreciation - Equipment	3,640
Total	4,308
Release of budget from existing RHSC (buildings only)	361
Revised total	3,947

Figure 37: Annual capital charge implication

Lifecycle Costs

- 5.38 A further revenue cost that is recognised through the OBC is that associated with lifecycle. Essentially, lifecycle costs (LCC) reflect the impact of replacing key components of e.g. a building to ensure the performance of the facility is maintained to an optimum standard for a given (contractual) period. At present there are lifecycle costs associated with existing facilities on the Little France site; these are managed as part of the contract with Consort Healthcare. In future, there will be lifecycle costs via the preferred NPD contractor for the facility as well as additional lifecycle associated with the enabling works to be carried out by Consort Healthcare, and the impact of SA6 (car parking).
- 5.39 In accordance with the Capital Accounting Manual, life cycle costs which are capital in nature will be managed as part of NHS Lothian's capital plan. Figure 38 below summarises the LCC assumed for the project.

	£	Cost Stream	Funding	Comments
Consort Healthcare (for SA6 – car parking)	█	Via unitary charge payable to Consort	Revenue / Capital	If costs are capital in nature, these are managed as part of NHS Lothian's capital plan in accordance with the Capital Accounting Manual
Consort Healthcare (for enabling works)	█	Via unitary charge payable to Consort	Revenue / Capital	If costs are capital in nature, these are managed as part of NHS Lothian's capital plan in accordance with the Capital Accounting Manual
NPD Company	█	Via unitary charge payable to NPD Co	Revenue	

Figure 38: Life Cycle Costs

- 5.40 Recognising the costs associated with the NPD model and the capital investment implications, as well as all other revenue costs highlighted above, Figure 39 provides an overall summary of the incremental revenue impacts of the project. Both recurring and non recurring costs are identified; however as the clinical workforce costs are to be captured through the annual financial planning process, these are excluded from the summary below. In addition, hard FM and double running costs have yet to be quantified and are also not shown below. These costs will be quantified as part of the FBC process.

	2011/12 £000	2012/13 £000	2013/14 £000	2014/15 £000	2015/16 £000	2016/17 £000	2017/18 £000
Recurring Revenue Position							
Unitary Charge*							
Soft FM							2,791
Consort LCC/FM (SA6)							
Consort LCC/FM (enabling)							
Capital Charges (equipment)					786	3,640	3,640
Capital Charges (enabling works)							
Utilities						526	1,052
Rates						534	1,067
Total recurring							
Non Recurring Revenue Position							
Excess Travel					20	40	40
NHS Project Team	695	695	695	695	695	695	
Professional Fees	1,236	1,775	1,036	200	200	100	
Other	25	5	5	5	5	5	0
Total non-recurring	1,956	2,474	1,735	900	920	840	40
Cost v Funding							
Total Revenue Cost	1,956	2,474	1,735	900			
SGHD contribution* (UC)							
Existing NHSL Budget (Capital Charges)							(361)
Existing NHSL Budget (Facilities)							(1,659)

Existing NHSL Budget (Rates)							(233)
Existing NHSL Budget (Utilities)							(571)
Existing NHSL Budget (NHS project team)							(471)
Affordability gap	1,956	2,474	1,735	900	2,374	█	█

* Stated at 2017/18 prices; all other costs are at current prices

Figure 39: Summary of estimated revenue impact (incremental costs only)

- 5.41 It is assumed that any write down of the existing RHSC property will be treated as a funded impairment via the AME (Annually Managed Expenditure) process. There has been no assumption made on the likely impairment of the enabling works on the Little France site, although it is recognised that this would also impact on the Scottish Government AME budget.
- 5.42 The net revenue impact of █ (indicative for 2017/18) will be managed across all NHS partners and will be equitably distributed across each of the Boards using the East Coast Costing Model (ECCM). Figure 40 below details the proposed percentages and share of costs across our SEAT partners.

NHS Board	Indicative Average % Share	Recurring (first full year) £000	Non-recurring £000
Lothian	69.91%	█	█
Fife	9.64%	█	█
Forth Valley	5.57%	█	█
Borders	5.41%	█	█
Tayside	2.25%	█	█
Dumfries & Galloway	3.40%	█	█
Grampian	1.27%	█	█
Highland	0.95%	█	█
Lanarkshire	0.76%	█	█
Gtr Glasgow & Clyde	0.38%	█	█
Northumberland	0.16%	█	█
Ayrshire & Arran	0.12%	█	█
Orkney	0.08%	█	█
Western Isles	0.04%	█	█
Cumbria	0.04%	█	█
Shetland	0.03%	█	█
	100.00%	█	█

Figure 40: Share of revenue costs based on 2010/11 ECCM

- 5.43 All NHS partners recognise the financial risks which underpin the revenue position at this stage. NHS Lothian is in dialogue with neighbouring boards to obtain their support for the OBC.

Impact on Balance Sheet

5.44 The accounting treatment likely to apply to assets created by the project into three categories:

- Assets within the scope of the NPD contract
- Assets delivered by Consort Healthcare
- Assets funded and subsequently owned and/or managed by NHS Lothian

NPD Assets

NHS Lothian's accounts

5.45 In considering the appropriate accounting treatment for the NPD Project assets, it is first necessary to consider whether the arrangement is regarded as a service concession falling within the scope of HMT Guidance on IFRIC 12.

5.46 The project will be delivered using the standard contract for NPD projects issued by SFT. As such, the following features of the contract are indicative that the NPD arrangement is within the scope of IFRIC 12 as it meets all the following requirements under the HMT Guidance:

- NHS Lothian will control or regulate what services the NPD operator must provide with the infrastructure, to whom it must provide them and at what price
- NHS Lothian controls significant residual interest in the infrastructure asset at the end of the term of the agreement
- the infrastructure has been constructed by the NPD operator on land that will be under the control of NHS Lothian.

5.47 Accordingly, per the guidance set out in IFRS, NHS Lothian will need to record the infrastructure assets constructed under the project on its balance sheet.

5.48 The significant accounting entries required would be as follows:

- Recognition of the infrastructure asset and equipment on the balance sheet with a corresponding long term finance lease creditor at the date of transition to IFRS;
- Depreciation of the infrastructure asset over its economic useful life. The depreciation charge for the period since completion of construction / provision of equipment to the transition date would be recorded through the income and expenditure reserve account;
- Allocation of the finance charges to periods during the term of the NPD arrangement; and
- Allocation of facilities management service charges to periods during the NPD term.

Governmental accounts

5.49 From 1st April 2009 the accounting and budgetary treatments in relation to PFI and similar transactions 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 NPD arrangement would fall within the scope of MGDD.

5.50 The key issue under MGDD is the classification of the assets involved in the arrangement – either as government assets or as the (NPD) 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 following three main categories of risk:

- Construction risk: (covering events like late delivery, meeting defined specifications and additional costs),
- Availability risk: (covering volume and quality of output), and
- Demand risk: (covering variability of demand).

5.51 The assets should be classified as off balance sheet for government if both of the following conditions are met:

- the operator bears the construction risks, and
- the operator bears at least one of either availability or demand risk.

5.52 If these conditions are met the contract is treated as similar to the treatment of an operating lease in ESA 95 - it would be classified as the purchase of services by government. If the conditions are not met then the assets are to be classified as on balance sheet for government.

5.53 Based on the proposed NPD contractual arrangements the operator and not NHS Lothian will be exposed to construction risk. Specifically, NHS Lothian will not be obliged to pay for the assets unless they are delivered in working order and in accordance with the agreed specifications. A requirement for the NHS Lothian to pay without taking into account the effective state of the assets that are delivered would be evidence that the NHS bears the majority of the construction risk and is acting as de facto the owner of the assets. This would also be true were NHS Lothian required to make payments to cover additional costs, whatever their justification. In order for NHS Lothian to be regarded as not having the construction risk the important point is that the NHS should not be obliged to pay for any event resulting in a default in the management of the construction phase by the operator, which is case based on the proposed NPD standard contract. On this basis it would appear that the NPD operator and not NHS Lothian would bear the construction risk in respect of the assets built under the project.

Availability risk

5.54 The NHS is assumed not to bear such risk if it is entitled to reduce significantly its periodic payments if certain performance criteria are not met. Under these conditions, the NHS payments must depend upon the effective degree of availability ensured by the operator during any given period of time. The application of penalties where the operator is defaulting on its service obligations must be automatic and must also have a significant effect on the operator's revenue. The proposed payment mechanism arrangements would suggest that this risk rests with the operator.

Demand Risk

5.55 The NHS is assumed to bear this risk where it is obliged to ensure a given level of payment to the operator independently of the effective level of demand. The proposed

payment structure suggests that the payments due from the NHS to the operator are, subject to availability of the assets, due regardless of the level of underlying demand for the assets. On this basis demand risk will clearly rest with the NHS.

Conclusion

- 5.56 On the basis that the operator and not NHS Lothian is exposed to the construction risk and the availability risk the analysis under the MGDD would suggest that for National Accounts purposes the assets would be off balance sheet.

Consort Healthcare Assets

- 5.57 At present, the assumption made in this business case is that assets to be delivered by Consort Healthcare will be paid for directly by NHS Lothian. Consort Healthcare will carry out the works and recover the cost from NHS Lothian without amendment of the unitary charge.
- 5.58 The reason behind this decision is based on analysis of the Consort Healthcare contract using ESA95, which concludes that less than 50% of availability risk is transferred to Consort Healthcare under the current payment mechanism, and so places the assets on balance sheet in terms of National Accounts. Therefore, any new assets created under the contract and paid for under the payment mechanism would also require to be classified as on balance sheet, with the requisite capital cover having to be provided in addition to payment of an increased unitary charge.

Assets funded by Scottish Government / NHS Lothian

- 5.59 By applying the processes described above for IFRIC 12 and ESA 95, any such assets would be on balance sheet at both NHS Lothian and Scottish Government level.

Impact on Income and Expenditure Account

- 5.60 The SGHD budgetary framework with UK Treasury is operated under ESA95. This is broadly equivalent to the former method of resource accounting framework under UK Generally Accepted Accounting Principles (UK GAAP). Since 2008 however, Health Boards' accounts and financial targets have been set under International Financial Reporting Standards (IFRS).
- 5.61 When SGHD sets the Board's revenue allocation (RRL), the effect of PFI schemes under UK GAAP is removed from its core revenue allocation and replaced with a sum equivalent to the costs of such PFI schemes under IFRS accounting within its non-core allocation.
- 5.62 Recognising the impact of IFRS accounting treatment, the Board's financial advisers have undertaken an initial review of the likely impact of the NPD costs on both the Revenue Resource Limit (RRL) and Annually Managed Expenditure (AME). However, further work is required to more fully understand the actual impact of the SGHD revenue funding assumptions and the budgetary implications for RRL / AME, compared with the accounting entries for the NPD operating costs, financing costs, unitary charge uplift, lease creditor; and depreciation. This will be taken forward through discussion with the Board's financial advisers and SGHD.

Statement of Affordability

- 5.63 NHS Lothian confirms that the financial consequences will ultimately be managed as part of their financial and capital plan process; with support from the Scottish Government, NHS Boards and charity partners. This will be fully explored as part of the Full Business Case stage.

6 THE MANAGEMENT CASE

6.1 This section describes the management arrangements for the project including the governance structure, procurement strategy, project management arrangements including post project evaluation.

Governance

6.2 The Chief Operating Officer for NHSL is the Executive Director responsible for the delivery of the project, reporting to NHSL Board. The Medical Director, the Directors of Finance and of Employee Relations and a Non-Executive Director also sit on the Project Board.

6.3 The structure in figure 41 provides clarity in terms of governance and accountability for the RHSC + DCN Little France project.

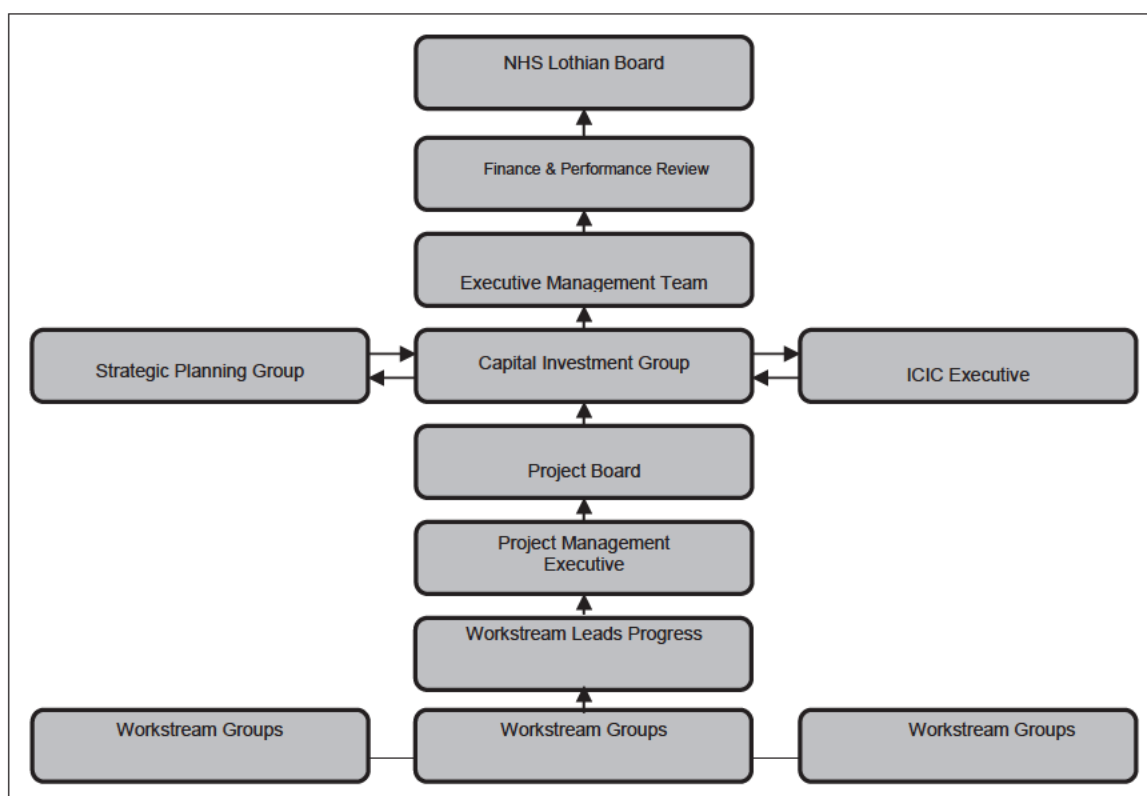


Figure 41: NHS Lothian Governance Process

6.4 At this stage in the project, the Project Board has delegated responsibility to approve the following on behalf of the NHSL Finance and Performance Review Committee:

- OJEU notice for the project at Little France.
- Pre-qualification questionnaire for interested organisations.
- Scoring methodology for pre-qualification submissions to short-list three bidders.

6.5 NHS Lothian is committed to partnership working. Throughout the project and in developing this OBC, close working and communication with NHSL Partnership colleagues has been a key element of the process. This has been achieved through:

- Representation on the Project Board
- Strategic Redesign Partnership Representative is a member of the Project Team

- Partnership involvement in working groups and workshops
- Regular briefing on the status of the project.

6.6 The project is a substantive agenda item on the SEAT Directors of Finance and Directors of Planning meetings.

6.7 As principle stakeholders in RHSC, CAMHS and DCN, NHS Borders, Dumfries and Galloway, Fife and Forth Valley have a role in the project governance and sign-off of the service model, preferred option and revenue costs outlined in the business case.

Procurement Strategy

6.8 The key stages associated with the competitive dialogue (CD) procurement process and described in this section are:

- OJEU notice
- Pre-qualification
- Competitive Dialogue
- Submission of final tenders
- Selection of preferred bidder
- Financial/Contract close

6.9 The Procurement Strategy for the project is included as Appendix 18. Below is a summary of that process.

6.10 Key Stage Review 2 will review the project and proposed procurement strategy after the OBC has been approved and prior to procurement commencing.

6.11 The OJEU notice is programmed to be published in March 2012. This will outline NHSL requirements for the project including details of the procurement strategy with regard to the pre-qualification process and associated selection and award procedures. The draft OJEU notice is included at Appendix 19.

Pre-qualification

6.12 Organisations or consortia expressing an interest in the project will be asked to complete a pre-qualification questionnaire (PQQ). This will verify organisations experience, financial standing and professional and technical capacity for delivering the project.

6.13 During the pre-qualification phase a bidders' day will be held to provide more information to prospective bidders on the project and the approach to the competitive dialogue process.

6.14 PQQ submissions will be evaluated via formal scoring methodology. It is proposed that a minimum of 3 bidders with the highest scores from this process will be shortlisted to go through to the CD phase. It is anticipated that all 3 short listed bidders will proceed through to the end of the CD process when a preferred bidder will be selected.

6.15 Prior to confirmation of shortlisted bidders, a further key stage review (before the Invitation to Participate in Dialogue is issued) review will be carried out by SFT.

6.16 The reason for short-listing three bidders can be summarised as follows:

- Taking additional bidders forward beyond PQQ will place additional burdens on Project Team resources, potentially adding to procurement costs.
- The time period for the CD process will be extended, increasing the overall procurement timescales
- Potential bidders will have concerns about resourcing and financing their bid through CD and tender stages when the chance of success is reduced
- Three bidders is the usual shortlisted number on similar NPD projects

6.17 It is acknowledged that due to the specific requirements of the RHSC & DCN project, current market conditions and the low number of private-public partnership projects associated with the acute health sector undertaken in recent years, that the PQQ will be a key stage to ensure that bidders with the appropriate blend of skill and experience are shortlisted.

Invitation to Participate in Dialogue and Competitive Dialogue Process

6.18 The CD process has been programmed to last 8 months between April 2012 and November 2012. The process will commence with the issuing of an Invitation To Participate in Dialogue (ITPD). This document will establish the requirements for information that bidders will submit for evaluation/review throughout the process.

6.19 The ITPD will include output specifications and other technical information to inform bidders of NHS Lothian's requirements, including the project's reference design that fixes clinical functionality, with mandatory elements that bidders will not be able to depart from this in their proposals.

6.20 The ITPD will describe how the interim review stages at the end of dialogue stage 1 (Invitation to Submit Outline Proposals) and at the end of dialogue stage 2 (Invitation to Submit Final Tenders) will be handled. This will include details of information required at each stage and the review criteria.

6.21 It is proposed that there are three main stages to the CD process:

- **Stage 1** dialogue on the strategic direction of the project and development of bidder's proposals, including 1:500 and 1:200 plans and associated technical / financial proposals. At the end of stage 1 the three bidders will be invited to submit their outline proposals.
- **Stage 2** will look at more detailed proposals, including 1:50 plans and associated technical / financial solutions. The second phase will conclude with an invitation to submit detailed proposals.
- **Stage 3** is a further round of dialogue and clarification before bidders submit a draft final tender, which will allow NHS Lothian and their advisors to ensure that bidders' final proposals address all aspects required in the final tender and are fully compliant with all mandatory requirements.

Invitation to Submit Final Tender (ISFT)

6.22 A Key Stage Review will be conducted prior to the ISFT.

- 6.23 Bidders will formally be invited to submit their final tenders. The ISFT document will confirm what detail is expected and advise what criteria and weightings will be used by NHS Lothian during the evaluation of tender proposals.

Selection of Preferred Bidder

- 6.24 Following the detailed evaluation of the final tenders, a final evaluation report will be prepared to recommend the preferred bidder. This recommendation will be based on the tender that represents the most economically advantageous. A full debriefing for unsuccessful bidders is included in the procurement programme.

Financial / Contract Close

- 6.25 Negotiations will take place with the preferred bidder to complete the NPD Project Agreement and clarify outstanding issues to reach a position where the agreement can be signed. During this period the preferred bidder will apply for and obtain detailed planning approval for the project.
- 6.26 In parallel with this, activity will take place to complete the Final Business Case (FBC) for the project and gain all necessary approvals to allow contract close to take place. This phase is programmed to take 3 months, achieving contract close in mid July 2013.
- 6.27 A final key stage review (pre-financial close) will take place before the NPD Project Agreement is signed with the preferred bidder.

Project Management

- 6.28 This section will outline:
- The project's structure
 - Project reporting arrangements in relation to the overall programme
 - Key roles and responsibilities of the project board and project team

NHS Lothian Board

- 6.29 NHS Lothian Board retains overall responsibility and decision making for the project. It is therefore responsible for:
- Appointment of advisers
 - Approval of the Outline Business Case
 - Approval of the OJEU notice
 - Approval of the shortlist
 - Approval of the preferred bidder
 - Approval of the Full Business Case
 - Approval of the final contract / contract award

Project Board

- 6.30 The Project Board is held monthly and includes the key stakeholders of the project. It is chaired by the Project Sponsor who reports directly to the Board Chief Executive for the delivery of the business benefits of the project.

- 6.31 The Project Board reports to NHS Lothian Board via the Executive Management Team and the Finance & Performance Review committee.
- 6.32 The role and remit for the Project Board including a list of project board members is included within Execution Plan (PEP) at Appendix 20.

Project Team

- 6.33 The project team responsible for the day to day delivery of the project from OBC through procurement of the NPD partner to FBC stage, reports directly to the Project Board and is comprised of:
- Project Director
 - Project Manager (Davis Langdon)
 - Project Clinical Director – DCN
 - Project Clinical Director – RHSC
 - Commissioning Manager (not yet appointed)
 - Project Accountant (not yet appointed)
 - Service Planning Project Managers
 - Capital Planning Project Mangers
 - Enabling Works Project Manager
 - Contracts Manager (not yet appointed)
 - Strategic Redesign Partnership Representative
 - Project Administrators

Workstreams

- 6.34 A total of 11 workstreams have been set up to progress the project through to financial close:
- Project Management Executive
 - Procurement Coordination
 - Design & Construct
 - Facilities Management
 - Cost Consultancy
 - Commercial
 - Finance
 - Legal
 - Equipment
 - Business Case
 - Enabling works
- 6.35 In addition to the above workstreams, a fixed-term Reference Design Team has been appointed to develop designs to the stage required for this OBC and in preparation for procurement of the NPD. External advisers have been appointed on a fixed-term basis to deliver the Reference Design.
- 6.36 The workstream leads meet on a fortnightly basis and report to the Project Manager (technical advisers Davis Langdon). A project delivery structure is included within the PEP along with the role and remit for each of the workstreams at Appendix 20.

- 6.37 The project programme is managed on a day to day basis by the Project Manager (Davis Langdon) with progress against the programme reported formally on a monthly basis at the workstream progress meeting.

Stakeholder involvement

- 6.38 The stakeholders to the project can be summarised under six main headings:
- NHS Lothian, comprising Lothian Partnership Forum, individual clinical design groups, Facilities Management, joint (support services) groups
 - RHSC + DCN combined project workstream groups
 - Statutory authorities and public utilities including the Health & Safety Executive, City of Edinburgh planning department as well as other bodies such as Architecture and Design Scotland (A&DS) who are a statutory consultee through the planning process
 - Funding comprising Lothian NHS Board, other NHS Boards, charities, the University of Edinburgh and the Scottish Government.
 - Patient Focus and Public Involvement (PFPI) groups
 - Other Stakeholders comprising National Education Services Scotland (NES), core NHS Lothian sections & others.

Key stakeholders of the project are represented within the appropriate workstreams and, where required, at project board level.

- 6.39 The clinical design structure ensures that staff can feed into the reference design, with representatives of departments participating in the design task groups. They will engage with their colleagues and the project team to develop and agree operational briefs that reflect their requirements, and to review project designs and proposals and feed back to the design team.
- 6.40 A full stakeholder map for the project is included within the PEP under Appendix 20.
- 6.41 A communications plan is in place to ensure communication and consultation with the wider network of stakeholders to the project. The strategy, with a record of activities to date, is included at Appendix 21.

Project Roles and Responsibilities

- 6.42 A review of NHSL capabilities was undertaken following the project being converted to an NPD project, and appropriate resources allocated to the project accordingly, both internally and via the use of external advisors. The PricewaterhouseCoopers review in September 2011 also considered and made recommendation with regard to these resources, detailed in Appendix 3.
- 6.43 Detailed roles and responsibilities for each individual within the core project team are summarised in figure 42 and detailed in Appendix 20, the Project Execution Plan.

Role	Responsibilities
Project Sponsor	Has ultimate responsibility for the project and leads the Project Board, providing overall direction and management of the project.
Project Director	Is responsible for the successful delivery of the project and is accountable to the Project Sponsor. The Project Director leads on the development control plan, corporate governance and negotiations with Consort Healthcare
Project Manager	Is the primary interface and first point of contact for the Project Director on all day-to-day issues affecting the project. Responsible for the overall project governance, structures, processes, lines of communication, programme monitoring and reporting (as detailed in the PEP). In addition, the project manager is responsible for the co-ordination of all workstreams under the NPD process.
Clinical Project Directors	Are responsible for providing strategic clinical input to the project. They are also responsible for representing the views of the clinical user groups within the design and project generally.
Service Planning Project Managers	Are responsible for the preparation of: <ul style="list-style-type: none"> • The clinical operational briefs, developing the clinical design and coordinating the eventual clinical functionality sign off. They will have the responsibility for representing the views of the clinical user groups within the design and project generally. • The non-clinical (FM) operational briefs and developing the clinical design and building functionality • The business case in line with the appropriate guidance.
Capital Planning Project Managers	Act as the liaison between NHSL and the reference design workstream and the design and construct workstream, responsible for informing the board's construction requirements and ensuring these are agreed by the appropriate NHSL user groups. These include the development of the schedule of accommodation. One of these Project Managers leads the equipment workstream the main output of which is equipment schedules.
Enabling Works Project Manager	Is responsible for developing managing and completing all clinical and non-clinical related enabling works to allow the RHDC + DCN project to take place.
Project Administrators	Assist the Project Director and wider project team in the administrative aspects of the project including meeting management.
Commissioning Manager	As described in the SCIM PPP Guide ¹⁴ , this individual will be responsible for the programme of moves, management of the transition process, facilitating change, risk identification and management
Contracts Manager	As described in the SCIM PPP Guide, this individual will be responsible for specification, evaluation of tenders and negotiation of contract for FM services.
Project Accountant	Will be responsible for FBC production, assessment of affordability of tenders, interrogation of the financial model and application accounting standards.

Figure 42: Key project roles and their responsibilities

External Advisers

- 6.44 The Project Team is supported by external advisers to assist initially with the preparation of the reference design and as well as the procurement and delivery of the NPD project.

¹⁴ Scottish Capital Investment Manual (May 2008): *Managing PPP/NPD Projects*

- 6.45 Mott MacDonald was appointed as the lead consultant and **Technical Advisers** via the Standard OGC Buying Solutions Framework Agreement in March 2011. They will deliver the following services:
- NPD procurement advice.
 - Facilities management advice.
 - Design and construction advice.
- 6.46 Mott MacDonald engaged the companies in figure 43 through sub-consultancy agreements to comprise the Technical Advisory Team. The organisations' roles and responsibilities, including the individuals involved, are detailed in the PEP at Appendix 20.

Technical Adviser Role	Contractor
Client and Lead Technical Adviser	Mott MacDonald
Project Manger	Davis Langdon AECOM
Cost Advisor	Thomson Gray Partnership
CDM Co-ordinator	Turner Townsend
Health Planner	Capita

Figure 43: Technical adviser roles and appointments

- 6.47 NHSL's **Legal Advisers**, MacRoberts, were appointed prior to OBC submission to provide the following legal advice up to and including financial close.
- Procurement under the NPD model of PPP
 - Advice on the legal requirements related to NHS Lothian's existing PFI contracts at Little France.
 - Advice on other legal and commercial issues related to this project, including advice in relation to organisations covered by the Charities Acts.
- 6.48 Ernst & Young are NHSL's **Financial Advisers**, responsible for the preparation of the shadow bid model, financial modelling and project finance advice up to and including financial close.

Technical Advisor Support required for Project Procurement

- 6.49 Specifically for the procurement phase of the project, an individual experienced and qualified in revenue funded healthcare projects is to be seconded to the Project Team for 18-24 months.

Value for Money

- 6.50 Chapter 3 of this business case sets out the preferred option for delivery of the project. In order to ensure that this preferred option is able to deliver value for money for the NHS, this section of the business case applies the Scottish Government's 'Value for Money Assessment Guidance: Capital Programmes and Projects' guidance issued to NHS Lothian by SFT on 17 October 2011. Appendix 17 contains a completed 'Appendix C – Checklist and Pro-forma of Required Actions Stage 2'. The version issued by SFT indicates which areas of the checklist should be completed. The overall aim of the document is to demonstrate that the project is viable, desirable and achievable if taken forward via NPD.

Change Management

- 6.51 The project falls under NHS Lothian's 'Improving Care, Investing in Change' strategy. The redesign and re-building of services on a new site represents considerable change for patients, staff and other stakeholders. Overall management of this change will be through the Project Sponsor, the Chief Operating Officer for NHSL.
- 6.52 The project team has considerable experience of managing change arising from complex capital projects. A change management plan action plan will developed as a part of commissioning planning for the new build, and detailed in the FBC due to be submitted in the summer of 2013.
- 6.53 There are significant workforce changes required by the new service models proposed as a part of this project. Workforce plans to support the proposed service models are being developed with the input of staff, Partnership, employee relations and organisational development. These will be detailed for the FBC submission in 2013 and rolled out under appropriate organisational practices.
- 6.54 A Workforce Planning group will be established and led by operational management with the remit to:
- Look at key drivers for organisational changes.
 - Support the workforce planning for transfer of service from the RHSC, CAMHS and DCN to their new accommodation at Little France.
 - Deliver the operational policy for the service within the new building.
 - Identify skills requirements and training needs to deliver the model of care.
 - Implement and introduce new ways of working.
- 6.55 The management teams and operational staff in RHSC, CAMHS and DCN will be fully engaged in planning the transition to the new build, and implementing any changes to the service model that can be introduced between now and 2016 in preparation for the move. For example, the clinical service model for paediatric surgery is already moving towards that proposed for the new hospital in response to current operational challenges, and bed modelling looking forwards, including benchmarking against peers.

Benefits Realisation

- 6.56 Benefits that NHSL plans to see delivered include improvements in quality and clinical effectiveness through a building designed around good clinical pathways and supporting facilities. The RHSC, CAMHS and DCN are planned to deliver upper quartile performance when measure against peer services in the UK, contributing to NHSL's goal to be one of the top 25 healthcare systems worldwide. The quality of the clinical environment in a purpose-designed new build will reduce the risk of healthcare associated infection, particularly through the increased provision of single rooms in inpatient areas. 100% single rooms in DCN will also contribute to an improved patient experience, with greater protection of privacy and dignity, and improved clinical outcomes.
- 6.57 The project will also benefit NHSL and its users through provision of more sustainable services for children and young people and for adult neuroscience patients. The new building will be a more environmentally sustainable facility that its predecessors, with reduced carbon emissions and better access by public transport for staff and patients. The co-location of RHSC, DCN and RIE will also contribute to the sustainability of medical staff rotas with the changing workforce over the next decade.

- 6.58 A Benefits Realisation Plan has been developed to identify against each benefit:
- Lead responsibility for ensuring the delivery of the benefit.
 - Action to be taken to ensure the benefit is realised.
 - The projected timescale for realisation of the benefit.
 - How the realisation of the benefit will be monitored and measured.
- 6.59 The Benefits Realisation Plan for the OBC is included as Appendix 22. This will be developed for the full business case.
- 6.60 Overall responsibility for ensuring that the benefits of the project are achieved rests with NHS, through the Project Board or its successor.
- 6.61 Where relevant, the performance measures identified within the Benefits Realisation Plan will be reviewed as part of the Project Evaluation Plan.

Risk Management

- 6.62 As part of the OBC addendum submitted in March 2011, a qualitative risk assessment on the short listed options was undertaken.
- 6.63 Following advice from Scottish Government to prepare a shadow tariff model only for the preferred option for the purposes of the main OBC submission, a quantified risk assessment of all options was not prepared. Instead, all risks inherent within the project were analysed for the preferred option only.
- 6.64 The following risk approach was developed based on the SCIM guidance with expert support from the Technical Advisor and Financial Advisor teams.
- 6.65 A copy of the full project risk register is attached at Appendix 12. This includes a risk allocation matrix as well as details of who is responsible for the management of risks and the required counter measures.
- 6.66 Methodology
- 6.66.1 The risk management methodology for the project followed the model below, with key project stakeholders involved at all stages:

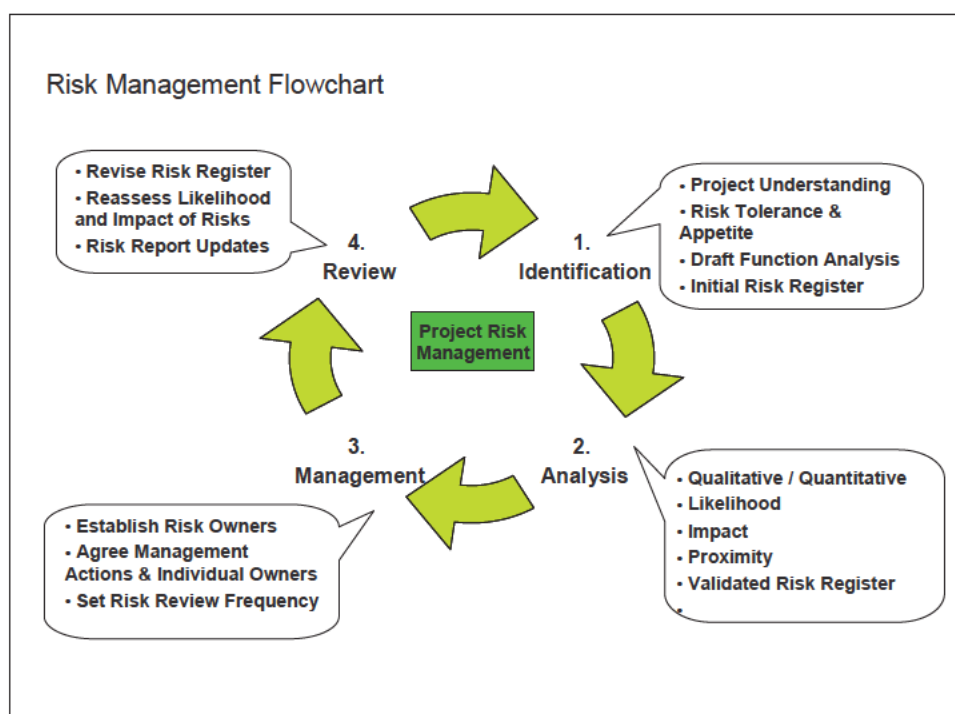


Figure 44: Risk management process

6.67 Risk Identification

6.67.1 A series of risk workshops were undertaken with a cross section of NHS Lothian staff including: Capital Planning, Finance, Estates & Facilities, Clinical Management Teams, Clinicians and Partnership. Members of the professional advisory teams also attended.

6.67.2 The initial workshops focused on determining a range of project risks. This included the re-assessment of risks identified as part of the previous procurement route. At the interactive workshop sessions, participants were asked to identify risks for each of the following categories:

- Business / Reputation / Service types
- Design / Construction types
- Operation / Performance types
- Procurement / Funding types
- Political / Policy / Legislative types
- Technology types

6.67.3 These risks were further allocated between a range of categories depending on where these risks would apply within the overall financial structure of the project. These are:

- Capital cost risks borne by NHS Lothian
- Those borne and priced by the NPD contractor
- Those applicable to enabling works
- Those that apply to clinical and soft FM services
- Those that are unquantifiable
- Those that would have a major impact on the cost of the project that are outwith the control of any party, for example, inflation or interest rate movements.

6.68 Risk Group

6.68.1 A risk sub-group was established with responsibility for the management of the risk process including assessment and quantification of risks. The group also review and develop the management strategies associated with the risks. This group is formed from members of the Capital Planning, Technical Advisor and Financial Advisor teams.

6.69 Analysis and Management

6.69.1 Each risk was assessed against the following evaluation criteria in terms of probability and impact.

Probability:

Category	Level	Probability
1	Very Low	0 to 5 %
2	Low	5% to 10%
3	Medium	10% to 25%
4	High	25% to 50%
5	Very High	> 50%

Figure 45: Assessment of probability

Impact:

Level		Cost Impact				Time Impact	Reputation Impact
		Capex		Low	High		
1	Insignificant	<0.1%		£0	£154k	> 5 days	Minimal risk to the project Minimal impact on services Minimal impact on the environment
2	Minor	0.10%	0.25%	£154k	£385k	5 to 10 days	Minor risk to project Minor impact on services Minor impact on the environment
3	Moderate	0.25%	0.50%	£385k	£770k	10 to 20 days	Some impact on the project Some impact on the services Moderate impact on the environment
4	Significant	0.50%	1.00%	£770k	£1,541k	20 to 50 days	Significant impact on the project Significant impact on the services
5	Major	1.0%		£1,541k		50 days	Major impact on project Major impact on services

6	Catastrophic	>5.0%	>£4,623k	> 100 days	Stops or delays project
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Figure 46: Assessment of impact

- 6.69.2 The combination of the probability and impact scores generated a total risk score. Scores of 0-9 is considered low risk (green), scores of 10-17 are moderate (amber) and scores of 17-25 identify a high risk (red).

Category	No. of risks
Green - Low Risks	79
Amber - Medium Risks	75
Red - High Risks	12
Total	166

Figure 47: Categorisation of risks

- 6.69.3 Following assessment of all the risks, a risk allocation matrix (RAM) was prepared confirming which items were to be retained by NHS Lothian and which risks would be transferred to the private sector via the NPD Project Agreement. The standard PPP Risk Allocation Matrix within the SCIM was used to determine which risks were acceptable to transfer and retain. This was also used as a check-list to ensure all relevant risks were considered in the risk analysis process.

6.70 Review

The risk register is maintained as a live document and updated at key milestones and or as the need arises with the risk profile for the project kept under constant review. The top risks are reported to the Project Board on a monthly basis.

6.71 Risk Quantification

The risk valuation process resulted in the following key outputs.

- 6.71.1 A risk value of [REDACTED] is attached to risks transferred to the NPD operator via the standard form NPD contract. These risks will be priced by the bidders involved in the procurement process and would form part of their overall financial proposals. This value is included, therefore, within the input costs used to derive the shadow unitary charge as described in section 5.2.
- 6.71.2 A risk value of [REDACTED] is attached to risks retained by the public sector that would result in an increased cost of the project, most likely via an increase in the annual unitary charge payable to the NPD contractor, if these risks were to be realised.

Post Project Evaluation

- 6.72 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.
- 6.73 The evaluation will be led by the Project Team supplemented by representatives of key stakeholders. The Project Board, or its successor, will receive evaluation reports on each element.
- 6.74 In accordance with current guidance and good practice the project will be evaluated in stages:
- **Stage 1** – Procurement Process Evaluation (post financial close)
 - **Stage 2** – Monitoring Progress (during construction)
 - **Stage 3** – Initial Project Evaluation of the Service Outcomes (6-12 months after commissioning)
 - **Stage 4** – Follow-up Project Evaluation (two years into the operational phase)
- 6.75 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?

BRIEFING: NHSL NEGOTIATIONS WITH CONSORT HEALTHCARE

[Commercial in confidence]

LETTERS OF SUPPORT FROM KEY STAKEHOLDERS:

- A) NHS Borders
- B) NHS Dumfries & Galloway
- C) NHS Fife
- D) NHS Forth Valley
- E) University of Edinburgh

NHS Borders

Chair & Chief Executive's Office

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Date 23 January 2012

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Dear Susan and Jackie

RHSC & DCN AT LITTLE FRANCE – OUTLINE BUSINESS CASE

NHS Borders is pleased to receive a copy of the Outline Business Case for the reprovision of the Royal Hospital for Sick Children and Department of Clinical Neurosciences at Little France. In response to your letter of 22nd December 2011 I am writing to support the financial model in principle and sign up to working with NHS Lothian to determine full allocation of revenue funding for the Full Business Case. This is based on the condition that the final cost of the re-provided services to NHS Borders when fully operational in 2017/18 does not alter significantly from that stated in the Outline Business Case. It is also conditional on the agreement from NHS Lothian that all issues relating to 2011/12 SLA are resolved by the 29th February 2011.

Yours sincerely

[REDACTED]

CALUM CAMPBELL
Chief Executive



**Dumfries and Galloway
NHS Board**

Chief Executive's Office

Mid North
Crichton Hall
Bankend Road
Dumfries
DG1 4TG
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Ms Susan Goldsmith & Ms Jackie Sansb
Lothian NHS Board
Finance Directorate
Waverley Gate
2-4 Waterloo Place
EDINBURGH
EH1 3EG

Ref: JAA/EMcR
Date: 16 February 2012

Handwritten signature of Susan & Jackie.

Dear Ms Goldsmith & Ms Sansbury—

RHSC & DCN AT LITTLE FRANCE - OUTLINE BUSINESS CASE

Further to your letter dated 22nd December 2011, relating to the Outline Business Case for the Royal Hospital for Sick Children and Department of Clinical Neurosciences at Little France, I would like to confirm that NHS Dumfries and Galloway support the financial model in principle, and agree to work with Lothian NHS Board to determine full allocation of revenue funding for the Full Business Case.

I understand that discussions have taken place between our respective teams on the proposed model for the accurate distribution of costs. I would be keen to ensure this work concludes in advance of the production of the draft Full Business Case.

Should you require any further information or clarification with regard to the above, please do not hesitate to contact me.

Yours sincerely

A large black rectangular redaction covering the signature area.

Jeff Ace
Chief Executive

Copy: Craig Marriott, Director of Finance, NHS Dumfries and Galloway
Judith Proctor, Director of Planning, NHS Dumfries and Galloway

Chairman: Michael Keggans
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Mrs. Susan Goldsmith
Director of Finance
NHS Lothian
Waverley Gate
2-4 Waterloo Place
EDINBURGH
EH1 3EG

Date 23 February 2012

Our Ref CB/SAL/L4421
Enquiries to [REDACTED]
Direct Line [REDACTED]
Email [REDACTED]

Dear Susan

REPROVISION OF ROYAL HOSPITAL FOR SICK KIDS AND DEPARTMENT OF CLINICAL NEUROSCIENCES AT LITTLE FRANCE

OUTLINE BUSINESS CASE

I refer to my email of 23rd December 2011 and thereafter the 13th January 2012 in respect of the above.

I am writing on behalf of the Board to confirm that NHS Fife is supportive of the Outline Business Case, recognising the identified service and financial implications for NHS Fife.

It is recognised that the details may change as work progresses to the Full Business Case and our support is based on there being no significant changes.

If you require further comment, please let me know.

Yours sincerely;

[REDACTED]

CHRIS BOWRING
Director of Finance



Carseview House
Castle Business Park
Stirling
FK9 4SW



Ms J Sansbury
Project Sponsor
RHSC/DCN re-provision
NHS Lothian
56 Canaan Lane
Edinburgh
EH10 4SG

Date : 25th September 2012
Your ref :SG/AWW
Our ref

Enquiries : Mrs F Ramsay
Direct Dial : [REDACTED]

Dear Jackie

RHSC and DCN at Little France – Outline Business Case

I write with reference to your letter of 22 December 2011 regarding support for the Outline Business Case for the reprovision of the Royal Hospital for Sick Children and department of Clinical Neurosciences at Little France..

In accordance with my email of 24th January 2012 I can confirm that NHS Forth Valley support the Financial model in principle and to working with NHS Lothian to determine the full allocation of Revenue funding for the Full Business Case.

Yours sincerely



Mrs F Ramsay
Director of Finance

Chairman Alex Linkston CBE
Chief Executive Fiona Mackenzie MA (Hons) MBA CIHM DipHSM

*Forth Valley NHS Board is the common name for Forth Valley Health Board
Registered Office: Carseview House, Castle Business Park, Stirling, FK9 4SW*

www.nhsforthvalley.com Facebook.com/nhsforthvalley @nhsforthvalley





12 December 2011

PRINCIPAL and VICE CHANCELLOR

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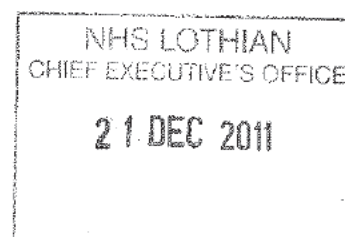
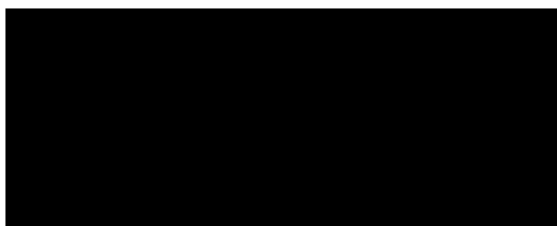
Telephone [REDACTED]
Fax [REDACTED]
Email [REDACTED]

Dear James,

Developments of the new Royal Hospital for Sick Children on the Little France Campus in Edinburgh

I am writing to express the strong support of the University for the above development and reinforce how important the partnership between NHS Lothian and the University of Edinburgh remains. As you know we are making a financial contribution to the development in addition to our investment in capacity building in both clinical academics and non clinical scientists associated with Neonatology and Child Life and Health. The establishment of the new Royal Hospital for Sick Children will provide an extraordinary opportunity to enhance the health and well being of neonates and children in the South East of Scotland, whilst at the same time strengthening our R&D programme in this important area of health care for Scotland.

We look forward to working with you to deliver this important project.



INDEPENDENT DESIGN REVIEW BY SCOTTISH FUTURES TRUST

[Commercial in confidence]

**PROJECT REVIEW BY PRICEWATERHOUSECOOPERS OF THE
SIGNIFICANT CHALLENGES AND RISKS AROUND THE PROJECT**

[Commercial in confidence]

**RECOMMENDATIONS TO NHS Lothian by the Scottish
Government's Infrastructure Investment Board**

[Commercial in confidence]

FUTURE SERVICE MODEL FOR CHILDREN AND YOUNG PEOPLE

1. Principles of Redesign

Throughout the consultation of the NHS Lothian Children and Young People's Health Strategy in 2006, patients and families clearly stated what is important to them. Since then, the RHSC Family Council and the Children and Young People Advisory Board has developed 'Principles that are important to Patients, Families and Public'.

These include:

- The children's service should have children and young people at the centre of a nurturing, engaged community.
- Systems and space should recognise the healing capacity of sustaining everyday lives.
- There should be parallel pathways of care for parents, carers and families, to ensure that they are appropriately supported and empowered during periods of personal stress and distress.
- Patients will travel for specialist care, but routine care should be delivered locally.
- Patients are happy to see experts, including consultants, nurse specialists and other practitioners.
- There is a need to improve communication throughout the NHS.
- Patients want equitable quality of care wherever they go.

In addition, principles for redesign were developed by NHS Lothian to inform the 'Improving Care, Investing in Change Programme'. These have been built on to include the issues relating specifically to children and young people's health services. These are outlined as follows:

- Children's services across South East Scotland and Tayside will be safe and effective and of the same quality irrespective of where it is delivered.
- Care delivery will be age-appropriate and for patients up to 16 years of age, and in some cases up to 18 years. It will be delivered by the most appropriate practitioner, whether it is doctor, nurse or allied health practitioner or other.
- Each specialty will decide where it will deliver each of the 4 levels of care – local, secondary care, regional and national.
- Service delivery networks and Managed Clinical Networks will be established to support local service delivery where appropriate, by providing support for local clinical decision-making.
- Ongoing redesign will take account of critical care needs (i.e. the necessary blend of HDU / PICU) and the impact on all other support services.
- Each service model must:
 - Support achievement of 1A banding for junior medical staff, as well as the requirements for MMC in future;
 - Support achievement of national quality targets; and
 - Meet the contractual requirements for all staff
- The groups established to progress this work will fully engaged with patients, multidisciplinary groups of staff, staff side, primary and secondary care, SAS and other agencies as appropriate.

This process has been progressed by a number of patient pathways as follows:

- Front door/unscheduled care services
- Out-patient/medical day care services
- Scheduled in-patient services
- Theatre & day surgery services
- Critical care
- Child & Adolescent Mental Health Services (CAMHS)
- Children and young peoples services in the community
- Adolescents/age appropriate care
- Clinical support services, including Pharmacy, Radiology & Laboratories

The process of service redesign initiated for the project will continue with an implementation programme to support the delivery of the new models of care.

2. Report of proposed Redesign of Patient Pathways

Generic recommendations

The outcome of service redesign identifies the following key principles:

- The hospital will continue to provide a local service for Lothian, a Regional service to the South East of Scotland and a National Service for a small number of specialities.
- Healthcare will be provided locally unless there is a sound reason for it to be provided centrally.
- Unscheduled / emergency medical care will be managed separately from scheduled care during the initial 48 hour period. This will enable the unplanned workload to be managed adjacent to the Emergency Department and will be supported by the delivery of the 'Hospital at Night' concept, and in turn protect the scheduled activity to ensure national access targets are met.
- Age appropriate facilities will be embedded in the design of the hospital as a whole, there will be adolescent beds within each of the wards with dedicated adolescent shared/social space between the medical inpatient and long stay surgical ward. There will be a dedicated Teenage Cancer Trust Unit (3 beds) within the Oncology Ward.
- Patients over 12 years will be cared for in single sex areas.
- At least 50% of beds will be in single rooms.
- Parental and family accommodation will be provided at ward level as well as in specific 'hotel' facilities within the hospital site.

- Facilities will be provided to support children and young people and their families in maintaining as normal a routine as possible, including keeping up with their school work.

Front Door / Unscheduled Care

- The Emergency Department (ED) in RHSC will receive patients up to 16 years of age, in age-appropriate facilities, and should be adjacent and linked to the RIE Emergency Department, both departments having easy access for emergency services and the public.
- Patients will remain in the ED for as short a time as possible, and less than 4 hours, and will be discharged home wherever that is clinically appropriate. Admission to hospital will be avoided where possible.
- There will be a Paediatric Acute Receiving Unit (PARU) adjacent to the ED where medical emergency patients can be observed, assessed and treated for short periods of up to 48 hours, supported by easy access to diagnostics (e.g. radiology, laboratories) and therapies. Patients would either be discharged within this period, or admitted to an inpatient ward for further treatment.
- The PARU will be one flexible unit, with 3 main patient groups and will include:
 - An area for short stay observation, which will support 100% compliance with the 4-hour target for the ED (at present sitting at an average of 99%), by caring for children who require a short period of observation following treatment in the ED, as well as the large number of patients currently admitted for less than one day.
 - An area for unscheduled medical patients (up to 48 hours).
 - An area for young people attending as emergencies, including those who self harm, or with drug and alcohol intoxication.
- Senior paediatric medical, nursing and AHP staff will be integral to the staffing of the PARU. They will be experienced and will make early, informed decisions about discharge or the need for further treatment. Each patient will have a consultant / lead clinician identified.
- The importance of the subspecialty teams is recognised, and models of workforce management (particularly nursing) will be predicated on staff with the required specialist skills being available to care for patients.
- The PARU will have appropriate accommodation to support the multi-disciplinary teams that will be using it.
- For the direct support they require, the ED and PARU require adjacency or easy access to
 - Radiology – x-ray / ultrasound / CT
 - Laboratories – (near patient testing + on campus easily accessed labs via an pneumatic tube system)
 - Pharmacy – one-stop-dispensing in dept with a pharmacy dispensary

- A&C support
- Social work support

Advantages of this model include:

- The patient will have early senior assessment and early senior decision-making so that diagnosis and treatment can be established, without delay, resulting in quicker recovery.
- This proposal will focus unplanned medical workload in one ward area, which will assist in delivering the 'Hospital at Night' concept, and support its sustainability.
- Following benchmarking with other specialist children's hospitals, and in particular Alderhey Children's Hospital in Liverpool, it is anticipated that the present length of stay for emergency paediatric patients could be reduced if this model was established.

Outpatient / Medical day care

- The provision of outpatient and day care services in the right place, with the right staff and equipment available, is central to these plans.
- Paediatric outpatients are currently delivered on 12 main sites in Lothian and in over 35 smaller sites. However, these sites do not always offer suitable accommodation for the clinics held there, or the necessary age-appropriate facilities. The strategy is for Community Treatment Centres/Hospitals to be established within Lothian that provide outpatient facilities for children & young people and thus shifts the balance of care from hospital to community settings where access to specialist services are not required. There are already clinics established in Leith Community Treatment Centre and Midlothian Community Hospital with plans for clinics to be established in the new build Musselburgh Primary Care Centre. This is part of a separate business case process being progressed by the 'Developing Children & Young Peoples Services in the Community' Strategy Group
- The clinics and medical day care facilities in the new hospital will be planned to provide the facilities required by children, young people, their families and the staff looking after them.
- Specialist medical clinics should be co-located with essential physiological investigation services enabling smoother access to specialist care, for example the Cardiology and ECG Dept and Respiratory Specialists and the Respiratory Laboratory.
- The outpatient department should be divided into several suites of rooms, creating different areas that provide age-appropriate facilities. Specialty clinics will be held in the best areas for their patients' age range, condition and space requirements with supporting specialist equipment.

- There are a number of specialist hospital paediatric clinics still held in inappropriate locations outside RHSC because there is not enough space in the present hospital (e.g. spinal deformity surgery OP held in RIE). It is proposed to bring these services into the new hospital where they can then benefit from the age-appropriate environment. These include:
 - Spinal deformity surgical clinics are at present held at RIE due to lack of clinic space in RHSC. This provides inappropriate facilities and space for families attending with the patient. There is poor privacy for adolescent girls (approx 80% of patients). It is planned to transfer these clinics to RHSC so that there is access to other multi-professional teams involved in this complex care. The service is expanding with additional consultant surgeons joining the team delivering this national service and the RIE facilities do not have the capacity for this expansion. It is anticipated that there will be 7 clinics per week, held over 3.5 days.
 - Paediatric Audiology services are provided in many community facilities, though none of these at present have sound-proofed rooms, leading to a significant number of repeat investigations, where the child requires to attend the main Audiology department in the Lauriston building for a second appointment. Audiology works closely with a number of other key specialities, including ENT, cleft surgery, oncology and neurology. Children at present attend OP at RHSC, and then attend Lauriston for their Audiology tests, either on the same day or for a second appointment. It is proposed in future that Audiology booths will be provided in the OP dept of the new hospital, as well as in the proposed new community facilities as they are established.
 - Vision screening and Orthoptic clinics are held across Lothian. Specialist ophthalmology clinics and orthoptist clinics at present are held in the Princess Alexandra Eye Pavilion (PAEP) with 3 paediatric clinics per week where patients see both ophthalmologists and orthoptists. The outcome of the BACiL (Better Acute Care in Lothian) review of the service (adults and paediatrics) proposes that the paediatric ophthalmology service at present in PAEP and RHSC will be delivered in the new C&YP's hospital in future, providing an improved service, in age appropriate facilities.
 - At present paediatric dermatology clinics are held in RHSC and Lauriston Building. The current facility in Lauriston is not age-appropriate where children are sharing facilities with adult patients. A published review of Specialist Children's Dermatology Services stated that 'in Edinburgh an expansion of the service at the Children's Hospital would be desirable'. Moving the paediatric activity to the new children's hospital will support integration of care with other specialities including rheumatology, allergy, child protection and plastic surgery where patients at present have to attend 2 sites on same day. It will enable minor surgery to be performed with appropriate paediatric emergency backup, providing access to paediatric specialist nursing, and improved access to paediatric phlebotomy, x-ray and photography. Patients

will be able to attend the medical day case unit for required IV therapy. This plan will support improved transition (e.g. for genetic skin diseases, intractable inflammatory disorders). Some paediatric patient services will remain in Lauriston – where the paediatric patient activity is very small and ad hoc – for example phototherapy and patch testing.

- For children and young people with the most specialist complex needs, (for example, neuro rehabilitation), it is proposed to establish a Paediatric Assessment and Treatment Centre. This Centre could be a focal point for therapy outpatient services, with skilled personnel and excellent facilities, providing patients with expert care from experienced multi-professional staff, as well as other staff involved in supporting and assessing patients – for example school teachers. This facility should be located adjacent to the children’s therapy facilities
- The new medical day care unit will provide expanded pre-planned investigation and daytime treatments currently available in the present Programmed Investigation Unit. Nurse-led organisation of assessment, investigation and therapy will streamline the process of care for medical patients who don’t need to stay overnight in hospital.
- While the number of return outpatient appointments will be kept to a minimum, often long-term and highly specialist paediatric illnesses will require specialist follow-up until and beyond adolescence.

In patient facilities:

- Will be admitted directly to the day units (medical or surgical) or the in-patient facilities.
- Inpatient facilities should be provided in 5 main areas, all with age appropriate facilities –
 - (1) Medical (including all the medical subspecialties, a ‘home in hospital’ + sleep studies)
 - (2) Surgical Short stay (Up to 72 hrs) for both elective and emergency surgical activity (this will be for all surgical specialities)
 - (3) Surgical Long stay (more than 3 days) for all surgical specialities
 - (4) The strength of the current amalgamation of neuroscience services (neurology / neurosurgery / neurophysiology / academic dept) should also be preserved.
 - (5) Cancer unit that will manage day patients, inpatients, day patients and teenage cancer patients.
- There are a small number of children with highly complex health needs, some who require long-term ventilatory support for either all or part of every day, and others who require significant technical support and care. These ventilated children often have a prolonged hospital stay during the extended period that is required for setting up home-care packages. Other long term patients are managed within busy, acute wards, where staff are balancing their day-to-day priorities, which is not the most

suitable environment for supporting the normal development of this group of children / young people.

- It is proposed to provide a more appropriate area for children with complex technology needs, within the medical inpatient ward area.
 - The area would provide a facility where staff and families can be supported in developing the required new skills for managing their child, and be assessed in a supportive environment.
 - This would provide consistent long-term step down care with the social and development interaction that other children nearby would provide, whilst ensuring adequate levels of clinical supervision.
- At least 50% of the bed spaces will be in single rooms, which will facilitate infection control, age-appropriate facilities and support sex segregation.
 - Parental and family accommodation will be provided at ward level as well as in specific 'family hotel' facilities adjacent to the hospital site.
 - Therapy facilities should be easily accessed from the inpatient facilities, to support delivery of timeous and effective therapy services to inpatients.
 - For patients with chronic or life-long conditions, a key worker/lead professional will be identified who will be responsible for ensuring that ongoing care plans are robust, appropriate, agreed with the parents and all professionals involved in the patients care. They will also be responsible for ensuring that the care plan is implemented and updated.
 - Where surgical patients require to arrive in hospital prior to the day of surgery either because of distance from home, or for pre-operative investigations, it is proposed that most children would, in future, stay with a parent in a family facility within the hospital unless there is a clinical reason for earlier admission.
 - The importance of the subspecialty teams is recognised, and models of workforce management (particularly nursing) will be predicated on staff with the required specialist skills being available to care for patients.
 - In Edinburgh, where the surgeons in subspecialties (e.g. orthopaedics) already operate on 13 – 16 usually within adult services, the patients would be managed in future by the same surgeons but within age appropriate environment in the children's hospital. Patients' aged 16-18, with specific specialist conditions, would have the choice of management in adult or the children & young people's services.
 - For patients with complex health needs admitted for elective treatment, especially surgery, the discharge plan must be established prior to admission to ensure the required equipment and support is available at the appropriate time.

- The elective surgical process will be more streamlined by the establishment of nurse-led pre – assessment clinics, prior to planned admission, which will avoid cancellations on the theatre list due to changes in patients clinical presentation.
- Where other Health Boards no longer retain general surgeons who will undertake paediatric surgery, surgical inpatients are transferred to Edinburgh for the operation, as agreed with the parent Health Board, while day cases will be repatriated to their host Health Board.

Theatres / day surgery

- It is proposed to have 6 theatres, incorporating emergency theatre capacity, and one that will have the potential for extended-day operating. The opportunity of increasing the number of theatres working extended days is being explored.
- 70- 75% of elective general surgery is presently delivered within a day case admission – benchmarking with the other tertiary paediatric units in the UK demonstrates that this exceeds all the other units and so it is not anticipated that there will be a significant additional shift from inpatient surgery to day surgery.
- A “Patient / family hotel” will provide accommodation to facilitate ‘same day’ admission for patients travelling longer distances.
- There should be a single reception /admissions area, where all surgical patients (inpatients and day cases) should be admitted on the day of surgery. Nurse-led clerking / pre-operative assessment is currently being established, which will ensure the pre-op service is no longer dependent on doctors-in-training. Patients will have staggered arrival times, to enable more efficient admission.
- Day case patients admitted for endoscopy procedures under anaesthetic, will require pre-operative preparation, and will require privacy and easy access to toilet facilities
- Within RHSC the theatre complex should be one complete clinical area with the Day Case Unit (DCU) part of the theatre complex, which will enable the facility to work as effectively as possible. A single reception/admission area will service both components.
- All day case surgical patients and all other day case patients who require an anaesthetic will be managed in the DCU, to ensure the safest possible patient pathway for this large group of patients.
- There will be separation of the pre and postoperative ‘patient flows’ in theatre and DCU so that the patients (accompanied by their parents)

going to theatre do not pass the patients returning from theatre to the ward, as currently happens.

- A number of trolleys will be required in this area, for patients who have had sedation or pre-medication.
- DCU should retain beds in the post op area, so that a wider group of patients with a longer recovery period can benefit from the opportunities of day surgery. There will then be a discharge lounge / play area for patients following surgical recovery, prior to discharge.

Critical Care:

- Critical Care (CC) includes
 - (1) Paediatric Intensive Care Unit (PICU),
 - (2) The Intensive Care Retrieval Service,
 - (3) Medical and Surgical / Burns High Dependency (HDU), and
 - (4) Neonatal Surgery
- CC facilities should all be located together, as well as close to, on the same floor as, the theatre suite. This will ensure easier transfer of postoperative sick patients following major surgery to critical care, as well as facilitating effective working for senior medical staff who work between theatres and PICU.
- Paediatric Intensive Care is nationally commissioned by the National Services Division at the Scottish Government, as a single service delivered on 2 sites (Edinburgh and Glasgow).
- In 2008 the number of PICU beds increased from 6 to 8 due to the high level of occupancy. This does not take account of the possible increase in activity when the formal age range is increased to 16/18, (currently approximately 9% of the PICU activity involves patients aged 16 and over) however it is planned to provide higher specification critical care bed spaces within HDU, which can be used flexibly to cope with peaks in patient activity of this specialist facility.
- PICU Retrieval – also nationally commissioned where, together with Yorkhill, Edinburgh PICU provides a specialist team that retrieves critically ill children from anywhere in Scotland. This requires a highly skilled and competent group of medical and nursing staff. There will be a review of the present compliment of retrieval staff, due to the impact of MMC and EWTR. At present clinical fellows and senior / experienced PICU nurses provide an available team (one of each) at all times. Currently advanced nurse practitioners are being trained, and with increased support from consultant staff, will in future make up the team. This will ensure that there are staff in place as part of the solution to address the impact of MMC and EWTR.
- A national High Dependency Audit took place in 2006-7, which collated detailed information of all patients under 16 years of age requiring high dependency care in all hospitals in Scotland. The audit showed that

there were a significant number of high dependency level patients in Edinburgh who were being cared for in the inpatient wards, predominately within respiratory and specialist surgical specialities. This supports the need for the planned increase of High Dependency beds. Most of this activity is already being provided, however significant amounts is within inpatient wards. For clinical governance and patient safety reasons, it is planned to cohort these patients in future within an HDU.

- The adolescent activity in the current HDU at RHSC in 2010/11 is 128 occupied bed days.
- It is planned to separate medical and surgical High Dependency Services, as the patient groups needs are significantly different. Both should be co-located with PICU, the medical HDU having additional isolation facilities as this area will have a greater proportion of infective patients and with the surgical HDU being adjacent to the theatre recovery area as well as the surgical neonatal unit.
- The importance of the subspecialty skills is recognised, and models of workforce management (particularly nursing) will be predicated on staff with the required specialist skills being available to care for patients.
- Patients who have sustained thermal injuries will be admitted to and cared for in a Burns facility that will be provided within the surgical HDU. Large numbers of children at present are discharged home as soon as clinically appropriate and attend the plastic surgery ward for the Plastics Dressings Clinic, by specialist nursing staff with appropriate skills, and with the necessary equipment and medical support.
- The care of surgical neonates who require postoperative surgical care will receive it at RHSC. The more premature patients will be transferred back to the SCRH. There will be closer working between the PICU and NICU, with greater presence of neonatologists in RHSC, and surgeons in SCRH, improved communication between the surgeons and the neonatologists, and improved support to postnatal mothers who choose to stay close to their baby in RHSC.

Child and Adolescent Mental Health Services (CAMHS)

- CAMHS in Lothian provides a tiered model of care involving outpatient, day patient and inpatient facilities for children and adolescents up to their 18th birthday.
- Outpatient services will continue to be delivered in the community in a variety of sites across Lothian. The existing model of service is being reviewed in order to reduce the present waiting time for appointment.
- Outpatient facilities will be provided in the new RHSC, as a local facility in the southeast of Edinburgh. There will be close co-ordination with the Children & Young Peoples Services in the Community group to ensure services are provided as close to home as possible.

- The Young People’s Unit Tier 4 services at the Royal Edinburgh Hospital will move to Little France with RHSC. This includes the Inpatient Unit (12 Beds), 2 Day Programmes (Age 5 – 18), the Early Psychosis Support Service and the Intensive Treatment Service.
- Day patient services will continue to be delivered in West Lothian and in RHSC for Edinburgh, East and Midlothian.
- Inpatient and Day patient services should be located in the new RHSC in order to provide an integrated care pathway for this group of severely mentally ill patients.
 - This is particularly crucial for patients with anorexia nervosa whose physical health is usually severely compromised by their illness. They currently account for over 50% of the acute and long-term admissions to the unit.
- Currently the Paediatric Psychology and (Psychiatric) Liaison Service offer a specialist service to patients in RHSC where mental health issues complicate their physical health problems. This service will require to expand with the expanded age-range of patients in future, and the additional specialties, who presently are managed out- with the hospital due to lack of space.
- The Liaison Mental Health Services, including the complex neuropsychiatry and psychology are presently located within the Sciennes site, and work closely with the children’s service with active links with the children’s inpatient and outpatient services, in particular the Paediatric neurology service around assessment, advice and consultation. This service would be most appropriately delivered from the Assessment and Treatment Centre.
- Further work is required to develop and improve the model of service for patients with learning disability and psychiatric disorder who require inpatient and day patient care, as the current service does not adequately meet the needs of this group of children and young people.

Children and young peoples Services in the Community

- Collaborative working with different health disciplines and partner agencies is essential in providing children's services “closer to home”
- The model of care will focus on ‘Getting it Right for Every Child’ (GIRFEC) - taking a holistic approach that listens to the child and family and develops multi-disciplinary and multi-agency services around the child.
- Facilities for Children and Young People within Community Treatment Centres/Hospitals are being established Lothian-wide to assist in shifting the balance of care to closer to patients’ homes. These are also providing a good and appropriate base for community staff

- The Centres will provide a range of services including Outreach Outpatient sessions for a range of specialties and professions, CAMHS, Community Child Health and also universal services, and including soundproofed audiology facilities. No one centre is likely to provide all services.

Adolescent / age-appropriate care:

- Young people up to 16 years with acute or emergency problems who attend the ED at Little France will be seen in the new Children's & Young Peoples Hospital and those over 16 years will be seen in the Royal Infirmary.
- Patients with long-term health needs may stay in the children and young people's service if they choose to, and it is agreed with their clinician until they are 18 years old.
- Transition from paediatric to adult services will continue to be developed which will include formal planning with young people and their parents. Work is being taken forward nationally to develop agreed standards for transition.
- The change in age range offers an opportunity for new ways of working between adult and paediatric services.
- Young people will be managed within their specialty area, in age appropriate accommodation and will have additional support facilities which will include 'chill out and den areas', with access to both IT equipment and beverage making facilities.
- Facilities will be provided to help young people keep up with their schoolwork and keep in touch with their friends.

Regional Assumptions

- It is assumed that IT & telecommunications links will support the moving of images & information, and not the patient- unless there is a clinical need.
- It has been agreed with each individual Health Board that patients will be repatriated to their local DGH / children's hospital if they no longer require clinical management in a specialist / highly specialist environment. This will require close working with the Scottish Ambulance Service, to ensure inter-hospital transport services are further developed.
- Managed Clinical Networks will ensure that specialist advice is available to DGH services.

- General paediatric surgeons are providing 'out reach' to Fife, Borders and St Johns Hospital in West Lothian to support day case surgery and clinics in these areas.
- It has also been agreed that patients should be managed at their local hospital as long as care can be delivered within that local hospital by local clinicians or by Edinburgh clinicians providing outreach (e.g. general surgical day cases)

3. Impact of redesign on future clinical activity

Modelling of activity from redesign

The process of developing the database of activity to inform the project is outlined in Appendix 7.

Paediatric Acute Receiving Unit (PARU)

The proposal to establish a Paediatric Acute Receiving Unit (PARU) will be a new clinical area. At present there is a medical admissions unit, which is as close to the ED as possible in the current building. This new area would propose to include all emergency medical and adolescent admissions, with patients discharged as soon as appropriate as well as a short stay 'observational bay' of 4 beds.

Any emergency admissions with hospital length of stay of 48 hours or less will spend the duration of their stay in PARU. Those emergency admissions that require to stay in hospital for over 48 hours will be transferred to the inpatient wards, at the most appropriate time after this clinical decision is made.

As the paediatric emergency activity fluctuates markedly, with peaks at varying times of the year, and with recent activity trends demonstrating an increase in this activity, it is proposed to manage the PARU with an average occupancy of around 70-3%.

Inpatient Beds

The inpatient wards will admit all elective inpatients, and emergency patients who are to stay in hospital for more than 48 hours, and it is proposed that this will operate at a higher occupancy rate of 78% which mirrors the benchmarking in the UK benchmarking group. It is planned that no day cases or ward attendee's will be managed within this area.

Haematology/Oncology – Future Cancer Unit

In the activity modelling it was planned that the IP cancer unit will operate at 60% occupancy.

The anticipated clinical activity for patients over 12 years old has been identified, as there is an assumption that we will continue to provide a teenage cancer facility, within the cancer unit for patients up to age 16 - 18.

The bed modelling assumes that all day case patients occupy day bed facilities only, where at present they have overflowed into inpatient beds. The Cancer day bed unit will be incorporated within the 'cancer unit', in order to make the most effective use of the specialist staff with the required skills and competencies to manage paediatric cancer care and in particular, chemotherapy.

Day Beds

Medical

It is assumed that medical day beds open 5/7 days, with 1.5 patients per bed per day. This assumption has been tested against other paediatric units in the UK and is consistent with their assumptions.

Surgical

Surgical day beds will be open 5/7 days, 1.5 patients per day (assumption based on review of current DCU throughput, and anticipated efficiencies that will be possible with the proposed purpose-built facility, separating pre and post operative patients).

The redesign has proposed that all day patients that require an anaesthetic will be managed within the day case surgical unit. As a result, some medical specialty patients with OPCS4 codes that require to attend theatre have been reassigned to surgical day case unit. For example, children requiring endoscopy / bronchoscopy at present attend medical day case will in future attend the day surgery unit.

Child & Adolescent Mental Health Service (CAMHS)

The CAMHS activity was not included in this initial activity database. However there has been a nationally review of the required inpatient capacity, and there has been SEAT agreement that the future capacity of CAMHS / YPU inpatient beds should be 12.

4. NHSL Single Room Accommodation Report for Children's and Young People's Services - 2007

This report was prepared in September 2007, following consultation with children, young people and their families and was submitted to the SGHD as part of their Single Room Accommodation review 2008, who accepted the needs of children and young people were different to that of adults.

This paper has been reviewed by the clinical teams in 2011 and the recommendations remain unchanged.

Introduction

This paper will provide information on the issue of single rooms and bed bays within the proposed new Children & Young People's Hospital in Edinburgh. A recent draft Report 'Single Room Provision in Scotland', produced by NHS Scotland on behalf of the Scottish Executive Nurse Directors Group (March 2007) proposes that all new hospital builds should provide a 100% single room accommodation. This recommendation was made following consultation with patients and nursing staff, however this does not appear to have specifically involved consultation with children, young people and their families and the nursing staff caring for this patient group.

Consultation with Children, Young People & their Families

As part of the Re-provision Project to replace the Royal Hospital for Sick Children in Edinburgh, a number of consultation initiatives have taken place. One of the questions asked was:

'Should the patient areas have single rooms or rooms of 4/6 beds or a mixture of both?'

Responses

A wide range of groups as detailed below completed questionnaires: -

Contact a Family, a UK wide Charity providing advice, information and support to the parent of all disabled children no matter what their disability and health condition, sent questionnaires in June 2007 to their Local Co-ordinators and parent members from across Scotland. Through Contact a Family links some questionnaires were also sent to parent members of 'One Parent Families' a UK charity dedicated to providing information and advocacy to lone parents. Of the 47 completed questionnaires, 39 respondents (83%) stated that the wards should have a mixture of both and only 5 (11%) supported all single rooms.

At the annual Sick Kids Friends Foundation Street Fair in May 2007, 'Roving Reporters' randomly selected adults and children who were attending. Of the 33 questionnaires completed, 20 (61%) respondents were in favour of a mixture of both and only 2 (6%) respondents felt it should be all single rooms.

The Hospital and Outreach Teaching Service in June 2007 asked children and young people to complete one of the questionnaires.

All of the patients who responded were taken from the following groups: -

- Young people sick at home
- Young mums'/pregnant schoolgirls
- Gypsy/travellers
- Looked after and accommodated children/young people
- Children and Young people with mental health difficulties in Forteviot and Young Person's Unit.
- Children/young people excluded from school.
- Children experiencing difficulty at school
- Young people going through the criminal justice system

Of the 74 questionnaires completed, 41 (55%) felt that the patient areas should be single rooms and 22 (30%) supported a mixture of both. 50 (68%) of the respondents were 12 years and over.

In June 2007 the Looked After Children Nurses asked children and young people who are accommodated (foster care, residential and secure units) for their views. 12 responded of which 9 (75%) were in favour of a mixture of both and 2 (17%) felt it should be all single rooms.

Also at a consultation event in March 2007 for Young People who currently attend the hospital they said that they wanted to have the choice of a single room or bed bay.

Overall from the feedback we have received to date it is being proposed that there will be a minimum of 50% single room accommodation for patients. However it is important to note that the single room accommodation requires to have en-suite facilities. There should also be sufficient space for one parent to sleep overnight with the child/young person.

Clinical Staff Feedback

Currently children and young people are allocated single rooms prioritised on the following criteria: -

- Infection requiring isolation
- Mothers who are breastfeeding
- Terminally ill
- Adolescents

It is acknowledged that currently there are not sufficient single rooms within the existing hospital.

Not all parents will stay with their child overnight or are here all the time during the day. Children and many young people often feel very isolated and alone when they are in cubicles and enjoy the social interaction of being in a ward area beside other children.

In addition younger children and babies, unlike adults, are not able to use nurse call systems and therefore observation of them is more difficult if all were to be nursed in single rooms.

Children as part of their development require social interaction and for those who are unable to mobilise and are confined to their bed and therefore not able to use the playroom, benefit from being nursed beside other children. This is a particular issue for children who are in hospital for a very long time.

100% single rooms would compromise the management of groups of babies and young children with the same infection e.g. bronchiolitis.

The Association of Chief Children's Nurses, representing senior nurses from across the UK, have discussed whether there should be 100% cubicles and this

was not supported, as it is recognised that children find great comfort from sharing with others, especially when their parents are not with them.

It was recognised that many adolescents would wish to be in a single room for privacy, however equally many of them also wanted to share and that consideration needs to be given in relation to segregation of male and female patients.

In addition it was felt that having a 100% single rooms would require higher patient: nurse staffing ratios because of the dependence of babies and young children on nursing staff, which is different to the dependence and support required by adult patients.

FUTURE SERVICE MODEL FOR CLINICAL NEUROSCIENCES

1 Overview

- 1.1 In reviewing the current service provided in DCN, the project has principally looked at the role of the tertiary specialist centre (level N3 in the national model of care¹), and its role as 'district general hospital' (level N2) for NHS Lothian patients.
- 1.2 The proposed future service model does include recommendations for the whole patient pathway from primary and community services, who have been fully engaged in the redesign, as it is necessary to capture the impact on, and support required by, these level N1 providers.

2 Assumptions for Future Service Requirements

- 2.1 The DCN Re-provision project is planned on the assumptions outlined below:
 - Neurosurgery will continue to be delivered in Edinburgh for the South-East and South of Scotland, in addition to three other NHS Scotland boards; these services will continue to be managed through the emerging national Managed Service Network.
 - Neurology beds for Lothian, and the specialist tertiary referral service for South-East and the South of Scotland, will continue to be provided in DCN.
 - Interventional Neurovascular Radiology for the South and East of Scotland will continue to be provided in DCN and out of hours services for the whole of Scotland in conjunction with NHS Greater Glasgow and Clyde.
 - Paediatric neurosurgery will continue to be provided in the Royal Hospital for Sick Children, Edinburgh.
- 2.2 All services currently provided in DCN which support and complement the above specialties are included in the redesign.

3 Service Redesign Principles

- 3.1 The service redesign by the Clinical Advisory Board for the project identified the key principles for the future model of care as listed below.
- 3.2 As far as possible healthcare will be provided locally unless there is a sound clinical reason for it to be delivered in the regional specialist centre. Information technology and telecommunications links will be used

¹ Scottish Executive (2005): *Delivering for Health*, p49

where possible to reduce the requirement for patients to travel unless there is a clinical need.

- 3.3 Neuroscience services will be safe and effective and of the same quality irrespective of where they are delivered.
- 3.4 Unscheduled care will be managed separately from scheduled care for the initial management and stabilisation of emergency patients to minimise disruption to existing inpatients. This will support equitable and timely access to planned care.
- 3.5 Patients admitted to hospital will be cared for in single sex areas; all inpatient beds will be in single en-suite rooms.
- 3.6 Patients waiting for appointments, investigations or treatment in DCN will do so in private, quiet and comfortable accommodation.
- 3.7 Relatives waiting for patients undergoing investigations or treatment in DCN will be able to do so in comfortable accommodation, with provision for private discussions with staff.
- 3.8 The close integration of research academic staff and clinical services will be maintained and developed in the new model to ensure the highest quality of, and opportunity for, translational research to support the provision of up to date evidence based treatment.

4 New Models of Care

- 4.1 This section gives an overview of the proposed changes to the current model of care.
- 4.2 Unscheduled Care
 - 4.2.1 All emergency referrals to neurology, neurosurgery and acute stroke for assessment and/or admission will come to a single neurosciences acute receiving and assessment unit, the DCN Acute Care area.
 - 4.2.2 DCN Acute Care will not act as an Emergency Department. All unscheduled patients self-presenting for hospital services or brought in by the Scottish Ambulance Service (SAS) as a 999 emergency will go to the RIE Emergency Department (ED) in the first instance.
 - 4.2.3 Emergency referrals from GPs and all other hospital services, including the ED, will need to be made directly to senior on-call medical staff, who will provide clinical advice to referring practitioners and arrange admission if required. This will apply to all NHS Boards referring to DCN, including hospitals within Lothian.
 - 4.2.4 DCN Acute Care will be the focus of the on-call medical staff and an experienced multi-disciplinary team around the sickest and least stable patients. The team will have rapid access to the resources required to

receive, assess, resuscitate if necessary, investigate, diagnose and treat emergency patients.

- 4.2.5 By focussing the resource required for emergency patients, the DCN Acute Care model will in turn protect scheduled activity to ensure compliance with national access targets.

4.3 Stroke Services

- 4.3.1 Working in partnership with the NHS Lothian Stroke Review, the DCN Re-provision project supports formalising closer working between DCN and stroke specialties to streamline emergency patient pathways.

- 4.3.2 The early co-ordination and availability of stroke physicians, neurologists, neuroradiologists and neurosurgeons is key for successful intervention in acute stroke. Their service model proposes the directing of all acute stroke patients to the Acute Care area for investigation and assessment to enable rapid decision-making where time-critical thrombolysis, interventional neuroradiology or neurosurgery is indicated.

- 4.3.3 Following assessment, and intervention where appropriate, patients would be transferred to beds under the care of the stroke specialty, either in critical care or the acute stroke ward. The service model recommends that acute stroke beds are located close to DCN for ease of transfer of these patients and to support the availability of stroke physicians in DCN Acute Care.

- 4.3.4 This is a change to the first eight hours the management of an acute stroke presentation only. Patients not requiring intervention or neurosurgery will be transferred to an acute stroke ward in the RIE, WGH or St John's for ongoing treatment and rehabilitation.

4.4 Neuroradiology

- 4.4.1 Where staff expertise and equipment allows, NHS Boards will perform scans locally to minimise patient travel. Images will be transferred using Picture Archiving and Communications Systems (PACS) to the DCN for review, and ease of early, decisions for clinical management.

- 4.4.2 Interventional radiology and intra-operative MRI will be sited within the DCN theatre complex, supporting rapid transfer of patients between theatre and neuroradiology in an emergency.

- 4.4.3 Dedicated capacity for scheduled investigations and procedures will support efficient pathways and the delivery of the 18-week referral-to-treatment waiting time guarantee.

- 4.4.4 The research staff and scanner of the University of Edinburgh's Brain Imaging Research Centre make a substantial contribution to clinical care in DCN. These facilities will be integrated into the future re-build of the DCN working in partnership with the University of Edinburgh.

4.5 Outpatients and Day Case Investigations

- 4.5.1 Neuroscience outpatient facilities will be configured in one department for medical, nursing, psychology and rehabilitation appointments; these will be close to radiology and neurophysiology to support effective 'one-stop' clinics where patients see more than one discipline in their visit.
- 4.5.2 Patients, carers and primary care stakeholders have stressed the importance of maintaining neurology outpatient services in North Edinburgh if the DCN moves off-site. The service is committed to continuing and expanding outreach clinics in the future. The proposed locations for future clinics are detailed in figure 1 below.

2011 Neuroscience Outpatient Clinic locations in Lothian	Proposed Future Neuroscience Outpatient Clinic locations in Lothian <i>at least</i>
Western General Hospital (DCN)	Western General Hospital
Royal Infirmary of Edinburgh	Royal Infirmary of Edinburgh
St Johns Hospital, Livingston	St Johns Hospital, Livingston
Roodlands Hospital, Haddington	Roodlands Hospital, Haddington
Newbattle Medical Practice	Newbattle Medical Practice
Conan Doyle Medical Centre	Conan Doyle Medical Centre
	Leith Community Treatment Centre
	Midlothian Community Hospital

Figure 1: Outpatient Clinic Services in 2009 and proposed for the future

The Programmed Investigations Unit will support investigations and daytime treatments, also co-located with outpatients to maximise the links with radiology and neurophysiology. This is expected to:

- reduce the number of inpatient admissions, maximising the efficient use of beds; and,
- reduce patient journeys where visits for multiple investigations could be a single, or one-stop, outpatient day attendance.

4.6 Scheduled Inpatients

- 4.6.1 All scheduled surgical and interventional radiology patients will be routinely admitted on the day of surgery unless there is a clinical reason for earlier admission. This will be supported by nurse-led pre-assessment and investigations in advance of their admission.
- 4.6.2 Scheduled surgical and interventional radiology patients will be admitted via a theatre reception area.
- 4.6.3 Patients with complex health needs admitted for elective treatment will have a discharge plan established prior to admission to ensure that the required equipment and support is available at the appropriate time.

4.7 Theatres and Day Surgery

- 4.7.1 DCN theatres will be used for both adult and paediatric neurosurgery procedures, including access to interventional radiology and intra-operative MRI. Children and young people undergoing neurosurgery will

be admitted to hospital via the RHSC, and will return to the RHSC for age-appropriate care post-operatively.

- 4.7.2 DCN theatres will be a single clinical area for day case and inpatient elective surgical and interventional radiology procedures, with dedicated capacity for emergency surgery.
- 4.7.3 Intra-operative MRI in DCN theatres will allow more effective surgical treatment of brain tumours.
- 4.7.4 The project also recommends that in order to maximise service efficiencies and cross-speciality learning, the orthopaedic and neurosurgical services for spinal surgery are combined. The project is linked into the NHS Lothian Spinal Service Review with orthopaedics services.

4.8 Inpatient wards

- 4.8.1 All inpatient ward accommodation will be provided in single en-suite rooms, in compliance with guidance intended to protect patient privacy and dignity, reduce infection and improve clinical outcomes.² The ward configuration and allocation of staff will be designed to maximise patient observation in single rooms. Patients' individual rooms will be complemented by communal sitting rooms and rehabilitation space.
- 4.8.2 Inpatients will only be in DCN for as long as they require the expert care available within the specialist centre; it is proposed that all NHS Boards will support appropriate care closer to home, either in hospital or community facilities, or in the patients' home.

4.9 Critical Care

- 4.9.1 Level 3 and level 2 critical care for neurosciences will be provided alongside general adult critical care.
- 4.9.2 In a clinical emergency it must be possible to transfer patients quickly by trolley from DCN Acute Care, neurosurgical theatres and neuroradiology to high dependency or intensive care.
- 4.9.3 DCN clinical staff have agreed that a five-minute transfer, by trolley, is an acceptable journey time between these facilities.
- 4.9.4 Beds for patients requiring 'level 1' care (relating to clinical acuity or increased dependency on nursing staff) will be provided within the DCN.

4.10 Cross-specialty working

- 4.10.1 The Edinburgh Centre for Neuro-Oncology (ECNO) is a clinical service based in the DCN and run jointly with the Edinburgh Cancer Centre.

² Chief Nursing Officer for NHSScotland: *CEL 48 (2008)*

Strong links with oncology will be maintained and developed to streamline the patient pathway once ECNO has moved to the new DCN.

- 4.10.2 DCN has a close working relationship with the Regional Infectious Diseases Unit based at WGH, with shared responsibility for neuro-virology patients where specialist input from DCN clinicians is required. Referral and support mechanisms will be reviewed as part of planning the future service model.
- 4.10.3 The National CJD Surveillance Unit for the UK is on the WGH site and is not part the planned re-provision; DCN provides the clinical cover and facilities for inpatient admissions and surgical procedures referred by this service, and will continue to do so in the future.
- 4.10.4 Neurosurgeons and endocrinologists work closely in the management of patients requiring pituitary surgery Current referral and management pathways will continue wherever DCN is located in future.
- 4.11 Regional Working Assumptions
 - 4.11.1 The redesign and provision of services beyond NHS Lothian falls outside the scope for this project, however the five regional NHS Boards served by the DCN are working in partnership on the re-provision project to look at the entire patient journey.
 - 4.11.2 Technology and information sharing are key to supporting care close to home. This service model assumes that images and records will be moved between GPs, hospitals and DCN before a patient is moved, until a clinical need for that journey is confirmed. In particular, access arrangements for MRI scanning across the region are being looked at locally.
 - 4.11.3 Patients will be repatriated to their local hospital or rehabilitation facilities if the required care can be provided locally and they no longer require clinical management in a specialist or highly specialist environment.
 - 4.11.4 Neurologists in NHS Borders, Dumfries and Galloway, Fife and Forth Valley will work closely with DCN specialists to support their local service, and link into the centre for education and professional development.

ACTIVITY MODELLING 2011**1. Purpose of the Report**

The purpose of this report is to propose the Bed, Radiology and Theatre model for the project.

2. Executive Summary

University Hospitals Division Senior Management Team approved these recommendations on 6 October 2011, and the Project Board on 14 October 2011. The number of beds to be commissioned for both services will be reviewed and subject to change as the project proceeds to Full Business Case.

2.1 RHSC Bed Modelling

2.1.1 It is proposed that the new RHSC will need to have 161 beds (134 In-Patients, 22 Day Case, and 5 Seasonal Beds) in total in 2016, (75% average occupancy rate). The planned beds to be built in this new building are 166. This includes 5 beds that will not be commissioned in 2016 but will allow for future proofing.

2.1.2 The Women, Children's and Neuroscience CMT have agreed average bed occupancy for in-patient areas of 78-80%. For acute admission areas an average occupancy of 74% is proposed. The Neuroscience and Oncology specialist areas will run at lower bed occupancy rate to ensure adequate bed provision throughout the year. See Table 1 below – Proposed RHSC Bed Model for 2016.

2.1.3 If a desired bed occupancy level of 80% is used throughout, then the number of beds required would reduce to a total of 154 beds (126 In-Patients, 23 Day Case, and 5 Seasonal Beds).

2.1.4 It is proposed to commission a total of 155 Beds when the building opens in October 2016, with a further 6 beds available to open to meet seasonal variation.

Table 1–Proposed RHSC Bed Model for 2016

	OBC (Aug 2008)	New Build Plan Sept 2011	Proposed Beds to Open 2016	Expected Average Bed Occup	Future Proofing Capacity
Paediatric Acute	32	28	28 ¹⁷	74%	
CAMHS	16	12	12	80%	
Inpatient Areas					
Medical	73	23	22	80%	+1
Surgical short-stay		14	14	79%	

¹⁷ Bed No includes 4 'Observational Beds' linked to the Emergency Department

Surgical long-stay		15	15	79%	
Neurosciences		12	11	64%	+1
Cancer Unit		10	9	58%	+1
Critical Care	24	24	22	76%	+2
Total In-Patient Beds	145	138	133	75 %	+5
Day Beds					
Surgical		10	10		
Medical	25	5	5		
Oncology		7	7		
Total Day Beds	25	22	22		
Total All year	170	160	155	75%	160
Seasonal Beds	5	6	6		6
Total	175	166	161	75%	166

2.1.5 Key issues to consider include:

- Seasonal variation in young children hospital admissions, in particular the under 4 age group.
- Fluctuating birth rate over the last 5 years and impact this has on a children's hospital and in particular to the under 2 age group.
- The recommended average bed occupancy rate for specific clinical areas (73% PARU/Medical Inpatients/ 78-80% all other inpatient areas)
- The number of beds to build and commission on opening (Oct 2016) and future proofing capacity
- The ratio of single bed allocation

2.2 DCN Bed Modelling

2.2.1 It is recommended that the number of beds to be built in this new building should stand at 69 (including the 2 Day Case Beds). This will allow NHSL to address the future population growth and anticipated rise in older patients. It is recommended that the number of beds to be commissioned on opening (October 2016) should be 64.

2.2.2 The DCN CMT have agreed that the average bed occupancy rate for specific Neuroscience Inpatient areas should be 82% and Critical Care Beds 75%. The Neuroscience Level 2 and 3 Beds will be provided within the RIE, Critical Care Area. It is recommended the number of beds agreed in 2009 should remain and 64 beds should be commissioned when new building opens in Oct 2016. Table 2 provides the Clinical Neuroscience Bed modelling detail.

Table 2 – Proposed Number of Beds for the Clinical Neuroscience Service

	OBC (2009)	New Build Plan (Feb 2011)	Capita Modelling (2016 Proj)	Capita Modelling (2021 Proj)	Expected Average Bed Occupancy
DCN Acute Care	12	12	12	12	82%
Level 1	15	12	12	12	82%
Inpatient	40	43	38	41	82%
Programmed		2	2	2	

Investigations Unit					
Total New Hospital		69	64	67	82%
Level 2 critical care	6	5	5	5	75%
Level 3 critical care	6	6	6	6	75%
Total Neurosciences	79	80	75	78	81%

2.3 Theatre Modelling (RHSC and DCN Services)

- 2.3.1 The Theatre Model has been developed to reflect the proposed service model in partnership with the RHSC and DCN clinicians and the Clinical Management Teams. It builds on previous work carried out by Tribal Consulting, 2008/9. Section 5 gives details of the methodology used to calculate the number of Theatres required for the new RHSC and DCN.
- 2.3.2 The current new hospital theatre design has planned for 9 Theatres to be built. It had been agreed previously that 8 Theatres should be commissioned when the new building originally intended to open (2012/13), (5 RHSC and 3 DCN). The recent modelling recommends (Capita July 2011) a combined requirement of 8.2 Theatres working a 13 session week. There is therefore a need to commission all 9 Theatres when this building opens in October 2016 to meet the elective and emergency patient activity.
- 2.3.3 Within the 9 Theatres capacity there is still the scope for additional patient activity as demonstrated below. The design of the co-joined Theatres will allow for a degree of flexible use.
- 2.3.4 The DCN activity will include adult spinal and adult congenital spinal cases allowing the interface between paediatric and adult spinal surgery with the expertise congregated in a single theatre complex.
- 2.3.5 Both services need access to a CEPOD Theatre and this model supports this requirement.

2.4 Radiology Modelling (Co-joined RHSC and DCN Services)

- 2.4.1 An NHS Lothian wide exercise is currently being carried out by Capita in conjunction with the Radiology service and therefore consideration needs to be given to that report prior to finalising radiology assumptions for the RHSC + Clinical Neuroscience Service in the new building.
- 2.4.2 Two feasibility studies are currently on-going to:
 - ascertain if the RIE can accommodate the UoE Research MRI Scanner.
 - ascertain if SJH can accommodate an MRI Scanner.
- 2.4.3 The RHSC and DCN Radiology Model has been developed to reflect the proposed service model in partnership with the RHSC and DCN clinicians and the Clinical Management Teams. It builds on previous work carried out by Tribal Consulting, 2008/9. Section x

gives details of the methodology used to calculate the different type of Radiology rooms required for the new RHSC + DCN new building.

Table 3 - radiology new build assumptions

	Current RHSC NB Assumption	Current DCN NB Assumption
General Radiography	2	1
General Ultrasound	2	1
MRI Bunkers	2	2
DCN Intra-operative MRI		1
Fluoroscopy	1	
Image Intensifiers	2	1
CT	1	1
Radionuclide Imaging	2	
Interventional Diagnostic Suite (Angiogram) in Theatres		1

- 2.4.4 The RHSC and DCN recent Capita modelling report version 1.5 identified the need for 4 NHS MRI scanners to be functional when the new building opens Oct 2016 (based on 5% increase in activity per year).

2.5 Key Risks

- 2.5.1 RHSC - seasonal variation in young children hospital admissions, in particular the under 4 age group.
- 2.5.2 RHSC - fluctuating birth rate over the last 5 years and impact this has on a children's hospital and in particular to the under 2 age group.
- 2.5.3 DCN - population growth in the older age group.
- 2.5.4 RHSC+ DCN Bed/Theatre/Radiology future proofing needs post provision of new building e.g. transfer of national services into NHS, new clinical developments.

3. RHSC FINAL BED MODELLING PROPOSAL

3.1 Background

- 3.1.1 The bed model has been developed to reflect the proposed service model in partnership with RHSC clinicians and the Clinical Management Team. It builds on previous work carried out by NHS Lothian analysts and Tribal Consulting (now known as Capita), and included:

- July 2007 - The initial provisional bed model was completed by NHS Lothian Health Informatics staff. This used 05-06 / 06-07 activity data and the previously completed service redesign proposals to inform the modelling.
- April 2008 - a revised bed model was completed within NHS Lothian. This modelling had involved Public Health Consultants, the NHS Lothian Children's service CMT and the RHSC Project Team and formed the basis of the Outline Business Case August 2008. This included a more detailed review of anticipated demographic change in SEAT, as the observed birth-rate was considerably different to the predicted birth-rate by the General Register Office for Scotland (GROS).
- November 2009 - Tribal Healthcare were asked to repeat their modelling using 2008-09 activity data to ensure that any recent changes in activity were captured
- June 2011 – Capita Consulting were appointed as the Project Health Care Planner and commissioned to review the bed modelling based on latest data (2010/11) and service redesign assumptions.

3.1.2 This section gives details of the methodology used to calculate the number of beds required for the new RHSC.

3.2 Agreed assumptions from the clinical redesign that impact on bed modelling

3.2.1 The following assumptions have been agreed following the clinical redesign process:

3.2.2 The age range of patients will increase from the current upper age for emergency admissions of 13th birthday, to the 16th birthday for all admissions, with patients who have long term or lifelong illness having a choice to remain with the RHSC services until their 19th birthday (ref. *Delivering for Health*)

3.2.3 To separate the unscheduled and elective medical patients at admission, with children and young people (C&YP) admitted as emergencies being admitted to the paediatric acute receiving unit (PARU), during which time they will be assessed, treated, and discharged, or admitted into the inpatient speciality wards.

3.2.4 Latest analysis on the length of stay of unscheduled emergency paediatric patients shows that 42% were admitted for less than 24 hours, a further 23% were discharged within 48 hours, and of the remaining group, on average these patients were admitted for 5-7 days. This supports the proposed patient pathway for the unscheduled areas to discharge home, or admit into the inpatient wards within 48 hours.

3.2.5 The Surgical patient flow for both elective and unscheduled patients will be managed dependant upon predicted length of stay and admitted either to the short-stay surgical ward (SSSW) for up to 72 hours or the long stay surgical ward.

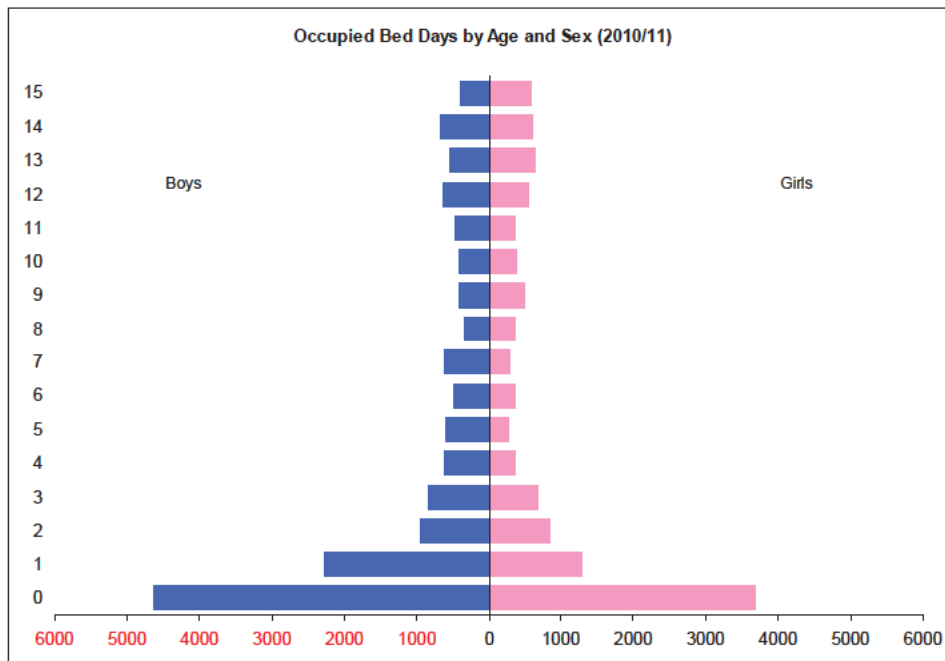
3.2.6 The new hospital will have a mix of single rooms and multi-bed areas for patients. While this is different to the requirement in place for any new build in adult services in Scotland, this principle has been supported by NHS Lothian, and the work of the RHSC Project Team was supported and referenced by the NHS Scotland Nurse Directors Group in their report on Single Room Provision in Scotland (2007).

- 3.2.7 Maximising the opportunities of the ward adjacencies to enable maximum flexibility of bed use, while maintaining robust infection control capability.
- 3.2.8 An increase in High Dependency beds is proposed, following the recommendations of the national audit of paediatric high dependency.
- 3.2.9 That C&YP domiciled in other SEAT Boards will normally be able to have day case surgery within their local hospital, performed by paediatric surgeons from NHS Lothian. It is assumed that approximately 75% of this activity will be in local hospitals. 25% undertaken in RHSC will be due to the patient age (under 2 years), complexity of the day surgery or the patient's co-morbidities.
- 3.2.10 Paediatric health care will be delivered locally unless there is a sound reason for provision at the specialist centre.
- 3.2.11 The Royal College of Surgeons guidance for day case modeling will be used - that there will be 1.55 patient episodes per bed per day, and would be delivered 5 days per week, 50 weeks per year.
- 3.2.12 Inpatient beds will be available for use 365 days per year.

3.3 Assumptions made on Demographic Change

- 3.3.1 Population projections have been made by age, gender and Health Board area. Note that earlier GROS predictions did not reflect the birth-rate trends in the SEAT region and therefore an additional factor of 0.7% per year was included. The most recent GROS figures are considered to be fully in line with the observed birth rate in Lothian, which has now stabilized after a few years of rapid growth. Therefore, the 0.7% addition is no longer required and, in general, the population uplift used is at a lower level than previously applied.

Figure 1 – age and sex breakdown of occupied bed days at RHSC (2010/11)



3.3.2 The majority of occupied bed days are taken up by patients under 4 years old. The 2010 baseline data showed:

- 56% of Occupied bed days are taken up by patients under 4 years of age
- 41% are taken up with patients aged 1 year and under

3.4 Speciality area groupings

- 3.4.1 The modeling of occupancy rates is based on the analysis of the peaks in demand. On the inpatient floor, where the long-stay medical, long-stay and short-stay surgical wards are designed to be immediately adjacent, it is assumed that for 95% of the time, a patient will be able to be admitted into the correct specialty area, with the final 5% able to be accommodated in an adjacent area.
- 3.4.2 The unscheduled medical (PARU), neuroscience and Cancer wards have been designed as separate bed holding areas, without any immediate appropriate adjacency. It has therefore been planned that for 99% of the time, these areas will be able to admit all required patients. The balance of unscheduled admissions will be managed by either earlier discharge or by earlier transfer into appropriate inpatient wards. Cancer will manage the balance by flexing between their inpatient and day care beds.
- 3.4.3 Neurosciences day case patients will be managed within the neuroscience ward, with key neurophysiology provision horizontally adjacent to the ward. The neurophysiology dept will be dependent on the ward for some patient facilities e.g. sharing the ward reception area.
- 3.4.4 Hematology / Oncology day cases will be treated within the Cancer Ward, where the staff specialist skills for the management of patients having chemotherapy will be centred. Three of the oncology day case beds will be in single rooms, which will provide flexibility for use as inpatient beds as required.
- 3.4.5 Child and Adolescent Mental Health will be a self contained facility which will include regional inpatient beds as well as Tier 4 day patient facilities. The average length of stay of inpatients over the last year has reduced to between 40 and 50 days. It is planned to keep one bed available for emergency admissions, the rest (of 12) will be occupied, with a planned occupancy level of 80%.

3.5 Benchmarking with Peer Services

- 3.5.1 The peer group for the children's hospital has been specified as specific Children's sites and NHS Trusts with a dedicated children's hospital (identified using ages <16). The services used for the benchmarking are:
- Royal Liverpool Children's NHS Trust
 - Sheffield Children's NHS Foundation Trust
 - Birmingham Children's Hospital NHS Trust
 - Central Manchester & Manchester Children's University Hospitals NHS Trust
 - United Bristol Healthcare NHS Trust
 - Nottingham University Hospitals NHS Trust
 - The Newcastle Upon Tyne Hospitals NHS Foundation Trust

Length of stay and day case rate activity was benchmarked with these peer services.

Length of Stay

- 3.5.2 In order to ensure appropriate comparisons with the other hospitals, the overall total length of spell (combining all episodes of an admission – where a patient is transferred between

different inpatient services) was benchmarked against aggregate length of spell at peer sites.

- 3.5.3 The benchmarking showed a potential reduction of 4 inpatient beds for elective activity and around 10 inpatient beds for emergency and transfer activity. However this is offset by the associated requirement for an additional 2 day case beds and 10 day only assessment beds. While there is no overall change in projected required beds, there is potential in closing more beds overnight or at weekends. This also gives the service flexibility in managing of beds at peak times (seasonal variation).
- 3.5.4 Following discussion with the Senior Management Team (14 July 2011), the modelling has used results at 75th performance percentile of the peers.
- 3.5.5 Reviewing current performance indicates that non-Lothian activity accounts for one-third of occupied bed days and these patients have an average length of stay of 1 day longer than Lothian residents.

Day Case Rate

- 3.5.6 The modelling has reviewed current day case against the peer sites above, using a selection of day case procedures.
- 3.5.7 The total overall day case rate of all specialities in RHSC is 77%, as compared to 74% in 2007-08. This is the 3rd highest amongst the peer sites.

Table 4 - Elective Day Case Rate Comparison with Peer Sites (2010)

Site	Day Case Rate % 2010
RHSC	77%
Nottingham University Hospitals NHS Trust	84%
Birmingham Children's Hospital NHS Trust	72%
Royal Liverpool Children's NHS Trust	73%
Newcastle Upon Tyne Hospitals NHS Foundation Trust	75%
Central Manchester & Manchester Children's University Hospitals	63%
United Bristol Healthcare NHS Trust	80%
Sheffield Children's NHS Foundation Trust	73%

3.6 Assumed / Anticipated Future Activity

- 3.6.1 The clinical activity data has been modelled from 2010/11, taking the trends of activity since the project commenced with 2005/06 data, and applying agreed demographic change, and the redesign assumptions, including, for example, the repatriation of day case surgical activity to SEAT Boards.
- 3.6.2 This data includes all hospital patient activity of C&YP under the age of 16 years in Edinburgh.
- 3.6.3 It is assumed that no unscheduled activity for patients over 16 years will be managed within the RHSC, and that, following review of the specific activity, 20% of elective activity for patients 16 – 19 will choose to remain with the children's service.

3.7 Inpatient Activity with Zero length of stay

- 3.7.1 These are patients who are admitted as inpatients (and not recorded as day cases), whose length of admission is completed within one calendar day. As they are not inpatients over midnight, they are not included in the inpatient bed modelling; however they do require an inpatient bed for their period of admission. This activity has therefore been added to the inpatient modelling.

Table 5 – Inpatient activity with length of admission 0 days (2010-11)

Clinical Grouping	Elective	Emergency
Haem. / Onc.	13	24
Medical	50	590
Neuroscience	37	20
Surgical	258	631

Table 6 - Examples of these patients' diagnoses on admission are:

Paediatric Surgery	Other and unspecified abdominal pain
Medical Paediatrics	Acute obstructive laryngitis [croup]
Orthopaedics	Follow-up care involving removal of fracture plate or other internal fixation device
Plastic Surgery	Open wound of finger(s) with damage to nail
Neuroscience	Adjustment and management of infusion pump

3.8 Proposed Bed Model

- 3.8.1 Table 7 below summarises the baseline activity used in the latest modelling, along with the predicted activity for the new children's hospital in 2016/17 and 2020/21:

Summary Activity (episodes)		Year		
Hospital Admission	Admission Type	2010 Baseline	2016/17	2020/21
Current RHSC	Non Elective	7,359	7,425	7,580
	Day Case	2,844	2,870	2,929
	Elective	7,298	7,364	7,517

Current RIE	Non Elective	328	331	338
	Day Case	75	76	77
	Elective	780	787	803
Current WGH	Non Elective	79	80	81
	Day Case	58	59	60
	Elective	198	200	204
Total in NB		19,019	19,190	19,590

- 3.8.2 The Capita modelling proposes that the new hospital will need to have 163 beds (135 In-Patients, 23 Day Case, and 5 Seasonal Beds) in total in 2020/21, (75.4% average occupancy rate). It is proposed to commission a total of 161 Beds when the building opens in October 2016.
- 3.8.3 If a desired bed occupancy level of 80% is used throughout, then the number of beds required would reduce to a total of 154 beds (126 In-Patients, 23 Day Case, and 5 Seasonal Beds).
- 3.8.4 It is proposed to commission a total of 155 Beds when the building opens in October 2016, with a further 6 beds available to open to meet seasonal variation.

Table 8–Proposed Bed Model (including findings from Capita Report Version 1.8)

	OBC (Aug 2008)	New Build Plan Sept 2011	Capita Modelling (2016 Projection)	Expected Average Bed Occupancy (2016)	Capita Modelling (2021 Projection)	Bed Nos at 80% Occupancy 2016	Proposed Beds to Open 2016	Expected Average Bed Occupancy	Future Proofing Capacity
Paediatric Acute Receiving ¹	32	28	26	84%	27	27	28	74%	
CAMHS ²	16	12	12	80%	12	12	12	80%	
Inpatient Areas									
Medical ³	73	23	21	84%	21	21	22	80%	+1
Surgical short-stay ⁴		14	15	74%	15	14	14	79%	
Surgical long-stay		15	16	74%	16	15	15	79%	
Neurosciences		12	11	64%	11	9	11	64%	+1
Cancer Unit		10	9	58%	9	7	9	58%	+1
Critical Care ⁵	24	24	24	70%	24	21	22	76%	+2
Total In-Patient Beds	145	138	134	75 %	135	126	133	75 %	+5
Day Beds									
Surgical	25	10	10		11	11	10		
Medical		5	5		5	5	5		
Oncology		7	7		7	7	7		
Total Day Beds	25	22	22		23	23	22		
Total All year	170	160	156	75 %	158	149	155	75%	160
Seasonal Beds	5	6	5		5	5	6		6
Total	175	166	161	75 %	163	154	161	75%	166

¹ Includes 4 observation beds. Excludes 6 seasonal beds open 4 months per year

² Not modelled by Capita. National CAMHS Review used to inform.

³ Includes 2 sleep beds Includes 4 Transitional Care Beds

⁴ Includes the 5 Surgical Emergency/Day Case Beds

⁵ Not modelled by Capita. National Critical Care Audit used to inform. 8 PICU (Funded NSD) 6 High Acuity HDU, 6 Low Acuity HDU, 4 Surgical NNU

3.8.5 In the modelling for OBC (August 2008), the number of young people aged 13-16 admitted to adult hospitals in Edinburgh was significant, occupying the equivalent of an average 16 beds. Since the OBC, the recent modelling has shown a significant reduction in the OBDs, and therefore beds used for this age group in the RIE and WGH have reduced, however, there has been a significant increase in this age group in RHSC. The main specialities where this increase is shown is in anaesthetics, oncology, rheumatology and orthopaedics.

3.9 Paediatric Bed Modelling Challenges

3.9.1 The children's hospital has many of the specialities that are delivered in adult services. However, these multiple specialities (37) are delivered from a comparatively small bed pool.

3.9.2 There are limited local options for admission, in Lothian these being RHCSE and St John's Hospital children's ward. Across SEAT there has been a significant challenge in sustaining effective 24/7 staffing capacity, particularly within District General Hospitals.

3.9.3 As a regional and national service for some specialities, RHSC delivers a number of small Tertiary services that have a major variation in activity.

3.9.4 Within the hospital there is protected capacity for 'at risk' patients – therefore it would not be appropriate to 'board' either general medical or surgical patients into the oncology or neuroscience ward. In general therefore, bed occupancy levels in children and young people's services will be at a lower level than in adult services.

3.10 Hospital Design to support effective service delivery / bed usage

3.10.1 The proposed Medical Paediatric Acute & Receiving Unit (PARU) is designed to be immediately adjacent to the Emergency Department, facilitating transfer from ED to a ward area, which will include a short stay (up to 8 hours) observation area, supporting an effective patient pathway for a period of observation following emergency treatment avoiding the need for a full / longer admission. The short stay observation area will support the planned reduction in length of stay in PARU.

3.10.2 There is a 175% increase in single room capacity in the medical unscheduled admission beds (from 8 to 22), reducing the current need to frequently 'board' patients into another speciality in order to provide the isolation required for certain patient groups particularly with respiratory infections.

Table 9 shows the current RHSC and CAMHS Single Bed Room allocation.

	RHSC Total current beds	Current single rooms	%
Ward 6 Med. Paed Acute Receiving Unit	12 (winter 17)	8	67% (47%)
Ward 3 + 4 Surgical Short Stay Surgical Long Stay	30	17	56.6%

Ward 1 Medical Inpatients	18	6	33%
Ward 7 Neuroscience	12	0	0%
Ward 2 Cancer Inpatients	8	5	62.5%
PIU Medical Day Case	5	5 (previously an ID ward)	100%
Surgical Day Case	17	0	0%
Cancer Day Case	4	0	0%
CAMHS	12	12	100%
Total	118 (5)		
Excluding CAMHS and PIU from the calculation gives a current single room provision of 28%			

Table 10- shows the currently planned new building Single Bed Room allocation.

Area	Total	Single Rooms	2 Bed Bay Rms	4 Bed Bay Rms
PARU (34)		65%		
Medical	22	14 (Includes 1 Isolation Bed)		8
Adolescent	2	2		
Short Stay	4			4
Seasonal	6	6		
Sub-total	34	22		12
Inpatient Area		47%		
Medical	23	15 (Includes 3 Isolation Rooms/4 Transitiona l Care (inc 1 isolation room)/3 Adolescent Beds)		8
Surgical Long Stay	15	7 (Includes 5 Adolescent) Beds)		8
Surgical Short Stay	14	6		8
Neuroscience	12	4 (includes 1 Isolation Beds)		8
Sub Total	64	30		34
Cancer Unit		100%		

Inpatient	7	7 (includes 4 Isolation Beds)		
Adolescent	3	3		
Sub Total	10	10		
Critical Care		42%		
PICU	8	4 (includes 2 Isolation Rooms)		4
High Acuity HDU	6	2 (includes 2 Isolation Rooms)	4	
Low Acuity HDU	6	2		4
Surgical NNU	4	1		3
Sub Total	24	10	4	10
CAMHS Inpatients		100%		
CAMHS	12	12		
Total	144	84	4	56
Day Case				
Surgical	10			
Medical	5	2		3
Oncology	7 Beds 2 Chairs	3		4 beds 2 Chairs
Total	22 + 2 Chairs	5		7 + 2 Chairs

- 3.10.3 The 2 major bed-holding areas are Medical and Surgical inpatients. To assist the future-proofing of the bed capacity, the hospital design has planned that these 2 areas are immediately adjacent, providing flexibility to shift the ward boundary in the future if / when the balance of activity between medical and surgical inpatients changes.
- 3.10.4 The new hospital will provide age-appropriate facilities, including specific requirements for teenagers. The most effective clinical model is to provide the adolescent beds within the speciality groupings of medicine, surgery and haematology / oncology, with supporting adolescent non-clinical facilities accessible to patients aged 12 and over.
- 3.10.5 All inpatient beds (excluding initial emergency medical admissions and critical care admissions) are on one floor, with adjacency to other bed groupings, again supporting the future changes in clinical activity which cannot be predicted.
- 3.10.6 The Medical Day Case Unit area has been planned to be on the inpatient floor to provide the opportunity for flexing the use of this area as required for exceptional increases in activity particularly during the winter.
- 3.10.7 Cancer inpatients, the Teenage Cancer Unit and the haematology / oncology day care patients will be managed within the same unit to make the most effective use of staff skills and competencies, and reduce clinical risk.

4 DCN FINAL BED MODELLING PROPOSAL

4.1 Background

The bed model has been developed to reflect the proposed service model in partnership with DCN clinicians and the Clinical Management Team. This appendix gives details of the methodology used to calculate the number of beds required for the new DCN. It builds on previous work carried out by NHS Lothian analysts and Tribal Consulting, notably in relation to the Outline Business Case produced in 2009.

4.2 Methodology

The methodology used to calculate the number of beds required for the new DCN has several stages. These are:

- Establishing the baseline quantity of inpatient and day case activity that is currently delivered by DCN.
- Establishing that this baseline activity is accurate and representative in relation to historical data.
- Remodelling the baseline activity data to reflect the redesigned models of care that will be going through the proposed new DCN.

- Consideration of day case and short-stay inpatient activity.
- Modelling bed complements and occupancy levels to inform the proposed bed numbers in each broad bed pool.
- Applying population projections to the reconfigured data.
- Incorporation of agreed service developments and addition of 'new' activity that is not currently delivered by DCN.

4.3 DCN Bed Modelling 2010/11

- 4.3.1 Although the year 2010-11 had ended when the latest bed modelling exercise commenced, the clinical coding was not complete enough to allow Capita Consulting to carry out benchmarking comparisons. Capita therefore used 2009-10 data for this work.
- 4.3.2 However, activity levels in 2010-11 were significantly lower than in 2009-10, reflecting certain service changes e.g. earlier repatriation of patients back to referring hospitals, implemented by DCN and also being free of any one-off waiting list initiatives. Therefore, the 2010-11 data is considered to be a more realistic and sustainable representation of the activity that will go through DCN in the future.
- 4.3.3 The data used covers all Neurology and Neurosurgery inpatient and day case activity at WGH and is irrespective of the ward area in which the patient stayed. Neuroscience patients staying out with DCN are included. Conversely, patients from other specialties who stay in DCN (i.e. boarders in) are excluded.

Table 11 - The 2010-11 baseline data may be summarised as follows:

	Day case episodes	Elective inpatient episodes	Non-elective inpatient episodes	All episodes	Occupied bed days
Neurology	671	455	662	1,788	6,043
Neurosurgery	472	1,666	1,567	3,705	12,572
Total Neuroscience	1,143	2,121	2,229	5,493	18,615

Table 12 shows the breakdown of this activity by NHS board of residence

	Day case episodes	Elective inpatient episodes	Non-elective inpatient episodes	All episodes	Occupied bed days
Lothian	883	1,136	1,358	3,377	12,592
Fife	109	265	343	717	2,079
Forth Valley	72	227	167	466	1,373
Dumfries and Galloway	24	182	84	290	987
Borders	27	135	73	235	607
Tayside	5	57	51	113	249
Grampian	3	41	49	93	178

Highland	5	28	31	64	113
Lanarkshire	9	17	13	39	111
Greater Glasgow and Clyde	4	8	12	24	84
Ayrshire and Arran		1	3	4	8
Shetland		9		9	10
Orkney		4		4	6
Out with Scotland	2	11	45	58	218
Total Neuroscience	1,143	2,121	2,229	5,493	18,615

4.3.4 The source data was then split into elective and emergency inpatient and day case activity for both Neurology and Neurosurgery at WGH. Day cases were treated separately since, as they do not stay overnight, standard OBD calculations do not take them into account.

4.3.5 Emergency activity was then subdivided into ‘front-door’ and ‘ward’ areas, modelling on the basis of a front-door receiving unit (DCN Acute Care) with a maximum length of stay of 48 hours.

4.3.6 In early 2011, it was agreed with the Clinical Management Team for LUHD the provision for Critical Care for Neuroscience is:

- 6 Level 3 beds – this activity is currently counted under the Intensive Care specialty.
- 4 Level 2 beds – this activity is currently counted under the Neuroscience specialties.

This activity will, in future, be incorporated within the main RIE Critical Care area. 6 Level 3 beds and 5 Level 2 beds will be cohorted together and this will enable the delivery of a 75% bed occupancy level for Neuroscience critical care.

4.3.7 The potential bed complement for each of the proposed areas of the new DCN was identified by taking an extract of activity for each and analysing it to see how many beds were occupied at midnight on each night of the year.

4.3.8 This analysis demonstrates the fluctuating levels of occupancy in the different areas of DCN. The relatively small critical mass of beds within DCN makes this particularly relevant when planning the proposed bed numbers and levels of occupancy. The planned facilities will require to be configured to support flexible management of beds.

4.3.9 This will be key to ensuring beds are available for patients at the right place at the right time and will minimise the need for boarding of patients. It is therefore intended that the bed envelope will be designed with limited demarcation of ward areas to support this required flexibility.

4.3.10 The bed model needs to take account of projected changes in the population of South and East Scotland. Projections are supplied by the General Register Office for Scotland (GROS) and are available by Health Board area and age group.

4.3.11 Applying the GROS population projections to age-specific bed use rates for each Health Board gives estimated overall increases in bed use compared to the 2010-11 baseline as follows:

Table 13- GROS Population Projections

Year	Overall Change	Neurology Lothian	Neurosurgery Lothian	Neurology non-Lothian	Neurosurgery non-Lothian
2013	+ 3.3%	+ 3.7%	+ 3.7%	+ 1.7%	+ 2.8%
2018	+ 8.8%	+ 9.9%	+ 9.8%	+ 3.8%	+ 7.2%
2023	+ 13.5%	+ 15.7%	+ 15.3%	+ 4.9%	+ 10.4%
2028	+ 17.9%	+ 21.0%	+ 20.9%	+ 6.4%	+ 13.1%
2033	+ 22.2%	+ 26.3%	+ 26.5%	+ 6.9%	+ 15.0%

Note that these increases are the effect of population change only, and take no account of developments in treatment.

Applying these population changes has the following indicative effect on future bed requirements in Neuroscience:

Table 14 - Population changes impacting on future bed provision in DCN

Year	Overall Increase
2013	+ 2 beds
2018	+ 5-6 beds
2023	+ 8-9 beds
2028	+ 11-12 beds
2033	+ 14-15 beds

4.3.12 The NHS Lothian Stroke Review proposed that potentially treatable acute strokes will first be admitted to DCN Acute Care for an initial period (to cover assessment and thrombolysis and other immediate treatment), and then transfer to an acute stroke ward bed. This is equivalent to 2 beds worth of activity.

4.3.13 It has been proposed that the spinal surgery currently carried out by RIE Orthopaedic Surgeons will be incorporated into a joint spinal service with DCN when it moves to the RIE site. Based on an analysis of spinal primary diagnoses and procedures carried out by RIE Orthopaedics between 2007-08 and 2010-11, it is estimated that 320 cases per year, this will amount to 1,200 occupied bed days will transfer to DCN. This is equivalent to 4 beds worth of activity.

4.3.14 There is currently no provision available for adult patients with spinal deformities in Scotland. The National Services Division of NHS Scotland has recognised that there is a need for a national designated service and it is proposed that such a service will form part of the new DCN, with 21 surgical procedures per year to be provided initially, although this is expected to increase in future years. Length of stay may vary widely, depending on the surgery carried out and characteristics of the individual patient. A modelling assumption using an average stay of 14 days in the new DCN translates to an additional 1 bed for DCN.

4.3.15 As in previous exercises, Capita carried out a benchmarking exercise comparing DCN 'whole spell' Length of Stay against a peer group of 9 hospitals. Using the 2009-10 fully coded data, benchmarking by Healthcare Resource Group (HRG) at the 75th percentile showed virtually no reduction in bed use for elective activity and up to 7 inpatient beds for non-elective activity.

4.3.16 In 2010-11, LoS for DCN non-elective patients was considerably shorter than in 2009-10 as a result of certain initiatives around the discharge process, especially in relation to the transfer of tertiary patients back to their home areas. The LoS performance saving applied to the 2010-11 data is therefore estimated to be approximately half of that calculated by Capita from the 2009-10 data.

4.4 Current Bed Complement

4.4.1 The following table identifies the **current** number of beds available to DCN:

Table 15 - Bed Capacity in DCN, May 2011

Area	Funded beds	Utilised beds	Notes
Ward 31	18	18	Level 0 and 1 beds, mainly Neurology patients
Ward 32	15	15	Level 0 and 1 beds, mainly Neurosurgery patients
Ward 33	19	19	Level 0 and 1 beds, mainly Neurosurgery patients
Ward 33 HDU	4	4	Level 2 beds, to be cohorted with Level 3 in future
Total	56	56	

4.4.2 These figures exclude the general ICU (WGH Ward 20) and the clinical spaces provided in the Programmed Investigation Unit (WGH Ward 31A), so are consistent with the bed model described here.

4.5 Benchmarking

4.5.1 As in previous exercises, Capita carried out a benchmarking exercise comparing DCN 'whole spell' length of stay against a peer group of 9 hospitals.

- Brighton & Sussex University Hospital Trust
- Cambridge University Hospitals
- Hull & East Yorkshire Hospitals
- Newcastle University Hospitals NHS Trust
- Nottingham University Hospitals NHS Trust
- Oxford Radcliffe Hospitals
- Sheffield Teaching Hospitals NHS Foundation Trust
- South Tees Hospitals NHS Trust
- Plymouth Hospitals NHS Trust

4.5.2 Using the 2009-10 fully coded data, benchmarking by Healthcare Resource Group (HRG) at the 75th percentile showed reduction of one bed for elective activity and seven beds for non-elective activity.

4.5.3 In 2010-11, length of stay for DCN non-elective patients was considerably shorter than in 2009-10 as a result of certain initiatives around the discharge process, especially in relation to the transfer of tertiary patients back to their home areas. The length of stay performance saving applied to the 2010-11 data is therefore estimated to be approximately half of that calculated by Capita from the 2009-10 data.

4.6 Proposed Bed Complement

4.6.1 The following table describes the proposed number of beds in the new DCN:

Table 16 – Proposed Number of Beds in the new DCN

Area	OBC (2009)	New Build Plan (Feb 2011)	Capita Modelling (2016 Proj)	Capita Modelling (2021 Proj)	Expected Average Bed Occupancy
DCN Acute Care	12	12	12	12	82%
Level 1	15	12	12	12	82%
Inpatient	40	43	38	41	82%
Programmed Invest Unit		2	2	2	
Total New Hospital		69	64	67	82%
Level 2 critical care	6	5	5	5	75%
Level 3 critical care	6	6	6	6	75%
Total Neurosciences	79	80	75	78	81%

4.6.2 There are currently no nationally agreed recommended occupancy levels for general inpatient areas, although a maximum level of 82% or 85% is generally advised, principally on the basis of research on the spread of hospital-acquired infection.

4.6.3 To provide a comparison for 2016 with the current allocation of 56 beds, a figure of 67 beds should be used. This is because the above table includes a Level 3 facility of 6 beds that, at the WGH, is provided out with DCN in the general ICU, and also includes 2 beds in the Programmed Investigation Unit. The proposals for 2016 also include certain 'new' activity (specified in paragraphs 4.3.12-4.3.13 above) that is not currently treated in DCN).

5 RHSC AND DCN FINAL THEATRES MODELLING PROPOSAL

5.1 Methodology and assumptions

5.1.1 This modeling carried out by Capita using the following methodology and assumptions as agreed with NHSL.

5.1.2 Two scenarios were modeled: 10 sessions per theatre per week and 13 sessions per theatre per week.

5.1.3 Required theatre capacity is based on the total required operating minutes and dividing this by assumptions of minutes available using target recommendations on theatre

utilisation from the Audit Commission Review of Operating Theatre Times (2003) (see table below)

5.1.4 Growth assumptions are in line with bed modeling assumptions.

Assumptions	Scenario 1		Scenario 2	
	Elective	Emergency	Elective	Emergency
Total Availability - Theatre Per Annum				
Planned hours per session			3.5	
Planned Sessions per week	10			13
Planned weeks per year			50	
% Cancelled Sessions	7.5 %		7.5%	
% Anaesthetic time	7.5%		7.5%	
% Utilisation of available time	90 %		90 %	
% Utilisation of available planned time	77 %	60%	77 %	60%
Availability minutes theatre / per year	80,857	63,000	105,114	81,900

5.2 Total theatre requirements

5.2.1 Requirements are calculated from:

- Total demand for theatre time = total activity x time per procedure
- Total theatres = total demand for theatre time / total availability of theatre time p.a.

Scenario	Specialty	Current	Baseline	2017	2020
10 Theatre Sessions Per Theatre Per Week	RHSC	5	7 (6.6)	7 (6.7)	7 (6.8)
	DCN + Spinal	2 (+ 6 sessions per wk spinal)	4 (3.7)	4 (3.9)	4 (4.0)
	Combined	7 (+ 6 sessions per wk spinal)	11 (10.3)	11 (10.6)	11 (10.8)
13 Theatre Sessions Per Theatre Per Week	RHSC	5	6 (5.1)	6 (5.2)	6 (5.2)
	DCN	2 (+ 6 sessions per wk spinal)	3 (2.8)	3 (3.0)	4 (3.1)
	Combined	7 (+ 6 sessions per wk spinal)	8 (7.9)	9 (8.2)	9 (8.3)

5.2.2 Therefore, the 2017 modeling requirement is for:

- 7 RHSC theatres and 4 DCN theatres over a ten session week, or
- 6 RHSC theatres and 3 DCN theatres over a thirteen session week, or
- 10-11 theatres between RHSC and DCN flexibly based on 10 sessions per week, or
- 8-9 theatres between RHSC and DCN flexibly based on 13 sessions per week.

5.2.3 The recommendation that the combined requirement of 9 theatres was approved by the Clinical Management Teams and the Senior Management Team. This is based on modelling results and analysis of daily use of theatre by week day / weekend during the baseline year and extended out of hours sessions for emergency work.

6 RHSC AND DCN FINAL RADIOLOGY MODELLING PROPOSAL

6.1 Methodology and assumptions

6.1.1 This modeling carried out by Capita using the following methodology and assumptions as agreed with NHSL.

6.1.2 The requirements are based on:

- All activity at RHSC.
- Activity at RIE and WGH for all patients less than 16 years of age, with exception of radiography activity for Emergency Department referrals at WGH (assume will remain part of Minor Injuries Clinic)
- All patients activity referred by DCN specialty across all sites

6.1.3 The outputs are based on current time taken by procedure and normal working hours. Care should be taken in interpreting combined requirements because of different procedure times and opening times

6.1.3 It was agreed to revise growth projections of 5% per annum for MRI, CT and US. All other activity has GROS population projections applied.

6.2 Total radiology requirements

6.2.1 Modelling outcome is summarised in the table below.

Modality	Baseline Paediatrics	Baseline DCN	*Baseline Combined	2017 Paediatrics	2017 DCN	2017 Combined	2017 Previously Modelled	Current	Rooms Plan
General Radiography	2.23	0.17	2.40	2.26	0.19	2.45	2.80	2 (plus DCN uses WGH)	2
General Ultrasound	1.45	0.28	1.73	2.05	0.40	2.45	1.40	2	2 (+ 1 Doppler)
MRI	1.29	1.72	3.01	1.82	2.42	4.24	2.80	2	2 (+ 1 research)

Fluoroscopy	0.49	0.18	0.67	0.50	0.20	0.70	0.40	1 (plus DCN used WGH)	1
CT	0.15	0.61	0.75	0.21	0.86	1.07	0.90	2	2
Radionuclide Imaging	0.73		0.73	0.75		0.75	0.50	1	
Angiography		0.80	0.80		0.85	0.85			1 (Theatre)
Paediatric Radiology	0.02		0.02	0.02		0.02			

6.2.2 The MRI scanners modelled above do not include the intra-operative MRI in theatres.

6.2.3 The recommendation that the combined requirement of 3 MRI scanners (one research owned by the university), 2 CT scanners, 2 general radiography, 2 general ultrasound, one Doppler ultrasound, one fluoroscopy and 1 angiography suite be provided in the new RHSC and DCN was approved by the Radiology Clinical Management Team and the Senior Management Team.

6.2.4 DCN also provides services for other patients at WGH, which are not included in projections. Modelled required capacity to 2017 to remain at WGH is 0.88 MRI, 0.33 Ultrasound and 1.07 CT scanners. This is being planned with the Radiology Clinical Management Team and will be detailed in the Full Business Case.

LITTLE FRANCE HELIPAD FACILITIES

1. Introduction

This briefing provides background to the decision taken by NHS Lothian (NHSL) Senior Management Team on 5 May 2011 to **approve the inclusion of a roof-top helipad for the Little France site in the Royal Hospital for Sick Children (RHSC) and the Department of Clinical Neurosciences (DCN) new build.**

The recommendations outlined in this paper are supported by NHS Lothian Adult and Paediatric Consultants in Emergency Medicine, Critical Care, Anaesthesia and Retrieval Medicine. They are also supported by the Scottish Ambulance Service (SAS), who provide Scotland's Air Ambulance Service.

2. Background

Little France is a large comprehensive medical site focussed around the Royal Infirmary of Edinburgh (RIE), the principal trauma centre, acute receiving and major incident hospital for Lothian.

From late 2016 the RHSC and DCN will also be at Little France. Emergency, acute and critical care services for neonates, children, young people and adults will share the site, and will all be in linked buildings.

A range of options for improved helipad facilities for the site have been considered, assessing the location and the related operational issues regarding the safe and time-sensitive transfer of patients by air to and from the RIE and RHSC.

3. Strategic Context

Regional / national services for which patients are transferred to Little France from beyond Lothian include:

- National liver transplant centre
- Regional hepatopancreatobiliary centre
- Regional primary PCI cardiology
- Regional neonatal surgery (from 2016)
- National paediatric intensive care unit (PICU) service and national paediatric intensive care retrieval contract jointly with Yorkhill (from 2016)
- Regional neurosurgery centre – adult and paediatrics (from 2016)

Further potential changes:

- National paediatric intensive care retrieval contract is being re-negotiated
- Potential regional tertiary stroke centre (from 2016)

The continuation of paediatric intensive care retrieval to Edinburgh, and of PICU in the RHSC, is integral to the sustainability of specialist children's services for the South East and Tayside (SEAT) region and a number of national specialist services, as well as acute and emergency services for children and young people in Edinburgh.

The assumptions made in the RHSC Re-provision OBC, approved in August 2008, were:

Planning for future service delivery will be based on the assumption that NHSL Children's Service will continue to provide:

- *The local and regional services currently provided, although the models of care will be different;*
- *Paediatric Intensive Care (now a designated National Service) and Paediatric High Dependency Care; and*
- *Current National Services Division services of: Paediatric Intensive Care Retrieval, Spinal Deformity surgery, Cleft Lip and Palate MCN.*

In addition, due to the clinical excellence within current services, the RHSC will be well placed to continue to provide:

- *Paediatric Neuroscience services, (co-located with adult neurosciences); and*
- *Tertiary services for Paediatric Oncology / Haematology.*

Retention of these services would ensure the sustainability of PICU services in the future, by providing regular elective activity and will provide the required critical mass of patients. Failure to sustain PICU would compromise the future viability of the other highly specialised children's services presently delivered there.

It is anticipated that helicopter transfers will increase across the NHS with specialty centralisation, increased patient expectation and increased helicopter retrieval services in Scotland and the North of England.

For adult, paediatric and neonatal services, an integral helipad, avoiding the need for secondary transfer on-site, by a road ambulance (usually a 999 vehicle and crew), is an essential specification for, and defining feature of, those centres that deliver national, as opposed to regional, services. The geography of Scotland, combined with an increasing demand for time-sensitive transfer and pressures on the service, will make the capacity to sustain 24/7 helicopter transfer a key determinant of patient flow.

NHS Lothian aims to be in the top 25 healthcare providers in the world, and as such must provide Scotland's capital city, its environs and the wider region with the best facilities and care.

4. Investment Objectives & Benefit Criteria

NHSL aims to have helicopter transfer facilities that will deliver benefits in line with the stated criteria for NHSL's programme of *Improving Care and Investing in Change*. These are outlined in figure 1 below.

Fig 1: Investment objectives and benefit criteria for Little France helipad facility

	Where clinical service arrangements can be delivered to a standard and timeframe that represents the best possible outcome for patients.
1. <i>Clinical effectiveness and quality of care</i>	E.g. primary retrieval of trauma patients direct from the scene of an incident to Emergency Department facilities in RIE or RHSC. The Health Building Note (HBN 15-03) on hospital helipads states that the transfer from transport to the emergency department should be less than two minutes.
2. <i>A high quality physical environment</i>	Services that will be safely accessible for operators, patients and staff. E.g. minimal obstructions, with maximum range of flight path options, again, specified in HBN 15-03.
3. <i>Accessibility</i>	Equal access to services for patients for whom transport by road would take too long to reach acute specialist services. E.g. 24/7 access to RIE and RHSC services for emergencies and for acute patients more than 2hrs away by road
4. <i>Sustainability</i>	Supporting the ongoing provision and further development of safe, clinically effective hospital services at Little France. E.g. Sustaining PICU, tertiary services and related acute paediatric specialties.
5. <i>Deliverability</i>	Feasibility of facility, e.g. flight paths as specified in HBN 15-03. Causing the minimum possible disruption to patients and allowing the continued delivery of clinical service over the duration of any construction.

5. Existing Arrangements

5.1 Current location and facility

The helipad is currently on a hillside to the north of the RIE. See figure 2, which shows its location in relation to current buildings and planned developments at Little France.

The helipad was located to maximise take off and landing zones whilst being clear of any cars, visitors or patients. This strategy and design for the site was implemented prior to any HBN guidance and Civil Aviation Authority (CAA) regulations being in place for hospital sites.

The helipad is adjacent to an upslope of ground; this incurs more risk for the pilot, crew, aircraft and patient than if the area around the landing site were flat and without obstructions.

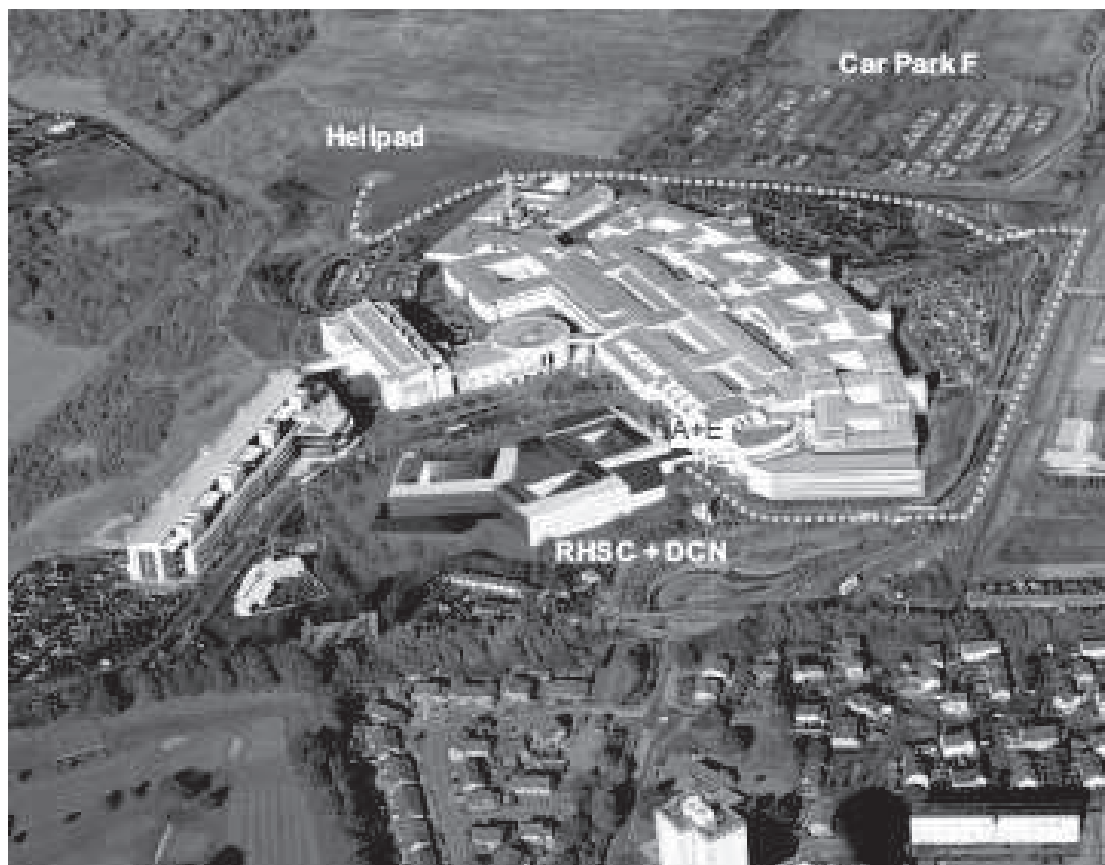


Figure 2: Little France



There is only one flight path available, from the east, due to the terrain. Guidance now states that a hospital helipad must have a minimum of two approach and departure tracks separated by not less than 150 degrees.

The helicopter pilot has the responsibility of deciding whether conditions at a helipad are safe for landing or if an alternative site should be used.

The Little France site is deemed safe for daytime flights, but does not strictly comply with the relevant health building guidance which was published in 2008, several years after the site became operational. There is no guarantee that the CAA would pass it as compliant on inspection now.

The existence of current adjacent banking and trees prevents night time flying under the requirements of HBN 15-03 and CAA regulations; the helipad is therefore unusable for significant parts of the 24hr period, especially during the winter. Due to the existing location improvements are not feasible.

Military operations do not require improved facilities to existing site and can land at night; military helicopters are used for search and rescue (SAR) missions.

Military helicopters are also currently used for emergency medical transfers, where for weather, lighting or other logistical reasons the air ambulance is not suitable.

5.2 Current patient pathways

The RIE Emergency Department is the entrance for nearly all adult patients transferred to the RIE by helicopter; it is the furthest away of all clinical departments on site. In future, paediatric and DCN patients would make the same journey from this site, as marked by the dotted line on figure 2.

Patients arrive at the RIE by SAS air ambulance or military Search and Recovery helicopter, and are transferred to the hospital for handover to NHSL clinical teams by an SAS emergency vehicle and crew. This is a front-line 999 ambulance tied-up on the RIE site when a landing is anticipated. This transfer adds 15-20 minutes to the patient journey before they reach the RIE. The alternative landing site at Edinburgh Airport adds a minimum of 60 minutes to the journey.

Secondary transfer brings additional risks to the patient in terms of delays, further patient movement (e.g. lines getting pulled out), direct worsening of the patient's condition, multiple handovers, and potential vehicle failure.

5.3 Current activity

2008-9 patient transfers by air ambulance into NHS Lothian:

Health Board of origin:	
Ayrshire & Arran	1
Borders	1
Dumfries & Galloway	13
Fife	2
Grampian	19
Greater Glasgow & Clyde	4
Highland	70
Lanarkshire	1

Orkney	4
Shetland	8
Tayside	1
Western Isles	8
Outside Scotland	3
Total	135

5.3.1 Adult patients – current activity

In 2008-09 there were 31 helicopter landings at the RIE; in addition to this there were a further 52 landings at other sites where the patient destination was the RIE. The RIE was the intended destination for 61% of patient air transfers into NHS Lothian.

The majority of those landing elsewhere landed at Edinburgh Airport, which is eleven miles by road through the city, or sixteen travelling round the bypass.

Using the RIE helipad adds 15-20 minutes to the patient journey, and flying in to Edinburgh airport a minimum of 60 minutes; it is reported that crews opt to land at sites where patient transfer times are shorter, and/or there is no need to rely on additional resources for transfer, for example in Glasgow or Newcastle. No figures are currently available on these decisions, or their impact, but from 2015 a roof-top helipad is planned for the Southern General (SGH) development in Glasgow, due to open in 2015.

5.3.2 Paediatric patients – current activity

In 2008-09, all air transfers to Edinburgh by the paediatric critical care retrieval were by fixed-wing aircraft to the airport. 15% of all patients flown into Lothian were in transfer to the RHSC. The lack of helipad facilities for the RHSC, combined with the size of the SAS helicopter, meant that this was not the transport of choice for the retrieval team. However, 52 of the 156 patients retrieved in 2008-09 were over two hours by road from RHSC; two-hours is the recommended cut-off time beyond which travel by helicopter should be considered for a patient.

A very small number of paediatric trauma patients, less than three a year, might land by SAS or MOD helicopter on the Meadows for onward secondary transfer by road to the RHSC Emergency Department.

5.3.3 Neonates – current activity

The majority of neonatal retrieval transfers from across the SEAT region to the unit at RIE are currently done by road transport and not helicopter.

5.4 Conclusions – current facility

An average of 1-2 patients per week requires air transfer to services at the RIE. The current helipad is unable to support 24/7 flights, resulting in only

37% of patients to be transferred to the RIE by air actually landing at Little France. Its location on the hillside incurs extra risk for the pilot, crew, patient and aircraft. The secondary transfer incurs further additional risk to the patient.

The move of RHSC and DCN will increase the number of air ambulance landings at Little France.

Future plans for major trauma centres in neighbouring regions include roof-top helipads with direct access to emergency departments and other acute services.

6 Business Needs

As a major acute hospital complex, the Little France site must be able to receive the following patients by air ambulance:

- Primary retrieval of trauma patients
- Primary / secondary retrieval of patients for primary PCI
- Secondary retrieval of critically ill and injured adults, children and neonates

To ensure equity of access to services, air ambulances must be able to land with patients throughout the 24-hour period, 365 days a year.

6.1 Location and Facility

The helipad should meet the criteria of HBN 15-03, which notes that *‘from both the aviation and the long-term planning perspectives, the best position for a hospital helipad is on the roof of the tallest building on the site.’* It notes that helipads built on rooftops:

- largely remove any constraints on future building plans,
- provide the greatest choice of obstacle free helicopter flight paths,
- reduce the downwash effects and risk to people, vehicles and property associated with this, and
- reduce the noise impact on the hospital and its neighbours.

It also notes that *‘a helipad on the roof of the building housing A&E, with a ramp to provide trolley access [to a lift] usually offers the shortest transit with the patient exposed to the elements.’*

The guidance notes that elevated rooftop helipads are more expensive to build and operate than those on ground level. They require integral fire-fighting facilities and trained rescue & fire fighting services manpower, and lighting approved by the CAA. However, the additional expense is reduced if the helipad can be included in the initial design of the building.

If a helipad is at ground level, in common with elevated rooftop sites it requires two clear flight paths for take off and landing, that are free of all obstructions including trees and shrubs. As stated in paragraph 5.1, the current helipad does not comply with HBN 15-03.

The RIE helipad is used predominantly by SAS air ambulances, but casualties of leisure and major industrial accidents and natural disasters may be retrieved by SAR helicopters. It is important that as the major acute receiving and major trauma centre, the Little France site can receive the largest of the helicopters used by Scottish Ambulance Service, Great North Air Ambulance Service, and SAR helicopters. These are likely to be:

- Eurocopter EC135
- Eurocopter / Aerospatiale Dauphin
- Westland WS-61 Sea King Mk 5 & Westland WS-61 Sea King Mk 3
- Sikorsky S92

6.2 Patient Pathways

For time-critical patients, the journey to the acute hospital must avoid unnecessary delays; this is true for PCI (where "minutes mean muscle"), aortic aneurysm, stroke ("minutes mean brain"), trauma (for exsanguination), and other time-critical injuries e.g. tension pneumothorax.

It is important that the time taken to transfer them between the helicopter and the hospital is without delay and that the patient is protected as far as possible from adverse weather conditions; this will decrease the risk of worsening their condition.

To minimise risk, patient journeys should incur minimal handovers between clinical teams and/or modes of transportation. There is extensive anecdotal evidence of the adverse clinical impact of secondary transfers.

6.3 Future activity

Air transport covering rural and outlying areas of Scotland is improving the access of these populations to acute specialist facilities in regional centres such as the RIE and RHSC. As pilots currently opt to transfer patients to alternative hospitals with safer helicopter landing sites and shorter transfers to the hospital, an improvement to the Little France facility will make the RIE and RHSC services a destination of choice. It is difficult to predict the number of air transfers in the future, but there is nothing to suggest a decline and so the Little France site should expect 2-3 air transfers a week from 2016.

In its review of national retrieval contracts, NHSScotland is considering increasing transfers by air as a way of reducing travel time to cut staff costs. If the quality measure of a maximum of two-hours for travel by road for

paediatric transfers were implemented, 33% of the paediatric retrievals brought to Edinburgh could be by helicopter.

An increase in regional and national services on the Little France site will increase the demand for air transfers to specialist facilities, and also to repatriate these patients back to their local health board, as has been seen in the West of Scotland.

In addition to the move of RHSC and DCN to Little France bringing more acute and emergency patients into the site, a number of other strategic and clinical developments will potentially impact on the demand for helicopter access. While it is difficult to quantify this activity, these services are included in the anticipated 2-3 patient transfers per week.

Trauma

The reduction of medical training grade posts may impact on the ability of district general hospitals to manage major trauma. This will result in an increase in primary retrieval to the regional trauma centre. There are significant numbers of major trauma patients in the Borders and Dumfries and Galloway who do not currently benefit from RIE expertise with many patients being transfers by road to Borders General Hospital or by helicopter to SGH. Understanding the full impact of changes in medical staffing is being developed across the region.

Cardiology

Reflecting on the use of helicopter transport by the West of Scotland STEMI reperfusion service, it is envisaged that as the timelines for this intervention evolve that there may be a small but additional requirement for such transport in the SEAT region.

Stroke services

Whilst still subject to ongoing discussion and consideration by the South East of Scotland Boards, there is potential for DCN to develop as a Tertiary Stroke Centre for the SEAT region. Consequently, patients with time-critical conditions that can not be managed in local centres, even with telemedicine support, could be transferred to Lothian. This would be perhaps for five patients per year unless intra-arterial thrombolysis is shown to be substantially better than intravenous treatment, when the numbers may rise to 20 or more.

7 Options

The possible options to address the business needs above are:

Option	Description
1.	Do nothing – <i>this is required as a comparator</i>
2.	Upgrade existing ground level facility
3.	Elevated helipad on the roof of RHSC + DCN*

4. Elevated helipad on the roof elsewhere on RIE
5. Elevated helipad above existing car park (C or D)
6. Elevated helipad above future car park (F)
7. Elsewhere at ground level at Little France

8 Option Appraisal

Appraisal of these options against the benefit criteria outlined in section 4 above is summarised here:

Option	Clinical effectiveness and quality of care	High quality physical environment	Accessibility	Sustainability of services	Deliverability	Recommended?
1 Do nothing <i>(must be included as a comparator)</i>	Risks incurred by delays and secondary transfer.	Terrain poses risk to pilot, crew, aircraft and patient.	Not 24/7; only one flight pathway only so unusable in some conditions.	Helipad unsuitable for over 60% of transfers for RIE; pilots opt not to transfer to NHS Lothian.	Status quo; marginal or no compliance with HBN 15-03.	No
2 Upgrade existing ground level facility	Risks incurred by delays and secondary transfer; too distant for A&E staff to meet transfer.	In the existing location improvements to lights and landscaping not feasible.	Upgraded helipad would increase flight paths options and 24hr access.	Upgraded helipad would increase pts pilots chose to transfer to Lothian.	In the existing location improvements to lights and landscaping to HBN 15-03 not feasible.	No
3 Elevated helipad on the roof of RHSC + DCN	Direct covered access to A&E depts, 2-minute transfer possible; proximity supports NHSL clinical staff taking handover at helipad.	Lighting and clear landing space possible. Covered transfer to hospital possible.	24/7 with lighting possible at night. Highest point on the site, therefore max approach pathways.	Helipad would be suitable for majority of conditions and transfers in to NHS Lothian specialties, securing future provision.	Dependant on RHSC + DCN project approval; fully compliant helipad can be designed in; no disruption to current service.	Yes
4 Elevated helipad on the roof elsewhere on RIE	Not structurally feasible.					No
5 Elevated helipad above car park C or D	Not feasible due to proximity and height of RIE build.					No
6 Elevated helipad above (future) car park F	Risks incurred by delays and secondary transfer; too distant for A&E staff to meet transfer.	Lighting and clear landing space possible.	24/7 with increased options for flight paths, although these dependant on BioQuarter planning.	Helipad would be suitable for increased number of transfers in to NHS Lothian specialties.	Fully compliant helipad can be designed; no disruption to current service.	No

7	Elsewhere at ground level at Little France	No feasible ground space.	No
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9 Constraints & dependencies


9.1 Feasibility

A full feasibility study and aviation risk assessment of the preferred option, minimising risk to patients, crew, vehicle and the public, and minimising disturbance to the public, needs to be completed for the design and planning application. Technical Advisers, including an aviation consultant, will be engaged to develop the Reference Design for the facility.

Any scheme must be developed in agreement with Consort / Balfour Beatty and other partners on site in the University and the BioQuarter and comply with the City of Edinburgh Council planning process.

9.2 Environmental impact

NHS Lothian anticipates potential challenge from the planning authorities, in relation to the environmental impact of the helipad, namely from noise.


Project Manager, RHSC & DCN
3 November 2011

FACILITIES MANAGEMENT SERVICE MATRIX

[Commercial in confidence]

DEPARTMENTAL SCHEDULE SUMMARY

[Commercial in confidence]

DELIVERABLES FOR REFERENCE DESIGN

[Commercial in confidence]

PROJECT RISK REGISTER

[Commercial in confidence]

DCN PROJECT OPTIONS FOR RE-PROVISION AT LITTLE FRANCE

1 Introduction

- 1.1 In the non-financial and the economic evaluations of the site options open to both RHSC (including CAMHS) and DCN, Little France scored highest.
- 1.2 Consideration of the strategic and business needs of NHS Lothian at Little France falls under the Masterplanning work led by the NHS Lothian Capital Planning Team. Key stakeholders whose interests in the site are also considered as a part of masterplanning are Consort Healthcare and the University of Edinburgh.
- 1.3 This work has informed the options for the location of and procurement route for DCN at Little France

2 Masterplanning for Little France

- 2.1 In 2009 Consort Healthcare was given the outline specification for the services and accommodation required by DCN and asked to provide a range of options for embedding DCN within the RIE. The options included:

Consort Healthcare Options	Option Description	Possible Procurement Routes
CH 1	Embedded within the RIE: relocate into existing Laboratories, Records, Pharmacy, Research & Education.	All three options are most likely to be a variation to the existing PFI contract
CH 2	Embedded within the RIE: relocate into the existing Simpson Centre for Reproductive Health and adjoining Education space.	
CH 3	Embedded within the RIE: ward arc extension plus relocation into some existing accommodation.	

Figure 1: Options for the location of DCN in the RIE identified by Consort Healthcare

- 2.2 External advisors Davis Langdon were asked to assess possible locations for DCN on site, including those not integral to the existing RIE and PFI contract. In addition to options CH 1 – CH 3 above, the following further options were identified:

Little France Site Options	Option Description	Possible Procurement Routes
LF 1	Joint new build with DCN and RHSC in Car Park B	NPD

LF 2	Stand-alone DCN building in Car Park B	NPD funded
LF 3	Stand-alone DCN building at the end of the RIE ward arc.	NPD funded

Figure 2: Further options for the location of DCN on the Little France Site

2.3 The technical assessment by Davis Langdon considered the capital cost, required clinical adjacencies, disruption to the current site, timescales, deliverability and implications for relations with Consort Healthcare for all six of the options described above. Davis Langdon carried out this assessment with input from NHS Lothian Capital Planning and Strategic Planning staff.

2.4 As a result of this assessment three options were discounted for the following reasons:

Option	Feasibility and Impact
<u>LF 3</u> Stand-alone DCN building at the end of the RIE ward arc.	<p>The footprint available, with the planning limitation of four floors, is too small to meet the DCN requirements.</p> <p>Option discounted.</p>
<u>CH 1</u> Relocate into existing Laboratories, Records, Pharmacy, Research & Education	<p>Consort Healthcare noted the high level of disruption to the existing hospital (clinical and support services) in order to provide the necessary structural upgrades and refurbishment.</p> <p>Planning to relocate the displaced departments has not started, Consort Healthcare estimate that this would result in a delay to DCN capital works starting on site of 2.5 to 3 years.</p> <p>Option discounted.</p>
<u>CH 2</u> Relocate into the existing Simpson Centre for Reproductive Health (SCRH) and adjoining Education space	<p>NHS Lothian has no strategic or structural reason to relocate SCRH from its current location. Disruption to other services would be considerable.</p> <p>Planning to relocate the displaced departments has not started, Consort Healthcare estimate that this would result in a delay to DCN capital works starting on site of 2.5 to 3 years.</p> <p>The cost of relocating DCN would need to incorporate the cost of rebuilding SCRH.</p> <p>The SCRH location does not deliver the clinical adjacencies that DCN require.</p> <p>Option discounted.</p>

Figure 3: Summary of Assessment of Discounted Options

- 2.5 On the basis of the Davis Langdon technical assessment of these options, three possible locations for DCN on the Little France site were then included in the appraisals for the 2009 business case. These are shown on the site photograph in figure 4 below

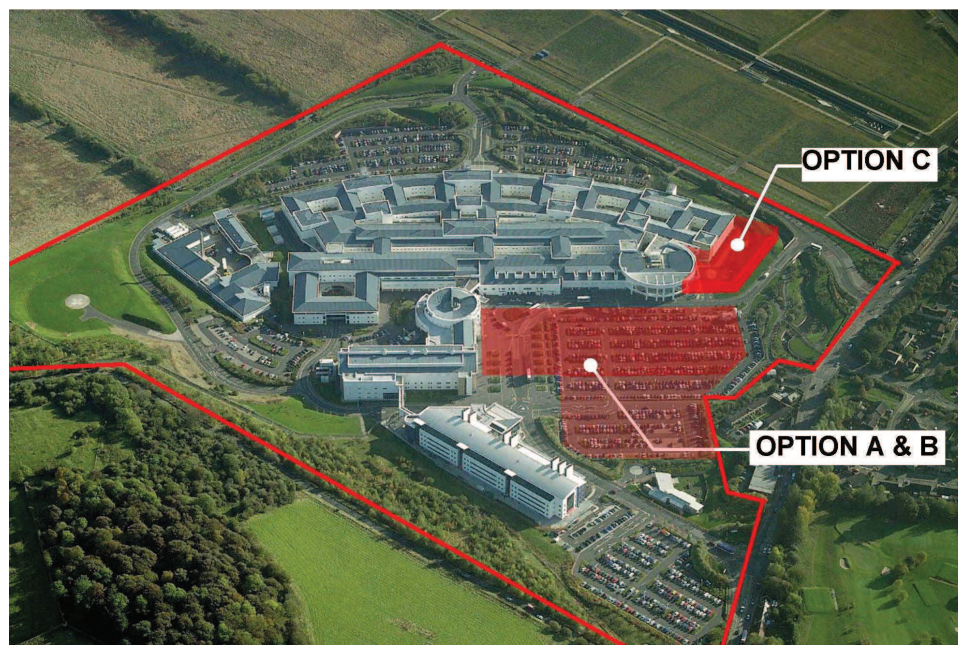


Figure 4: Little France project options for DCN in December 2009

- 2.6 Option A – Joint build with RHSC (LF1)
- 2.6.1 This assumes that DCN is a joint build with the new RHSC in Car Park B, with links to the existing RIE.
- 2.7 Option B – Stand-alone build (LF2)
- 2.7.1 This assumes that DCN is a separate building, with links to the existing RIE, on Car Park B alongside the development site for the new RHSC. NPD delivery would require to be procured after full open tender.
- 2.8 Option C – Embedded within RIE (CH3)
- 2.8.1 This assumes that DCN will be use existing space within the RIE plus an extension in the development zone at the south end of the ward arc. It is proposed that this be procured from Consort Healthcare as a variation and additional works package.

3 DCN Options Appraisal, 2009

- 3.1 The three project options for DCN at Little France in 2009 were scored by stakeholders against the non-financial benefit criteria. These scores were then applied to the outcome of the costing of each option, with the result summarised in figure 5 below.
- 3.2 Based on economic assessment, option A, a joint build with RHSC, scored more favourably and appears to achieve better value for money than the other project options.

	Option A	Option B	Option C
	Joint build with new RHSC	Stand-alone new build alongside new RHSC	Embedded within the RIE: ward arc extension plus some relocation
Net Present Value (£'000)	██████	██████	██████
Non Financial Benefits Scoring	421	269	324
Net Present Value per Benefit Score (£'000)	██████	██████	██████
Ranking	1	3	2
Equivalent Annual Cost (£'000)	██████	██████	██████
Equivalent Annual Cost per benefit point (£'000)	██	██	██
Ranking	1	3	2

Figure 5: Net present cost comparison for DCN project options 2009

4 Options for a Joint Build in 2011

- 4.1 By November 2010 the RHSC project had progressed to 1:200 design for a stand-alone building on car park B. This work indicated that there was not space for a stand-alone DCN (option B) on the car park as well. Option B had scored the lowest in the non-financial and financial appraisals in 2009. It is no longer feasible to consider this as an option if RHSC and DCN are to be delivered together.
- 4.2 To conclude, there are two feasible site options for delivering RHSC and DCN at Little France:
- RHSC and DCN as a joint build on car park B, or
 - RHSC on car park B, with DCN being mostly new build at the end of the RIE ward arc.

PROJECT OPTIONS NON-FINANCIAL BENEFITS SCORING 2010

Stakeholders met on 16 December 2010 to review and score the two shortlisted options for the location of the Department of Clinical Neurosciences at Little France.

Options

As this exercise was to score the *non-financial* benefits of the location of DCN, the different procurement routes for Option 1 were not considered, and only two options were scored:

- 1: Joint build in an independent build with the new RHSC
- 2: Extension at the south end of the ward arc, plus some existing RIE space

Scoring Participants

Stakeholder Group	Representative
Senior Management Team	[REDACTED]
DCN Clinical Management Team (CMT)	[REDACTED]
Children's Services CMT	[REDACTED]
Critical Care CMT	[REDACTED]
Anaesthetics & Theatres CMT	[REDACTED]
General Medicine CMT	[REDACTED]
Radiology CMT	[REDACTED]
NHS Lothian Staff Partnership	[REDACTED]
Project Team	[REDACTED]
NHSL Capital Planning	[REDACTED]

Benefit Criteria

The group agreed that the following benefit criteria and weighting should be used to score the project options.

Quality of care: clinical effectiveness and meeting national guidance.	Weighting
<p>To provide integrated neuroscience services providing good patient and staff pathways within DCN:</p> <p><u>Essential</u>: immediate adjacency of DCN Acute Care, neuroradiology and neurosurgical theatres (horizontal or vertical); neuroscience ITU and HDU beds within approximately 5 minutes transfer by trolley from DCN Acute Care, neuroradiology and neurosurgical theatres.</p> <p><u>Desirable</u>: co-location of outpatient clinics, therapies, neurophysiology and radiology.</p>	35
<p>To provide good patient and staff pathways between DCN and related adult specialities:</p> <p><u>Essential</u>: immediate adjacency of General ITU (Ward 118) and neurosciences ITU and HDU;</p> <p><u>Desirable</u>: close proximity between Emergency Department and DCN Acute Care (horizontal or vertical); adjacency with trauma; adjacency with orthopaedic back services in order to support a single spinal surgery service; adjacency with RIE radiology to allow economies in build and revenue costs; proximity to acute stroke unit.</p>	
<p>To provide good patient and staff pathways between DCN and related paediatric specialities:</p> <p><u>Essential</u>: RHSC access to DCN theatres; PICU beds within approximately 5 minutes transfer by trolley from neuroradiology and neurosurgical theatres.</p> <p><u>Desirable</u>: co-located with RHSC radiology and neurophysiology to allow economies in build and revenue costs.</p>	
Deliverability – the ability to implement options	
Delivering the operational solution by 2015.	25
Minimising disruption to clinical services during construction and commissioning of services.	
Minimising disruption for the wider site during construction and commissioning of services.	
Quality of the physical environment	
A functional, safe and efficient working environment for the assessment, treatment and care of patients.	15
Sustainability	
The delivery of emergency specialist services 24/7.	15
Maximising potential efficiencies to deliver a sustainable workforce.	
An energy efficient infrastructure and working environment.	
A facility that allows for flexibility and further expansion to meet changing service needs.	
Accessibility (Helicopter access only)	
Ease of access to the Little France hospitals for emergency patients transferred by helicopter.	10

The stakeholder group agreed that the site options to be scored would deliver no significant difference in the remaining criteria used in the initial appraisal, so Research and education was therefore not weighted.

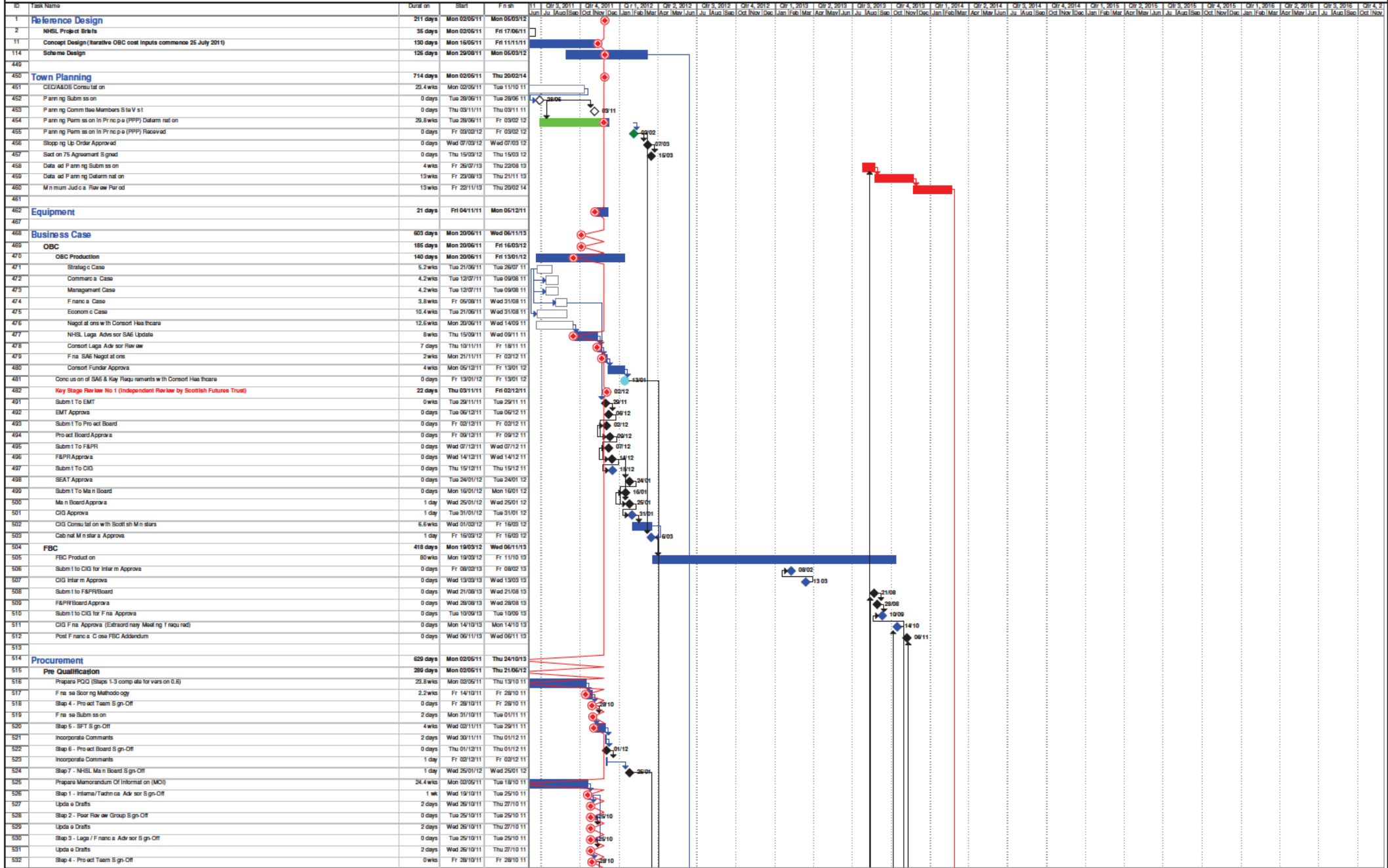
Scores

BENEFIT CRITERIA		Unweighted scores		AGREED WEIGHT	Weighted scores		Notes on discussion
		OPTION 1	OPTION 2		OPTION 1	OPTION 2	
		Joint build with new RHSC	New build extension and some existing RIE		Joint build with new RHSC	New build extension and some existing RIE	
1	Quality of care	47.3	39.3	35	138.1	114.7	Option 1 provided the best pathways for essential links between RHSC and the DCN theatres. Option 1 is more flexible in the internal adjacencies for DCN than the site at the end of the ward arc. Both options have excellent proximity from DCN to ITU.
2	Deliverability	48.0	32.7	25	100.0	68.1	Considerable disruption anticipated for RIE to build DCN on the end of the ward arc. Concerns about live construction either side of the Emergency Department for option 2. Overall timescale for completion of two separate projects thought likely to be longer.
3	Sustainability	49.7	34.3	15	62.1	42.9	Greater energy efficiency demanded of option 1. Less impact on sustainability of RIE services during construction of option 1. Option 2 would utilise last remaining RIE expansion zone.
4	Quality of the physical environment	53.0	39.0	15	66.3	48.8	New builds would be 100% single rooms. Proportion of DCN would be in existing RIE wards and therefore not single rooms in option 2. Higher quality of build expected in purpose-designed and -built accommodation complying with latest regulations.
5	Accessibility - Helipad only	45.0	48.0	10	37.5	40.0	Noted that this was for a small but critical group of patients.

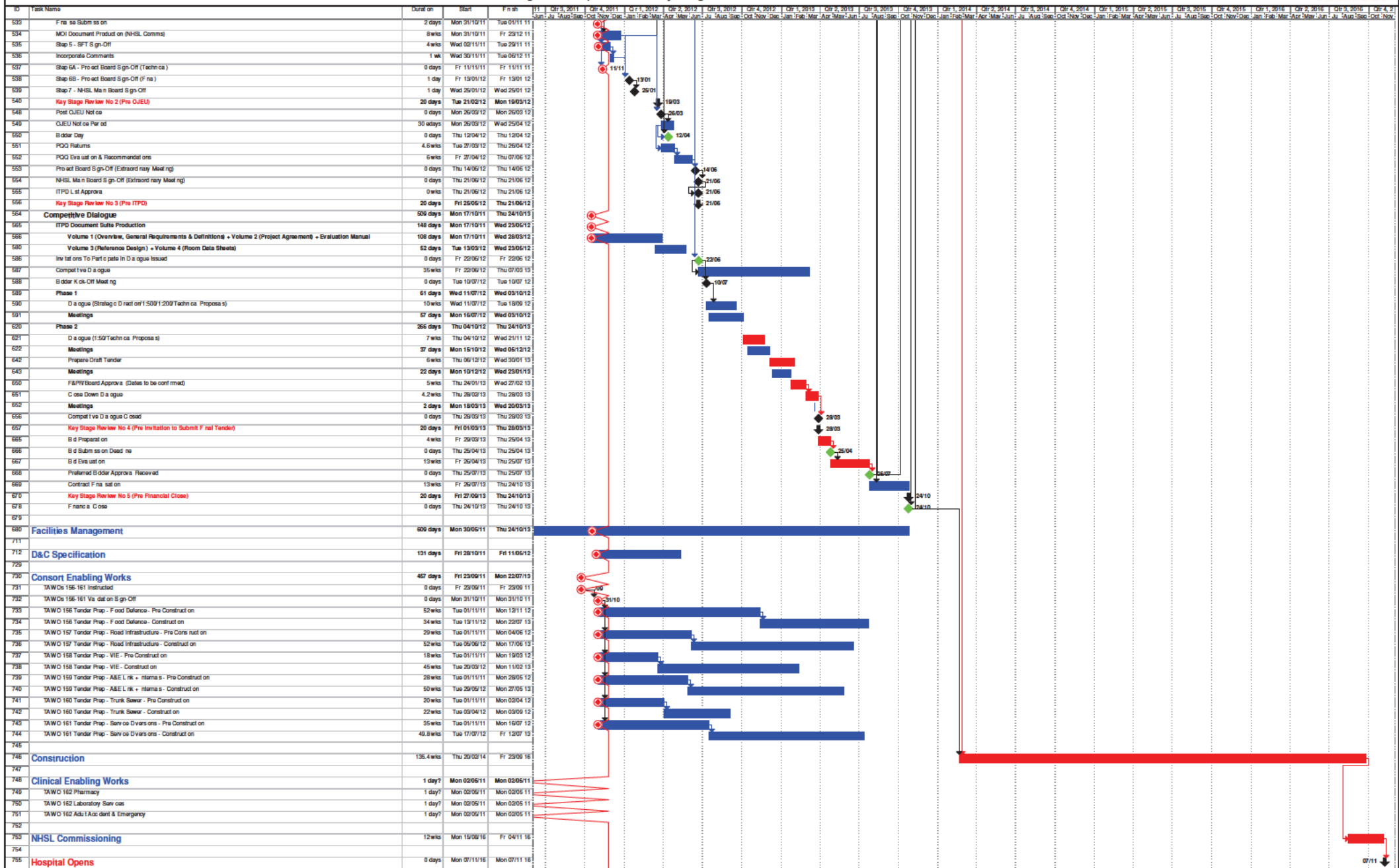
APPENDIX 15

6	Research and education	0.0	0.0	0	0.0	0.0	
	TOTAL	243.0	193.3		403.9	314.4	

STRATEGIC DEVELOPMENT DELIVERY PROGRAMME



<p>Datex: Fr 25/11/11</p> <p>Task: █ PPP ◆ SA6 ◆ KSR ◆ CD ◆ Summary</p> <p>Cr / ca Task: █ F&PR ◆ CHG ◆ Summary</p> <p>Milestone: ◆ CHG ◆ Summary</p>	<p>Progress: █ Complete Milestone ◆ Milestone</p> <p>Comp Milestone: ◆ Milestone ◆ Milestone ◆ Milestone</p>
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Task	PPP	SA6	KSR	Progress	Complete Milestone	Complete Milestone	Complete Milestone
Critical Task	F&PR	CD	KSR Summary	Complete Task	Complete Milestone	Complete Milestone	Complete Milestone
Milestone	CHG	Summary	PPP	Complete Summary	Complete Milestone	Complete Milestone	Complete Milestone

OB FORMS

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SGHD VALUE FOR MONEY ASSESSMENT GUIDANCE: CAPITAL PROGRAMMES AND PROJECTS

Appendix C – Checklist and Pro-forma of Required Actions Stage 2

Requirement	Details Assessed	NHS Lothian response
Qualitative Assessment of NPD	<ol style="list-style-type: none"> 1. Review, confirm and complete applicable pro-forma below relating to: <ul style="list-style-type: none"> • Viability of project • Desirability of project • Achievability of project (in particular market capacity and likely bid competition / market interest to be reviewed) 2. Consider wider VfM factors and generic VfM factors 3. Review proposed Project Timetable 4. Confirm proposed risk allocation (as per standard form NPD/hub DBFM contract, where applicable) 5. Confirm benefit assessment and deliverability 6. Support evaluation and decision with evidence from previous projects. <p>Report findings should include the results of the assessment of the viability, desirability and achievability of revenue financed procurement. (This should include the pro-forma assessment tables and the results of the workshops which assessed these.)</p>	The remaining sections of this table address each of these points.
Review of Affordability – to determine if the project can continue	<p>Confirm project is affordable / supportable to the procuring authority based upon forecast scope and delivery timescales. The affordability implications (including the affordability envelope under a range of sensitivities) should be signed off required.</p> <p>The affordability assumptions and implications should be detailed within the report.</p>	Refer to section 5.6.
Review of Balance Sheets Status	<p>The accounting implications of the project should be assessed and recorded within the Report.</p>	Refer to section 5.4.

VIABILITY		
Issue	Questions	NHS Lothian Response
Project level objectives and outputs	Is the Procuring Authority satisfied that a long term, operable contract could be constructed for the project?	Yes. The requirement is for discrete facilities capable of being managed under a specific contract, with clearly definable outputs. The clinical requirement supports long-term strategy within the NHS in Scotland.
	Confirm that the proposed contract describes / will describe service requirements in clear, objective, output-based terms over a long term period in accordance with the standard NPD contract and guidance.	The project will use the standard form NPD contract as drafted by SFT, with no derogation envisaged other than in project-specific areas.
	Confirm that the contract will support assessments of whether the service has been delivered to an agreed standard in accordance with the standard NPD contract and guidance.	As above.
	Confirm that the proposed project outcomes will meet the project objectives and address the need.	The development of the project has ensured that the outcomes to be sought under the procurement are aligned with clinical and strategic objectives and will meet long term clinical needs.
	Will there be significant levels of investment in the new capital assets and related services?	Yes. Refer to section 5.1. The project is a major capital investment for the NHS, with a value of circa £150 million.

VIABILITY		
Issue	Questions	NHS Lothian Response
	<p>Confirm that any interfaces with other projects or programmes are clear and manageable?</p> <p>Confirm that the services to be provided as part of the project do not require the essential involvement of Procuring Authority personnel? To what extent does any involvement negate the risk transfer that is needed for VfM?</p> <p>Will the private sector have control / ownership of the intellectual property rights associated with the performance / design / development of the assets for the new service? Confirm that the standard form NPD contract provisions relating to intellectual property rights will be adopted.</p>	<p>The key areas of interface will be with the ongoing operations of the Royal Infirmary of Edinburgh, managed via a contract between NHS Lothian and Consort. This interface is critical to the success of the project and has been addressed in detail in risk management processes. Ensuring an effective interface is a key aspect of the project management and governance structure.</p> <p>The services to be provided by the contractor are limited to Hard FM. NHS Lothian will have no direct role in the delivery of these services, although the monitoring and management of contractual arrangements will be a key task for NHS Lothian staff.</p> <p>Arrangements for these issues will be governed by the contract, which will utilise the standard form drafting provided by SFT.</p>

VIABILITY		
Issue	Questions	NHS Lothian Response
Operational flexibility	Is the Procuring Authority satisfied that operational flexibility is likely to be maintained over the lifetime of the contract at an acceptable cost?	Yes. The contract will contain drafting to deal with the management of change. The specification for the facilities will be derived from detailed design work already undertaken that ensures that long-term clinical needs will be met. As FM services are limited to Hard FM only, the NHS will have control over the delivery of the vast majority of operational services provided within the new facility.
	Is there a practical balance between the degree of operational flexibility that is desired and long term contracting based on up-front capital investment in projects?	See above.
	What is the likelihood of large contract variations being required during the life of a typical contract?	The facility is designed to deliver long-term need as it is currently understood. Any requirement for change will derive from factors and influences that are not yet known. However, major variation is not expected or considered likely.
Equity, efficiency and accountability	Does the scope of the project services allow the contractor to have control of all the relevant functional processes? Do the services have clear boundaries?	These factors will be fully addressed within the contract, which follows SFT standard form.
	Are there regulatory or legal restrictions that require project services to be provided directly?	There are no such restrictions envisaged.

VIABILITY		
Issue	Questions	NHS Lothian Response
	<p>Will the private sector be able to exploit economies of scale through the provision, operation or maintenance of other similar services to other customers?</p> <p>Does the private sector have greater experience / expertise than the Procuring Authority in delivery of the project services? Are the services in the project non-core to the Procuring Authority?</p> <p>Is the Project likely to deliver improved value for money to the Procuring Authority as a whole?</p>	<p>The project is located centrally within Scotland's central belt and has good access to communication links. While it is not yet known which private sector parties may decide to take part in the procurement, we can reasonably assume that they will be experienced operators of similar contracts, facilities or services in Scotland or elsewhere in the UK, and so could exploit economies of scale on this basis.</p> <p>The services to be provided by the contractor are limited to hard FM services, which cannot be considered core to the NHS. All core NHS services are to be retained by NHS Lothian.</p> <p>Yes. The procurement process will be highly competitive and will drive a value for money outcome. During operations the governance of the NPD vehicle will ensure that the contractor operates efficiently and maximises returns for stakeholders.</p>
OVERALL VIABILITY	Is the relevant Accountable Officer satisfied that operable contracts with built in flexibility can be constructed across the project, and that strategic and regulatory issues can be overcome?	Yes, this is confirmed.

DESIRABILITY		
Issues	Question	Response
Risk management	Does the project involve the purchase of significant capital assets, where the risks of cost and time over-runs are likely to be significant?	The assets to be procured are significant and there are several risks inherent in a project of this nature. However, each of these risks has been identified, as set out in section 6.7, and quantified where possible. Risk mitigation processes have been put in place for each risk. In addition, the affordability analysis takes account of a number of sensitivities that test the implications of delays and cost overruns.
	<p>Is the private sector likely to be able to manage the generic risks associated with the project more effectively than the Procuring Authority?</p> <p>Bearing in mind the relevant risks that need to be managed for the project, what is the ability of the private sector to price and manage these risks?</p> <p>Can envisaged standardised payment mechanisms and contract terms incentivise good risk management within the project, as per the standard form NPD contract?</p>	<p>The risk processes applied have sought to identify all risks and allocate them to the party best placed to manage that risk. In particular, the standard NPD contract embodies a risk allocation that is well understood and accepted by the private sector. The project will, therefore, only seek to allocate risks to the private sector that it can manage effectively and price so that value for money is not damaged. NHS Lothian will retain other risks.</p> <p>The use of the NPD standard contract will ensure that good risk management arrangements are put in place.</p>

DESIRABILITY		
Issues	Question	Response
Innovation	Does a preliminary assessment indicate that there is likely to be scope for innovation on a project basis?	The approach to be taken in the project is to create a reference design for the facilities that embodies desired clinical adjacencies and functionality that will form a key element of the output specification for the project. Bidders will be able to focus, therefore, on delivering the most effective and innovative solution that delivers these outputs, built on a solid foundation of work already completed by NHS Lothian.
	Does some degree of flexibility remain in the nature of the technical solutions / services and / or the scope of the project?	
	Can solutions be adequately free from the constraints imposed by the Procuring Authority, legal requirements and / or technical standards?	
	To what extent will the individual project's scope, specification and operation be pre-set or open to negotiation with the private sector?	
	Could the private sector improve the level of utilisation of the assets underpinning the project (e.g. through selling, licensing, commercially developing for third party usage etc)?	The scope of the project and the outputs sought will be set. However, the competitive dialogue process will allow scope for discussion about how the bidders might best deliver this scope in output terms.
		There is no specific barrier to bidders coming forward with proposals along these lines during the competitive dialogue subject to the core requirement being delivered and to the constraints of avoidance of direct competition with commercial activities delivered by Consort at the Royal Infirmary.

DESIRABILITY		
Issues	Question	Response
Service provision	In relation to the project, are there good strategic / service delivery reasons not to retain soft service provision in-house? What are the relative advantages and disadvantages of this approach?	The decision to include only hard FM services in the project was taken at programme level and has been agreed with Scottish Government. There are no specific reasons why Soft FM should be included in the contract alongside Hard FM.
Incentive and monitoring	Confirm that the standard form NPD / hub DBFM contract provisions relating to monitoring and incentivising service delivery will be adopted.	This is confirmed
Lifecycle costs / residual value?	Is it possible to integrate the design, build and operation of the project?	Yes – bidders will be asked to provide an integrated solution that encompasses design and build, with life cycle and hard FM provisions designed to be complementary to the chosen design.
	<p>Is a lengthy contract envisaged?</p> <p>Will long-term contractual relationships be suitable (or advantageous) for the service?</p> <p>Are there constraints on the status of the assets at contract end?</p>	Yes – a contract length as per the NPD standard will be adopted, along with the standard approach of assets reverting to NHS Lothian at nil cost at the end of the concession.

DESIRABILITY		
Issues	Question	Response
	<p>Are there significant ongoing operating costs and maintenance requirements across the project?</p> <p>Are these likely to be sensitive to the type of construction?</p>	<p>Yes. The contractor will be fully responsible for all hard FM and life cycle aspects of the facility throughout the contract and will be required to cost such services in tandem with design and construction so that the elements are fully integrated.</p>
OVERALL DESIRABILITY	<p>Overall, is the relevant Accountable Officer satisfied that the project and its procurement approach would bring sufficient benefits?</p>	<p>Yes. The chosen approach will ensure that the need is met via a competitive process that will be designed to encourage bidders to add value.</p>

ACHIEVABILITY		
Issue	Question	Response
Transaction costs and client capacity	Does the Procuring Authority have an appropriate governance and management structure in place for progressing the procurement of the project?	Yes. The project is supported by a well-resourced team of internal and external staff as described in section 6.3.
	Is there sufficient Procuring Authority capability and capacity to manage the procurement process and appraise the ongoing performance against agreed outputs?	Yes, see above.
	Can an appropriately skilled procurement team be assembled in good time?	Yes, this team is already in place as shown in section 6.3.
	<p>Will the project be feasible within the required timescale?</p> <p>Is there sufficient time for resolution of key Procuring Authority issues?</p> <p>Does the size of the project justify the transaction costs?</p>	<p>Yes. Considerable work has been put into designing a challenging yet deliverable timetable for the project that has been agreed with SFT and SG.</p> <p>Yes. Transaction costs have been factored into the financial modelling undertaken on which affordability of the project has been established. These amount to some x% of the overall project cost and are derived from benchmarking against other similar projects.</p>

ACHIEVABILITY		
Competition / Market Interest	Is there evidence that the private sector is capable of delivering the required outcomes for the Project?	Yes. The scope of the project is broadly similar to other DBFO-type projects delivered successfully in the NHS in the UK. Considerable informal market interest has already been demonstrated.
		As above.
	Have any similar projects been tendered to market?	The concept of NPD is now well established in the market, with three completed schools projects and a completed NPD project in the NHS, NHS Tayside's Mental Health Developments Project.
	Is there likely to be sufficient market appetite for the project in the timetable currently anticipated?	The timing of the project is such that there are few other similar projects in progress at this time and that interest from the market, which is very keen to see a clear pipeline of deals emerging, will be considerable.
	Has this been tested robustly? Is there any evidence of market failure for similar projects?	Yes. See above. This has been tested via various market sounding exercises.
	Has the Procuring Authority's commitment to a revenue financed solution for this type of project been demonstrated?	NHS Lothian has demonstrated its commitment to a privately financed approach and has procured several facilities, included the Royal Infirmary of Edinburgh, in this way in the past.

ACHIEVABILITY		
	<p>Do the nature of the investment and / or the strategic importance of the work and / or the prospect for further business suggest that it will be seen by the market as a potentially profitable project?</p>	<p>Yes. This is a large and important project that creates a major opportunity for the market to be involved in a significant long-term partnership that will generate a variety of sub-contracts. NHS Lothian recognise that it is desirable for the private sector to be able to generate a reasonable profit from such a project, bearing in mind that the contract will be let competitively and value for money tested rigorously.</p>
OVERALL ACHIEVABILITY	<p>Overall is the relevant Accountable Officer satisfied that the project is achievable, that the project team is sufficiently resourced and the project is attractive to the market?</p>	<p>Yes. NHS Lothian has invested heavily in this project in order to ensure its success.</p>

PROCUREMENT STRATEGY

[Commercial in confidence]

DRAFT OJEU NOTICE

[Commercial in confidence]

PROJECT EXECUTION PLAN

[Commercial in confidence]

STAKEHOLDER COMMUNICATIONS & ENGAGEMENT PLAN

1.1 Background information

The RHSC project commenced in 2006. The involvement of children, young people, parents, and voluntary organisations was extensive during the first phase of the project. The views obtained were set out in the Outline Business Case to the Scottish Government in 2008 and incorporated into the design brief in 2009, which set out to the companies tendering for the design and building of the new hospital what was expected. More focused engagement took place during 2009/10 as part of the detailed design stage of the project with children, young people and parents.

The DCN project commenced in 2008. A range of engagement events that year invited patients, carers and voluntary organisations to review their experience of the clinical service, and the options for improving it. The views obtained have been used to set out the brief for the project.

1.2 The aims of engagement and communications

Due to a change in funding stream in November 2010, both projects have had to re-focus. NHS Lothian is now building a combined RHSC and DCN at Little France, which will be privately financed. The process and the timelines for the project are now different. The requirements for communication and engagement need to be:

- Clarity for all about what can be influenced and what cannot
- Clarity about what has been taken forward from the previous engagement and has influenced the new design
- The timelines for the project for the design stages and the deadlines to ensure engagement can take place and be meaningful
- Regular information on the project to all participants during the detailed design stage including how and what they can be engaged with
- Information to the wider communities interested in the project
- Reporting the outcomes of engagement to participants and the wider community
- Monitoring of the engagement and communication plan
- Reviewing the plan to reflect on what has worked well and where engagement and communication needs to change to reflect the different development stages of the project.

1.3 Who will be involved

In view of the timelines being tight the RHSC engagement will continue to be with the Family Council and the Young People's Advisory Group. At key stages the RHSC PFPI Task Group will review and reflect on what is appropriate and proportionate in accordance with CEL 4 (2010) Informing,

Engaging and Consulting People in Developing Health and Community Care Services.

Engagement for DCN patients, carers and voluntary organisations, and review of this engagement against CEL 4 (2010) will be carried out with their Patient Reference Group.

Engagement with staff is outwith the remit of the PFPI Task Group and the Patient Reference Group.

A wide range of staff will be extensively involved in the clinical design process via the Clinical Design Task Sub –groups and some of the planned events, e.g. exhibition and the AEDET reviews will target staff as well as services users. Staff will also be kept up-to-date on progress within the project through NHS Lothian's regular communication methods including team meetings and Connections.

1.4 Channels of engagement and communication

GROUP	COMMUNICATION VEHICLE	FREQUENCY
STAFF: Children's Services CAMHS DCN	Reference design task group	Monthly
	Team Brief	Monthly
	Connections	Bi-monthly
	Intranet	On-going
	Website	On-going
	TASK GROUPS <ul style="list-style-type: none"> • Clinical TG/Sub Design Groups • Work Force Planning TG • Communication TG • PFPI TG 	FORTNIGHTLY FORTNIGHTLY MONTHLY MONTHLY
	ADET events	TBC
	Staff Meetings	Monthly
	Partnership meetings	TBC
	1:1 consultations	TBC
	Exhibitions/Notice boards	TBC
Wider NHS Lothian staff population	Team Brief	Monthly
	Connections	Bi-monthly
	Intranet	On-going
	Website	On-going
	Exhibitions/Notice boards	TBC
Service users	Reference design task group	Monthly
	Regular meetings	

APPENDIX 22

GROUP	COMMUNICATION VEHICLE	FREQUENCY
	PFPI meetings	Every two months?
	Website	On-going
	Healthlink	Quarterly
	Exhibitions	TBC
	Media coverage	On-going
NHS partners (work with NHS Lothian e.g. voluntary bodies, local authorities and other health boards)	Stakeholder board meetings	
	PFPI meetings	Every two months
	SEAT meetings	Monthly
	Healthlink	Quarterly
	Direct communication on specific issues/service interface	As required
	Exhibitions	TBC
	Media coverage	On-going
	Website	On-going
Politicians (Councillors / MSPs / MPs)	Healthlink	Quarterly
	NHS Lothian MSP meeting	
	Media coverage	

PLANNED ENGAGEMENT AND COMMUNICATIONS ACTIVITIES – PATIENT, CARER & PUBLIC STAKEHOLDERS JULY – OCTOBER 2011

This log is a live document and will be updated with developing Communications and Engagement activities, and outcomes, as the project progresses.

Timescale	Stakeholder group	Information activity	Engagement activity	Notes on outcomes
6 July 2011	Public stakeholders / Neighbours	Letter to 'planning stakeholders' to advise of progress in planning application.		No response as at 18/08/11. All responses to planning submission are being collated by Montagu Evans.
7 July 2011	Reference Design Task Group – including one rep each of the RHSC Family Council and the DCN Patient Reference Group and [REDACTED] for 'Family Support'	Sharing the 1:500 concept designs.	Feedback on concept designs proposed.	(20/07/11) Presentation by Nightingale Associates and feedback from staff and PFPI reps. Attended by [REDACTED] Architects will develop the 1:500 designs.
14 July 2011	DCN Patient Reference Group	Catching up on project developments in the last 18 months; sharing the 1:500 concept designs.	Plans for future engagement, development of DCN design.	(20/07/11) Presentation by Nightingale Associates and feedback from members. Proposals well received, key area of interest is next level of design for single room accommodation and wards.
14 July 2011	RHSC Family Council	Sharing the 1:500 concept designs.	Plans for future engagement, continuing the RHSC design.	(20/07/11) Presentation by Nightingale Associates and feedback from members. Key concerns were about identity and segregation of children and young people from DCN.

Timescale	Stakeholder group	Information activity	Engagement activity	Notes on outcomes
End of July	Public stakeholders	Media release on planning application.		
11 August 2011	Reference Design Task Group – including one rep each of the RHSC Family Council and the DCN Patient Reference Group and Maureen Harrison for 'Family Support'	Sharing the developed 1:500 concept designs.		
12 August 2011	Patients, carers and public representatives <u>not</u> already involved in informing the design.		AEDT Review of the 1:500 design, by people <u>not</u> involved in the design process.	Average scores over the group ranged from 3.5 (between 'little' and 'fair' agreement) for the Form and Materials and the Use criteria, to 5.7 (between 'strong' and 'virtually total' agreement) for Urban and Social Integration.
20 August 2011	Young People's Advisory Group	Catching up on project developments in the last year; sharing proposed 1:500 concept designs.	Plans for future engagement. Members to discuss membership and recruitment.	
August / September 2011	RHSC, CAMHS, DCN & RIE Staff	Sharing the signed off 1:500 concept designs. Open meetings from 12-23 September 2011.		Frequently Asked Questions developed for the web and other media.
August / September 2011	RHSC, CAMHS & DCN Patients & Carers	Sharing the signed off 1:500 concept designs.	Specific involvement requested in developing relevant rooms. E.g. DCN PRG and single rooms.	
August / September 2011	Neighbourhood Partnerships	NHSL offered to attend a meeting and update on the		No invitations received.

Timescale	Stakeholder group	Information activity	Engagement activity	Notes on outcomes
		1:500 concept designs submitted for 'planning in principle'.		
Mid September	Public stakeholders	Article in Healthlink		
Early October 2011	Staff	Article in Connections		
Oct / Nov 2011	RHSC, CAMHS, DCN & RIE Staff, Patients & Carers		1:200 designs	
22 October 2011	Young People's Advisory Group	Sharing the signed off 1:500 concept designs.	Review of role of YPAB and recruitment of members.	Review and feedback on 1:200 proposals for public spaces, family support, adolescent accommodation and spiritual care. Agreement on plans for promotion of the group and recruitment of new members
Dec 2011 / Jan 2012	RHSC, CAMHS & DCN Staff, Patients & Carers	Sharing 1:50 designs for 'generic' rooms with relevant stakeholder groups.	1:50 designs	

BENEFIT REALISATION PLAN

The anticipated benefits map to the investment objectives for the RHSC and DCN re-provision project. Developing plans to realise and report on the anticipated benefits will be undertaken in 2012 in preparation for the Full Business Case, as will collating the baseline measurement of the indicators detailed below.

Contents

Benefit:	Page no:	Project Lead for FBC development and measurement:
Quality and clinical effectiveness	2	[REDACTED]
Quality of environment	6	[REDACTED]
Accessibility	8	[REDACTED]
Sustainability	11	[REDACTED] (environment) and [REDACTED] (workforce)
Deliverability	14	[REDACTED]
Research and development	16	[REDACTED]

Quality and clinical effectiveness

Overview

- Improvement in health and reduction in health inequalities by delivering and sustaining high quality care and treatment.
- A hospital that facilitates good clinical pathways and interfaces between specialities, diagnostic and support services.
- The building will allow NHS Lothian to meet quality and treatment targets set out in national and clinical guidance.

Responsibility for delivering the benefit

- [REDACTED]
- [REDACTED]

Responsibility for monitoring the benefit

- [REDACTED]
- [REDACTED]

Specific	<p>Benefits</p> <p>Improved access to care and treatment for all at the right time and in the right location. A hospital that facilitates and maximises interfaces between specialities through co-location on site of:</p> <ul style="list-style-type: none"> • Adult and paediatric emergency departments. • Paediatric and neonatal surgery. • Adult and paediatric neurosurgery. • Acute neuroscience care and the emergency department. • Adult spinal surgery in DCN and orthopaedics. <p>A hospital that facilitates good clinical pathways and patient journeys between specialities, diagnostics and support services, e.g.</p> <ul style="list-style-type: none"> • Reduced patient transfer time from the emergency department to diagnostics, theatres and critical care as required. • Reduced patient transfer time for the retrieval of critically ill patients from other hospitals, by road or air. • Provision of critical care in specialist HDU and ICU units rather than general wards. • Reduction in time between the admission of emergency patients to initiation of specialist care. • Reduction in patients boarded into another speciality ward. <p>A reduction in healthcare associated infection.</p> <p>Improved patient safety.</p> <p>Upper quartile performance against peer national services.</p> <p>Disadvantages</p> <p>Distance created for neuro-oncology service between DCN at Little France and oncology at WGH requires to be addressed to ensure no negative impact on service quality.</p>
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Measurable	<p>Evidence required</p> <ul style="list-style-type: none"> ▪ New service co-located with major acute adult hospital – completion of RHSC and DCN at Little France project. ▪ Evidence of improved pathways & processes, physical adjacencies and best practice. ▪ Evidence of distance and timescales for patient journeys. ▪ Evidence of meeting waiting time targets. ▪ Reduction in the cancellation of operations and over-run of theatre sessions. ▪ Reduction in infection rates. ▪ Reduction in clinical incidents. ▪ Benchmarking against peer services through Civil Eyes Valuing Medical Resources programme. <p>Examples of how benefits will be monitored</p> <ul style="list-style-type: none"> ▪ Monitor LOS prior to introducing new models of care and after transfer to new building - health intelligence data. ▪ Measure pre and post move transfer of patient journey times between key departments e.g. DCN theatres to adult ICU, emergency departments to theatre, SMMP to RHSC theatre. ▪ Waiting times performance before and after the move. ▪ Monitor comparative levels of HAI – Infection Control Reports and Audits. ▪ Scottish Patient Safety Programme measures, e.g. for HAI, surgical incidents and critical care outcomes. ▪ The Productive Operating Theatre measures. ▪ Releasing Time to Care measures. ▪ Parent and family satisfaction audits before and after the move. ▪ Monitor volume of and issues raised in complaints before and after the move.
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Achievable	<p>Actions necessary to realise benefits</p> <ul style="list-style-type: none"> ▪ Engagement of staff in developing, signing-off and delivery of the project. ▪ Develop and sign-off a design that delivers the necessary adjacencies and relationships. ▪ Redesign of patient pathways, and associated operational policies, workforce plans and service development plans. ▪ Development of a robust communications plan with staff and public to give understanding of the benefits of the project implementation. ▪ Commissioning Plan.
Relevant	<p>Associated Investment Objective</p> <p>To provide an environment that supports Clinical Effectiveness, meeting of national standards and targets and facilitates the implementation of best evidence based practice leading to improved treatment outcomes for patients.</p>
Time-bound	<p>Timeframe for monitoring this benefit</p> <p>Baseline monitoring for FBC: 2012 Re-visit the baseline pre-move: 2015/16 Post-project evaluation: 2017/18</p>

Quality of environment / acceptability

Overview

- A quality physical environment which promotes the health and wellbeing of the building's users.
- There will be an increase in stakeholders satisfaction, working in the new 'fit for purpose' environment
- The building will comply with Hospital Building Note (HBN) guidance, the Disability Discrimination Act (DDA) and Design Quality for NHS Scotland 2010.

Responsibility for delivering the benefit

- [REDACTED]
- [REDACTED]

Responsibility for monitoring the benefit

- [REDACTED]
- [REDACTED]

Specific	<p>Benefits</p> <ul style="list-style-type: none"> • Patient privacy and dignity in care will be improved with single rooms and fit for purpose design. • Patients will have increased control over own environment – noise , temperature, light, socialisation and uninterrupted sleep. • Increased patient and public satisfaction in the facilities. • Building users will have access to external amenity space. • Age appropriate care. • A reduction in healthcare associated infection. • Improved patient safety. • Reduced staff absence – unplanned absence will achieve the target of below 3.5%. • Improvement in the recruitment and retention of staff with a reduction in staff turnover. <p>Disadvantages</p> <p>None identified</p>
Measurable	<p>Examples of how benefits will be monitored</p> <ul style="list-style-type: none"> ▪ Patient Environment Audit Tool measures. ▪ Patient satisfaction / parent and family satisfaction audits before and after the move. ▪ Monitor environmental / facilities complaints before and after the move. ▪ Monitor environmental / facilities issues in staff feedback before and after the move. ▪ Monitor comparative levels of HAI – Infection Control reports and Audits. ▪ Monitor staff absence and turnover – personnel systems.

Achievable	<p>Actions necessary to realise benefits</p> <ul style="list-style-type: none"> ▪ The design and finished environment will be scrutinised through the AEDET process. ▪ The building will be DDA compliant. ▪ The building will conform to the Design Quality for NHSScotland Standards 2010. ▪ Engagement of staff and patient representatives in developing, signing-off and delivering the project. ▪ Develop and sign-off a design that delivers the necessary adjacencies and relationships. ▪ Develop and sign-off a design that delivers the internal department design required to promote user satisfaction and well-being.
Relevant	<p>Associated Investment Objective</p> <p>To provide a physical environment, the quality of which, promotes the health and well being of the buildings users.</p>
Time-bound	<p>Timeframe for monitoring this benefit</p> <p>Baseline monitoring for FBC: 2012 Re-visit the baseline pre-move: 2015/16 Post-project evaluation: 2017/18</p>

Accessibility

Overview

- Services that will be safely accessible to patients, visitors and staff, by public and private transport.
- The project includes provision of car-parking, cycle-parking and public transport drop-off, and the re-provision of car park B at the RIE, which is being taken over for the new RHSC and DCN.

Responsibility for delivering the benefit

- [REDACTED]
- [REDACTED]

Responsibility for monitoring the benefit

- [REDACTED]
- [REDACTED]
- [REDACTED]

Specific	<p>Benefits</p> <ul style="list-style-type: none"> ▪ The site location enables easy access on foot or by car, cycle or public transport. ▪ The main entrance to the building is pedestrianised. ▪ The site supports rapid and ease of emergency access by land and air. ▪ The joining of adult and paediatric emergency departments, allowing families to be treated on the one site. ▪ Separation of emergency and routine traffic: <ul style="list-style-type: none"> Patients arriving by emergency ambulance will enter by the A & E entrance. Patients arriving for day case or outpatient appointments will enter via the main entrance into hospital. ▪ Adequate car parking provision is provided to support the specific needs of patients, frontline staff, essential car users and visitors to the site. ▪ A drop off facility for carers adjacent to the main entrance and the Emergency Department (ED). ▪ Car parking spaces adjacent to the main entrance and the ED for disabled patients / drivers. ▪ Car parking for RHSC & DCN patients and visitors will be in the closest public car park on the Little France site. ▪ Access to park and ride facilities close to new hospital. ▪ Provision is made for cyclists to secure their bikes to bike racks. ▪ The signage access and way-finding will be compliant with DDA. <p>Disadvantages</p> <ul style="list-style-type: none"> ▪ Limited parking capacity; some staff eligible for a pass at their current place of work will no longer have one – perceived disadvantage.
Measurable	<p>Examples of how benefits will be monitored</p> <ul style="list-style-type: none"> ▪ Monitor transport / access complaints before and after the move. ▪ Monitor transport / access issues in staff feedback before and after the move. ▪ Usage of flexible parking permits and other parking management information. ▪ Access audit.

Achievable	<p>Actions necessary to realise benefits</p> <ul style="list-style-type: none"> ▪ Good public information including signage and route management to direct public and staff by the planned safe route into the building. ▪ Include access management in the commissioning programme. ▪ Provide dedicated set down and pick up points clearly identifiable within the site layout plans. ▪ Provide car parking arrangements that meet the requirements recommended by the Scottish Government. ▪ Provide safe access route into the RHSC and DCN Building and Little France site. ▪ Provide good real time travel information at the exits to the hospital. ▪ Provide bike racks to allow cyclists to secure their bikes. ▪ Shuttle bus and park and ride facilities close to hospital building.
Relevant	<p>Associated Investment Objective</p> <p>To provide services that will be safely accessible to patients, visitors and staff, by public and private transport.</p>
Time-bound	<p>Timeframe for monitoring this benefit</p> <p>Baseline monitoring for FBC: 2012 Re-visit the baseline pre-move: 2015/16 Post-project evaluation: 2017/18</p>

Sustainability

Overview

ENVIRONMENTAL SUSTAINABILITY

- Efficient use of resources and revenue to deliver services. Scottish Government policy is for all new NHS buildings achieve the standard of BREEAM Healthcare 'Excellent'.

CLINICAL / SERVICE SUSTAINABILITY

- Delivery of sustainable clinical services, particularly adult and paediatric critical care, and neurosurgery.

Responsibility for delivering the benefit

- [Redacted] [Redacted]
- [Redacted]

Responsibility for monitoring the benefit

- [Redacted]
- [Redacted]

Specific	<p>Benefits</p> <p>ENVIRONMENTAL SUSTAINABILITY</p> <ul style="list-style-type: none"> • 20% renewable energy (BREEAM ‘Excellent’ rating). ▪ Reduced utilities consumption and lifecycle costs. ▪ Reduced carbon emissions. <p>CLINICAL / SERVICE SUSTAINABILITY</p> <ul style="list-style-type: none"> ▪ Secure paediatric neurosurgery and intensive care unit in RHSC. ▪ Sustainable delivery of adult ICU on three acute sites in Lothian. <p>Disadvantages</p> <ul style="list-style-type: none"> • Costs of achieving BREEAM excellence standard to be determined.
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Measurable	<p>Examples of how benefits will be monitored</p> <p>ENVIRONMENTAL SUSTAINABILITY from BREEAM 2011 guidance:</p> <ul style="list-style-type: none"> ▪ Management ▪ Health & Wellbeing ▪ Energy ▪ Transport ▪ Water ▪ Materials ▪ Waste ▪ Land Use & Ecology ▪ Pollution <p>CLINICAL / SERVICE SUSTAINABILITY</p> <ul style="list-style-type: none"> ▪ Sustainable medical staff rotas; use of agency / locum cover ▪ Sustainable nursing staff rotas; use of agency / locum cover ▪ % theatre cancellations by NHSL ▪ % outpatient cancellations by NHSL
Achievable	<p>Actions necessary to realise benefits</p> <ul style="list-style-type: none"> • The building design will to be compliant with Edinburgh Standards for Sustainable Buildings. • A strategy for waste reduction during construction will be implemented. • Once operational, recycling will be promoted through the provision of appropriate and accessible storage areas for waste. • What material will be used on the building. • Off site recycling of waste. • For transport see Accessibility benefit, above.

Relevant	<p>Associated Investment Objective</p> <ul style="list-style-type: none"> Efficient use of resources and revenue to deliver services.
Time-bound	<p>Timeframe for monitoring this benefit</p> <p>Baseline monitoring for FBC: 2012 Re-visit the baseline pre-move: 2015/16 Post-project evaluation: 2017/18</p>

Deliverability / Disruption	
<p>Overview</p> <ul style="list-style-type: none"> Continuity of RHSC, DCN and RIE services with minimal impact on quality or targets throughout the delivery of the project <p>Responsibility for delivering the benefit</p> <p>█ [REDACTED] • [REDACTED]</p> <p>Responsibility for monitoring the benefit</p> <p>█ [REDACTED] █ [REDACTED]</p>	
Specific	<p>Benefits</p> <ul style="list-style-type: none"> Services in RHSC and DCN will be uninterrupted through construction phase as the new build is off-site. Services in the RIE will experience minimal disruption as traffic management and construction project management will work to reduce impact and risk. <p>Disadvantages</p> <ul style="list-style-type: none"> Double-running requires resource – staff, equipment and support services. Staff engagement requires resource – clinical and non-clinical groups, design, equipment, workforce planning, commissioning.
Measurable	<p>Examples of how benefits will be monitored</p> <ul style="list-style-type: none"> Services will maintain waiting times and quality targets before, during and after the commissioning phase, e.g. HEAT targets. 'Loss of facility' registered for the RIE PFI provider.

Achievable	<p>Actions necessary to realise benefits</p> <ul style="list-style-type: none"> • Construction programme planning to minimise disruption. • Commissioning programme planning to maximise service delivery, including double-running where necessary. • Engagement of RIE site PFI providers in traffic management planning for construction and commissioning period.
Relevant	<p>Associated Investment Objective</p> <ul style="list-style-type: none"> • To provide a scheme option that results in the minimum possible disruption to patients and allows the continued delivery of clinical services over the duration of the project (activity levels maintained).
Time-bound	<p>Timeframe for monitoring this benefit</p> <p>Baseline monitoring for FBC: 2012 Re-visit the baseline pre-move: 2015/16 Post-project evaluation: 2017/18</p>

Research & Development

Overview

- To provide an environment that facilitates engagement and involvement with the University of Edinburgh and other research and development bodies and opportunities.

Responsibility for delivering the benefit

[Redacted]

[Redacted]

Responsibility for monitoring the benefit

[Redacted]

[Redacted]

[Redacted]

Specific	<p>Benefits</p> <ul style="list-style-type: none"> • Co-location with the Chancellor’s Building, Queen’s Medical Research Institute and Edinburgh BioQuarter. • Access to quality training and teaching facilities for staff in RHSC and DCN specialties. • Access to quality training, teaching and personal study facilities for undergraduate and postgraduate study in paediatric and neuroscience disciplines. • High quality research facilities. • Formal partnership arrangements with education and research institutes. • Enhanced research and education portfolio in paediatric and neuroscience disciplines. <p>Disadvantages</p> <ul style="list-style-type: none"> • None identified
Measurable	<p>Examples of how benefits will be monitored</p> <ul style="list-style-type: none"> ▪ Research Assessment Exercise rating for hospital-based clinical subjects, psychiatry and neuroscience. ▪ Research portfolio in paediatric and neuroscience disciplines.
Achievable	<p>Actions necessary to realise benefits</p> <ul style="list-style-type: none"> • Formal partnership arrangements with education. • Enhanced research portfolio. • Multidisciplinary involvement in the research and education programme.

Relevant	<p>Associated Investment Objective</p> <ul style="list-style-type: none"> To provide a service environment that will easily allow engagement and involvement with research and service development opportunities with our partner higher education institutes. To provide a service that will advance treatments and interventions and attract highly capable staff with progressive research interests and who can be more readily retained.
Time-bound	<p>Timeframe for monitoring this benefit</p> <p>Baseline monitoring for FBC: 2012 Re-visit the baseline pre-move: 2015/16 Post-project evaluation: 2017/18</p>

From: Donna Stevenson [REDACTED]
Sent: 31/01/2012 12:11:57
To: Colin Proctor [REDACTED]
CC: Andrew Bruce [REDACTED]
Subject: FW: Edinburgh RHSC/DCD Design Review
Attachments: RE: Edinburgh RHSC/DCD Design Review; FW: NPD Acute Health Projects : Funding Conditions

Colin

Perhaps we could pick up on these Design issues and the process for interface with A&DS/HFS when we meet on Thursday to discuss the KSR/Funding conditions points.

Regards

Donna

Donna Stevenson
Associate Director
Scottish Futures Trust

Mobile [REDACTED]

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From: Heather Chapple [REDACTED]
Sent: 31 January 2012 12:02
To: Henderson Peter (NATIONAL SERVICES SCOTLAND); Donna Stevenson
Cc: Mike.Baxter [REDACTED]; Bettina.Sizeland [REDACTED]; Norman.Kinnear [REDACTED]
Subject: RE: Edinburgh RHSC/DCD Design Review

All

I understand that the reference design may have moved on since the A+DS Design Review panel commented on the Planning Application in the summer and therefore the drawings that Atkins based their report on may be different to those which Pete and I have seen; limiting the extent of detailed consideration. However, there are a number of areas of concern in Atkins' report that chime with the comments the panel had given to the project team in the summer*; specifically:

- Section 7 of Atkins' report raises strong concerns over fundamental design aspects such as clarity and ease of arrival and the internal circulation diagram, recommending that these elements require to be "*significantly developed in the brief for the NPD design teams or considerably further developed in the reference design*".
- Further, it recommends development of a design strategy "*for elements such as orientation of bedrooms for sunlight and connection to the natural environment*" building on evidence based design.

Therefore, in terms of commenting on the report as requested, we'd support it as clearly describing some rather fundamental challenges in the reference design** and areas of significant development in briefing needed to appropriately direct the bidders.

We understand it is expected that the recommendations in relation to the reference design and the brief will be addressed by the Board prior to the ITPD. We would be happy to:

- help the Board capture design quality standards to be incorporated into the brief
- and/or help the pre-ITPD KSR consider if the 'design' recommendations (16-19 & 20 'design shape' being those most within our area) have been addressed before the reference scheme and briefing documents are presented to bidders; and Pete has suggested that HFS can carry out a high level check of the reference scheme against guidance at this point if this is not being done out by others.
- help with evaluating the bidders' responses to the developed design brief: for our part in relation to the design quality standards etc & HFS could carry out a high level check against guidance if this is not being done out by others. Once NHSL come back with their response to the recommendations please let us know how/ when we can help move forward briefing for improvements and evaluating the design responses.

Kind regards

Heather

* report available here <http://www.ads.org.uk/designreview/reports/royal-hospital-for-sick-children>

** one aspect of the development that the report doesn't cover (due to the scope of the commission restricting the review to the NPD element) is the wider masterplanning impact on the RIE campus. The introduction of this new development will affect all users of the campus in terms of circulation and parking. Although plans are being put in place to divert buses and cars to the east of the hospital to ease access to the RIE (addressing the basic mechanics of the issue) it'd be good to see a site wide strategy (landscape, wayfinding) that clarifies and improves the arrival experience for adults coming to the RIE (inc some for the DCN?), and those 'passing through' the site on busses to/from the city, as the full tour of the campus will be a daily experience for many people and an opportunity for the board to create a positive impression of the service. This may be in development....?

Heather Chapple | Health Programme | Architecture and Design Scotland

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From: Henderson Peter (NATIONAL SERVICES SCOTLAND) [REDACTED]

Sent: 27 January 2012 11:04

To: donna.stevenson [REDACTED]

Cc: Mike.Baxter [REDACTED]; Bettina.Sizeland [REDACTED]; Norman.Kinnea [REDACTED];

Heather Chapple

Subject: Edinburgh RHSC/DCD Design Review

Donna

As requested by Mike at last weeks meeting my comments on Atkins report are attached. These mostly reinforce Atkins' comments rather than adding anything new as I haven't seen the latest detailed drawings or specification information. If they have not already prepared one, I think it would be useful for the Board/Design Team to produce a comprehensive schedule of the guidance documents they are following in order for future bidders to be clear on the standards that they are expected to comply with.

Regards

Pete

Peter Henderson
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Property and Capital Planning
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HFS Comments on the RHSC/DCN Independent Design Review carried out by Atkins for SFT

(The following comments relate to the Atkins Independent Design Review Dated 12th December 2011. The drawings and detailed information on which the Atkins report was based were not available to HFS other than a set of Proposed Reference Design drawings dated June/July 2011 previously submitted to A+DS for their Design Review.)

Heading from the Summary and Recommendations section of Atkins report.	HFS Comment
Links to existing RI <i>Recommendation 1</i>	Supported
Planning for Future Change <i>Recommendation 2</i>	Supported. Current guidance suggests that there should be a greater emphasis for the design of <u>all</u> elements to be capable of future adaptation to meet changing needs. In particular, although the current proposal is only a reference design, if the design developed by the NPD Co develops the plan shapes currently indicated on the drawings, it will inevitably result in accommodation that is less standardised and therefore less capable of future adaptation. See HBN 00-03
Clinical Planning <i>Recommendations 3 and 4</i>	Supported

Space Planning	
Single rooms	<p>The statement that “Adult critical care units are looking towards 100% segregation of patients into single-bays or rooms” does not illustrate the extent of the reference design’s variation from current guidance. Since November 2008 it has been mandatory for all new build in-patient accommodation (for all patient groups) to provide 100% single bedrooms unless there are clinical reasons for multi-bedded rooms to be available. Although the original design work on the re-provision of the RHSC commenced prior to the issue of CEL 48 (2008) there is now an opportunity to realise the considerable benefits of designing to the current standards.</p>
<i>Recommendation 5</i>	<p>Supported. The recommendation should be reinforced to require that bidding teams should maximise the single bedroom provision with a minimum requirement of compliance with the design brief.</p>
Bedroom and en-suite floor areas	<p>HBN 23 Hospital accommodation for children and young people which was published in 2004 indicates an area of 15m² for a single bedroom. HBN 23 also states that all single bedrooms should provide sufficient space for a bed for a parent and that bed bays in 4 person rooms should each accommodate a reclining chair.</p> <p>When these requirements are taken together with the current need to provide a clinical support zone within the bedroom, ergonomic studies have shown that a minimum of 19m² is required for the bedroom. (SHPN 04-01 Adult in-patient accommodation [2010] and HBN 04-01 [2008])</p> <p>HBN 23 indicates that a minimum of 80 m² is required for a four person bedroom.</p>
<i>Recommendation 6</i>	<p>Supported. A requirement that the feasibility study of room sizes should use the ergonomic data available in guidance documents HBN 00-02 Sanitary spaces, HBN 00-03 Clinical and clinical support spaces and SHPN 04-01 Adult in-patient accommodation should be added to the recommendation.</p>

Ward Planning	
<i>Recommendation 7</i>	Supported
Emergency Department	
<i>Recommendation 8</i>	Supported
Operating Theatres	
Radiology	
Outpatients	
<i>Recommendation 9</i>	Supported. Item 2 should be a requirement as this would be necessary to comply with the guidance in HBN 00-03 Clinical and clinical support spaces.
Therapies	
<i>Recommendation 10</i>	Supported
Clinical space planning generally	
<i>Recommendation 11</i>	Supported. The dimensions of the indicative layouts of rooms should be based on the ergonomic data available in guidance documents HBN 00-02 Sanitary spaces and HBN 00-03 Clinical and clinical support spaces.
Support Services Planning	
<i>Recommendations 12&13</i>	Supported

Efficiency of planning	
<i>Recommendations 14&15</i>	Supported
Reference design	
<i>Recommendations 16,17&18</i>	Supported. In regard to recommendation18 it would not be unreasonable to recommend that the reference design should avoid using irregular shapes that make planning for flexibility and efficiency less achievable.
Design Quality	
<i>Recommendation 19</i>	Supported. A+DS have confirmed their availability to assist in preparing a Design Statement
Costs	
<i>Recommendations 20</i>	Supported

Date: Wednesday, April 11 2012 11:19 AM
Subject: RHSC/DCN : Reference Design
From: Donna Stevenson
To: Colin Proctor [REDACTED]
Attachments: 2nd email re RHSC & DCN 1.200 Drawings .msg; RHSC & DCN 1.200 Drawings .msg; RHSC + DCN - Little France - Reference Design.msg; RHSC DCN Project Review table 20120312.doc

Colin

We had a brief discussion some time ago regarding the extent to which NHS Lothian intend to mandate elements of the Reference Design which it has been developing. I had a discussion some weeks ago (referring to the drawings which had been produced at that stage and which are attached for reference) and I expressed concern at the extensiveness of the mandation proposed.

Brian Currie undertook to let us have a paper on the topic and the relevant Mott Macdonald paper is also attached.

The paper says that Operational Functionality which is summarised paragraph 4.1 of the report, an extract of which states:

“The Operational Functionality will be defined in the following constituents of the Reference Design:

- _ 1:500 Interdepartmental Layouts;
- _ 1:200 Layouts; and
- _ 1:50 Generic and Key Room layouts

There is absolutely no latitude for alternative solutions for the departmental layouts on the RHSC + DNC facility. This is because of the number of fixed points that the design must address, for instance linkages to the existing RIE and the constrained nature of the site. With the interdepartmental layouts thus fixed, it follows that there no latitude for alternative solutions to the departmental room layouts. As a consequence of this it is apparent that circulation routes within departments also need to be mandatory if the operational functionality is to be retained as agreed. Minimum corridor widths will also be mandated in the Reference Design and in the D&C Output Specification as is the norm. Since communications spaces including lifts and stairs, general communications routes and servicing solutions are independent of the Clinical Functionality requirement these are not made mandatory in the Reference Design but indicated for information only.”

The paper refers to SFT’s standard form PA which refers to but does not define Operational Functionality in relation to design approval. The NHS standard form previously referred to clinical functionality which was accepted by the public sector in the design approval clause. The point though is that those concepts would be defined the point when the design had been developed during the course of competitive dialogue, rather than at the outset of the procurement.

Among the issues which arise in relation to the extent of mandation are :

1. The acknowledgement that the preference is that the clinical sign off which has been obtained to date does not need to be revisited though I would have thought that there would be the scope for some further adjustment/sign off during the dialogue phase;
2. The acknowledgement of the constraints of the arrangements (eg as regards connection to the existing building and servicing arrangements) to be agreed with the existing PFI provider.
3. The issue arises as to what happens if the mandated elements in the ITPD either are not deliverable either due to concerns re buildability or cost or indeed if NHSL changes its views (as happened recently in relation to part of the proposed patients hotel).
4. The conditions of SG funding support require that “As referred to in the then Acting Director General Health and Social Care’s letter of 22 March 2011 the Board will be required to satisfy both the Scottish Government and the SFT that it has

sought to minimise capital and operating costs within the agreed project scope and that it has undertaken a whole of life cost analysis of bidders' proposals. This will be scrutinised at critical points in the procurement (i.e. Pre-OJEU, pre-dialogue, pre-final tender, pre-preferred bidder and pre-financial close) through the KSR process." The question arises as to whether the extent of mandation allows bidders sufficient scope to provide proposals to minimise capex and opex costs.

5. The recommendation which we included in our comments on the OBC is :

"That the extent of negotiable and non negotiable elements is developed by the Board on the basis that bidders should be provided with maximum flexibility to propose their own design and engineering solution, within defined parameters, and avoiding the need to open up the clinical adjacencies which has been settled with the Board's clinicians to date and reflecting the constraints in the site as reflected in SA6. The final position is to be reviewed by SFT as part of the Pre ITPD KSR."

There is an issue as to whether the mandation of clinical adjacencies needs to go so far as, for example providing that there is absolutely no latitude for alternative solutions for the departmental layouts" including circulation space and ward configuration and room orientation.

The paper refers in passing to the SFT Project Review which looked at the Reference Design at a much earlier stage and contained a number of recommendations. I attach the latest table with NHSL's responses noted. We will need to consider how these relate to the Reference Design as now developed and how SFT is going to assess whether they have been satisfied. For example concern was expressed re the shape of the building and clarity is required as whether changes can be accommodated if there is to be "absolutely no latitude for alternative solutions for the departmental layouts"

I have asked Brian for some dates for a meeting for us to discuss the paper and I will check your diary for availability. Perhaps we could have a discussion before the meeting as well.

Regards

Donna

From: [Donna Stevenson](#)
To: [Andrew Bruce](#)
Subject: FW: RHSC/DCN Reference Design
Date: 26 April 2012 12:00:58
Attachments: [image001.jpg](#)

Andrew

For information this was the list of issues which we used as a basis for today's discussion. I will copy you in on my summary of agreed items with Brian and also send an email re the design development point.

Regards

Donna

Donna Stevenson
Associate Director
Scottish Futures Trust

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SFT Logo



From: Donna Stevenson
Sent: 26 April 2012 09:56
To: Colin Proctor
Subject: RHSC/DCN Reference Design

Colin

As arranged I note below the key issues which we discussed at our meeting with Peter and Andrew yesterday. I have left a copy of the plans on your seat for the meeting at 10am.

1. Is NHSL confident that the cost of the Reference Design will be bid within the construction cap? Has Thomson Gray signed off on its cost estimate? TS4 is reflected in the OBC and hence the construction cap, subject to subsequent inflation adjustments: is it consistent with subsequent development of the Reference Design (taking account of the proposed mandatory elements)?
2. Is NHSL confident as to the buildability of the Reference Design (taking account of the proposed mandatory elements)?
3. Given the stage of development of the design and the range of rooms covered, why is there only 52% which have been developed to 1:50 stage (MM paper at 4.1);
4. As the bidders develop the detail of the remaining rooms (and the remainder of the

development) :

- 4.1. What impact might that have on the existing layouts which are stated to be mandatory?
- 4.2. What implications might that have for the need for clinical sign off : is that to be covered by the clinical input within the project team rather than additional wider clinical engagement?
- 4.3. Given the constraints of the site and the degree of mandatory elements proposed by NHSL, what in practice is the scope for Bidders to develop their preferred option for M&E and communication space?
5. Given the proposed mandatory elements, would a design which replaces curved walls and corridors with straight / perpendicular lines be acceptable?
6. Given the departure of the reference design team, is NHSL satisfied that it has sufficient technical support to evaluate the bids and the sufficient information is available to enable that process to be carried through effectively?
7. How would any change proposed by NHSL from a clinical or operational perspective or required by planners , other statutory bodies or third parties be accommodated given the proposed scope of the mandatory elements?
8. Has NHSL now addressed all of the recommendations of the Project Review as brought out in the Atkins Report. Bearing in mind that the Reference Design team will be disbanded at the issue of OJEU? SFT will look to NHSL to confirm that that these have been implemented at the Pre ITPD KSR. NHSL should note that SFT is not signing off on the design.
9. The office element seems high.

I hope this is helpful.

Regards

Donna

Donna Stevenson
Associate Director
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NHS Lothian

Project Steering Board Meeting
11th May 2012

Susan Goldsmith, Director of Finance

RHSC + DCN – LITTLE FRANCE REFERENCE DESIGN

1 Purpose of the Report

- 1.1 The purpose of this report is to recommend that the Project Steering Board confirms that the report “RHSC + DCN – Approach to Reference Design dated March 2012” (copy attached) is used as a basis for accurately conveying NHSL’s (the procuring body) intentions to bidders in relation to mandatory and non mandatory elements. This will allow conclusion of all associated ITPD documents.

Any member wishing additional information should contact the Executive Lead in advance of the meeting.

2 Recommendations

The Board is recommended to:

- 2.1 Approve the implementation of the following as described in Section 7 Conclusions of the report “RHSC + DCN – Approach to Reference Design dated March 2012”:
- 2.2 Mandatory Elements - comprising the information that defines Operational Functionality and as indicated in Interdepartmental Layouts (1:500), Departmental Layouts (1:200) and Room Layouts (1:50) for Key and Generic Rooms. As a consequence of the particular project and site issues, departmental corridor layouts are also mandated as a result.
- 2.3 Non Mandatory Elements - Information that has been developed to verify the feasibility of the Reference Design in terms of architecture and engineering and information developed for issue to Bidders in regard to site and servicing information.
- 2.4 Bidders will be prohibited from revisiting the Schedule of Accommodation and Operational Functionality during the procurement process given the significant investment in time and money made by NHSL in the production of the Reference Design.

- 2.5 Confirm that Variant Bids (of any nature) will be prohibited by bidders ensuring an optimum and competitive response from the market through recognition of a “level playing field” where no one potential bidder will be significantly advantaged over another.* see comment on 4.2

3 Discussion of Key Issues

- 3.1 The Reference Design has been concluded following the Project Steering Board’s approval in July 2011 of the strategy for it’s development given the benefits arising. These remain as previously reported:

- Enhanced cost certainty at OBC
- Clinical Design complete – very limited future engagement of scarce clinical resource
- Shortens Competitive Dialogue Phase
- Utilises available programme time – parallel with Consort Negotiations ie no overall delay to strategic programme
- Minimises abortive design cost for unsuccessful bidders

- 3.2 The report “RHSC + DCN – Approach to Reference Design dated March 2012” was discussed in detail with SFT on 26th April, 2012. SFT subsequently confirmed that the meeting was “useful”. NHSL have received no correspondence recommending adjustment to this report or its recommendations from SFT.

- 3.3 The Project Steering Board are reminded that because of the particular and unique issues surrounding the development of this facility on this site, greater input and a more mature Reference Design has been necessary than may be the case in other Healthcare NPD projects.

These issues include:

- The connections required to the existing RIE building – predetermined by the location of the existing A&E department and Critical Care.
- The restricted nature of the site bounded on all sides as it is by existing road and services infrastructure and key access/egress points.
- Height and massing restrictions imposed by the local planning authority.
- Flood protection measures and Public Transport Infrastructure requirements.
- The site being part of an existing PFI / PPP site.
- Interface and Access requirements with the existing RIE PFI service provider.

- 3.4 Following the close of Competitive Dialogue, and the appointment of the Preferred Bidder, the Reference Design will be replaced with the Preferred Bidder’s full design solution.

4 Key Risks

- 4.1 Room Layouts have been developed for Key and Generic Rooms covering 54% of the rooms. This substantially reduces the exposure of the risk carried by NHSL in regard to areas specified being adequate to accommodate equipment required

albeit there is a minor residual risk for the rooms that remain to be drawn. However, these rooms are significantly less complex operationally.

- 4.2 Given the previous healthcare planning input to the project from an external Healthcare Planner and NHSL's extensive internal resource, the lack of an appointed adviser as Healthcare Planner during procurement is deemed to be a minor and manageable risk.

- * Potential variant options which may be proposed by bidders and must be resisted post short listing to ensure maintenance of a "level playing field" and strict compliance with procurement rules could be:

- Elimination of Basement
- Off site Energy Centre
- Off site FM / Goods / Waste Handling Yard
- Shared Facilities and Support Services
- Removal of Helipad
- Removal or shrinkage of Communication Spaces (The Hub)

5 Risk Register

- 5.1 No significant new risks have been identified to those previously identified in the project risk register.

6 Impact on Health Inequalities

- 6.1 The findings of the Equality Diversity Impact Assessment for the separate projects to move RHSC and DCN to Little France are to be revisited as a joint project in advance of the submission of the Full Business Case. The Project Steering Board will be appraised of findings and recommendations to address inequalities.

7 Impact on Inequalities

- 7.1 The findings of the Impact Assessment for the separate projects to move RHSC and DCN to Little France are to be revisited as a joint project in advance of the submission of the Full Business Case. The Committee will be appraised of findings and recommendations to address inequalities.

8 Involving People

- 8.1 NHSL Partnership have been engaged in developing these proposals for project personnel and facilities.
- 8.2 The communications and engagement plan for the project, developed in conjunction with the Scottish Health Council and NHSL Partnership details the plans for involving and informing staff, patients, the public and other stakeholders.

9 Resource Implications

9.1 The resource implications for adviser support and NHSL staff during the procurement phase of the project have been advised previously.

Brian Currie
Project Director – RHSC + DCN – Little France
8th May 2012



List of Appendices

Appendix 1: “RHSC + DCN – Approach to Reference Design” dated March 2012 by Mott MacDonald.

ACTION NOTES

Commercial in Confidence – not disclosable under the Freedom of Information (Scotland) Act 2002

Meeting Title: RHSC + DCN – Little France – PROJECT STEERING BOARD #13

Date/Time: 11th May, 2012 / 1.00pm

Location: Craigmillar Room, PEC, RIE, Edinburgh

Attendees:	Jackie Sansbury George Walker Peter Reekie Iain Graham Carol Potter Brian Currie Susan Lloyd	Chief Operating Officer – NHSL (Chair) Non Exec Director - NHSL Director Finance + Structures – SFT Director of Capital Planning and Projects – NHSL Associate Director Finance - NHSL Project Director – NHSL Partnership Lead – NHSL
Apologies:	Susan Goldsmith Mike Baxter David Farquharson Fiona Mitchell Stuart Wilson Norman Kinnear Chris Bowring	Director of Finance – NHSL Deputy Director (Capital + Facilities) - SGHD Medical Director – NHSL Dir. Ops – NHSL - Women's, Children's + Neurosciences Director of Communications - NHSL Major Capital Projects Advisor – SGHD Director of Finance – NHS Fife

NOTES

Item

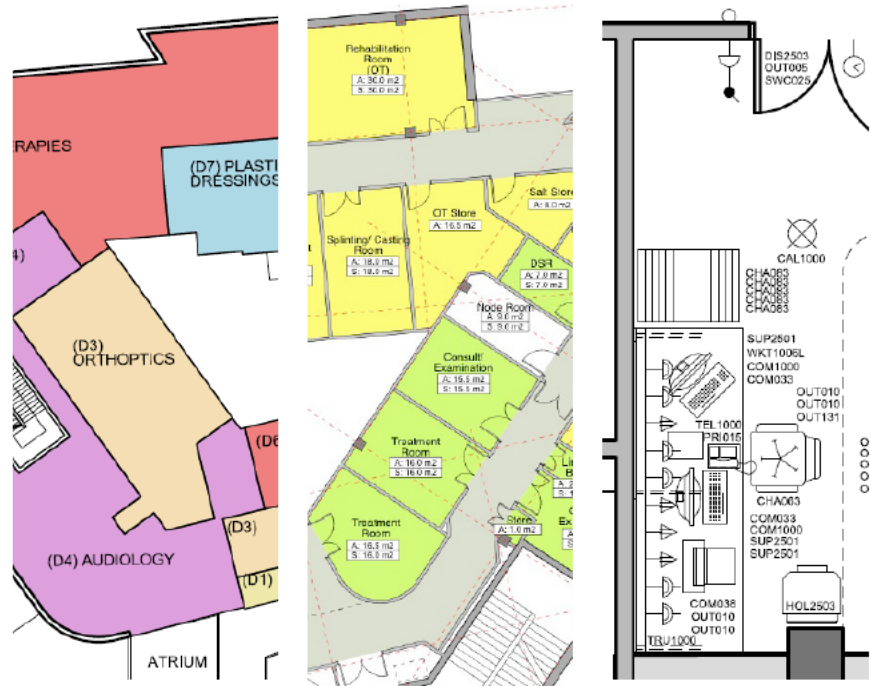
1.	Previous Notes + Matters Arising	Lead
	Revisions were agreed to previous notes (see copy attached).	
	Susan Goldsmith and Alan Payne to be consulted as to minimum attendance to form quorum.	BC
2.	Dashboard	
	Off Site Flood Works have been identified as necessary following flood modelling exercise recently undertaken by Arup. Scope and cost yet to be determined. Land registry search underway to determine ownership.	BC
	SA6 sign off by all Consort's funders has made no progress since last meeting. A proposal has been given to Consort by the last remaining bank to enable them to approve. However, this would require all funders to agree and first indications are that this will not be possible.	
	The issue, as far as NHSL understand, is not in relation to SA6 as such rather a financial issue between the bank in question and Consort.	
	JKS asked what timescale is anticipated to resolve this problem and what and when needs to be escalated?	
	It was noted that the issue will be taken to the Main Board on 23 May and thereafter to a Consort / NHSL Board to Board meeting on the 28 th May.	SG
	GW commented that it is essential that the Main Board have clarity on the possible outcomes and steps necessary to resolve.	SG / IG
	Fundraising Strategy update to be provided by SG at next meeting.	SG

ACTION NOTES

Commercial in Confidence – not disclosable under the Freedom of Information (Scotland) Act 2002

Item

3.	Equipment Update	
	Paper as tabled was noted.	
4.	Approach to Reference Design	
	Paper as tabled was approved.	
5.	Year End Financial Report	
	Paper as tabled was noted	
6.	ANY OTHER BUSINESS	
	JKS asked for an updated cost per month for delay to the delivery of the project.	BC
7.	DATE & TIME OF NEXT MEETING	
	Board Room 1 , RIE , 1.00pm – 3.00pm, 8 th June 2012	All



RHSC + DCN - Approach to Reference Design

RHSC + DCN at Little France

May 2012

NHS Lothian



RHSC + DCN - Approach to Reference Design

RHSC + DCN at Little France

May 2012

NHS Lothian

Rillbank Terrace, Edinburgh

Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
A	9 Jan 12	AGScott	PC Hampson	RD Cantlay	Draft Issue
B	25 Feb 12	AGScott	D Kelly (DL) D Stillie PC Hampson AA Duncan	RD Cantlay	Pre-issue Draft – Issued to NHSL (B Currie & N McLennan); MacRoberts (A Orr) and Ernst & Young (M Pryor)
C	20 Mar 12	AG Scott	AA Duncan	RD Cantlay	Formal Issue for Client review and approval
D	27/ Mar 12	SA Knight	AG Scott	RD Cantlay	Circulation at PME 29 Mar 12
E	30 Mar 12	AG Scott	SA Knight	RD Cantlay	Formal issue
F	4 Apr 12	AG Scott	SA Knight	RD Cantlay	Issue following final review by NHSL
G	9 May 12	AG Scott	D Stillie	RD Cantlay	Issue following review with SFT
H	30 May 12	AG Scott	K Falconer	RD Cantlay	Issue to incorporate change in wording at Sect 4.1 para 5

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Executive Summary

This report builds upon the discussions at the Project Board in July 2011 regarding procurement options for the RHSC + DCN NPD Project where it was agreed that a Reference Design would be developed to mandate elements as they relate to clinical functionality which NHSL would be required to sign off in any event under the Project Agreement.

The Reference Design for RHSC + DCN has been developed to streamline the procurement process and give greater certainty over the final design of the facility.

The key benefits are seen as being:

- Enhanced cost certainty at OBC
- Clinical Design largely complete – very limited future engagement of scarce clinical resource
- Shortens Competitive Dialogue Phase
- Utilises available programme time – parallel with Consort Negotiations ie no overall delay to strategic programme
- Minimises abortive design cost for unsuccessful bidders

The Reference Design comprises Mandatory and Non-mandatory elements. The Mandatory elements define the Operational Functionality which NHSL will sign off in the final Project Agreement. The Non-mandatory elements comprise information produced in order to verify the feasibility of the Reference Design along with information that Bidders will require in order to complete their proposals. The Planning Permission in Principle application has also been developed in the course of the preparation of the Reference Design.

The Schedule of Accommodation based on the final Reference Design will be issued to Bidders with NHSL's original Schedule of Accommodation being made available to Bidders for information. Floor plans (at both 1:500 and 1:200 scale) have been developed for the overall facility. In addition room layouts (at 1:50 scale) have been developed for Key and Generic Rooms (covering 52% of the rooms). This substantially reduces the exposure of the risk carried by NHSL in regard to areas specified being adequate to accommodate equipment required albeit there is a residual risk for the rooms that remain to be drawn at 1:50 scale.

It is recognised that Bidders are likely to suggest revisiting the Reference Design during the Competitive Dialogue in order to differentiate themselves from other Bidders. NHSL will resist any such suggestions on the basis that the Reference Design represents the operational and clinical solution agreed by NHSL and Stakeholders. The absence of an external Healthcare Planner on NHSL's advisory team during procurement could be perceived as a risk. Given however the previous healthcare planning input to the project and NHSL's internal resource, this is deemed by NHSL to be a minor and manageable risk.

The release of the Reference Design Team to join bidding teams requires both NHSL and Technical Advisory Team to ensure that the Reference Design is fully compliant and fully understood in preparation for procurement commencing.

The following are key action points arising out of this report:

- NHSL to review and confirm the contents of this paper to allow the development of the ITPD and associated documents moving forward.
- The definition of Operational Functionality rather than Clinical/Non-clinical Functionality to be developed in the Project Agreement.
- NHSL and Technical Advisor Team to be fully briefed on the Reference Design prior to departure of Reference Design Team.
- NHSL to confirm that the Reference Design complies with their requirements and output specification;
- All members of NHSL's dialogue team (NHSL and Advisors) to be briefed on the contents of this paper; and
- Bidders to be fully briefed on non-negotiable status of Reference Design.

1. Introduction

1.1 Purpose of Report

The purpose of this report is to:

- Outline the reasons for preparing and the purpose of a Reference Design
- Outline the level of detail required in a Reference Design
- Outline the distinctions between mandatory and non mandatory elements of the Reference Design
- Application of Reference Design during Competitive Dialogue
- Outline the development of the Reference Design

The report builds upon the procurement options and recommendations endorsed by the Project Board in July 2011. The key option adopted was outlined as follows:

MANDATE CLINICAL FUNCTIONALITY

This involves developing the design to the extent required in order to fix aspects of the design as they relate to clinical functionality, as defined under the Project Agreement e.g.

- Access
- Relationships between buildings
- Adjacencies between clinical departments and between rooms
- Schedule of accommodation areas
- Room layouts (loaded)

The clinical functionality elements will then be mandated within the invitation to participate in dialogue (ITPD).

1.2 Definition of Functionality

To date, reference has been made to Reference Design in relation to Clinical Functionality. The following note extracted from the Design Development Protocol indicates how this could lead to some confusion:

Clinical functionality refers to, and only to, the project's capacity for use by the Board or its staff for carrying out the trust's clinical functions and non-clinical functions. The Board's non-clinical functions are deemed to include all hard and soft Facilities Management services retained by the Board that are out-with the bidder's responsibility.

Since 'Clinical Functionality' refers to both clinical functions and non-clinical functions, we should refer to Operational Functionality as opposed to Clinical Functionality since some of the mandatory areas of the Reference Design will cover non-clinical functions. This is in line

with the SFT Standard Form Project Agreement (NPD Model) where the reference is to Operational Functionality (See Appendix A) – largely because the standard form will also be adopted in non-healthcare projects. (Note that Operational Functionality is not defined in the Standard Form as noted in the extract in the SGHD Standard Form also indicated at Appendix A. This will need to be considered by the Procurement Workstream when developing the draft PA for inclusion in the ITPD.)

2. Reasons for Preparing a Reference Design

2.1 Background to introduction of Reference Designs

The use of a Reference Design in Non Profit Distributing (NPD) projects is being promoted by the Scottish Futures Trust (SFT) and the Scottish Government (SG).

Previously on Public Private Partnership (PPP) projects in Scotland, a Conventionally Procured Assessment Model (CPAM) design was sometimes prepared but this was at a strategic level and prepared principally for the purposes of feasibility and to form the basis of the Outline Business Case (OBC) capital costs.

The benefits offered by the use of Reference Designs in NPD projects in the health sector are as follows:

- To give greater certainty in OBC costings;
- Since Operational Functionality design risk sits with the Procuring Authority anyway, this can be developed by the Procuring Authority to inform the procurement process;
- To give greater certainty over final design – to reduce the risk of the Board ending up with a design it does not wholly favour;
- To avoid detailed input being required from Clinicians during the Competitive Dialogue process where the Clinicians would have to consider in detail, three solutions with three separate Bidders;
- Very limited engagement of a scarce clinical resource being required during the Competitive Dialogue process
- Capitalises use of available programme time. At RHSC + DCN, design development running parallel with Consort Negotiations ie no overall delay to strategic programme;
- Minimises abortive design cost for unsuccessful bidders; and,
- To streamline the NPD procurement process thus reducing the cost and programme to both the Procuring Authority and Bidders.

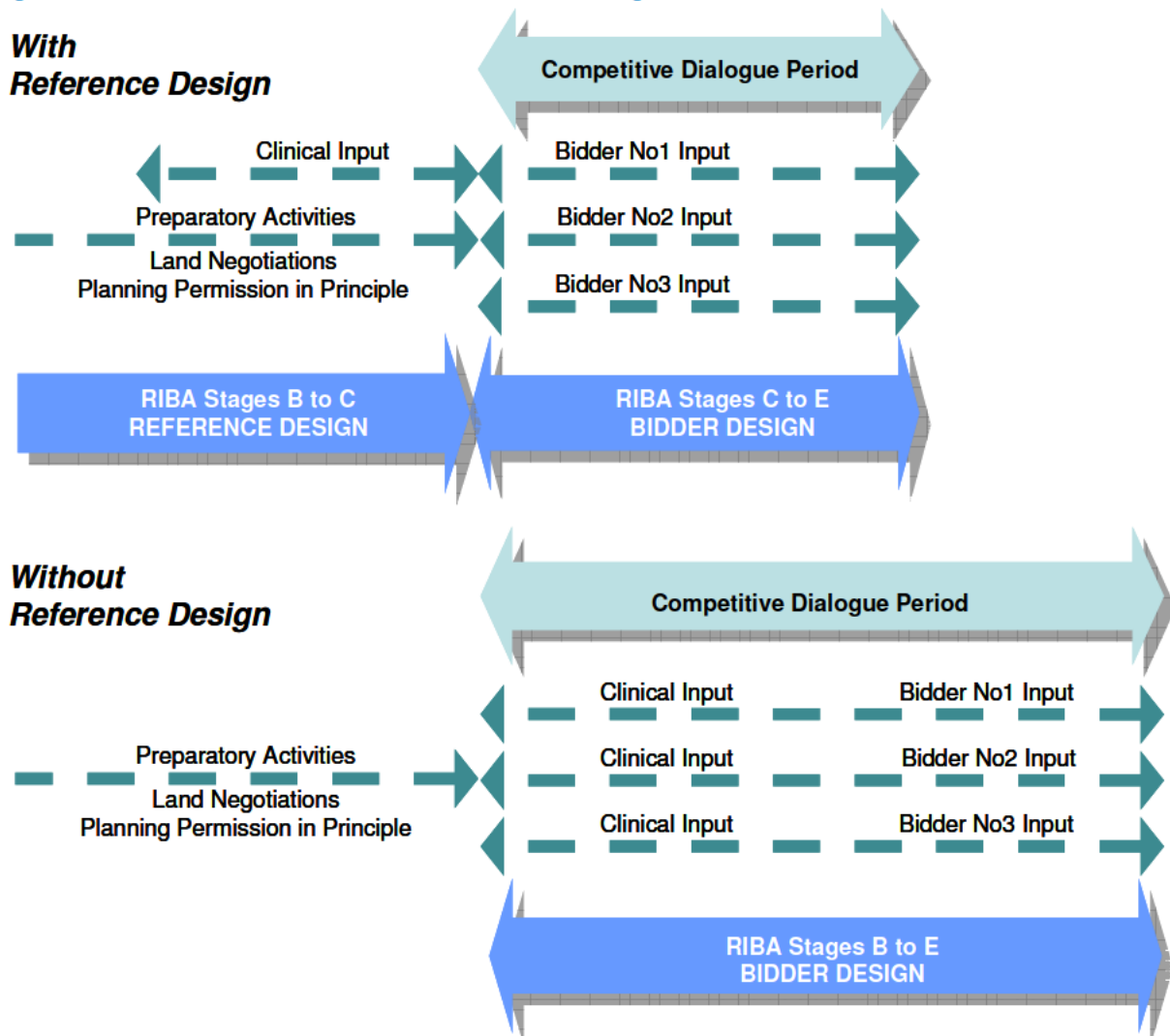
2.2 Reference Design and Other Project Information

As noted above, the principal purpose of the Reference Design is to define Operational Functionality. However during the preparation of the Reference Design, other information will be prepared both as a by-product of undertaking the reference design and as a general project requirement. This will include the Planning Permission in Principle (PPiP) application, servicing information and boundary definitions. Whilst this information will be made available to the Bidders, its function and purpose is quite separate from those areas of the Reference Design that define Operational Functionality. This distinction is outlined in the list of Reference Design Deliverables at Appendix B.

2.3 Resource Input and Programme

The following shows the programme and resourcing advantages of procurement using a Reference Design. With a Reference Design RIBA Stages B to C are carried out in advance of procurement. The remainder of the RIBA Stages, C to E are completed by Bidders. With no Reference Design, Bidders have to complete the full design, Stages B to E, during a longer competitive dialogue period and with a threefold increase in Clinical input.

Programme and Resources With and Without a Reference Design



Source: RHSC + DCN Procurement Model

3. Level of Development of Reference Design

3.1 Basis for Level of Development Required

The level of development of the Reference Design is predicated upon the definition of Operational Functionality defined in the Project Agreement. This is based on the Standard Form definition outlined in Appendix A. The constituents of the Reference Design are detailed in the matrix of Reference Design Deliverables at Appendix B. The level of development can be described as approximating the RIBA Plan of Work, Stage C – Concept Design (See Appendix C).

On the RHSC + DCN project greater input is required in the preparation of the Reference Design than would normally be the case. This is because of the particular and unique issues surrounding the development of this facility on this site. These issues include:

- The connections required to the existing RIE building – predetermined by the location of the existing A&E department;
- The restricted nature of the site bounded on all sides as it is by existing road and services infrastructure;
- Height restrictions imposed by the local planning authority
- Flood protection measures required;
- The site being part of an existing PFI / PPP site; and
- Interfaces required with the existing RIE PFI service provider

The requirement however to prepare and detail services interfaces, detailed site information, 1:50 layout drawings and attendant equipment requirements goes beyond the normal Stage C level of development thus the Reference Design should be described as being at RIBA Stage C+.

These issues have combined to make the development of the RHSC + DCN Reference Design considerably more complicated and resource intensive exercise than would normally be required in other NPD projects of this scale.

The Reference Design can be described as a graphic representation of NHSL's accepted design solution to the requirements of:

- The Clinical Output Specification;
- The Board's Construction Requirements;
- The Soft FM Specification;
- The Schedule of Accommodation; and
- The Adjacency Matrix.

To achieve this the 1:500 scale departmental adjacency layouts, the 1:200 scale department layouts and 1:50 scale generic and key room layouts were developed in conjunction with and signed-off by NHSL.

3.2 Other Project Information

Whilst the principal purpose of the Reference Design is to define Operational Functionality, during the preparation of the design other areas of the design proposal need to be developed in order to test the viability of the solution being proposed. These deliverables are included in the matrix of Reference Design deliverable at Appendix B. An example is the PPIp application, where the footprint, massing, roads and footpaths have to be developed in consultation with NHSL and Local Planning Authority. A further example is the servicing solution. The Reference Design team has taken cognisance of servicing requirements to demonstrate that the design being developed is feasible. However any such servicing solutions developed will be indicative only since they form no part of the Operational Functionality as defined in the Standard Form. It will be for the Bidders to develop these areas since the risk is outwith that of Operational Functionality and must rest with the Bidders and, ultimately, Project Co.

4. Mandatory and Non Mandatory Elements of Reference Design

4.1 Reference Design Mandatory Elements

The Operational Functionality requirements for the RHSC + DCN will be outlined in the Clinical Output Specification, Schedule of Accommodation and the Adjacency Matrix.

The ITPD will state that it is mandatory that Bidders develop proposals that comply with the Operational Functionality solution as detailed in the Reference Design.

The Operational Functionality will be defined in the following constituents of the Reference Design:

- 1:500 Interdepartmental Layouts;
- 1:200 Layouts; and
- 1:50 Generic and Key Room layouts

There is absolutely no latitude for alternative solutions for the departmental layouts on the RHSC + DNC facility. This is because of the number of fixed points that the design must address, for instance linkages to the existing RIE and the constrained nature of the site. With the interdepartmental layouts thus fixed, it follows that there is no latitude for alternative solutions to the departmental room layouts. As a consequence of this it also follows that circulation routes will be dictated if the operational functionality is to be retained as agreed, however these in themselves are not considered to be mandatory. Instead minimum corridor widths are mandatory for these and will be indicated in the Reference Design and in the D&C Output Specification as is the norm. Since communications spaces including lifts and stairs, general communications routes and servicing solutions are independent of the Clinical Functionality requirement these are not also mandatory in the Reference Design but indicated for information only. However such spaces will be required to comply with the requirements in the D&C Output Specification, in particular the requirement for Hospital Street communications spaces to be a minimum of 3.0 m in clear width.

Whilst there is an absolute requirement to maintain Operational Functionality, Bidders will have latitude and will be encouraged to develop innovative solutions for the external and internal architectural expression and site layout for the Facility. The Reference Design as currently developed contains certain features incorporated primarily for the purpose of developing an architectural solution suitable for inclusion in the Planning Permission in Principle application. In the ITPD, Bidders will be advised that features such as curved walls and the external landscaping forming part of the Reference Design are indicative only given that these have no influence on the Operational

Functionality. Bidders will therefore be encouraged to apply a unique design strategy founded on sound architectural principles whilst complying with the mandatory elements of the Reference Design.

Regarding the Schedule of Accommodation, the Reference Design will result in areas that differ from the precise Board requirements simply as a function of the design process. It will be these areas that Bidders will have to adopt since these will have been agreed with NHSL. The Schedule of Accommodation developed by NHSL should however be issued for information to Bidders (in the Data Room) to indicate the minimum acceptable areas should any minor adjustments be required during the design development process. This will only apply to those elements detailing the Operational Functionality. Areas such as service spaces (including risers) and Hard FM spaces will be for the Bidders to determine since responsibility and risk for these as non operational spaces will ultimately rest with Project Co.

Whilst the Schedule of Accommodation will indicate areas, 1.50 room layouts will determine and fix the proportions of spaces, width to length, so that these proportions will also be defined for the purposes of Operational Functionality.

The 1.50 layout drawings included in the Reference Design will cover the generic and key rooms only. Generic Rooms are those rooms that are replicated more than four times across the facility. Key rooms are those that have critical operational requirements which NHSL has identified for more detailed consideration and development at this stage. These include major spaces in the Emergency Department, operating theatre, radiology and outpatients departments. In RHSC + DCN there are approximately:

- 1812 rooms in total;
- 207 are covered under 75 key room types and;
- 730 are covered by 26 generic room types;

The Reference Design is therefore developed in full at 1.500 and 1.200 scale. At 1.50 scale, where individual room layouts are detailed, the coverage is 52% of the total number of rooms (equating to 41% of the net floor area). This accounts for 937 rooms leaving a total 875 for which 1,50 layout drawings will not be included in the Reference Design.

The requirements for these remaining rooms will be detailed in a combination of Room Data Sheets, the Equipment Responsibility Matrix and the Environmental Matrix.

The level of development of Room Layouts in the RHSC + DCN Reference Design greatly reduces the risks of room sizes and equipment requirements being incompatible ie rooms not being large enough to accommodate the equipment required. Hitherto, projects have been procured where this exercise is undertaken by the Bidders/Preferred Bidder with the risk of any changes being required to maintain and achieve operational functionality having to be borne by the Procuring Authority. With the level of design development in RHSC + DCN this risk is now reduced to the remaining 48% of rooms (875) none of which are key rooms or generic rooms. It should be noted however that the development risk of these Operational spaces does remain albeit this risk is likely to be minor given the low cost or cost neutral solutions that are likely to be found. Further, during the Competitive Dialogue period, Bidders will be requested to review these residual rooms and associated equipment requirements and to highlight any issues they may have so that appropriate solutions can be found and agreed with the Board during bidding process. This will further mitigate, if not eliminate any risk to be borne by the Board following the appointment of the Preferred Bidder.

4.2 Non-mandatory Elements of the Reference Design

Outwith those mandated elements of the Reference Design, Bidders will have freedom to develop proposals constrained only by the requirements of the Board's Construction Requirements. Bidders will be positively encouraged to develop innovative solutions in those areas not prescribed by the Reference Design. Notwithstanding this, the information forming the Reference Design also includes elements that Bidders must address during the bidding process as follows.

As noted above, only certain elements of the information included in the Reference Design will be mandatory; those that define the Operational Functionality. The Bidders will however also be required to take cognisance of the other parts of information issued either as part of the ITPD or included in the Data Room insofar as this will detail fixed points such as site boundaries and services interconnections. Whilst compliance with this information will be required, it must be considered outwith the definition of Operational Functionality and the risks associated with the validity of this information will ultimately be borne by Project Co.

The table at Appendix B gives a detailed analysis of the Reference Design deliverables distinguishing those that are mandatory and those that are non-mandatory. The Non-mandatory elements of the Reference Design may be considered under the following:

- Information that would be prepared and made available to Bidders even in the absence of a Reference Design; and
- Information that has been prepared as a consequence of preparing the Reference Design.

The information that would be prepared irrespective of the preparation of the Reference Design includes such matters as:

- Site boundary drawings;
- Services interconnections;
- Brief for a Standalone Energy Centre and FM Goods Handling + Distribution
- PPIp application drawings; and
- Wayfinding strategy.

This information is made available to supplement the mandatory requirements outlined in the Board's Construction Requirements and the Bidders will be required to comply with these requirements and accept responsibility for verifying their validity.

The following elements will be developed as a consequence of the Reference Design being prepared. This is deemed to be non-mandatory and will include such matters as:

- Structural engineering solutions;
- Building Services engineering solutions;
- Servicing strategies and space allocations; and
- Hard FM solutions and space allocations.

Information issued in this regard will be issued to the Bidders for information only so that they can understand the intent of the Reference Design. The Bidders will however have to refer to the Board's Construction Requirements for the detailed requirements for matters such as the structural engineering, servicing and Hard FM requirements for which they will ultimately carry the risk. Bidders will need to be advised the Board's Construction Requirements will always take precedence over the Reference Design for matters not defining Operational Functionality.

Communication space indicated in the Reference Design will also be non-mandatory but any minimum widths specified will be treated as mandatory. Any courtyards and terrace spaces are treated as communications spaces. However whilst these spaces will need to be indicated on the Schedule of Accommodation they need to be excluded from the measurement of the Gross Internal Floor Area ie indicated below the line.

4.3 Room Data Sheets

Room Data Sheets generally comprise the following sections:

- Section 1: Activities, Personnel, Relationships and Space Data (areas);
- Section 2: Environmental Requirements;
- Section 3; Generic Architectural Requirements; and
- Section 4: Equipment Requirements.

The information contained in Room Data Sheets is generally a mix of specific and generic information for instance the architectural requirements are specified in terms of compliance with particular NHS guidance such as Health Technical Memoranda with Bidders ultimately being required to specify compliant materials / components. Similarly the Environmental Requirements specify parameters and criteria that need to be met for which the Bidders will be required to advise the levels that will be achieved in their particular design.

The Equipment requirements will also have an element of generic information particularly regarding the Group 1 equipment where minimum requirements will be outlined. NHSL will outline the generic requirements for items such as sinks, taps, and wash hand basins with the Bidders advising on the specific manufacturer and components selected during the Preferred Bidder and post Financial Close stages. The remainder of the equipment will be for NHSL to specify and this will be mandated to the Bidders.

Previously in PFI and PPP projects, draft or indicative Room Data Sheets could be issued with an Invitation to Negotiate (ITN) with the responsibility for completion resting with the Preferred Bidder to be carried out in conjunction with NHS Board. In NPD projects with a Reference Design there is a requirement for a more complete set of Room Data Sheets to be available to Bidders. Therefore, the Room Data Sheets for the RHSC + DCN facility are being prepared as follows:

- Key and Generic Rooms. These have been developed as part of the Reference Design Room Layouts. The equipment is listed on the drawings in line with the Equipment Responsibility Matrix. The architectural section prepared during the development of the Reference Design Team is transposed on to the Room Data Sheets. The environmental requirements are scheduled (for all spaces) as part of the Reference Design Team services engineers' process.
- Non Key and Generic Rooms. These are prepared as part of the final process to have Room Data Sheets available for all spaces to be available to Bidders. The environmental requirements are detailed as noted above. The equipment is included in the Equipment Responsibility Matrix.

5. Reference Design during Procurement

5.1 Reference Design prior to Competitive Dialogue

Prior to the commencement of the Competitive Dialogue, Bidders should be clearly briefed that the Reference Design solution to Operational Functionality is mandatory as follows:

IM+PQQ

This will set out the approach to Reference Design at a high level.

Bidders Day

The approach to Reference Design will be presented in detail by NHSL and made available to Bidders along with supporting information.

ITPD

Instructions to Bidders in regard to the application of the Reference Design during the procurement period will be outlined in the ITPD. A draft of the instruction that will be given is outlined in Appendix D (to follow). This stresses the non – negotiable nature of the operational functionality elements of the Reference Design.

Where circumstances may have changed since the completion of the Reference Design these will have to be highlighted to the Bidders. It will be essential that the same clear guidance is given to all Bidders at the outset regarding what the changes are and what amendments should be made to the ITPD or information in the data room.

The evaluation criteria will also be outlined in the ITPD. Generally where a requirement of the Reference Design is deemed to mandatory, Bidders will be evaluated on a pass / fail basis. The quality criteria marked as part of the evaluation will be concentrated on the non-mandatory elements of submissions.

5.2 Variant Bids

No variant bids are to be permitted during the procurement process. This will reinforce to Bidders the mandatory status of the Reference Design.

5.3 Reference Design during Competitive Dialogue

Bidders will be instructed to comply with all mandated requirements associated with the Reference Design. During Competitive Dialogue

NHSL will stress to Bidders that the mandatory elements of the Reference Design are not a matter for debate and is the design solution that NHSL wish to see developed.

It is recognised that Bidders may seek to question NHSL's solution to Operational Functionality developed and outlined in the Reference Design in order to try and gain a competitive advantage. Bidders may employ Healthcare Planners to review and question the schedule of accommodation and design solution with a view to proposing alternative solutions. However, whilst the Reference Design represents a particular solution and, as with any design solution could be revisited for further development given the objective nature of design, this is not an option that will be considered where this impacts on the mandated elements. Any review of the Reference Design would lead to additional affordability and programme risks and the benefits of the reduced Clinical input required through the development of a Reference Design would be lost since further extensive engagement would be required with Stakeholders.

With regard to any further Healthcare Planning input being suggested by Bidders, the Board can demonstrate that a robust approach has been taken in the development of the Reference Design. NHSL has led the Healthcare Planning input on the RHSC + DCN throughout the development of the scheme. This was supported heavily by Capita in the capital funded scheme. During the course of the development of NPD project, Capita have been retained to provide reviews of critical areas and assist with the development of the Clinical Output Specifications. A health care planning review has also been undertaken by SFT. Given this level of input to date, NHSL has confirmed that no external Healthcare Planning input is required during the Competitive Dialogue process and instead the Board will rely on the in-house expertise that has led this input throughout.

The importance of adherence to the mandatory elements of the Reference Design will therefore be stressed throughout the Competitive Dialogue period

5.4 Reference Design Post Competitive Dialogue

Following the close of Competitive Dialogue, and the appointment of the Preferred Bidder, the Reference Design will be replaced with the Preferred Bidder's full design solution that is affordable and commercially acceptable. In summary, the Reference Design will have fulfilled the function required and will become extinct.

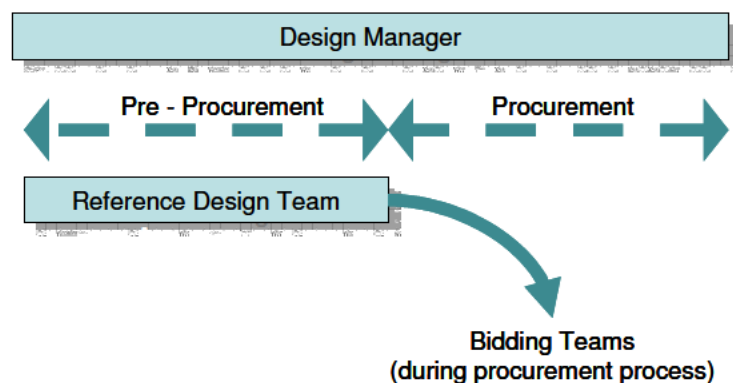
6. Development of Reference Design

6.1 Reference Design Team Appointment

The Reference Design is developed by a Reference Design Team. In the RHSC + DCN project, the incumbent design team from the capital funded project was commissioned on the basis of the knowledge held regarding the project. In this instance the Reference Design Team were ring fenced for the Reference Design development function only so that they could be released to join bidding teams during the procurement stage. This is indicated in the diagram below.

This approach meant that there was complete separation between the Technical Advisor team (involved in the development of procurement and contract documents) and the Reference Design Team (engaged at arms length to develop the Reference Design). A Design Manager was also appointed to provide the linkage so that the Reference Design Team prepared a solution that was consistent with that required by the Technical Advisory team without giving the Reference Design Team any understanding or involvement in the development of the procurement and contractual elements of the project. This was vital in order that there was a level playing field after the Reference Design Team joined various bidding organisations.

Reference Design Team Roles



Source: RHSC + DCN NPD Model

6.2 Brief for Reference Design

The Brief for the Reference Design came from the Clinical Briefs developed by NHSL (being adapted for inclusion in the ITPD as Clinical Output Specifications), the Schedule of Accommodation and the Adjacency Matrix. (For RHSC + DCN, the Reference Design also relied on briefing information developed for the capital procured scheme.) The brief also includes the Soft FM construction requirements for those elements of FM to be retained by Board.

As previously noted, the Reference Design Team is also responsible for the PPiP application; it will also develop the site information required by Bidders such as utilities locations and site layouts.

Whilst the foregoing outlines the minimum requirements for a Reference Design, the brief for a Reference Design Team needs to be prepared on a project by project basis i.e. it may include assisting in site selection, the development of enabling works; negotiations with third parties such as utility providers; procurement and interpretation of site investigations; legal issues such as boundary definitions. The core will however be to develop the Reference Design mandatory elements indicating the Operational Functionality.

6.3 Reference Design Commentary

In addition to the drawings and documentation that will constitute the Reference Design, a commentary will be required in the ITPD to outline:

- The basis of the Reference Design solution;
- Areas for further consideration i.e. those areas where the Reference Design Team may not have fully resolved particular issues or compromises have had to be made;
- The Mandatory and Non-mandatory elements (as outlined in the Appendix B);
- The application of the Reference Design during the procurement process.

6.4 Reference Design Sign-off and Handover

A feature of the RHSC + DCN as noted above is that the Reference Design team will not be retained by NHSL during the procurement period. The Reference Design will therefore have to be handed over to the Technical Advisory team and actions will have to be taken to cover for the fact that the Reference Design team will not be available to address queries during the procurement process.

In terms of the handover and sign-off of the Reference Design, the following matters will have to be addressed:

- Is the Reference Design fully aligned with the requirements of the Clinical Output specifications;
- Has NHSL taken ownership of the Reference Design on the basis that some areas of the design will be a compromise between the requirements and what can be achieved through design;
- Is the Reference Design fully aligned with the Board's Construction Requirements – architectural, engineering and Soft FM requirements;

The Technical Advisory team during procurement must be in a position to fully understand the development of the Reference Design from a technical point of view. The Team will need to take ownership of the design as if it was its own work.

In order that a robust handover and sign-off of the Reference Design is achieved, the following actions are required to address and mitigate the issues listed above:

- NHSL has signed off on the 1:500 layouts. NHSL will be required to do the same for the 1:200 layouts and the 1:50 Key and Generic Room layouts. This will need to be in place before the Reference Design Team is released.
- NHSL is currently in the process of finalising the Clinical Output Specifications. This is being carried out by the team involved in NHSL's input to the Reference Design. Whilst this should ensure that the Clinical Output Specifications and the Reference Design are fully aligned, a final review should be carried out by NHSL working in conjunction with the Reference Design to ensure this is the case.
- NHSL needs to highlight now any concerns regarding the Reference Design. Whilst NHSL will ultimately sign-off the Reference Design through the 1:500s, 1:200s and the 1:50s, NHSL should advise the Technical Advisory team of any areas where it believes further development may be required so that this can be conveyed to the Bidders.
- The alignment of the Reference Design with NHSL's Construction Requirements has largely been achieved with the involvement of the Reference Design Project Manager in the development of the ACRs which includes the Soft FM Construction Specifications. Notwithstanding this, there is a considerable task to be undertaken to ensure that all of the Technical Advisory Team have a full understanding of the Reference Design. This will need to be achieved through the two teams (particularly in regard to Engineering) working together over a period until complete knowledge transfer is achieved. This will entail the two teams

- meeting regularly and the Technical Advisory Team undertaking a thorough and detailed review of the Reference Design.
- The Technical Advisory team must be in a position to adopt full ownership of the Reference Design prior to the departure of the Reference Design Team. Any areas of concern should immediately be highlighted and a satisfactory resolution obtained prior to procurement commencing.

7. Conclusions

7.1 Operational Functionality

The term Operational Functionality should be used in preference to Clinical and Non-Clinical Functionality given that both Clinical and Non-clinical Functionality are being mandated in the Reference Design.

7.2 Purpose of Reference Design

The purpose of developing a Reference Design is to assist the procurement process to:

- Assist with OBC and pre-procurement costing;
- Provide greater certainty over the final design solution;
- To optimise the input required from Stakeholders;
- Capitalise programme time allowing other activities to take place in parallel to the design development process;
- Reduce bidding costs; and
- To streamline the procurement process.

7.3 Mandatory and Non-mandatory Elements of Reference Design

There are two distinct elements to the Reference Design:

Mandatory

This comprises the information that defines Operational Functionality and is indicated in Interdepartmental Layouts (1:500), Departmental Layouts (1:200) and Room Layouts (1:50) for Key and Generic Rooms.

Non-mandatory

This comprises two elements;

- Information that has been developed to verify the feasibility of the Reference Design in terms of architecture and engineering – the area where Bidders will have freedom to propose innovative solutions; and
- Information developed for issue to Bidders in regard to site and servicing information.

7.4 Schedule of Accommodation

The Schedule of Accommodation based on the Reference Design drawn layouts should be issued to Bidders with the target Schedule of Accommodation being made available for information only.

7.5 Non-Key and Non-Generic Room Layouts

There is a risk pertaining to the Room Layouts that have not been developed as part of the Reference Design in that there may be issues surrounding orientation and space requirements that will only become evident when these are developed following appointment of the Preferred Bidder. This risk is borne by NHSL but it is believed to be minor and manageable given the level of development in the Reference Design covers 52% of all spaces and covers the key and generic rooms.

7.6 Reference Design During Procurement

There is a concern that Bidders may seek to revisit the Schedule of Accommodation and Operational Functionality during the procurement process. Bidders must be advised that this is not an option given the investment made by NHSL in the Reference Design and revisiting the design would negate any advantages in having carried out this work. The absence of a Healthcare Planner on NHSL's advisory team during procurement is a risk. Given however the previous healthcare planning input to the project, this is deemed by NHSL to be a minor and manageable risk.

7.7 Reference Design Team Handover

The Reference Design Team for RHSC + DCN is being released to join Bidding teams. A thorough and detailed handover between the Reference Design Team and NHSL and Technical Advisory Team will have to be undertaken in the lead up to the conclusion of the Reference Design.

7.8 Key Action Points

The following are key action points arising out of the foregoing:

- NHSL to review and confirm the contents of this paper to allow the development of the ITPD and associated documents moving forward.
- The definition of Operational Functionality rather than Clinical/Non-clinical Functionality to be developed in the Project Agreement.
- NHSL and Technical Advisor Team to be fully briefed on the Reference Design prior to departure of Reference Design Team.
- NHSL to confirm that the Reference Design complies with their requirements and output specification;
- All members of NHSL's dialogue team (NHSL and Advisors) to be briefed on the contents of this paper; and

- Bidders to be fully briefed on non-negotiable status of Reference Design.

Appendices

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Appendix A. SFT & SGHD Standard Form Definitions

A.1. Scottish Futures Trust Standard Form PA

The following is an extract from the SFT Standard Form Project Agreement (NPD Model) Version 1 dated 16 June 2011. Note the reference to Operational Functionality in regard to Authority design approval.

Authority design approval

12.5 The Authority confirms that, as at the date of this Agreement, it has reviewed such of Project Co's Proposals as have been initialled by the Authority and that, subject to any qualifications and/or comments notified by the Authority to Project Co in writing and set out in [] such proposals satisfy the Authority's requirements in respect of Operational Functionality, so far as can reasonably be determined given the level of detail of Design Data which has been disclosed to the Authority.

A.2. SGHD Standard Form PA

The following is extract from the SGHD Standard Form Project Agreement Non-profit Distributing (NPD) Model: Version 1. This outlines NHSL's responsibilities in regard to design approval and the reference to Clinical Functionality. The definition of Clinical Functionality, defined in Part 1 to the Schedule is also give.

Project Agreement Main Body Clause 17.6

Board design approval

17.6 NHSL confirms that, as at the date of this Agreement, it has reviewed such of Project Co's Proposals as have been initialled by NHSL and that, subject to any qualifications and/or comments notified by NHSL to Project Co in writing and set out in [] such proposals satisfy NHSL's requirements in respect of Clinical Functionality, so far as can reasonably be determined given the level of detail of Design Data which has been disclosed to NHSL.

Schedule to Project Agreement

PART 1 OF THE SCHEDULE: DEFINITIONS AND INTERPRETATIONS

Section 1: Definitions

In this Agreement unless the context otherwise requires:

"Clinical Functionality"

(a) the following matters as shown on the [1:500 scale development control plan]:

- (i) the points of access to and within the [development site] and the [buildings];
- (ii) the relationship between one or more [buildings] that comprise the [development]; and
- (iii) the adjacencies between different Hospital departments [referenced to a drawing number or numbers];

(b) the following matters as shown on the [1:200/1:100 scale plans] – (referenced to a list of drawing numbers in Project Co's Proposals for example):

- (i) the points of access to and within the [development site] and the [buildings];
- (ii) the relationship between one or more [buildings];
- (iii) the adjacencies between different Hospital departments; and
- (iv) the adjacencies between rooms within the Hospital departments;

(c) the quantity, description and areas (in square metres) of those rooms and spaces shown on the [Schedules of Accommodation];

(d) the location and relationship of equipment, furniture, fittings and user terminals as shown on the [1:50 loaded room plans] in respect of:

- (i) all bed and trolley positions;
- (ii) internal room elevations;
- (iii) actual ceiling layouts; and

(iv) [other project specific requirements might need to be considered, for example with regard to theatres and imaging departments]; and

(e) The location of and the inter-relationships between rooms within a department as shown on [] scale drawings, but only insofar as each of the matters listed in (a) to (e) above relate to or affect Clinical Use

Appendix B. Matrix of Reference Design Deliverables

Deliverable	Deliverable Use Categories						Notes	Status
	Mandate & Fix Operational Functionality	OBC Costings	Planning and Third Party Consultations	Validate Design and Test Against OS	Enabling Works Design	Site Information for Bidders		
Schedules of Accommodation	✓	✓					Schedule of Accommodation to include all areas of the building comprising all rooms in departments plus hard and soft FM areas, circulation, plant and communication spaces.	Some elements mandatory (operational spaces, soft FM spaces) and some elements indicative (plant and communication space and hard FM and NPD Co accommodation)
Room Data Sheets	✓	✓					RDS for all rooms and space types	Mandatory - Sheet 1 for all rooms (general), Sheet 3 for all rooms (environmental parameters) and Sheet 4 - (groups 2, 3 and 4 equipment). Sheet 2 (finishes) for all rooms and Sheet 4 (group 1 equipment for all rooms) outline generic specifications that must be met. RDS for Project Co spaces with be the responsibility of the Bidders.
Equipment Schedules	✓	✓					Equipment Responsibility Matrix developed from RDS - this acts as equipment list and responsibilities matrix.	Mandatory - Groups 2, 3 and 4 equipment Indicative - Group 1 equipment
Development Control Plan + Urban Design 1:1000/1:500	✓	✓	✓	✓	✓	✓	To show both the planning of the area within the red-line and the interface with the wider site - 1:1000 and 1:500 site plans indicating building footprint, road adjustments, parking layouts, access, energy centre and support facilities, blue-light/emergency appliance access, outline landscape/public realm proposals – not limited to Reference Design redline site. Will include the bus, car parking, cycle route and Emergency Department route strategies developed to Planning stage for the scheme. Develop proposals for heli-pad taking cognisance of appropriate regulations and guidance. Proposals to take account of boundaries of land outwith NHS control, servicing/waste strategies, buses and public transport requirements, site-wide parking provisions,	Mandatory - those elements defined under 'Operational Functionality' i.e.: (i) the points of access to and within the [development site] and the [buildings]; (ii) the relationship between one or more [buildings] that comprise the [development]; and (iii) the adjacencies between different Hospital departments [referenced to a drawing number or numbers] Indicative - everything else with exception of the above

Deliverable	Deliverable Use Categories						Notes	Status
	Mandate & Fix Operational Functionality	OBC Costings	Planning and Third Party Consultations	Validate Design and Test Against OS	Enabling Works Design	Site Information for Bidders		
							flood protection plus feedback from Local Planning Authority/A&DS. Should also show flexibility, adaptability, expansion strategy. Also to include all services locations, points of interface; topographical information; planning site boundaries and extents for permitted development.	
Departmental Layouts 1:500	✓	✓	✓				1:500 layout plans for all levels identifying departmental adjacencies, departmental areas, and vertical circulation cores. Also to indicate entrance 'zones', service cores, ICT, Comms and Hub rooms, Hard and Soft FM spaces	Mandatory - those elements defined under 'Operational Functionality' ie: (i) the points of access to and within the [development site] and the [buildings]; (ii) the relationship between one or more [buildings]; (iii) the adjacencies between different Hospital departments; and (iv) the adjacencies between rooms within the Hospital departments; This to include Soft FM spaces. Circulation defined as a consequence of the adjacencies. Indicative - all other elements (e.g. layouts and locations for Hard FM spaces, locations and sizes for services risers and spaces etc)
General Arrangements Plans 1:200	✓	✓					1:200 layout plans for all levels identifying room numbers, room areas (as-drawn), indicative structural grid integration, main service risers, vertical circulation cores. Window locations will be excluded and partition thicknesses will be standardised. Entrance zones indicated. FM, ICT, Hubs indicated. These drawings to be the basis for validating compliance with fire and escape requirements and servicing strategies.	Mandatory - those elements defined under 'Operational Functionality' ie:(i) the points of access to and within the [development site] and the [buildings];(ii) the relationship between one or more [buildings]; (iii) the adjacencies between different Hospital departments; and(iv) the adjacencies between rooms within the Hospital departments; Circulation defined as a consequence of the adjacencies; Soft FM spaces. Indicative - all other elements (e.g. layouts and locations for Hard FM spaces, locations and sizes for services risers and spaces, corridors widths etc etc) and Communication spaces.

Deliverable	Deliverable Use Categories						Notes	Status
	Mandate & Fix Operational Functionality	OBC Costings	Planning and Third Party Consultations	Validate Design and Test Against OS	Enabling Works Design	Site Information for Bidders		
General Arrangement Elevations and Sections.		✓	✓				Elevations and Sections for indicative purposes only. Required for A+DS and PPiP only.	Indicative
Generic Room Layouts 1:50	✓	✓					Generic - rooms. 1:50 layout plans indicating all fixtures/fittings and relevant codes, corresponding room elevations, equipment schedule, area analysis.	Mandatory - those elements defined under 'Operational Functionality' ie: (d) the location and relationship of equipment, furniture, fittings and user terminals as shown on the [1:50 loaded room plans] in respect of: (i) all bed and trolley positions; (ii) internal room elevations; (iii) actual ceiling layouts; and (iv) other project specific requirements, for example with regard to theatres and imaging departments; All other elements - indicative.
Key Room Layouts 1:50	✓	✓					Key - rooms. 1:50 layout plans indicating all fixtures/fittings and relevant codes, corresponding room elevations, equipment schedule, area analysis.	Mandatory - those elements defined under 'Operational Functionality' ie: (d) the location and relationship of equipment, furniture, fittings and user terminals as shown on the [1:50 loaded room plans] in respect of: (i) all bed and trolley positions; (ii) internal room elevations; (iii) actual ceiling layouts; and (iv) other project specific requirements, for example with regard to theatres and imaging departments]; All other elements - indicative.
Fire Strategy 1:200				✓			Reference Design Demonstrating Compliance. Supplemented in D+C Output Specification Design to show compliance with Technical Standards - not bespoke fire engineered solutions. Escape strategies also	Indicative

Deliverable	Deliverable Use Categories						Notes	Status
	Mandate & Fix Operational Functionality	OBC Costings	Planning and Third Party Consultations	Validate Design and Test Against OS	Enabling Works Design	Site Information for Bidders		
							to be developed. Services input essential	
Interior Design + Artwork Concepts		✓	✓	✓			D+C Specification + outline strategy. Part to be included in Development Control Plan and Site Plan.	Indicative
Wayfinding Strategy		✓	✓	✓			D+C Specification with supporting drawings/strategy report.	Indicative
Flexibility and expandability			✓	✓			D+C Specification with flexibility clearly defined.	Indicative
Supplies, Storage, Distribution and Waste Management (Soft FM)	✓	✓					Demonstrated in Operational Functionality drawings with supporting text in the Soft FM Construction Specifications.	Mandatory
Decontamination and Control of Infection (HAI-SCRIBE)				✓			Developed for verification purposes only.	Indicative

Deliverable	Deliverable Use Categories						Notes	Status
	Mandate & Fix Operational Functionality	OBC Costings	Planning and Third Party Consultations	Validate Design and Test Against OS	Enabling Works Design	Site Information for Bidders		
BREEAM				✓			Reference Design to be tested for compliance. Requirement for rating be covered in D+C Output Specification. Pre assessment required by reference design team to validate and inform the design.	Indicative
Geotechnical Site Investigation					✓	✓	Reference Design to be tested for compliance. Information to be available to bidders.	N/A (Data Room status)
Decanting, Phasing,				✓			To validate that Reference Design is compliant with strategy.	Indicative
Traffic Impact Assessment and Traffic Management Plan			✓			✓	Required for PPIP. Also Reference Design to be validated against the plan.	Indicative
Security Strategy				✓			Reference Design to be tested for compliance. Information to be available to bidders through D+C Output Specification and in Data Room.	Indicative
Construction Phase restrictions and controls						✓	Any restrictions / controls required to be outlined in D+C Output Specification and in Data Room.	Indicative
ICT strategy	✓	✓		✓	✓	✓	Server Room locations and numbers , operational policies and area schedules req for reference design.	Mandatory
Helipad	✓	✓					Reference design to locate the helipad within general massing and have been successfully tested against aviation requirements.	Indicative

Appendix C. RIBA Plan of Work

RIBA Plan of Work indicating Works Stage C – Concept Design

RIBA Outline Plan of Work 2007

The Outline Plan of Work organises the process of managing, and designing building projects and administering building contracts into a number of key Work Stages. The sequence or content of Work Stages may vary or they may overlap to suit the procurement method (see pages 2 and 3).

RIBA Work Stages		Description of key tasks	OGC Gateways
Preparation	A Appraisal	Identification of client's needs and objectives, business case and possible constraints on development. Preparation of feasibility studies and assessment of options to enable the client to decide whether to proceed.	1 Business justification
	B Design Brief	Development of initial statement of requirements into the Design Brief by or on behalf of the client confirming key requirements and constraints. Identification of procurement method, procedures, organisational structure and range of consultants and others to be engaged for the project.	2 Procurement strategy
Design	C Concept	Implementation of Design Brief and preparation of additional data. Preparation of Concept Design including outline proposals for structural and building services systems, outline specifications and preliminary cost plan. Review of procurement route.	3A Design Brief and Concept Approval
	D Design Development	Development of concept design to include structural and building services systems, updated outline specifications and cost plan. Completion of Project Brief. Application for detailed planning permission.	3B Detailed Design Approval
	E Technical Design	Preparation of technical design(s) and specifications, sufficient to co-ordinate components and elements of the project and information for statutory standards and construction safety.	
Pre-Construction	F1 Production Information	Preparation of production information in sufficient detail to enable a tender or tenders to be obtained. Application for statutory approval.	3C Investment decision
	F2 Tender Documentation	Preparation of further information for construction required under the building contract. Preparation and/or collation of tender documentation in sufficient detail to enable a tender or tenders to be obtained for the project.	
	H Tender Action	Identification and evaluation of potential contractors and/or specialists for the project. Obtaining and appraising tenders; submission of recommendations to the client.	
Construction	J Mobilisation	Letting the building contract, appointing the contractor. Issuing of information to the contractor. Arranging site hand over to the contractor.	4 Readiness for Service
	K Construction to Practical Completion	Administration of the building contract to Practical Completion. Provision to the contractor of further information as and when reasonably required. Review of information provided by contractors and specialists.	
Use	L1 Post Practical Completion	Administration of the building contract after Practical Completion and making final inspections.	5 Benefits evaluation
	L2	Assisting building user during initial occupation period.	
	L3	Review of project performance in use.	

The activities in *italics* may be moved to suit project requirements, i.e.
 D Application for detailed planning approval;
 E Statutory standards and construction safety;
 F1 Application for statutory approvals; and
 F2 Further information for construction.
 G+H Invitation and appraisal of tenders

Source: RIBA www.architecture.com

Appendix D. Draft Instructions to Bidders (to follow)

Date: Wednesday, June 6 2012 01:49 PM
 Subject: RE: Reference Design
 From: Currie, Brian [REDACTED]
 To: Donna Stevenson [REDACTED]
 Colin Proctor [REDACTED] Graham, Iain
 CC: [REDACTED] Potter, Carol [REDACTED];

Attachments: image001.jpg; RHSC + DCN - Approach to Reference Design.pdf

Donna

Please find attached what we hope will be the final version (revision H) of our document on our approach to reference design.

Section 4.1 para 5 has revised wording following your comments at our meeting noted below.

Tech Cost 5 and current accommodation schedule will be with you shortly.

Regards

Brian

Brian Currie
 Project Director
 LUHD - RHSC + DCN Reprovision

 NHS Lothian
 56 Canna Lane, Edinburgh, EH10 4SG

T: [REDACTED]
 M: [REDACTED]
 E: [REDACTED]

From: Donna Stevenson [REDACTED]
Sent: 30 April 2012 16:45
To: Currie, Brian
Cc: Colin Proctor
Subject: Reference Design

Brian

Further to the useful meeting on reference design, as arranged, I note below the actions which we agreed.

1. You confirmed that bidders will be able to change the shape of the building eg to change curved walls or corridors to straight lines and that you will revise the paper and consider the wording to be included in the ITPD documentation to make this clear. You said that you would also look at my suggested wording in the IM/PQQ.
2. You confirmed that Thomson Gray has continued to be involved as the design has developed and that you will let us have the updated cost plan to demonstrate that the Reference Design remains within the construction cap (taking account of the inflation adjustment mechanism).
3. You are going to send me a reconciliation of the accommodation schedule showing the changes from the OBC.
4. I attach the table of recommendations from the Project Review. As you will appreciate, SFT is not signing off on the design. Rather at the Pre ITPD KSR, we will look to the Board to confirm that it has taken account of and implemented the recommendations. Given that the reference design is now completed it would be useful at this stage if you could return the table confirming the implementation of the

recommendations.

Regards

Donna

Donna Stevenson
Associate Director
Scottish Futures Trust

Mobile [REDACTED]
Direct [REDACTED]
Email [REDACTED]

Videoconference facilities available
Address 11-15 Thistle Street, Edinburgh, EH2 1DF. Main [REDACTED] Fax [REDACTED]
www.scottishfuturestrust.org.uk



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Director-General Health & Social Care and
Chief Executive NHS Scotland

Derek Feeley



T: [REDACTED] F: [REDACTED]
E: [REDACTED]

Mr Tim Davison
Chief Executive
NHS Lothian
Waverly Gate
2-4 Waterloo Place
Edinburgh
EH1 3EG



Our ref: A3968223
18 September 2012

Dear Tim

NHS Lothian – The Royal Hospital for Sick Children and Department of Clinical Neurosciences – Outline Business Case

The above Outline Business Case has been considered by the Health Directorate's Capital Investment Group (CIG) using expedited procedures. Following CIG's original consideration of the project the Board were informed that approval of the OBC would be conditional on receipt of planning approval in principle and approval by funders of the existing PFI contract at Little France to the land and commercial changes required (encapsulated in Supplementary Agreement 6). Now that these conditions have been fulfilled CIG have recommended approval and I am pleased to inform you that I have accepted that recommendation and now invite you to submit a Full Business Case.

I am aware that negotiations are currently underway with Consort regarding the six enabling works packages required to support the new RHSC/DCN project and that an OJEU notice for the project will not be issued until those matters are successfully concluded. I would urge you to ensure that this is concluded as soon as is practicable in order that the project can progress into procurement.

Given the engagement that has taken place since the OBC was originally submitted to SGHSCD we would request that agreed changes be made to the document before the OBC is placed in the public domain. In accordance with SCIM Guidance, business cases/addendums are required to be placed within the Scottish Parliament Library (SPICE) within one month of receiving approval.

Therefore, I would be grateful if you could forward a public version of the Outline Business Case to Glenda Roy at the address below within one month of receiving this approval letter. It is a compulsory requirement within SCIM, for schemes in excess of £5m, that NHS Boards set up a section of their website dedicated specifically to such projects.

The approved Business Cases/ contracts should be placed there, together with as much relevant documentation and information as appropriate. Further information can be found at [http://www.scim.scot.nhs.uk/Approvals/Pub BC C.htm](http://www.scim.scot.nhs.uk/Approvals/Pub_BC_C.htm).

I would ask that if any publicity is planned regarding the approval of the business case that NHS Lothian liaise with SG Communications colleagues regarding handling.

As always, CIG members will be happy to engage with your team during the development of the Full Business Case and to discuss any concerns which may arise. In the meantime, if you have any queries regarding the above please contact Mike Baxter on 0131 244 2079 or e-mail Mike.Baxter@scotland.gsi.gov.uk

Yours sincerely



DEREK FEELEY

PROCUREMENT STRATEGY



Executive Summary

This paper details the proposed process for the procurement of the RHSC & DCN Little France project in Edinburgh (the Project).

The Project will be procured via the Scottish Governments revenue financed Non Profit Distributing (NPD) model. A preferred bidder for the contract will be selected via Competitive Dialogue (CD) as part of the procurement process.

The new building associated with the Project will be located adjacent to the existing Royal Infirmary of Edinburgh (RIE) on the Little France site.

The existing RIE building/land is associated with an earlier PFI project operated by Consort Healthcare. The intention is that the RHSC & DCN will be standalone and a separate facility on the Little France site as far as is practically possible. It is anticipated, however that there will be a number of common interfaces between the eventual RHSC & DCN and the RIE/Consort facility, associated mainly with physical, clinical and operational connections (patient pathways and staff communications), infrastructure associated with ICT, Security/fire alarm systems and the pneumatic tube delivery system employed by NHS Lothian on the RIE site.

The key stages associated with the procurement process and described in this paper are:

- PIN notice
- OJEU notice
- Pre-qualification
- Competitive Dialogue (CD)
- Submission of final tenders
- Selection of preferred bidder
- Financial/Contract close

1. Introduction

This paper provides details of the procurement proposed for the Project via the CD route and the interfaces with other workstreams associated with the Project.

The approach to procurement via competitive dialogue has been aligned with HM Treasury guidance on CD (2008).

A Procurement and Commercial workstream including NHSL personnel and project Technical, Legal and Financial advisors has developed the following proposal and is

in the process of completing key documentation associated with the procurement process, including pre-qualification and invitation to tender documentation.

2. PIN Notice

Application of a Prior Information Notice (PIN) has been considered by the Procurement and Commercial workstream. It is considered not appropriate to issue a PIN notice until Outline Business Case (OBC) is confirmed and all outstanding interface issues with the RIE concession are settled.

Additionally, the OJEU notice is programmed to be published during January 2012 leaving little time for the above issues to be closed out and a PIN issued.

It is therefore proposed not to publish a PIN notice for this Project. Given current market conditions and awareness and enthusiasm that already exists for the Project it is considered that lack of a PIN will have little impact on the markets response. It is intended that the OJEU notice and associated Pre-Qualification Questionnaire (PQQ) and Memorandum of Information documents will include additional input to compensate.

3. OJEU Notice

The OJEU notice is programmed to be published in January 2012. This will outline NHSL requirements for the Project including details of the procurement strategy with regard to the pre-qualification process and associated selection and award procedures.

The OJEU process will not commence until the final OBC has been completed and signed off. Following approval of OBC and prior to the OJEU notice being published, it is anticipated that a key stage review (pre-OJEU) will be carried out by the Scottish Futures Trust (SFT).

The proposed OJEU notice is included as part of the OBC submission.

4. Pre-qualification (PQQ)

Organisations/Consortia expressing an interest will be asked to complete a PQQ). This will verify organisations experience, financial standing and professional and technical capacity for delivering the Project.

During the pre-qualification phase, a bidder's day will be held to provide more information to prospective bidders on the Project and the approach to the CD process.

Pre-qualification submissions will be evaluated via a formal scoring methodology. It is proposed that a minimum of 3 bidders with the highest scores from this process will be shortlisted to go through to the CD phase. It is anticipated that all 3 short listed bidders will proceed through to the end of the CD process when a preferred bidder will be selected.

Prior to confirmation of shortlisted bidders, a further Key Stage Review (Pre-ITPD) review will be carried out by SFT.

Reasons for shortlisting three bidders can be summarised as follows:

- Taking additional bidders forward beyond PQQ will place additional burdens on Project Team resources, potentially adding to procurement costs.
- The time period for the CD process will be extended, increasing the overall procurement timescales
- Potential bidders will have concerns about Resourcing and financing their bid through CD and tender stages when the chance of success is reduced
- Three bidders is the usual shortlisted number on similar NPD projects

A draft PQQ, associated scoring template and Memorandum of Information have been prepared and reviewed by the Procurement & Commercial workstream. These are based on SFT standard form documents but developed to focus on project specific issues associated with the Project.

It is acknowledged that due to the specific requirements of the Project, current market conditions and the low number of PPP related projects associated with the acute health sector undertaken in recent years, that the PQQ will be a key stage in ensuring that bidders with the appropriate blend of skill and experience are shortlisted.

It is anticipated that the PQQ, associated scoring template and Memorandum of Information will be approved by NHS Lothian's project board during November 2011.

5. ITPD and Competitive Dialogue (CD) process

5.1 ITPD

The CD process will commence with the issuing of an Invitation To Participate in Dialogue (ITPD). The ITPD will:

1. Establish the requirements for information that bidders will submit for evaluation/review throughout the process;
2. Set out NHS Lothian's requirements (including output requirements and other technical information);
3. Set out how dialogue will be conducted (including a description of how the interim review stages at the end of dialogue stages 1 and 2 will be handled);
4. Set out the breadth of matters and subjects which NHS Lothian expects to be the subject of the detailed dialogue;
5. Flag up any constraints that bidders should be aware of;

6. Set out a protocol for communications between NHS Lothian and bidders; and
7. Include details of the information required at each stage and the associated review and award criteria.

On the Project a reference design will be developed by NHS Lothian and their advisors. This will detail a design that fixes clinical functionality. Elements of the reference design will be mandated in the ITPD and bidders will not be able to depart from this in their proposals.

There will be four main volumes for the ITPD:

Volume 1 – Instructions and guidance to bidders

Volume 2 – Project Agreement

Volume 3 – Specific requirements

Volume 4 – Room Data Sheets

5.2 Dialogue stage 1

It is proposed that there are three main stages to the CD process. The initial stage will involve dialogue on the strategic direction of the Project and development of bidder's proposals, including 1:500 and 1:200 plans and associated Technical, Financial and Legal proposals. At the end of stage 1 the three bidders will be invited to submit their outline solutions. Requirements for this will be described in the ITPD. It is proposed that review at this stage is an informal process rather than a full submission. Bidders will be asked to give a presentation on their outline proposals and work to date. This will be an opportunity for bidders and the procurement team to present proposals to NHSL representatives who have not been fully involved in the procurement process, but are still significant stakeholders in the Project.

Bidders will be given guidance on the presentation structure and requirements and will be asked to let stakeholders see the presentation in advance to familiarise themselves and frame questions.

The presentations will not be formally scored, but comments from stakeholders will be captured and fed back to bidders with salient points informing stage 2 of the dialogue process.

5.3 Dialogue stage 2

The second phase of CD will look at more detailed proposals, including 1:50 plans and associated Technical, Financial and Legal proposals. The second phase will conclude with an invitation to submit detailed solutions. This will require a more formal submission, focussing on key issues relating to affordability. A matrix will be prepared to allow key information from each bidder to be captured and analysed but not formally scored. Requirements for submissions at this phase will be described in the ITPD.

Feedback will be given to each bidder and will inform the basis for the remaining dialogue prior to submission of the draft final bid.

In both the stage 1 and stage 2 reviews, bidders will be expected to demonstrate innovation and explain how they intend to address issues around construction and provision of services.

5.4 Dialogue stage 3 and draft final tender

After the stage 2 review a further round of dialogue and clarification will take place before bidders are asked to submit a draft final tender.

At this stage, bidders will be asked to submit their final proposals in draft form based on an agreed contractual position. Draft bids will be reviewed for compliance and to ensure they are presented correctly to allow full evaluation to take place at the final tender stage.

Only limited dialogue is anticipated after submission of draft final tenders. This will allow NHS Lothian to engage with each bidder to clarify, specify or fine tune their tender.

Dialogue will formally close when NHS Lothian is comfortable that one or more solution is available. An Invitation To Submit Final Tender (ISFT) in draft form will be issued at this stage. Full details of ISFT requirements will be included in the ITPD.

5.5 CD meeting format

The CD process has been programmed to last 8 months. During the process dialogue with bidders will be split into three dialogue streams, Technical, Legal and Financial. Engagement with the three bidders for each of these dialogue streams will take place on a monthly basis.

A draft programme for the procurement workstream, including proposed dates for dialogue meetings and associated submissions is included in this paper. This shows proposed dates for dialogue meetings with shortlisted bidders and anticipates that at each dialogue cycle there will be three consecutive meeting days. One day for each bidder. The format for the days includes separate workshops for Technical, Legal and Financial discussions together with collective sessions.

6. Final Tenders

When the Competitive Dialogue period concludes, bidders will formally be invited to submit final tenders via an ISFT.

Details of scoring criteria and weightings that will be used by NHS Lothian during the evaluation of bid proposals will be described in the ITPD. As discussed above, the draft final bid will allow NHS Lothian and their advisors to ensure that bidder's final proposals address all aspects required in the final bid and are fully compliant with all mandatory requirements. A Key Stage Review will be held pre ISFT.

7. Selection of Preferred Bidder

Following receipt of final bids, some further discussions will take place with bidders to clarify, specify or fine-tune final bids. NHS Lothian shall then undertake a detailed evaluation of final bids based on the evaluation criteria specified in the ITPD.

Following the detailed evaluation of the final bids, a final evaluation report will be prepared to recommend the preferred bidder. This recommendation will be based on the bid that represents the most economically advantageous. It is proposed that a standstill period will apply at the point at which the preferred bidder is selected and announced.

A full debriefing for unsuccessful bidders is included in procurement programme.

8. Financial/Contract close

Dialogue will continue to take place with the preferred bidder only to complete the project agreement and clarify aspects of the preferred bidder's final bid to reach a position where the project agreement can be entered into and signed. At this time the preferred bidder shall not be entitled to modify substantially any aspect of its final bid. During this period the preferred bidder will apply for and obtain detailed planning approval for the Project.

In parallel, activity will take place to complete the final business case for the Project and gain all necessary approvals to allow contract close to take place. This phase is programmed to take 3 months, achieving contract close in mid July 2013.

It is proposed that a further standstill period shall take place between the date NHS Lothian notifies those parties who submitted a tender and the date on which NHS Lothian proposes to enter into and conclude the final contract with the preferred bidder, if NHS Lothian considers a further standstill period to be appropriate. A number of legal remedies may be available to interested parties relating, for example, to the award decision during or following the standstill period.

A final key stage review (pre-financial close) will take place before the project agreement is signed with the preferred bidder.

9. Procurement Programme

An outline of the draft procurement programme is included over, including key dates associated with the evaluation process.

Draft Procurement Programme – key dates

Evaluation Stage	Meeting dates	Comments
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PQQ Evaluation training	31 st January 2012	Coincides with publication of OJEU notice
Bidders day	17th February 2012	
PQQ Evaluation	5 th March 2012 – 27 th April 2012	Dates shown are for the proposed evaluation period. Evaluation work will take place throughout this period with meetings scheduled at a later date. This will depend on the number of PQQ submissions received.
CD Training	27 th April 2012	Coincides with release of ITPD to short listed bidders
CD Phase 1	Bidder A- 14 th May 2012 Bidder B- 15 th May 2012 Bidder C- 16 th May 2012 Bidder A- 11 th June 2012 Bidder B- 12 th June 2012 Bidder C- 13 th June 2012 Bidder A- 9 th July 2012 Bidder B- 10 th July 2012 Bidder C- 11 th July 2012	
Phase 1 review	11 th July – 1 st August 2012	Dates shown are for the proposed evaluation period. Review work will take place throughout this period with meetings scheduled at a later date.
CD Phase 2	Bidder A- 13 th Aug 2012 Bidder B- 14 th Aug2012 Bidder C- 15 th Aug 2012 Bidder A- 10 th Sept 2012 Bidder B- 11 th Sept 2012 Bidder C- 12 th Sept 2012	
Phase 2 review	12 th September – 3 rd October 2012	Dates shown are for the proposed review period. Work will take place

throughout this period
with meetings scheduled at
a later date.

CD Phase 3

Bidder A- 8th Oct 2012
Bidder B- 9th Oct 2012
Bidder C- 10th Oct 2012

Bidder A- 5th Nov 2012
Bidder B- 6th Nov 2012
Bidder C- 7th Nov 2012

**Review of Draft Final
Tender**

14th November – 12th
December 2012

Dates shown are for the
proposed evaluation
period. Review work will
take place throughout this
period with meetings
scheduled at a later date.

**Final Dialogue and
clarifications leading to
dialogue close**

Bidder A- 14th Jan 2013
Bidder B- 15th Jan 2013
Bidder C- 16th Jan 2013

**Evaluation of Final
Tender**

22nd February – 23rd May
2013

Dates shown are for the
proposed evaluation
period. Evaluation work
will take place throughout
this period with meetings
scheduled at a later date.



SCOTTISH HOSPITALS INQUIRY
Hearing commencing 9 May 2022
Bundle 3 - Governance
Volume 2 (of 3)